

University of Southampton Research Repository

Copyright © and Moral Rights for this thesis and, where applicable, any accompanying data are retained by the author and/or other copyright owners. A copy can be downloaded for personal non-commercial research or study, without prior permission or charge. This thesis and the accompanying data cannot be reproduced or quoted extensively from without first obtaining permission in writing from the copyright holder/s. The content of the thesis and accompanying research data (where applicable) must not be changed in any way or sold commercially in any format or medium without the formal permission of the copyright holder/s.

When referring to this thesis and any accompanying data, full bibliographic details must be given, e.g.

Thesis: Author (Year of Submission) "Full thesis title", University of Southampton, name of the University Faculty or School or Department, PhD Thesis, pagination.

UNIVERSITY OF SOUTHAMPTON

FACULTY OF SOCIAL AND HUMAN SCIENCES

Sociology, Social Policy and Criminology

**Low uptake of the Green Deal: Examining financial, decision-making and awareness
reasons**

by

Alexander Afful Acheampong

Thesis for the degree of Doctor of Philosophy

September 2016

UNIVERSITY OF SOUTHAMPTON

ABSTRACT

FACULTY OF SOCIAL AND HUMAN SCIENCES FACULTY

Sociology, Social Policy and Criminology

Doctor of Philosophy

LOW UPTAKE OF THE GREEN DEAL: EXAMINING FINANCIAL, DECISION-MAKING AND AWARENESS REASONS

By Alexander Afful Acheampong

The Green Deal was part of a strategy to tackle climate change by reducing home energy use. It operated in the UK from 2013 to 2015, but uptake of the policy was very low. Energy efficiency policies usually advantage homeowners over tenants and landlords. Therefore it is important to analyse the differences in uptake and the reasons for low uptake across sectors. This study examines which role financial incentives, decision-making and awareness play in inequality of uptake of the Green Deal, compared between the privately rented and owner-occupier sectors and between student landlords and the young professional landlord market. The study uses qualitative interviews, a survey, and documentary research to address the research question.

The conclusion is that financial reasons are very relevant for understanding why uptake of the Green Deal was lower in the privately rented sector than the owner-occupier sector, and the student rented sector than the young professional rented sector. I found that the Green Deal finance was too expensive for customers in general, but that people in the privately rented sector found it more difficult than owners to access loans under the scheme. One of the novel findings from the study was that student landlords focused on rental incomes and believed that Green Deal improvement would not increase their rental incomes, but young professional landlords focused on capital gains and understood that Green Deal improvements would slightly increase their capital growth. Decision-making reasons are very important for explaining the inequality of take-up of the Green Deal across sectors. The requirement for consensus between landlord and tenant in the rented market not exist in the owner-occupier market. I found that it is more difficult to reach consensus in student rented market than in the young professional rented market because the student market is made up of more transient and larger tenant groups than the young professional rented market, which contains fewer tenants who plan to stay for longer.

It is less clear how important awareness reasons are to explain the difference in uptake of the Green Deal across sectors. There were equal levels of Green Deal awareness between the privately rented sector and the owner-occupier sector, and between the students rented market and the young professional rented market. I found that tenants are not interested in energy efficiency when renting, but owners consider energy efficiency in their buying decisions. Therefore, owner-occupiers might be more willing to act on their pro-environmental attitudes than landlords and tenants. Equally, environmental attitudes of different types of landlord are potentially relevant in explaining difference in uptake of the Green Deal in the student rented market and the young professional rented market. Landlords in the young professional rented market might be more willing to act on their pro-environmental attitudes than landlords in the student rented market, as the former's motivations to rent out their properties are based on long-term enhancement of capital value, as against the latter's motivations based on short-term profit.

Table of Contents

| | |
|--|-------------|
| Table of Contents | i |
| List of Tables | vii |
| List of Figures..... | ix |
| DECLARATION OF AUTHORSHIP | xi |
| Acknowledgements and Dedication..... | xiii |
| Abbreviations..... | xv |
| Chapter 1: Introduction | 1 |
| 1.1 Introduction..... | 1 |
| 1.2 Research main question and its policy relevance..... | 7 |
| 1.3 Substantial contribution to knowledge | 8 |
| 1.4 Rationale for the research..... | 8 |
| 1.5 Main argument..... | 10 |
| 1.6 Outline of the thesis..... | 10 |
| Chapter 2: Description of the Green Deal and background to the study | 13 |
| 2.1 Introduction..... | 13 |
| 2.2 Description of the Green Deal (GD) | 13 |
| 2.3 The UK housing stock and distribution of insulation and heating measures by different sectors | 18 |
| 2.3.1 Size of the UK housing sector..... | 18 |
| 2.3.2 Property age..... | 18 |
| 2.3.3 Dwelling type..... | 18 |
| 2.4 Energy efficiency trends | 20 |
| 2.4.1 Standard Assessment Procedure (SAP) | 20 |
| 2.5 Insulation measures..... | 22 |
| 2.5.1 Cavity wall insulation | 22 |
| 2.5.2 Loft insulation | 23 |
| 2.5.3 Solid wall insulation | 23 |
| 2.5.4 Double glazing..... | 25 |

| | | |
|-------------------|---|-----------|
| 2.6 | Heating measures..... | 26 |
| 2.6.1 | Heating..... | 26 |
| 2.6.2 | Heating control..... | 27 |
| 2.7 | The overview of past UK home energy efficiency policies | 28 |
| 2.8 | Conclusion | 33 |
| Chapter 3: | Literature review..... | 35 |
| 3.1 | Introduction | 35 |
| 3.2 | Financial reasons | 36 |
| 3.2.1 | Rational choice theory | 36 |
| 3.2.2 | Time consistent preferences | 37 |
| 3.2.3 | Loss aversion..... | 40 |
| 3.2.4 | Empirical evidence on the role of financial incentives..... | 41 |
| 3.2.5 | The financial design of the Green Deal..... | 43 |
| 3.2.5.1 | The reinforcement of the Green Deal for the rental market's split | 52 |
| 3.3 | Expectation | 53 |
| 3.4 | Decision making reasons | 55 |
| 3.4.1 | Power theories..... | 55 |
| 3.4.2 | Empirical evidence on the role of power in decision making | 58 |
| 3.4.3 | The role of decision making reasons..... | 59 |
| 3.5 | Expectation | 65 |
| 3.6 | Awareness reasons..... | 66 |
| 3.6.1 | Information deficit model..... | 66 |
| 3.6.2 | Environmental concern theories..... | 68 |
| 3.6.3 | Empirical evidence on information deficit model | 71 |
| 3.6.4 | Empirical evidence on environmental concern | 72 |
| 3.6.5 | The distribution of Green Deal information..... | 73 |
| 3.6.6 | Awareness of the Green Deal and related issues | 73 |
| 3.6.7 | The understanding of the Green Deal | 75 |
| 3.6.8 | Attitudes to energy efficiency..... | 80 |
| 3.7 | Expectation | 81 |

| | | |
|-------------------|---|------------|
| 3.8 | Summary of the literature review..... | 81 |
| 3.9 | The framework of the study..... | 82 |
| Chapter 4: | Methodology | 87 |
| 4.1 | Introduction..... | 87 |
| 4.2 | Research strategy and design | 87 |
| 4.3 | Data collection methods..... | 89 |
| 4.3.1 | Documentary research | 89 |
| 4.3.2 | Qualitative interviews..... | 91 |
| 4.4 | Justification for combining documentary research with qualitative interview | 93 |
| 4.5 | Pilot interviews..... | 94 |
| 4.6 | Recruitment of landlords, tenants and owner occupiers | 95 |
| 4.7 | Other background characteristics of the study participants..... | 98 |
| 4.7.1 | The age of the property..... | 98 |
| 4.7.2 | The duration of landlordship | 99 |
| 4.7.3 | Gender of respondents | 99 |
| 4.7.4 | Number of adults in property | 99 |
| 4.1 | Ethics consideration..... | 99 |
| 4.2 | Data analysis procedure..... | 100 |
| 4.3 | Concluding remarks | 102 |
| Chapter 5: | Presentation and discussion of findings on financial reasons | 103 |
| 5.1 | Introduction..... | 103 |
| 5.2 | Presentation of findings | 105 |
| 5.2.1 | The financial design of the Green Deal..... | 105 |
| 5.2.1.1 | The reinforcement of the Green Deal for the rental market's split..... | 120 |
| 5.3 | The landlords' motivations and expectations..... | 122 |
| 5.4 | Energy efficiency improvements | 125 |
| 5.5 | Discussion of findings..... | 128 |
| 5.5.1 | The Green Deal financial mechanism | 128 |
| 5.5.1.1 | The reinforcement of the Green Deal for the rental market's split..... | 134 |

| | | |
|-------------------|---|------------|
| 5.6 | Landlords' motivation' and expectations | 137 |
| 5.7 | Energy efficiency improvements | 139 |
| 5.8 | Conclusion | 140 |
| Chapter 6: | Presentation and discussion of findings on reasons relating to decision making | 141 |
| 6.1 | Introduction | 141 |
| 6.2 | Presentation of findings | 142 |
| 6.2.1 | The role of power in decision making..... | 142 |
| 6.3 | Discussion of findings | 151 |
| 6.3.1 | The role of power in decision making..... | 151 |
| 6.4 | Conclusion | 156 |
| Chapter 7: | Presentation and discussion of findings on awareness reasons..... | 157 |
| 7.1 | Introduction | 157 |
| 7.2 | Presentation of findings on awareness | 159 |
| 7.2.1 | Awareness of the Green Deal and its supported regulations | 159 |
| 7.2.1.1 | Awareness of the Green Deal..... | 159 |
| 7.2.1.2 | Awareness of the tenant request legislation | 160 |
| 7.2.1.3 | Awareness of the energy efficiency minimum standard | 161 |
| 7.3 | Understanding of the Green Deal..... | 163 |
| 7.3.1 | HMO landlords do not require energy performance certificates..... | 164 |
| 7.4 | Attitudes to energy efficiency of the property | 168 |
| 7.5 | Discussion of findings | 172 |
| 7.5.1 | Awareness of the Green Deal and its supported regulations | 172 |
| 7.5.2 | Understanding of the Green Deal..... | 172 |
| 7.6 | Attitudes to energy efficiency of the property | 175 |
| Chapter 8: | Conclusions..... | 183 |
| 8.1 | Introduction | 183 |
| 8.2 | Comparison of financial reasons between the privately rented and owner-occupier sectors | 184 |

| | | |
|---------|---|-----|
| 8.2.1 | The financial design of the Green Deal | 184 |
| 8.3 | Comparison of decision-making reasons between landlords, tenants and owners .. | 187 |
| 8.3.1 | The role of power in decision- making..... | 187 |
| 8.4 | Comparison of awareness reasons between the privately rented sector and the owner-occupier sector | 189 |
| 8.4.1 | Awareness of the Green Deal and its supported regulations..... | 189 |
| 8.4.2 | Understanding of the Green Deal | 190 |
| 8.5 | Comparison of financial reasons between the student rented and young professional rented sectors | 191 |
| 8.5.1 | The financial design of the Green Deal | 191 |
| 8.6 | Comparison of decision-making reasons between the student rented and young professional rented sectors | 192 |
| 8.6.1 | The role of decision making reasons | 192 |
| 8.7 | Comparison of awareness reasons between the student rented and the young professional rented sectors | 192 |
| 8.7.1 | Awareness of the Green Deal and its supported regulations..... | 192 |
| 8.7.2 | Understanding of the Green Deal | 193 |
| 8.7.3 | Attitudes to energy efficiency | 193 |
| 8.8 | Policy recommendations | 196 |
| 8.8.1 | Policy recommendations related to financial design..... | 196 |
| 8.8.1.1 | Provide financial incentive for people in the privately rented sector and for the student landlords in particular, and/or regulate the privately rented sector..... | 196 |
| 8.8.2 | Recommendations regarding decision-making reasons | 198 |
| 8.8.2.1 | The removal of the retaliatory eviction, and addition of new financial incentives for landlords..... | 198 |
| 8.8.2.2 | Change the financial design of future energy efficiency policies | 198 |
| 8.8.3 | Recommendations in relation to awareness | 200 |
| 8.8.3.1 | Find easier ways of accessing people in the privately rented sector and provide information on the new legislation to landlords and tenants | 200 |

| | | |
|--|---|------------|
| 8.8.3.2 | Arrange Energy Performance Certificate calculation to cover HMOs with an EPC..... | 201 |
| 8.9 | The limitations of the study and direction for future study..... | 203 |
| 8.10 | Concluding remarks..... | 204 |
| Appendix 1: Description of UK Suppliers Obligation Schemes | | 205 |
| Appendix 2: Description of other UK home energy efficiency policies..... | | 207 |
| Appendix 3: Policy documents' sources & their titles for the documentary analysis . | | 209 |
| Appendix 4: A copy of pilot interview schedule..... | | 211 |
| Appendix 5: Copies of interview Schedule | | 213 |
| Appendix 6: Copies of survey guide | | 219 |
| Appendix 7: A copy of the request letter..... | | 223 |
| Appendix 8: A copy of the recruitment letter..... | | 225 |
| Appendix 9: Front and back of the postcard | | 227 |
| Appendix 10: A copy of the consent form | | 229 |
| Appendix 11: Participant information sheet..... | | 231 |
| Appendix 12: Ethical approval for pilot interviews | | 233 |
| Appendix 13: Ethical approval for the actual interviews | | 235 |
| List of References | | 237 |

List of Tables

| | |
|---|-----|
| Table 1 : Number of live Green Deal Plans by tenure, up to 30 June 2015 (DECC, 2015e). | 2 |
| Table 2 : Mean SAP rating by tenure, 1996 – 2011 (DCLG, 2013)..... | 22 |
| Table 3: Source of documents and number of documents examined, and number of participants interviewed. | 98 |
| Table 4: Relevance of the three dimensions for explaining differences in uptake between sectors | 178 |

List of Figures

| | |
|--|-----|
| Figure 1: Number of Green Deal Plans in unique properties, cumulative totals at end of each month, and by stages (DECC, 2015a) | 2 |
| Figure 2: Dwellings by tenure in the UK, 2014 (DCLG, 2016a) | 4 |
| Figure 3: Trends in tenure in the UK, 1980–2014 (DCLG, 2016a) | 4 |
| Figure 4: Fuel poverty in England, 2003-2013 (DECC, 2015c) | 5 |
| Figure 5: Fuel poverty by tenure England, 2013 (DECC, 2015c) | 5 |
| Figure 6: Age of housing stock by type of tenure, 2011 (DCLG, 2013) | 8 |
| Figure 7: Outline of the thesis | 11 |
| Figure 8: The steps involved in the Green Deal uptake (DECC, 2011d) | 17 |
| Figure 9: Dwelling type by tenure, 2014 (DCLG, 2016a) | 19 |
| Figure 10: Percentage of dwellings with insulation measures by tenure, 2011 (DCLG, 2013) | 23 |
| Figure 11: Wall insulation, by main wall type and tenure, 2014 (DCLG, 2016a) | 25 |
| Figure 12: Fuel poverty by wall type, England 2013 (DECC, 2015c) | 25 |
| Figure 13: The awareness of the Green Deal, (DECC, 2013d p.6) | 74 |
| Figure 14: The awareness of the Green Deal HIF (DECC, 2015b p.8) | 75 |
| Figure 15: The framework of the study | 85 |
| Figure 16: Rental yield by type of property and by main tenant types (NLA Landlords Panel, 2014) | 136 |
| Figure 17: The potential role of understanding home energy rating on EPC, for uptake of the Green Deal | 167 |
| Figure 18: A cycle of students’ rental contract | 177 |
| Figure 19: The identified three main barriers and their relative interventions. | 202 |

DECLARATION OF AUTHORSHIP

I, Alexander Afful Acheampong declare that this thesis entitled '**Low uptake of the Green Deal: Examining the financial, decision-making and awareness reasons**' and the work presented in it are my own and has been generated by me as the result of my own original research.

I confirm that:

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

Signed:

Date: September 2016

Acknowledgements and Dedication

To God be the glory, without whom I would not have come this far in life. I did not know where exactly He would put my feet after I finished my MSc and was still jobless, but He had a better plan of putting my feet on a higher ground. I am most grateful, God.

I am deeply indebted to Associate Professor in Sustainability, Economics, and Low-Carbon Transitions, Milena Buchs, and Professor of Energy and Buildings, Patrick James, my supervisors, for their insightful comment, advice, constructive criticism, support and teaching throughout this study. You taught me like undergraduate student and that made me learn a lot from you. Your attention to details throughout has been invaluable.

My heartfelt thanks go to my wife, Gloria Afful Acheampong, my son, Aimery Alex Afful Acheampong and my daughter, Nana Adoma Mikaela Afful Acheampong who have patiently put up with my non-availability in the house for so many hours. My profound gratitude also goes to my mum, Cecilia Adoma, my sisters, Dorothy Nyamekye and Ophelia Afful, my brothers, Eric Oti Afful and Rolf Nyamekye and my uncle, Kenneth Osei Akwasi, who chose to do so many things for me just to allow me more time to study. My thanks also go to my mother-in-law, Rosina Ocrah, for taking good care of our daughter so that I could spend more time doing research.

Grateful thanks are also owed to Dr Isaac Boateng. It was always refreshing to talk to you. To Dr Cletus Moobela, Dr Mark Danso-Amoako, and the principal lecturer, Tim Goodhead, a big thank you for your response to the request of interviews and inspiring good-luck messages thereafter. To all my friends and colleagues, thank you for the moral support and encouragement. I also appreciate the support and patience of all the respondents to my interviews, and especially the University of Southampton accommodation officers.

I dedicate this thesis to my entire family, especially my wife, Gloria, my son, Aimery and my daughter, Mikaela, for their love, support and sacrifices. You believed in me and encouraged me to undertake this doctoral programme. This thesis is also dedicated to the memory of my late father, Kwabena Afful, who taught me very early in life the value of knowledge, but who unfortunately could not live long enough to see the fruits of his labour. I dedicate this work to my father-in-law, Joseph Ocrah, who just passed away, but would have been elated at this achievement. Finally, my uncle, Kenneth Osei Akwasi, who brought me an Apple Macintosh Computer to support my study.

Abbreviations

ACE: Association for the Conservation of Energy
CAB: Citizens Advice Bureau
CERO: Carbon Emissions Reduction Obligation
CERT: Carbon Emissions Reduction Target
CESP: Community energy saving programme
CSCO: Carbon Saving Community Obligation
CSE: Centre for Sustainable Energy
DCLG: Department for Communities and Local Government
DECC: Department of Energy and Climate Change
DHs: Decent Homes
ECAs: Enhanced Capital Allowances
ECCC: Energy and Climate Change Committee
ECO: Energy Company Obligation
EEC1: Energy Efficiency Commitment, 2002-2005
EEC2: Energy Efficiency Commitment, 2005-2008
EESoP1: Energy Efficiency Standards of Performance
EESoP2: Energy Efficiency Standards of Performance
EESoP3: Energy Efficiency Standards of Performance
EPC: Energy Performance Certificate
EST: Energy Saving Trust
GD: Green Deal
GDHIF: Green Deal Home Improvement Fund
HHCRO: Home Heating Cost Reduction Obligation

L: Landlord

LESA: Landlords' Energy Saving Allowance

O: Owner -Occupier

PL: Professional Landlord

SAP: Standard Assessment Procedure

SL: Student Landlord

T: Tenant

WF: Warm Front

Chapter 1: Introduction

1.1 Introduction

The Climate Change Act (2008) commits the UK to reduce emissions by at least 80% from 1990 levels by 2050 (HM Government, 2008). The Green Deal was part of a strategy to tackle climate change by reducing home energy use (Department of Energy and Climate Change [DECC], 2015b; 2013d; 2012a; DECC, 2011a). It was officially introduced on 28 January 2013 in England and Wales and on 25 February in Scotland (DECC, 2015b; 2014a; 2014b; 2013a; 2013b; 2013c; 2013d; 2013e; 2013f), and ended on 23 July 2015 (DECC, 2015a). The policy also aimed to remove the upfront cost barrier that has prevented energy efficiency investments in the privately rented and owner-occupier sectors (DECC, 2015b; DECC, 2011a). It intended to remove the split incentive barrier for private landlords, which in the past had prevented uptake of such investments in the sector (DECC, 2011a). The split incentive problem is that landlords do not want to invest in energy saving measures because it is the tenant who benefits from lower energy bills (Bird and Hernández, 2012; Gillingham et al., 2012; Department for Communities and Local Government [DCLG], 2006; United Kingdom Green Building Council [UKGBC], 2008). Under the Green Deal, the tenant paid for energy efficiency measures, and they were meant to benefit at the same time from lower energy bills (Guertler, 2011; DECC, 2011a DECC 2011b).

Whilst the policy may have been an elegant idea, including financing energy efficiency measures through savings in energy bills, uptake of the Green Deal was very low across the board. The latest statistics show that just 11,215 measures were installed under the Green Deal since its implementation in January 2013 up to the end of July 2015, compared to 1,532,961 measures installed under the Energy Company Obligation (ECO) up to the end of July 2015 (DECC, 2015a). Figure 1 depicts how very low uptake of the Green Deal was.

Chapter 1

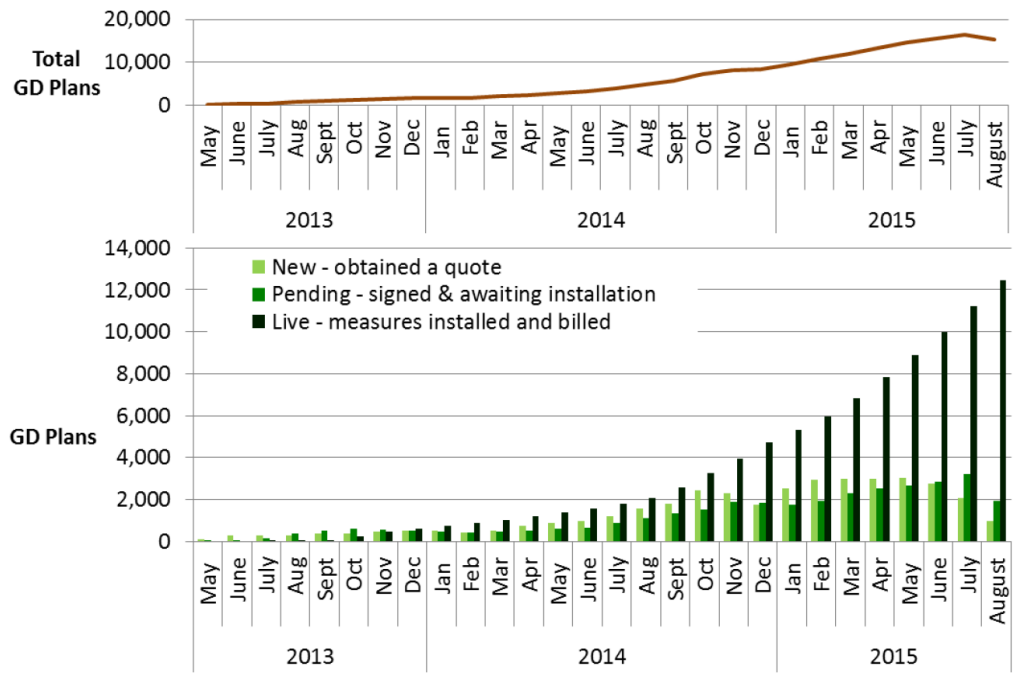


Figure 1: Number of Green Deal Plans in unique properties, cumulative totals at end of each month, and by stages (DECC, 2015a)

Also, uptake of the Green Deal was lower in the privately rented sector compared to the owner-occupier sector. According to Table 1, from January 2013 up to the 30th of July, 2015, around 95% of properties (9,420) that installed measures using Green Deal Finance were owner-occupied. This is compared to just 5% (542) that were in the privately rented sector (DECC, 2016b; DECC, 2015e). Since the privately rented sector only makes up 20% of the overall housing stock, we would not expect the proportion of assessments to be the same in the two sectors. However, 5% is still below the 20% that we would expect as a minimum if uptake had been equal across the two sectors—while it would have needed to be even higher to address the greater energy inefficiency in the privately rented sector.

Table 1 : Number of live Green Deal Plans by tenure, up to 30 June 2015 (DECC, 2015e).

| Tenure | Total number of 'Live' Green Deal Plans | Valid percentage of 'Live' Green Deal Plans ² |
|------------------|---|--|
| Owner-occupied | 9,420 | 95 |
| Rented (private) | 542 | 5 |
| Rented (social) | 9 | 0 |
| Unknown | 28 | - |
| Total | 9,999 | 100 |

Perhaps, unlike some of the previous policies, the Green Deal was in theory more open to the rented sector. Therefore, we need to understand the reasons for lower uptake of the Green Deal in the privately rented sector compared to owner occupier sector and the differences in uptake of the scheme within the privately rented sector. This study examines financial, decision making power and awareness as reasons for the inequality of uptake of the Green Deal between the privately rented sector and the owner-occupier sector, and between the student landlord market and the young professional landlord market.

It is possible that one reason the private sector contains poorly energy rated properties is that most previous policies have mainly targeted the owner-occupier and/or social housing sectors, and not the privately rented sector (Hope and Booth 2014; Moser, 2013; Morrison, 2013; Dowson et al., 2012; Wetherill et al., 2012; DECC, 2011g; Ofgem, 2008; Eoin Lees Energy, 2008; Eoin Lees Energy, 2006; Ofgem, 2005; Darby, 2005). Energy efficiency home policies have failed to engage private landlords (Hope and Booth, 2014). Consequently, uptake of policies in the sector remains low (Wilkinson and Goodacre 2002; Oxera, 2006; Tovar 2012; Dowson et al., 2012). For example, the Landlords Energy Savings Allowance has had a very low uptake of only 0.2% in 2007/2008 by UK landlords, despite offering a tax allowance of up to £1,500 per property for fitting insulation (Baker and Laine, 2010; Friend of the Earth and Association for the Conservation of Energy, 2013; House of Commons Energy and Climate Change Committee [ECCC], 2012). Some studies have stated that none of the UK home energy efficiency policies is effective at stimulating take-up of insulation in the privately rented sector (Oxera 2006; Dowson et al., 2012).

However, as already discussed, the privately rented sector makes up about 20% of UK housing stock. Figure 1 represents the size of the sector in the UK in 2014. The privately rented sector is the fastest growing sector; there were 2.3 million households privately renting in the UK in 2001. This rose to 5.4 million in 2014 and it is estimated that it could account for 7.2 million homes by 2025 (PricewaterhouseCoopers [PCW], 2014). The owner-occupier sector comprises around 65% of all households. However, the privately rented sector is the second largest sector after owner-occupier, at 19% of households, and it continues to grow (DCLG, 2016a; DCLG, 2013). Figure 2 represents this trend in tenure in the UK.

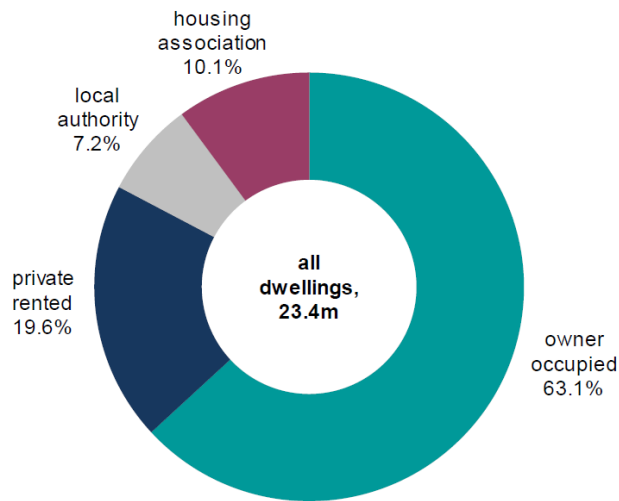


Figure 2: Dwellings by tenure in the UK, 2014 (DCLG, 2016a)

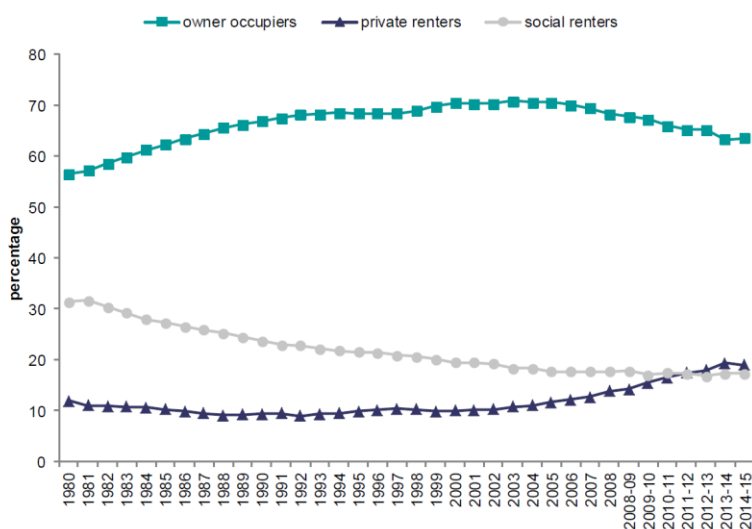


Figure 3: Trends in tenure in the UK, 1980–2014 (DCLG, 2016a)

The privately rented sector remains much less energy efficient compared to the owner-occupier sector (DCLG, 2013; DCLG, 2012; DCLG, 2011). More specifically, 17% of the privately rented sector’s dwellings were rated F and G compared with 14% of owner occupied dwellings, and it had the lowest proportions of dwellings with cavity wall insulation (21%) and loft insulation of 200mm or more (17%) compared with 41% and 33% of owner-occupied homes respectively (DCLG, 2013). Overall, privately rented homes have poor energy performance with an average Standard Assessment Procedure (SAP) rating of around 51.0 compared with 52.0 for owner-occupied homes in 2009 (DCLG, 2013), as shown in Table 2.

There were nearly 2.5 million households in fuel poverty in England in 2013 (DECC, 2015) (see Figure 4). However, reports also show that 19% of tenants in the privately rented sector live in fuel poverty (Office for National Statistics, 2012; DECC, 2014c), compared to just 8% of owners in the owner-occupier sector in 2012 (DECC, 2015c; DECC, 2014c), as shown in Figure 5.

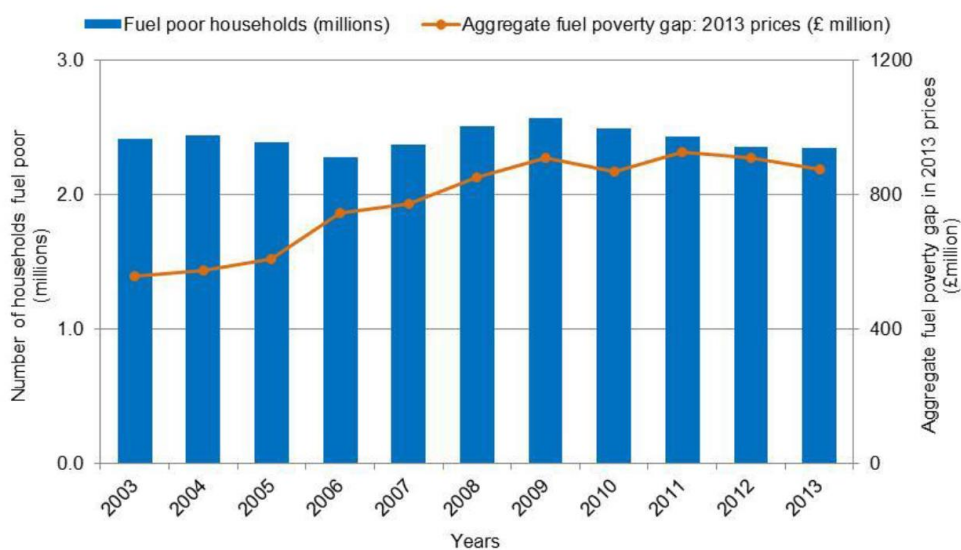


Figure 4: Fuel poverty in England, 2003-2013 (DECC, 2015c)

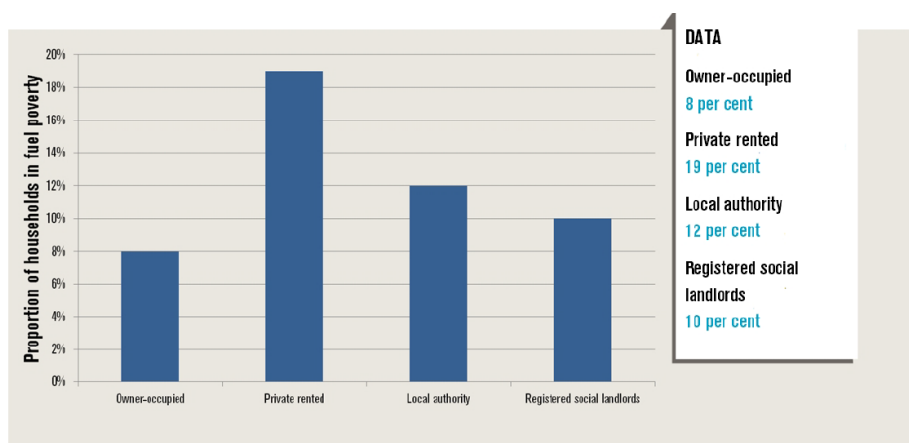


Figure 5: Fuel poverty by tenure England, 2013 (DECC, 2015c)

Chapter 1

It is estimated that over 40% of people living in privately rented F and G rated homes are in fuel poverty (DECC, 2011; Friends of the Earth and Association for the Conservation of Energy, 2011). According to the old definition of fuel poverty, fuel poor tenants spend more than 10% of their income to keep their homes warm (Roberts 2008; Tovar, 2012), and the real cause is poor energy efficiency of homes (Boardman, 2012). Poorly insulated homes with excess cold lead to chronic cold-related health problems (Roberts, 2008b; Phillips, 2012). Also, 40,000 deaths per year are attributed to the hazards of excess cold (Building Research Establishment [BRE], 2011). The annual cost to the National Health Service (NHS) in England of treating cold-related disease due to cold private housing is £145 million (Friends of the Earth and Association for the Conservation of Energy, 2011; BRE, 2011).

There are various reasons why past policies have had unequal uptake between the privately rented sector and the owner-occupier sector. However, what is not yet well understood is how the relevance of financial reasons, decision making, and awareness compares across the different sectors. Reasons for the inequality in uptake of energy efficiency measures include financial reasons, decision making and awareness. In terms of financial reasons, the cost of energy efficiency measures represents one of the greatest barriers preventing households from taking up home energy efficiency policies (International Energy Agency [IEA], 2008; Caird et al., 2008; Energy Saving Trust, 2010b; Niemeyer 2010; Gadenne et al., 2011; James et al., 2011; Consumer Focus, 2011; Pelenur and Cruickshank 2012a; Pelenur and Cruickshank 2012b; Phillips, 2012; Bird and Hernández, 2012). This barrier may be more acute for tenants than owners as on average they are poorer

In relation to decision making reasons, the fear of retaliatory eviction has prevented tenants from taking up some of these policies for home improvements (DCLG, 2007; Crosby, Formby and Citizens Advice Bureau [CAB], 2007; Shelter, 2011; DECC, 2011a; DECC, 2011b; Association for the Conservation of Energy [ACE], 2012; Centre for Regional Economic and Social Research, 2013). For example, in relation to the Warm Front Scheme, nearly 50% of cancellations from the private rented sector were tenants who had been ordered by their landlords to cancel their applications (Williamson, 2011). Moreover, in respect to awareness reasons, literature suggests that generally, the awareness levels of some energy efficiency measures are low (Linden et al., 2006; Russell, 2012; DECC 2011h; DECC, 2014d), but the level of understanding of these measures is lower among tenants than owners (Phillip, 2012).

It is not only important to compare homeowners to the privately rented sector, but also the student to the young professional rented sector, because energy efficiency is particularly bad in

the student sector. The private rented sector is made up of 89% of private individual landlords responsible for 71% of all private rented dwellings (while the remainder is made up of the socially rented sector which is not included in this thesis) (DCLG, 2011b). It is worth noting that the two main types of landlords in the sector are the student landlord and landlords of young professionals, of which the most substantial type is the student landlord (Rugg, Rhodes, and Jones, 2002; Rugg and Rhodes, 2008) in terms of inefficiency (DCLG, 2010 p.21). Student landlords basically provide accommodation to students and they rent out any type of property, with perhaps the only requirement being that it is furnished and capable of being shared by two or more students (Rugg, Rhodes, and Jones, 2002).

Evidence suggest that they often rent out properties as rooms within one building using multiple contracts (DCLG, 2010; Friends of the Earth and Association for the Conservation of Energy, 2013) and they rent out old and very low energy rated properties (DCLG, 2010 p.21) to more transient students (National Landlords Association, 2014). This is compared to landlords who target “young professionals”, who choose to rent privately in preference to entry into owner-occupation because they believe that their rent payment might allow them to access better-quality properties and in better locations than they could afford if they were buying (Rugg and Rhodes, 2008). They often rent out properties as building rather than rooms under single contracts to less transient tenants such as lecturers, doctors, nurses, midwives and so on.

1.2 Research main question and its policy relevance

The study examines financial reasons, decision making power, and awareness as reasons for understanding the inequality of uptake of the Green Deal between the privately rented sector and the owner-occupier sector, and between the student landlord market and the young professional landlord market. This question is policy relevant as answers from it will help policymakers to design new policies which will engage with people within the privately rented sector and especially the student landlord sector. It is well-documented that targeting an approach has the potential to ensure the success of energy savings programmes (Druckman and Jackson, 2008).

1.3 Substantial contribution to knowledge

I compare the relevance of financial, decision making and awareness reasons which helps us understand better why uptake of the Green Deal was lower among homeowners compared to privately rented houses. Existing studies only highlight one or two of these reasons, but do not systematically compare them (Pettifor et al., 2015; Dowson et al., 2012; Tovar, 2012; DECC, 2011a; Guertler, 2011, DECC, 2011b; Great British Refurb Campaign, 2010; Association for the Conservation of Energy, 2010; Laine et al., 2011). I also compare these reasons between the student and young professional rented sectors. This comparison is important because the privately rented market and the student sector especially, are energy inefficient.

1.4 Rationale for the research

It is well documented that older houses have low adoption levels of energy-efficient measures (Laquatra, 1992; Brechling and Smith, 1994; Scott, 1997; Roberts, 2008b; Dowson et al., 2012; Tovar, 2012). However, on average, buildings in the privately rented sector tend to be less energy efficient and older (as pointed out by Counihan and Nemtzow (1981) and Maruejols and Young (2011)), compared to owned properties that tend to be more energy efficient and newer. Specifically, between 50% and 53% of private rented stocks were built before 1945, compared to 39% of owner-occupied ones (DCLG, 2011; DCLG, 2013; DCLG, 2015), as shown in Figure 6.

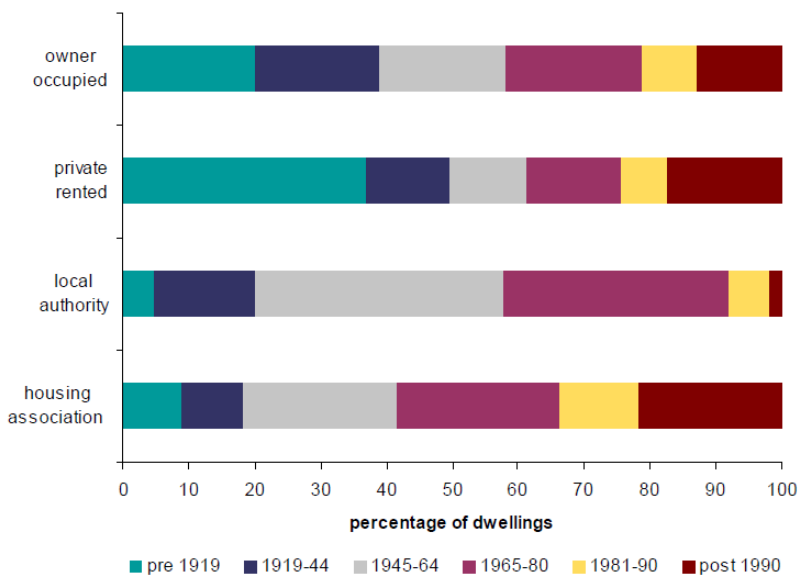


Figure 6: Age of housing stock by type of tenure, 2011 (DCLG, 2013)

This implies that the privately rented sector can represent an opportunity for substantial CO₂ emission reductions if these properties are improved. However, the older, worst performing homes in the sector are not seen as opportunities for improvement. As a result, on average, the privately rented sector contributes a higher percentage than the owner-occupier sector to the 30% of the UK's energy use from the domestic sector, and the 26% of carbon dioxide that the residential sector produces (DECC, 2013j; Davies and Osmani, 2011; Department for Environment, Food and Rural Affairs [DEFRA], 2008; Ward, 2008).

Perhaps the most effective way of addressing these issues is to replace inefficient existing dwellings in the privately rented sector with new buildings, built according to high energy performance specifications (Environmental Change Institute, Oxford, 2005). But housing stock turnover or replacement is low, at 1% a year (Cooper and Palmer, 2011; Three Regions Climate Change Group [TRCCG], 2008; Roberts, 2008a). Power (2008) argues that because demolition can be very time consuming, costly and disruptive to the environment, it is likely to promote much opposition within local communities, government and industry.

The Sustainable Development Commission estimates that 70% of the UK's 2050 housing stock has already been built (Sustainable Development Commission [SDC], 2007). According to recent forecasts, between 75 and 85% of UK homes will still be in use by 2050 (Power, 2008; Ravetz, 2008; Davies and Osmani, 2011). So the argument is that if demolition is not a favourable option in the private rented housing, then homes must be made more energy efficient for the UK Government to meet its 2050 emissions reduction target of 80% by 2050 from the 1990 emissions levels (Climate Change Act, 2008), and to meet the expectation of 29% of the emission reductions from the housing sector (DECC, 2009; Energy Saving Trust [EST], 2010c). Therefore, more research is needed to make recommendations on how to improve uptake in the privately rented sector. This is part of the task ahead of this thesis.

The Department of Energy and Climate Change study (2011b) is one of the few studies that uses qualitative interviews to enhance our understanding of low uptake of the Green Deal. However, unlike this study, the DECC's approach was not supplemented by documentary research methods. Most studies in this area have relied solely on simulation models (Brechling

Chapter 1

and Smith, 1994; Association for the Conservation of Energy, 2010; Laine et al., 2011; Guertler, 2011; Dowson et al., 2012; Tovar, 2012). Yet, such methods are limited in their ability to fully uncover the reasons for the low uptake of policies, because their results are mainly based on assumptions as opposed to field data. Thus, the failure of these methods to provide full insight into reasons for low uptake of policies, and the knowledge gaps created as a result, is one of the motivations behind this study.

Conversely, this work will conduct interviews with landlords, tenants and owner-occupiers to explore the reasons for the inequality of uptake of the Green Deal. It will compare the owner-occupier sector with the privately rented sector and young professional landlords with student landlords, as opposed to involving a simulation models where the experiences and opinions of landlords, tenants and owner-occupiers are not taken into account. The experiences and perspectives of these actors need to be understood more fully to evaluate the Green Deal, to understand its current failure and to formulate policy recommendations.

1.5 Main argument

The main argument of this thesis is the comparison of financial reasons, decision making and awareness to understand a) lower uptake in the privately rented compared to the owner-occupied sector and b) lower uptake in the student rented sector compared to the young professional rented sector.

1.6 Outline of the thesis

The thesis is structured as follows: Chapter 1 talks about what the study is about, introduces the research question and why it is relevant, the reasons for conducting the study, as well as its main arguments. Chapter 2 deals with the background to the study and the description of the Green Deal. Chapter 3 reviews the literature on energy efficiency measures to ascertain awareness, decision making and financial reasons for low uptake of the Green Deal, and how these reasons compare between the owner occupier and privately rented sectors and between landlords of young professionals and landlords of students. Chapter 4 covers the methodology. Chapter 5, 6 and 7 respectively present and discuss the results on the three key concepts of awareness, decision making power and finance. Chapter 8 concludes the thesis,

drawing together the main findings about the three concepts, highlighting in particular the study's contributions to knowledge, its limitations, opportunities for future research, and policy recommendations. Figure 7 outlines the structure of the thesis.

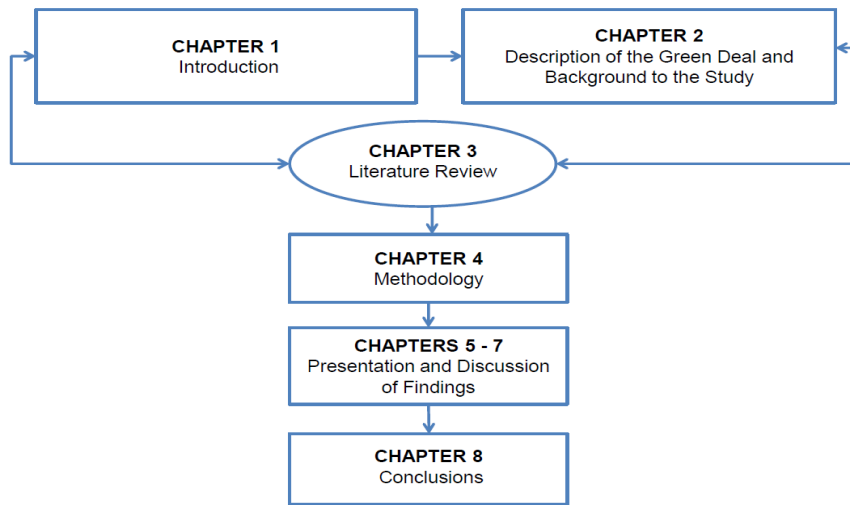


Figure 7: Outline of the thesis

Chapter 2: Description of the Green Deal and background to the study

2.1 Introduction

Energy efficiency is worse in the privately rented sector than in the owner-occupier sector. Therefore, rented homes are in more need of improvement than owned homes. Yet UK home energy efficiency policies seems to have targeted owner-occupied homes more than privately rented homes. This has caused an unequal allocation of energy efficiency measures between rented homes and owner-occupied homes. Nevertheless, the privately rented sector keep increasing in size. In this chapter, the thesis will first explain the Green Deal and then give an overview of UK housing stock, and then make a case for an uneven distribution of energy efficiency measures in UK homes. After this, I will argue that other past energy efficiency policies have provided much less support for the privately rented sector. Here, one relevant question is whether the Green Deal was different from other home energy efficiency policies.

2.2 Description of the Green Deal (GD)

The Green Deal was the UK Government's flagship energy efficiency policy, which formed part of its strategy to address climate change by reducing home energy use (DECC, 2012a; DECC, 2011a). It aimed to make improvements to 14 million homes, and save 17TWh of energy by 2020, with improvements to an additional 12 million homes by 2030 (BPF, 2013). The scheme was given a "soft launch" on 1 October 2012. It was officially launched on 28 January 2013 in England and Wales, and on 25 February in Scotland (DECC, 2014a; DECC, 2014b; DECC, 2013a; DECC, 2013b; DECC, 2013c; DECC, 2013d; DECC, 2013e; DECC, 2013f). It ended on 23 July 2015 because the government stopped funding the Green Deal Finance Company, which was set up to lend money to Green Deal providers (DECC, 2015). However, before it ended, in 2014, it was briefly replaced by the Green Deal home improvement fund (HIF). This was an incentive scheme meant to improve the energy efficiency of homes, which provided grants of up to £7,600 to homeowners for solid wall insulation, boilers and double glazing. It closed on 30 September 2015 (DECC, 2015).

Chapter 2

Lack of money had been cited as a principal barrier to uptake of energy efficiency measures (DECC, 2011a; DECC, 2011b; DECC, 2011c; DECC, 2011d; DECC, 2012), and this is particularly true in the privately rented sector, where tenants are on average poorer and had found it more difficult to obtain credit under previous policies. However, the Green Deal aimed to remove the capital barrier (DECC, 2015b; DECC, 2011a; DECC, 2012a). It offered a loan of up to 10% (UK Green Building Council, 2014) based on customers' credit ratings, which could be paid back via savings on energy bills (UK Green Building Council, 2014; CSE, 2013).

The golden rule of the Green Deal was that only those energy efficiency measures where financial savings exceeded the cost of repayment would be financed (DECC, 2012a; DECC, 2011a; DECC, 2011d; DECC, 2011f). The scheme anticipated that the golden rule would be essential in keeping the cost of Green Deal finance as low as possible, not increasing default rates, and making it likely that customers' bills would be no more than they would have been without a Green Deal (DECC, 2011f p.105). The Green Deal loan could be spread over twenty years (CSE, 2010; DECC, 2011a; DECC, 2011b). Customers had the option to part-finance Green Deal measures, choose shorter repayment periods, or especially repay early within the terms of the agreement (DECC 2011a). However, the long duration of the Green Deal loan payment was found to be a great factor putting off householders (DECC, 2011b; DECC, 2011c; UK Green Building Council, 2014), as current rates spread over twenty years could lead to a doubling of actual payments over the lifetime of the plan (UK Green Building Council, 2014).

The split incentive problem is one of the top reasons for not taking up energy efficiency measures (DECC, 2011a; DECC, 2011b; DECC, 2011c; 2011d; DECC, 2012). The problem is that landlords do not want to invest in energy saving measures because it is the tenant who benefits from lower energy bills (Bird and Hernández, 2012; Gillingham et al., 2012; DCLG, 2006; UKGBC, 2008). The scheme aimed to overcome the "split incentive" barrier that had prevented uptake of energy efficiency measures in the privately rented sector (DECC 2011a; DECC, 2012). With the Green Deal, tenants had to pay for energy efficiency measures, and were meant to benefit from lower energy bills (BPF, 2013; DECC, 2011a; DECC 2011b).

The Green Deal did not guarantee that energy bills would fall for individual consumers (DECC, 2011c). However, there was evidence to suggest that some customers were attracted by the ability of the Green Deal measures to provide them with warmer and easier-to-heat homes even without a substantial cost saving (DECC, 2011b; DECC, 2012c). The Green Deal charge was meant to be attached to the property, not the individual household, so when the dwelling changed hands the responsibility for the repayments and the benefits of the measures transferred to the new owner (CSE, 2010; DECC, 2011a; DECC, 2012). In other words, unlike a conventional loan, the bill payer was never liable for the full capital cost of the measures, only the charges due while the bill payer occupied the building. Some studies reported that the method of payment of the Green Deal was attractive to customers (DECC, 2011a; DECC, 2011c).

The owner or occupier was required to obtain the necessary written consent to make improvements to the property before they could take up the Green Deal (DECC, 2013d; DECC, 2013e; DECC, 2013f; DECC, 2014). In the privately rented sector, for example, the landlord was to obtain written consent to the Green Deal plan and the requirement to make payments of GD charge from the tenant(s) where the tenant(s) was/were the bill payer(s). Other consent for improvements depending on improvement type had to come from the freeholder, planning authority or mortgagee (DECC, 2012b). Once the consumer obtained any necessary permission and consents and signed up to the Green Deal plan and proposed work, an accredited installer was to install the measures (DECC, 2011d; DECC, 2012b).

The Green Deal was supplemented with new regulations to ensure that the private rented sector delivered its share of energy efficiency improvements (BPF, 2013). Since April 2016, tenants have had the right to request energy efficiency improvements that could be funded by the Green Deal, and the landlord could not unreasonably refuse consent (BPF, 2013; ACE, 2012; EST, 2012; EST, 2011; DECC, 2011a; Baker and Lainé, 2010). Also, from April 2018, landlords will not be able to rent out their F and G rated properties which Green Deal is able to improve.

As already shown within the introduction chapter, uptake of the Green Deal was very low across the board. The latest statistics show that just 11,215 measures were installed under the Green Deal since its implementation in January 2013 up to the end of July 2015 (DECC,

Chapter 2

2015). Also, uptake of the Green Deal was lower in the privately rented sector compared to the owner-occupier sector. Around 95% of properties (9,420) that installed measures using Green Deal Finance were owner-occupied. This is compared to just 5% (542) that were in the privately rented sector (DECC, 2015e). Maybe, some of the reasons why there was uneven uptake of the Green Deal can be related to the take-up process of the scheme.

The Green Deal take-up process for households is briefly summarised by Department of Energy and Climate Change (DECC; 2013a; DECC, 2013b; DECC, 2013c; DECC, 2013d; DECC, 2013e; DECC, 2013f; DECC, 2014a; DECC, 2015d), as follows:

Step 1: Assessment. The customer requested an assessment. A Green Deal assessor would come to the home to carry out the property assessment, talk to the owner/occupier about their energy use, and see if they could benefit from making energy efficiency improvements to their property. The assessor recommended improvements that were appropriate for the property and indicated whether they were expected to pay for themselves through reduced energy bills. A Green Deal Advice Report (GDAR) was produced for the householder and lodged on a national register. The customer was able to view the energy efficiency measures which had been recommended, and understand the potential costs and savings.

Step 2: Quotes. Green Deal providers discussed with the owner/occupier whether a Green Deal plan was right for them. They quoted for the recommended improvements, including the savings estimates, savings period, first year instalments, payment period for each improvement, and cost of the loan. A number of quotes could be obtained.

Step 3: Signing a Plan. The customer could choose to proceed with a given provider and package of measures. The owner/occupier needed to obtain the necessary consent to make improvements to the property before they could agree terms with the GD provider of a Green Deal plan, at which stage they entered a cooling-off period.

Step 4: Installation. Once a Green Deal plan had been agreed, the provider arranged for the improvements to be made by a Green Deal installer. Once the installation had been

completed, a letter was sent to the bill payer and, at that stage, the Green Deal plan went “live”.

Figure 8 represents these steps. However, for the purpose of this study, a flow chart of the Green Deal process from landlords, tenants and owner occupiers’ perspective was adapted from DECC, 2011d; DECC, 2013a; DECC, 2013b; DECC, 2013c; DECC, 2013d; DECC, 2013e; DECC, 2013f; and DECC, 2014a). (See Appendix 5 under 5La; 5Ta and 5Oa).

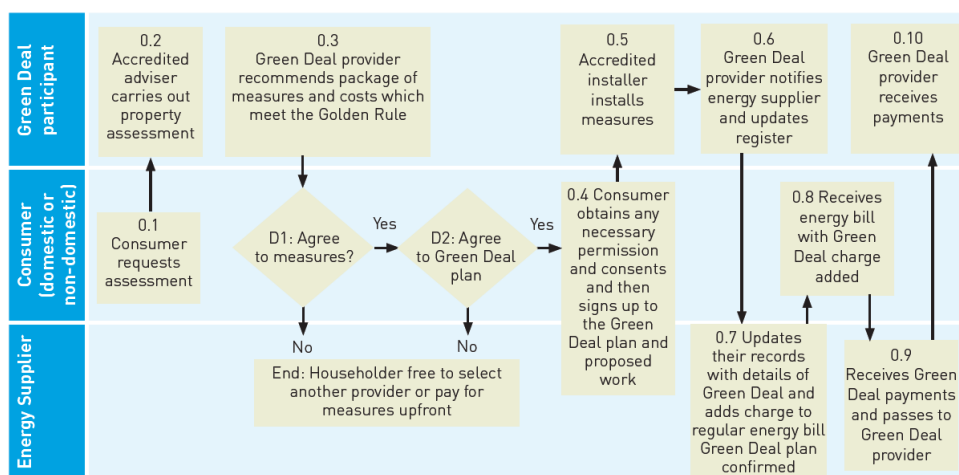


Figure 8: The steps involved in the Green Deal uptake (DECC, 2011d)

2.3 The UK housing stock and distribution of insulation and heating measures by different sectors

2.3.1 Size of the UK housing sector

There are around 26 million dwellings in the United Kingdom (Cooper and Palmer, 2011). Specifically, according to the DCLG (2016a) in 2014, there were an estimated 23.4 million dwellings in England and Wales. The majority, 14.8 million (63%), were owner-occupied, and 4.6 million (20%) were privately rented. The remaining 4.0 million dwellings (17%) belong to the social sector, with 2.4 million (10%) owned by housing associations and around 1.7 million (7%) owned by local authorities. Figure 2, (dwellings, by tenure, in the UK, 2014) shows evidence of these statistics within the introduction chapter.

2.3.2 Property age

England has one of the oldest housing stocks in Europe and in 2009, 38% all dwellings had been built before 1945 (DCLG, 2011). By tenure some 19% of local authority-owned properties, 18% of housing association-owned properties, 39% of owner-occupied houses and, in contrast, 53% of privately rented stocks were built before 1945 (DCLG, 2015; DCLG, 2013; DCLG, 2011). Various studies such as DCLG (2012), Cooper and Palmer (2011), Ravetz (2008), Roberts, (2008a) and Roberts (2008b) have suggested the need to improve older properties, of which the privately rented sector has been shown to contain the largest proportion (DCLG, 2015; DCLG, 2013; DCLG, 2011). I have already shown evidence of this in Figure 6 within the introduction chapter.

2.3.3 Dwelling type

Some 80% of all dwellings in 2011 were houses, but the profile varied between tenures (DGLG, 2013). The owner-occupier sector contains the largest proportion of houses (92%), in comparison with about 63% of privately rented properties and around 57% of social rented stock (DGLG, 2016a; DGLG, 2013). Around (29%) and (26%) of owner occupied properties were semi-detached and detached respectively. The privately rented sector comprises 7% detached houses compared to less than 1% detached houses in the social sector (DGLG, 2016a).

Around 33% of the privately rented sector is made up of terraced houses. This is compared to about 28%, 26%, and 29% respectively of owner-occupier, local authority, and housing association dwellings that are terraced (DCLG, 2016a; DGLG, 2013), as represented by Figure 9. Also, there is evidence to suggest that generally terraced houses are less efficient, and they are often lived in by poor tenants (Tovar, 2012; DGLG, 2012). This means that retrofitting homes in the privately rented sector is more pertinent in order to help reduce energy bills and lift vulnerable tenants from fuel poverty.

Purpose-built flats were the most energy efficient dwelling type, with the highest SAP ratings (64) and the lowest carbon emissions (3.8 tonnes per dwelling per year). Converted flats had the lowest mean SAP rating (47), with 21% of them in bands F and G compared with only 5% of purpose-built flats (DCLG, 2012). The English Housing Survey reports that the private rented sector is the only type of tenure with a significant proportion of converted flats: around 13% compared to less than 5% in the other types of tenure (DCLG, 2016a; DCLG, 2013) (as shown in Figure 9). Tovar (2012) noticed that flats have lower energy efficiency levels than houses, and this is due to the fact that most flats are rented. Also, according to Rugg, Rhodes and Jones (2002), students tended to live in converted flats and houses. This demonstrates the need to make rented homes in general, and student accommodation in particular, more energy efficient.

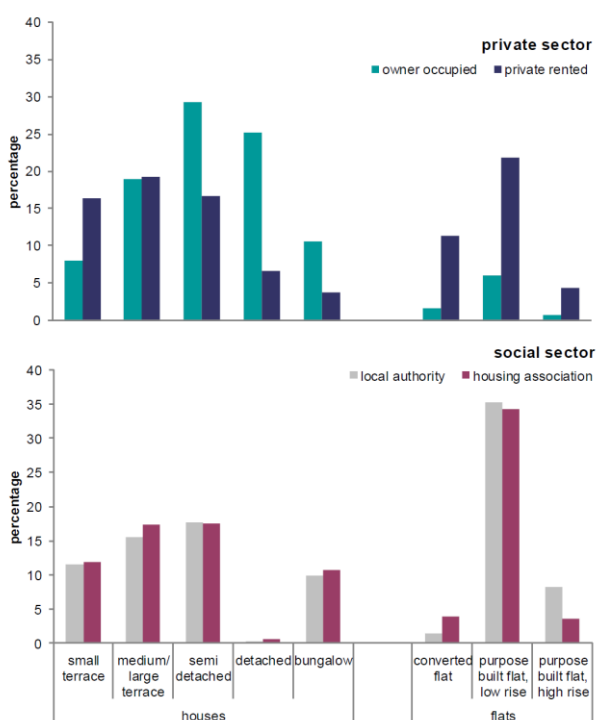


Figure 9: Dwelling type by tenure, 2014 (DCLG, 2016a)

2.4 Energy efficiency trends

2.4.1 Standard Assessment Procedure (SAP)

The UK Government's SAP is used to monitor the energy efficiency of homes (DCLG, 2013). It is calculated as a dwelling's energy costs per square metre, less any cost savings from energy generation technologies. Energy costs are defined as costs of space and water heating, ventilation, and lighting, less any cost savings from energy generation technologies (DCLG, 2012; Boardman, 2012; DCLG, 2010). The rating is expressed on a scale of 1–100 where a dwelling with a rating of 1 has poor energy efficiency (high costs) and a dwelling with a rating of 100 represents a completely energy efficient dwelling (zero net energy costs per year) (DCLG, 2010). The energy efficiency rating is also presented in an A to G banding system for an Energy Performance Certificate, where Energy Efficiency Rating (EER) band A represents low energy costs (i.e. the most efficient band) and EER band G represents high energy costs (i.e. the least energy efficient band) (DCLG, 2010).

SAP does not only assess the performance of the housing stock in terms of its energy efficiency but also carbon dioxide emissions. Carbon dioxide (CO₂) emissions are calculated as CO₂ derived from space heating, water heating, ventilation, and lighting, less any emissions saved by energy generation technologies, and are measured in tonnes per year (DCLG, 2010). It is important to emphasise that this assessment of housing stock is not based on actual energy consumption and emissions, but on the consumption (and resulting emissions) assumed under a standard occupancy and standard heating pattern for each dwelling. This enables the performance of the housing stock to be assessed on a comparable basis (DCLG, 2012).

The energy efficiency of housing stock continues to improve: between 1996 and 2011 the average SAP rating of a dwelling increased by 12 SAP points, from 45 to 57 (DGLG, 2013). Boardman (2012) notes that SAP levels across the whole housing stock have been improving fairly consistently since 1970, at a rate of about one SAP point per annum, and highlights that between now and 2050, the rate of improvement needs to be 1.2 SAP points per annum for the UK to achieve its climate change commitments in the housing stock. Likewise, Roberts (2008a) pointed out that, to meet the target of emission reduction of 80% for 2050, we need to raise the average SAP rating of the UK building stock to 80, in line with today's modern

building standards. In other words, we need to get homes into the top two bands (A or B) on the energy performance certificate (Boardman, 2012). Comparing the expected average SAP rating to the national average SAP rating—which was around 56 in 2011 (DCLG, 2013)—shows that we need very effective policies to raise the level of improvement in our homes.

There is a correlation between energy performance and type of tenure (Dowson et al., 2012). Overall, the social housing sector was on average more energy efficient than the private sector, and its average SAP rating improved by 14 points (from 49 to 63) while that of private sector improved by 11 points (from 44 to 55) over the same period, (1996 to 2011). During that time, the average SAP rating for owner-occupied housing increased 11 points from 44 to 55; in the privately rented sector it increased 15 points from 40 to 55; the local authority-owned sector recorded an increase from 48 to 62 representing 14 points up; and housing association-owned properties improved by 11 points, from 53 to 64 (DCLG, 2013), as shown by Table 2.

Theoretically, these findings indicate that privately rented homes are associated with the highest energy costs compared with other dwellings in the social sector, assuming that dwellings are of similar size. Findings from the DCLG (2013) highlight that, across all types of tenure, the percentage of dwellings in inefficient energy rating Bands F and G has improved significantly between 1996 and 2011. The social sector had the smallest percentages of dwellings in bands F and G: only 7% of local authority-owned dwellings, 4% of housing association-owned properties and 14% of owner-occupied homes, compared with 17% of privately rented dwellings.

Interestingly, if F and G rated homes are improved to meet Energy Performance Certificate band E, 150,000 households could be lifted out of fuel poverty, representing 25% of all private rented households currently living in fuel poverty. Tenants would save an average of £488 a year on their energy bills (Friends of the Earth, 2011). However, this value does not take into account the rebound effect where tenants may not save this much money because they may heat their homes more after improvements.

Roberts (2008b) argued that the thermal performance of existing housing stock is a core component of fuel poverty. This means that retrofitting existing homes is very important,

Chapter 2

particularly in the privately rented sector, which contains the worst energy rated properties, if the UK government is to address fuel poverty (Guertler, 2011) and to cut down carbon emissions by 80% by 2050. It was expected that the Green Deal could target these worse properties as improving them is an important measure for tackling climate change.

Table 2 : Mean SAP rating by tenure, 1996 – 2011 (DCLG, 2013).

| <i>all dwellings</i> | 1996 | 2001 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 |
|-----------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| owner occupied | 43.9 | 45.6 | 46.4 | 47.0 | 47.4 | 48.1 | 49.3 | 50.4 | 52.0 | 53.7 | 55.3 |
| private rented | 40.5 | 43.8 | 45.4 | 46.7 | 47.1 | 47.6 | 48.9 | 50.1 | 51.9 | 53.8 | 55.4 |
| private sector | 43.5 | 45.3 | 46.3 | 47.0 | 47.4 | 48.0 | 49.2 | 50.3 | 51.9 | 53.7 | 55.4 |
| local authority | 47.6 | 50.2 | 52.0 | 53.7 | 54.7 | 55.3 | 55.7 | 56.8 | 58.3 | 59.9 | 61.9 |
| housing association | 52.6 | 55.9 | 55.9 | 56.6 | 57.8 | 58.2 | 58.3 | 59.0 | 60.8 | 62.6 | 63.8 |
| social sector | 48.6 | 52.1 | 53.6 | 54.9 | 56.1 | 56.7 | 57.0 | 57.9 | 59.6 | 61.4 | 62.9 |
| all tenures | 44.6 | 46.7 | 47.6 | 48.5 | 49.0 | 49.6 | 50.6 | 51.7 | 53.2 | 55.0 | 56.7 |

2.5 Insulation measures

2.5.1 Cavity wall insulation

Cavity wall insulation can reduce heat loss through walls by up to 40% (Energy Saving Trust [EST] and Energy Efficiency Best Practice in Housing [EEBPH], 2003; Roberts 2008b).

However, Roberts (2008a) stated that 60% of UK homes had unfilled cavity walls in 2004.

Whilst the level of cavity wall insulation has increased recently (DCLG, 2011; DCLG, 2012),

the privately rented sector had the lowest proportion of homes with cavity wall insulation

(DCLG, 2013; DCLG, 2012). For example, 20% of privately rented sector homes had cavity

wall insulation, compared to owner-occupied homes, local authority-owned homes and social

housing dwellings with around 40%, 48% and 49% having cavity wall insulation respectively

(DCLG, 2013; DCLG, 2012). Figure 10 shows the percentage of dwellings with insulation

measures including cavity insulation by tenure, in 2011.

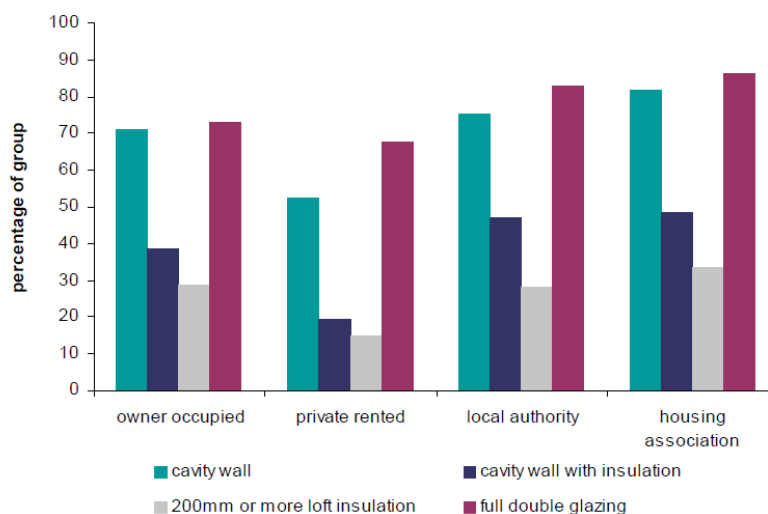


Figure 10: Percentage of dwellings with insulation measures by tenure, 2011 (DCLG, 2013)

2.5.2 Loft insulation

The English Housing Survey showed that 88% of all dwellings have loft insulated (DCLG, 2013). There is evidence to suggest that, by tenure, the privately rented sector had the lowest proportion of homes with loft insulation (DCLG, 2013; DCLG, 2012). The report further pointed out that there were just 6.9 million dwellings (30%) of all dwellings with 200mm or more loft insulation. Again, by tenure, the privately rented sector had the lowest proportions of dwellings with loft insulation of 200mm or more (17%), compared to 33% of owner occupied dwellings, 35% of housing association-owned dwellings, and 29% of local authority dwellings (DCLG, 2013; DCLG, 2012). See Figure 10 for evidence. Consequently, around 60% of private rented dwellings could benefit from loft insulation or top up of loft insulation to 200mm or more, as against 38% of housing association dwellings and 39% of local authority dwellings that could benefit from the same (DCLG, 2010; DCLG, 2011; DCLG, 2013).

2.5.3 Solid wall insulation

Solid wall insulation has been found to save more energy and carbon emissions than installation of cavity wall insulation (Dowson et al., 2012; Roberts, 2008a; University College London [UCL], 2007; Shorrocks et al., 2005). This is because the heat lost through an uninsulated solid wall is typically more than double that of an uninsulated cavity wall (EST,

Chapter 2

2006). Solid walls without a cavity need to be insulated through fixing insulation to the wall, either on the interior or exterior of the wall (EST, 2006). This method of insulation makes solid-walled properties' insulation considerably more labour intensive and expensive than installing cavity wall insulation (DCLG 2012; DCLG, 2011; DCLG, 2010; Beaumont, 2007; Shorrocks et al., 2005), or most other energy efficiency measures (Institute for Public Policy Research [IPPR], 2014). This result suggests that landlords with several such dwellings may find it more expensive to upgrade them compared to owners who may only need to improve one property of this type.

It is estimated that at the end of June 2015 338,000 homes in Great Britain had solid wall insulation, which equates to around 4% of properties with solid walls. This leaves around 7.5 million uninsulated solid walls in Great Britain. The remaining potential to insulate the housing stock is overwhelmingly concentrated in solid wall properties (94%) (DECC, 2015c; Aldous and Whitehead, 2016). This should be seen as an opportunity rather than a barrier (Roberts, 2008a). The social rented sector had a higher proportion of solid walls with insulation (29%) than owner-occupier (6%) or privately rented sector properties (6%) (DCLG, 2016a). Figure 11 shows the statistics. However, evidence suggests that solid wall homes without insulation in the privately rented sector are more likely to be worse off in terms of energy efficiency than those in the owner-occupier sector (DCLG, 2013; DCLG, 2012; DCLG, 2011). Therefore it is more needed to improve privately rented homes than owner-occupier homes. One possible reason is that the privately rented sector has a greater proportion of homes (33%) built before 1919 than the owner-occupier (20%) and social sectors (7%) (DCLG, 2016a).

The need to improve solid wall properties in the privately rented sector becomes clearer when we see that nearly 84% of hard-to-treat homes are in that sector (Dowson et al., 2012): a situation that needs urgent attention to reduce energy use in the sector and cut CO₂ emission. Also, a considerable percentage of fuel poor households occupy solid wall properties, 16% compared to 11% and 6% of households in fuel poverty who live in cavity uninsulated or cavity insulated homes respectively (DECC, 2015c; Aldous and Whitehead 2016), as represented by Figure 12. This reflects the fact that around 19% of households in the privately rented sector are fuel poor, higher than in any other tenure type (DECC, 2015c). This was already shown in Figure 5.

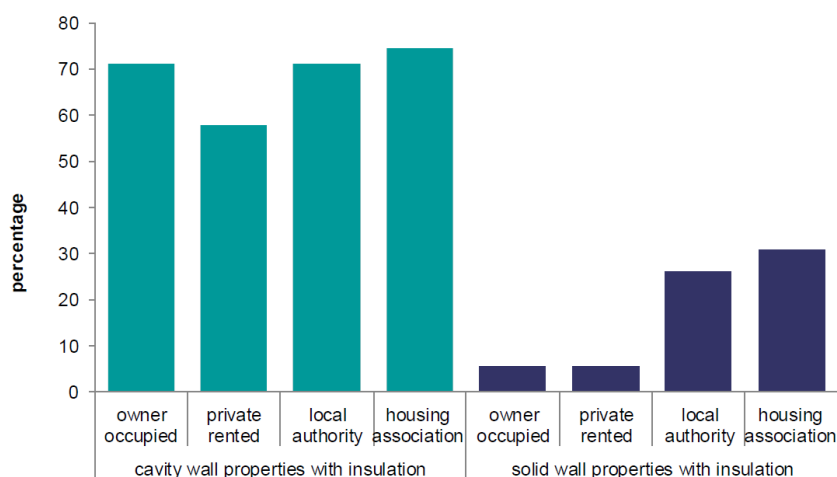


Figure 11: Wall insulation, by main wall type and tenure, 2014 (DCLG, 2016a)

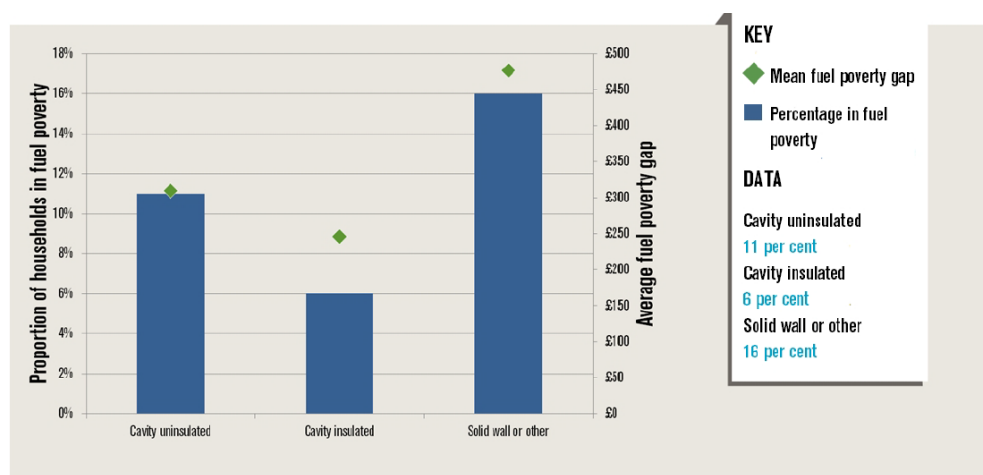


Figure 12: Fuel poverty by wall type, England 2013 (DECC, 2015c)

2.5.4 Double glazing

Some 17.4 million dwellings (76%) had full double glazing, and around 2.7 million dwellings (12%) had no double glazing. An additional 12% of dwellings would benefit from full double glazing (DCLG, 2013). In a carefully documented retrofit of four representative houses in the York region of the UK, installation of new window and door wood frames, sealing of suspended timber ground floors, and repair of defects in plaster reduced the rate of air leakage by a factor of 2.5–3.0. This, combined with improved insulation, doors, and windows, reduced the heating energy required by an average of 35% (Bell and Lowe, 2000). However, double glazing shows an extremely poor financial return on investment since the payback period (98

Chapter 2

years) far exceeds the predicted product lifespan (20 years) and the energy savings alone do not justify the capital investment (Shorrocks et al., 2005).

Generally, the popularity of installation of double glazing has nothing or little to do with energy performance, and installation of the measure is mainly associated with other benefits such as reduced noise, security provision and increased property value. There were around 2.7 million dwellings, (12%) of all dwellings in UK, that had no double glazing and could benefit from full double glazing (DCLG, 2013). By tenure, as already shown in Figure 10, housing associations and local authorities respectively had about 89% and 85% of their dwellings double glazed. The proportion of owner-occupied dwellings with full double glazing is around 75%, compared to a rate of around 70% for privately rented homes (DCLG, 2013; DCLG, 2012).

2.6 Heating measures

2.6.1 Heating

In 2011, some 20.5 million dwellings, representing 90% of the housing stock, had central heating (DGLG, 2013). Some 93% of owner-occupied dwellings had central heating systems, compared to 81% of privately rented dwellings (DGLG, 2013). A further 1.6 million dwellings (7%) had storage heaters as their main heating system (DGLG, 2013). The privately rented sector has the largest number of electrically heated homes (19% compared with 7% of owner-occupied homes) (DCLG, 2012). Some of the reasons that account for the variance are that landlords find electrical heaters very easy to install and maintain, and also they require no gas safety certificate. Therefore, without effective policy targeting the privately rented sector, the sector may keep installing electric heaters which are generally considered the least cost effective (DGLG, 2013; Cooper and Palmer, 2011).

Generally, the effectiveness of the heating system also depends on the type of boiler. Condensing boilers are generally the most efficient boiler type, and building regulations have now made it mandatory for new and replacement boilers to be condensing boilers (for gas-fired boilers since 2005; for oil-fired boilers since 2007). In 2011, 38% of the stock (8.6 million dwellings) had either a condensing or condensing combination boiler (DCLG, 2013). Overall, 11.5 million homes could potentially benefit from replacing an existing conventional central

heating boiler with a condensing unit. (DCLG, 2012). Yet, findings from the English housing stock indicate that, of the privately rented dwellings with standard boilers, some 57% had a boiler that was at least 12 years old, compared with 53% of owner-occupied dwellings with standard boilers (DCLG, 2011). This suggest how relevant it is to instigate improvements in this sector with regards to boiler upgrade (e.g. gas condensing boiler installation).

2.6.2 Heating control

The 2008 English Housing Condition Report showed that about 7.4 million dwellings need to upgrade their central heating controls (DCLG, 2010). Similarly, the DCLG (2011) noted that some properties with central heating do not have all three components of heating controls (thermostatic radiator valves (TRV), room thermostat and switch timer) and that the majority of these improvements are needed in rented homes. The DCLG (2012) confirmed that the privately rented sector had the highest proportion of dwellings where there was potential to install low cost measures including heating controls.

The next section will show that the UK home energy efficiency policies have targeted social housing and owner-occupied homes more than privately rented homes. In effect, uptake of these policies has been extremely low in the privately rented sector compared to the owner-occupier sector, and it was hoped that the Green Deal would have a different effect.

2.7 The overview of past UK home energy efficiency policies

Many policies have been used to improve domestic energy efficiency in the UK (ECCC, 2016; Aldous and Whitehead, 2016). These have included a series of Supplier Obligation (SO) schemes and other policies such as Decent Homes (DHs), Warm Front (WF), Enhanced Capital Allowance (ECAs), and the Landlord Energy Saving Allowance (LESA). See Appendix, 1 and 2 respectively, for more detailed descriptions of these policies. However, UK home energy policies have provided much less support for the privately rented sector (Dowson et al., 2012; Wetherill et al., 2012). In other words, they have concentrated too much on owner-occupied homes and social housing (Hope and Booth, 2014).

The review of literature suggested that SO schemes have benefited the owner-occupier and/or social housing sectors more than the privately rented sector (Moser, 2013; DECC, 2011g; Ofgem, 2008; Eoin Lees Energy, 2008; Eoin Lees Energy, 2006; Ofgem, 2005). In SO schemes, energy suppliers preferred to implement measures in the homes of customers on high incomes who could make a significant contribution to the costs of the measures (Moser, 2013; Eoin Lees Energy, 2006; Eoin Lees Energy, 2008; Ofgem, 2005). Suppliers found social housing more attractive (Eoin Lees Energy, 2008) than the privately rented sector, because social housing groups could contribute more towards the cost of measures (Ofgem, 2013a; DECC, 2011h).

Moser (2013) and DECC (2011h) argued that the cost of delivering a supplier obligation is passed on to all consumers through their energy bills, and that those on low income are affected more than those on higher income (Moser, 2013). In other words, SO schemes were found to be regressive, as the most vulnerable consumers pay disproportionately more than others. Ultimately SO schemes potentially increase the cost of energy bills of those already in low-income or fuel-poor homes (ECCC, 2016). Consequently, poor people benefit less from these schemes (Centre for Sustainable Energy [CSE], 2009; CSE, and ACE, 2010). On average, there are more poor people in the privately rented sector than the owner-occupier sector, and this reinforces the evidence that the privately rented sector contains a greater percentage of tenants (19%) compared to owners (8%) who live in fuel poverty (DECC, 2014c), as already discussed within the introduction of this thesis. Moreover, unlike in the owner-occupier sector, the Carbon Emissions Reduction Target (CERT) delivery to privately rented households, for example, was problematic. This was owing to the incentive for CERT investment being split between the tenant and the landlord (DECC, 2011g).

The WF benefited the owner-occupier sector more than the privately rented sector (Hope and Booth, 2014; Dowson et al., 2012; DECC, 2010), and the DHs did not target the full extent of private homes (Dowson et al., 2012; Morrison, 2013), compared to social homes (Darby, 2005). It was not until 2002 that the scheme was extended to cover private homes (Darby, 2005). Therefore, privately rented dwellings had the highest percentage of non-decent homes of all types of tenure, at 35%, compared to 22% of dwellings in the owner-occupier sector, and 17% of social sector dwellings (DCLG, 2013).

There have been no specific energy efficiency policies aimed solely at the privately rented sector (Hope and Booth, 2014). Reports from the ECCC (2012) and Laine (2010) indicated that the LESA failed to engage private landlords. One reason was that the allowance of £1500 maximum per property was found to be too small (Baker and Laine, 2010). Also, the scheme failed to provide immediate tax relief to landlords on improvement works, and they had to wait until the end of the financial tax year. This meant that the allowance was further reduced by inflation. Similarly, evidence suggested that significant number of individual private landlords were not eligible for ECAs as they were very unlikely to pay corporation tax (EST, 2002; Rugg and Rhodes, 2008; Watson, 2004). Another disadvantage of the scheme was that it could not be easily claimed by ordinary landlords without the help of accountant—but engaging the services of a qualified accountant required a fee which would in effect reduce the allowance. Surprisingly, there was virtually no empirical data on the reasons why uptake of LESA and ECAs was low in the privately rented sector, even though both had been in existence for over a decade.

In the Energy Company Obligation (ECO), the Home Heating Cost Reduction Obligation (HHCRO) subsidy, also known as Affordable Warmth, was provided on the basis of the tenant's circumstances (for tenants in receipt of means-tested benefit) (British Property Federation [BPF], 2013). There was a possibility that some landlords prevented their tenants from claiming the ECO subsidy, because it was the tenant who might benefit from a warmer home or lower energy bills under the Warm Front scheme. For example, as part of the Warm Front scheme, tenants could request improvements in the fabric efficiency of their homes without the explicit approval of their landlords. Whilst the exact number of privately renting tenants who participated in the Warm Front scheme is hard to come by, there is some evidence suggesting the figure to be about 12% (Williamson, 2011). However, the research conducted by the Eaga Charitable Trust (the operator of the Warm Front programme) into

Chapter 2

customer cancellations in July 2008 showed that 45% of cancellations from the privately rented sector were by tenants who had been told to cancel their application by their landlord (Williamson, 2011). This finding implies that the idea that landlords had to give consent to tenants before Green Deal measures were taken up was possibly a flaw.

UK home energy efficiency policies have improved some homes (Hope and Booth, 2014; Ofgem, 2013a; EST, 2012, DECC, 2011; Energy Efficiency Partnership for Homes [EEPH], 2010; National Audit Office, 2010; Ofgem, 2008; Eoin Lees Energy, 2008; Ofgem, 2005). For example, SO schemes such as CERT installed loft insulation in nearly 3.9 million homes, DIY loft insulation in approximately 2.8 million homes and cavity wall insulation in over 2.5 million homes (Ofgem, 2013a). Together, CERT and the Community Energy Savings Programme (CESP) have delivered some 8.5 million insulation or heating measures (House of Commons Library [HCL], 2015). Also, according to ECCC (2016), Ofgem (2015), HCL (2015), and DECC (2015), over 1.4 million measures were delivered under the first phase of ECO, which mainly consisted of cavity wall insulation followed by loft insulation (HCL, 2015). Warm Front improved over 2 million homes (Hope and Booth 2014; EST, 2012). By 2010, Decent Homes had improved over a million non-decent homes in the social sector (National Audit Office, 2010).

However, reviewed literature suggests that UK home energy efficiency policies have focused on the installation of lowest-cost measures. They had concentrated too much on the “low-hanging fruit”—that is, those measures that are cheapest to deliver in the easiest to treat properties and left the expensive measures uninstalled (Hope and Booth, 2014; Ofgem, 2013; DECC, 2011g; DECC, 2011h; National Audit Office, 2009). For example, in the lifetimes of CERT, the first Energy Efficiency Commitment (EEC1), and the second Energy Efficiency Commitment (EEC2), respectively 59,000, 23,730 and 41,410 solid wall insulations were installed. CESP installed around 75,255 solid wall insulations in its lifetime (see figures in Ofgem, 2013b; DECC, 2011g; Ofgem, 2008; and Eoin Lees Energy, 2008). 82,000 solid wall insulations were also delivered under ECO. Likewise, Warm Front energy efficiency improvements were limited to the low-hanging fruit of improved insulation, focusing only on small-scale improvements and failing to address hard-to-treat homes (Hope and Booth, 2014; National Audit Office, 2009).

The Committee on Climate Change highlighted in their 2009 report, “Meeting Carbon Budgets – the need for a step change”, that 2.3 million solid wall homes will need to have taken up solid wall insulation by 2022 in order for the UK to be on track to achieve its carbon budgets (Committee on Climate Change, 2009). It is based on this projection that I argue that, in order for all properties needing solid wall insulation to receive it, then over 250,000 homes need have the insulation installed every year from 2014 to 2022. However, UK energy efficiency polices have in fact installed solid wall insulation far below this number. As a result, the privately rented sector contains nearly 84% of hard-to-treat properties (Dowson et al., 2012), and the sector needs more solid wall insulation than the social housing sector (DCLG, 2016a).

Another barrier to uptake of these schemes for the installation of solid wall insulation is the disruption to householders associated with installation (Ofgem, 2013b; DCLG, 2012; DECC, 2011h; DCLG, 2011; DCLG, 2010; Beaumont, 2007). For example, installing internal solid wall insulation involves moving and refitting electrical sockets, radiators, and redecoration (DCLG, 2012; DCLG, 2011; DCLG, 2010). External solid wall insulation may alter the physical appearance of the dwelling (Beaumont, 200; DECC, 2011h), and planning permission prohibits external solid wall insulation on listed dwellings or those in conservation areas (Beaumont, 2007; DECC, 2011h). Another reason cited by a wide range of publications is that solid-walled property insulation (both external and internal) is much more expensive than cavity wall insulation (DCLG, 2012; DCLG, 2011; DCLG, 2010; Beaumont, 2007; Shorrocks et al., 2005) and most other energy efficiency measures (Institute for Public Policy Research [IPPR], 2014). By implication, tenants in the privately rented sector are less likely to benefit from solid wall insulations under these schemes, since privately renting householders are less able to contribute to the cost of measures than those in other sectors (DECC, 2011h).

Energy savings under these schemes were very small or negative in some instances as a result of the rebound effect. (Chahal et al., 2012; Jenkins et al., 2011; DECC, 2011; Hong et al., 2009; Hong et al., 2008; Gilbertson et al., 2006; Bell and Lowe, 2000). For instance, under CESP, in the post-retrofit survey, 75% of occupants agreed their homes felt warmer and were easier to heat to adequate levels. Nevertheless, most respondents were unsure whether this had led to a change in their heating expenses (64%). Just 25% said they had seen a decrease in their heating bills, and 11% said their heating bills had even increased (DECC, 2011), possibly resulting from the rebound effect. Similarly, under the Warm Front, whilst occupants did gain

Chapter 2

from increased thermal comfort (Hope and Booth, 2014; Gilbertson et al., 2006), few experienced any significant reduction in their energy bills (Gilbertson et al., 2006; Hong et al., 2009). This is attributed to the “take back”, where recipients of energy improvements do not save on their energy costs; instead they use the potential savings to increase thermal comfort within the home at no extra cost (Bell and Lowe, 2000; Chahal et al., 2012; Gilbertson et al., 2006; Hong et al., 2008; Hong et al., 2009; Jenkins et al., 2011).

Added to the above reason for low uptake of these policies is that customers’ satisfactions for some EEC2, CERT, CESP and ECO installed insulation jobs were not very great (Ofgem, 2015; Ofgem, 2013a; Ofgem 2013b; DECC, 2011g; Eoin Lees Energy, 2008). Specifically, in CERT, quality monitoring was carried out by suppliers on at least 5% of the properties which had insulation and heating measures to ensure that the installations were all operating properly and thus the expected savings from the measures resulted. The quality monitoring recorded a failure rate of around 18% of those monitored (Ofgem, 2013a). Failure rate of more than 25% occurred under ECC2 (Eoin Lees Energy, 2008). The high failure rates under some SO schemes meant that SO customers achieved low energy savings from some measures installed under the SO schemes. This prevented further uptake particularly in the privately rented sector where householders are often poor, live in poorly insulated homes, and therefore consider short term energy saving more relevant.

Deadweight was recorded in EEC1 and EEC2 (Eoin Lees Energy, 2008; Eoin Lees Energy, 2006). This meant that some customers took the incentives under the schemes even though they would have taken up the measures without the grants (Oxera, 2006; Eoin Lees Energy, 2006; Urge-Vorsatz et al., 2007). Deadweight had also been identified as a barrier to policies that offer tax credits, such as the LESA and the ECA. Carpenter and Chester (1988) conducted a survey with over 5,000 respondents from the USA on the US Energy Tax Act 1978 (ETA78) which provided a federal tax credit for residential energy efficiency investments. Around 89% of the respondents were aware of ETA78’s federal tax credit, but only around one third of them filed this claim. Out of those who did file the claim, 94% were going to make the investment even without tax incentives (deadweight).

Deadweight can increase the total cost of the programme, as energy suppliers unavoidably pick up and meet the cost of assisting consumers who would have taken the measure anyway.

In this view, deadweight could be bad for customers as they eventually pay for the cost of the programme via their energy bills. On the other hand, without the grant, generally consumers would have paid more on their installed measures and would have reduced or completely erased the energy saving benefits from these measures, reinforcing the lack of priority for energy efficiency investments. This could be particularly true for tenants more than owners, because tenants often live in expensive to heat properties, and take up these measures to enable them to save money on their energy bills or at least reach their energy need.

A commonly-occurring barrier to uptake was low awareness of home energy efficiency policies (ECCC, 2012; Baker and Laine, 2010). For instance, findings suggested that low awareness of both CERT offers and eligibility for offers was a key barrier to uptake (DECC, 2011g). Also, the literature review implied that awareness of CESP was higher in the social housing sector than in the privately rented sector (DECC, 2011h). For example, a survey result showed that the majority of respondents in social housing (71%) had received a letter informing them of the scheme. Additionally, private landlords have not heard a lot about LESA (ECCC, 2012; Baker and Laine, 2010; DECC, 2011g; DECC, 2011h). In effect, uptake of these policies is far lower in privately rented homes compared to those with other types of tenure.

2.8 Conclusion

I have described the Green Deal in more detail including its primary aim of addressing climate change and when it was introduced. I have talked about when and why the scheme was finally scrapped and some of the transitional phases it went through. I have highlighted some barriers associated with the uptake of the scheme, the steps involved in using it and its impact on homes in terms of the measures it installed during its lifetime. I have given an overview of UK housing stock and shown the differences in the distribution of energy efficiency measures by tenure type. Finally, I have demonstrated that the UK energy efficiency policies have focussed on the home owner and/ or the social housing sector but have provided much less support for the privately rented sector.

Chapter 3: Literature review

3.1 Introduction

Financial, decision making and awareness reasons have been discussed in the literature but have not been systematically compared across sectors. I have combined these themes into a framework and used them to structure the literature review. The first section of this chapter which relates to financial reasons, reviews the literature on rational choice models, followed by the empirical evidence on the role of financial incentives in people's decision making. The study then examines the financial reasons for inequality of uptake of energy efficiency measures, especially the Green Deal. This review will show that we do not understand the financial reasons for the inequality of uptake of the Green Deal between the owner-occupier and privately rented sectors, and between young professional landlords and student landlords. Finally, taken together, I will end this section with future expectations based on the reviewed literature.

The following section which relates to the theme of the decision making reasons, reviews the literature on the theory of power dependence relations, followed by the empirical evidence on the role of power in people's decision making. The study then examines the decision-making reasons for inequality of uptake of energy efficiency measures including the Green Deal. This review will show that we do not understand the role of decision-making reasons in the inequality of uptake of the Green Deal between the owner-occupier and privately rented sectors and between the young professional and student rented sectors. Finally, taken together, expectations based on the reviewed literature are presented at the end of this section.

The final section of the review which is based on the concept of awareness reasons, reviews literature on the information deficit model, followed by environmental concern or value models. Second, it presents empirical evidence on information models followed by empirical evidence on people's attitudes or environmental concerns. Third, the study conducts a review on the theoretical dimension of these models, to understand how awareness reasons for inequality of uptake of energy efficiency measures compare between the owner-occupier and privately rented sectors, and between young professional landlords and student landlords. This section will show that we do not understand the awareness-related reasons for the inequality

Chapter 3

of uptake of the Green Deal between the owner-occupier and privately rented sectors, and between young professional landlords and student landlords. Finally, taken together, assumptions based on the reviewed literature are presented at the end of this section. Putting all the three sections together, I will give a summary of the literature review and conclude the chapter with a discussion of the framework of the study.

3.2 Financial reasons

3.2.1 Rational choice theory

The rational choice model contends that consumers make decisions by calculating the individual costs and benefits of all different courses of action, and choosing the option that maximises their expected net benefits or minimises their expected net cost (Jackson, 2005; Steg and Vlek, 2009; Frederiks et al., 2015), given budget constraints (Wilson and Dowlatabadi, 2007; Collier et al., 2010; Lopes et al., 2012). A decision outcome with higher utility will be consistently preferred to an alternative outcome with lower utility (Wilson and Dowlatabadi, 2007). Utility is a construct that measures the preferences expressed for different outcomes (Clement and Reilly, 2001), but it is often regarded as a proxy for wellbeing, personal benefit, or the “betterness” of an outcome (Kahneman et al., 1999).

According to rational choice theory, consumers are assumed to behave in a way that is highly rational (Simon, 1955; Becker 1962; Jackson, 2005; Wilson and Dowlatabadi, 2007; Lopes et al., 2012; Frederiks et al., 2015). People act only out of their self-interest (Peters, 1999; Jackson, 2005). The theory postulates that consumers’ preferences are perfectly well-organised, recognised, stable and consistent (Wilson and Dowlatabadi, 2007; Darnton, 2008; Lopes et al., 2012). In order to achieve this utility maximisation, however, consumers need to be in possession of a certain set of information. In other words, “rational” choices are only possible in the context of “perfect” market information (Jackson, 2005) about the product or service and its price (Collier et al., 2010). So the model offers an intervention that policy should seek to ensure that consumers have access to the right information, to enable them to make informed choices about the available options (Jackson, 2005). Strategies to do this have included using incentive structures (e.g. taxes and subsidies) (Banks and Weingast, 1992, Collier et al., 2010). Here, the assumption is that individuals react rationally to incentives (Peters, 1999).

The main criticisms of this model include that people do not act rationally (Frederiks et al., 2015; Persson and Westermark, 2013), and that in a real-life decision-making situation, it is not true that people act only in their self-interest (Rabin, 2002; Jackson, 2005; Gowdy, 2008; Collier et al., 2010; Pollitt and Shaorshadze, 2011). Studies have challenged the view that agents are purely selfish or act solely on the basis of their own gain, by arguing that individuals often act pro-socially or altruistically (Andreoni, 1990; Rabin, 2002; Jackson, 2005; Gowdy, 2008; Pollitt and Shaorshadze, 2011), contribute to charities, and engage in pro-environmental behaviour, even if this imposes costs on them (Pollitt and Shaorshadze, 2011).

One reason for this is that behaving in pro-social ways makes people feel “better” about themselves (e.g., increased self-esteem from viewing oneself as selfless and socially responsible—the “warm-glow” effect (Andreoni, 1990)). These arguments mirror Schwartz’s (1992, 1994) value dimensions of self-transcendence (concern for others) versus self-enhancement (concern for self), as determinants of people’s behaviour. Likewise, Stern (2000) supports the view that personal values such as altruism and egoism influence people’s choice. Even evidence from several studies has shown that the values that most strongly have influence in activating pro-environmental personal norms are altruistic or self-transcendent values (Karp, 1996; Stern and Dietz, 1994; Dietz et al., 1995; Stern et al., 1999; Joireman et al., 2001; Nordlund and Garvill, 2003). However, egoistic values are sometimes linked if behaviour is “low cost” or brings financial benefits (Stern, 2000).

3.2.2 Time consistent preferences

Rational choice theory deviates from time-inconsistent preferences by assuming that individuals’ discount rates are fixed, constant in time, or do not depend on the time horizon (Benzion et al., 1989; Loewenstein and Thaler, 1989; Frederick et al., 2002; Venkatachalam, 2008). But Thaler (1981) and Epper et al. (2011) showed that individual discount rates vary in time. This model is supported by experiments showing that individuals use higher discount rates over a longer time horizon than over a shorter time horizon (Thaler, 1981; Benzion et al., 1989; Loewenstein and Thaler, 1989; Holcomb and Nelson, 1992) To deal with this apparent anomaly, behavioural economics proposes hyperbolic discounting as a more accurate

Chapter 3

representation of how individuals value costs and benefits over time (Loewenstein and Prelec, 1992; Harvey, 1994; Laibson, 2003; Gintis, 2000).

Under hyperbolic discounting, individuals use higher discount rates over short time horizons than over long time horizons (Thaler, 1981; Holcomb and Nelson, 1992; Loewenstein and Prelec, 1992; Ainslie, 1992; Laibson, 1997; Harris and Laibson, 2001, Gintis, 2000; Frederick et al., 2002; Laibson, 2003; Epper et al., 2011) in calculating the benefits and costs across a time period. Hyperbolic discounters are more impatient or have higher discount rates when making short-run decisions than when making long-run decisions. They have difficulty in committing to long term investments. The implication is that, when all costs and benefits are in the future, individuals are farsighted in their advance planning, but when some costs or benefits are immediate, decisions will be very short-sighted (Camerer and Loewenstein, 2004). Put differently, an immediacy effect gives rise to high short-term discount rates when otherwise immediate consumption is delayed, but this is accompanied by a decline in discount rates over the longer term (Gintis, 2000).

As first noted by Strotz (1956), in practice, behaviour will not generally be consistent over time. Individuals with time-varying discount rates change their preferences at some point in the future (Strotz, 1956; Loewenstein and Thaler, 1989; Loewenstein and Prelec, 1992; Pollitt and Shaorshadze, 2011). This is what Strotz (1956) and Loewenstein and Thaler (1989) referred to as dynamic inconsistency behaviour, or “myopia” as Strotz (1956) called it. This kind of time inconsistency preference or “preference reversal” has larger repercussions on environmental investment decisions (Venkatachalam, 2008).

Consider a decision maker who prefers an immediate, smaller reward to a later, larger reward (Ainslie, 1975; Halevy, 2008), but prefers the latter to the former when both alternatives are equally delayed (Halevy, 2008). As an illustration, an individual may prefer \$100 now over \$110 tomorrow, but prefer \$110 in 31 days over \$100 in 30 days (Frederick et al., 2004). Similarly, an individual is asked to choose between Problem A, \$100 now or \$110 in 4 weeks; and Problem B, \$100 in 26 weeks or \$110 in 30 weeks. A subject who prefers an immediate \$100 in Problem A but \$110 in Problem B is said to show diminishing impatience or to be present biased (Halevy, 2008). In other words, the preference or behaviour of this decision maker is found to be present biased (Laibson, 2003).

In these examples, and as already said in this review, individuals place a higher discount rate on those investments whose benefits occur in the immediate future, and a lower discount rate for those investments generating benefits in the distant future (Venkatachalam, 2008).

Similarly, there is a long line of evidence to show that discount rates exhibit a magnitude effect, i.e. discount rates for small amounts tend to be much higher than rates for large amounts (Epper et al., 2011). In other words, implicit discount rate increases as the size of the reward decreases (Thaler, 1981; Benzion et al., 1989; Loewenstein and Prelec, 1992; Green and Myerson, 1996), or the length of time decreases (Thaler, 1981, Benzion et al., 1989), and it decreases as the size of the reward increases (Thaler, 1981; Benzion et al., 1989; Loewenstein and Prelec, 1992; Green and Myerson, 1996) or the length of time increases (Thaler 1981; Benzion et al. 1989). As can be seen from the examples, discount rates decrease as a function of time delay, leading to a reversal of preferences (Loewenstein and Thaler, 1989).

Discounting hyperbolically correctly predicts preference reversal, and this ability has been cited as a compelling reason for rejecting exponential discounting (Green and Myerson, 1996).

With exponential discounting, if the individual discounts the future at a constant rate—that is, if discounting is constant for different time delays—then time preferences will not reverse (Loewenstein and Thaler, 1989; Green and Myerson, 1996; Pollitt and Shaorshadze, 2011), because the delay of 30 days and 26 weeks in the first and second examples is shared between the two choices. The difference between today and tomorrow seems greater than the difference between a year from now and a year plus one day (Thaler, 1981). It follows that it may be wrong to expect an individual's relative time preference at any earlier date over a later date to be the same no matter when a person is to make a choice (O'Donogue and Rabin, 1999; Frederick et al., 2002), or to treat the future the same as present. An exponential discount rate requires that these differences be perceived to be equal (Thaler, 1981).

In short, individuals do not make decisions in a time-consistent manner using constant discount rates (Benzion et al., 1989; Frederick et al., 2002; Rabin, 2002; Lopes, 2012). Instead, depending on the situation, they make different decisions with different associated discount rates (Thaler, 1981; Collier et al., 2010; Lopes; 2012). Also, it may be not right to assume that discount rate does not depend on the size of the amount involved (Green and Myerson, 1996). Rather, it may be that discount rates observed in both laboratory and field decision-

Chapter 3

making environments are shown to depend on the magnitude of the amount (Green and Myerson, 1996; Loewenstein and Thaler, 1989), the length of time to be waited, and so on (Loewenstein and Thaler, 1989). In other words, discounting the future hyperbolically is crucial to better understanding intertemporal choices, decisions in which the amount of money, and the timing of costs and benefits are spread out over time (Loewenstein and Thaler, 1989).

Perhaps, the idea that high short-term discount rates are consistent with hyperbolic discounting, resulting in much lower rates of adoption than might otherwise be expected (Hausman, 1979; Oxera, 2006; Hepburn and Duncan, 2010), is not a surprise revelation. These findings suggest that we may not have an accurate picture of individuals' decision making if we assume them to be exponential consumers rather than hyperbolic consumers. In that view, exponential discounting used by rational choice theory could increase policy failure if policy is designed based on these assumptions. Its assumptions are inconsistent with how decisions are made in the real world.

3.2.3 Loss aversion

One important factor that needs to be challenged is that, as traditional economics assumes, individuals are risk averse (Tversky and Kahnemann, 1992, Pollitt and Shaorshadze, 2011) but place the same value on losses and gains of equal amount (Pollitt and Shaorshadze, 2011). Prospect theory in the field of behavioural economics argues that valuation of losses is the mirror image of valuation of gains, and refers to this phenomenon as the reflection effect (Kahnemann and Tversky, 1979). This means that people are more afraid to lose something they already have (loss averse) than they are afraid not to gain something they do not yet have. Differently put, losses and gains are not valued the same by agents; instead losses hurt more than gains feel good. Individuals tend to be much more sensitive to losses than to gains, and value losses more than gains (Gomes, 2005; Pollitt and Shaorshadze, 2011; Persson and Westermark, 2013). Generally, individuals are loss-averse when making a decision (Wilson and Dowlatabadi, 2007).

Ang et al. (2004) and Gomes (2005) showed that stock market non-participation can be explained by loss-aversion. In this view, some studies have demonstrated that investors hold

on too long to stocks that have lost value, but are eager to sell stocks that have gained value, due to reluctance to sell at a loss (Shefrin and Statman, 1985; Odean, 1998; Kato, 1996; Grinblatt and Keloharju, 2000; Grinblatt and Keloharju, 2001). This could also be the result of buyers' trading preferences (Bremer and Kato, 1996). The implication of these studies for energy efficiency investments can be found in the work of Greene (2011), who indicates that loss aversion may cause consumers to underinvest in energy efficiency measures. Also, Epper et al.'s (2011) empirical finding suggests that participants who are more loss averse are likely to have higher discount rates than others.

Thus, loss aversion can be linked to discount rate, depending on whether the outcome of an investment is a gain or loss. People's discount rates for gains are found to be much higher than for losses (Thaler, 1981; Benzion et al., 1989; Frederick et al., 2002; Hardisty and Weber, 2009). Loewenstein and Thaler (1989) explained that people are quite anxious to receive a positive reward (i.e. they needed to be paid a lot to wait for a reward), especially a small one, but are less anxious to postpone a loss. In other words, desiring to experience something now rather than later, all other things being equal, translates formally into a higher discount rate for gains but a lower discount rate for losses (Hardisty and Weber, 2009). Whilst the policy recommendations of most economists rely on monetary incentives (for example, financial "risk relievers") to change behaviour, there are some studies which show that financial incentives may play no role in bringing about behaviour change or they can only sustain behaviour change for a short period of time.

3.2.4 Empirical evidence on the role of financial incentives

There is an ongoing debate in pro-environmental studies as to the role of incentive in behaviour change. There are a handful of studies available to show that financial incentives do not induce conservation activities (Pitts and Wittenbach, 1981; Held, 1983; Walsh, 1989; Gadenne et al., 2011). When rewards are strong, people can attribute their behaviour change to the reward and not to their personal convictions (Steg and Vlek, 2009). As a result, rewards tend to have short term effects only, for as long as the reward is in place, and behaviour reverts back to baseline levels upon removal of the reward (Winnett et al., 1978; Katzev and Johnson, 1984; Steg and Vlek, 2009). Also, monetary incentives may run the risk of undermining or crowding out intrinsic or pro-environmental motivation (Deci, 1971; Stern, 1999; Frey and Jegen, 2001; Gowdy, 2008; Handgraaf, 2013), particularly if the monetary

Chapter 3

rewards are small (Pollitt and Shaorshadze, 2011), or if intrinsic motivation for the target behaviour is already high.

However, several pieces of compelling evidence show that financial incentives are able to promote pro-environmental behaviours (Geller et al., 1982; Cameron, 1985; Stern et al., 1986; Carpenter and Chester, 1988; Bradbrook, 1991; Long, 1993; Hassett and Metcalf, 1995; Williams and Poyer, 1996; Stern, 1999; Geller, 2002; Scanlon and Kochan, 2009; Nair et al., 2010; Young et al., 2010; BioRegional, 2011; Schultz, 2013; Sweeney et al., 2013). As Stern rightly stated, it is not surprising that, when money is a problem, financial inducements of sufficient size can be a solution (Stern, 1999). Likewise, when risk prevents people from investing in energy efficiency or taking conservation action, financial “risk relievers” such as offering discounts and rebates (Frederiks et al., 2015), and money-back guarantees (Derbaix, 1983), may be key drivers for behaviour change. There is evidence to suggest that, in many cases, standard information-intensive campaigns, factual messages and other educational programmes do not directly support intrinsic or extrinsic motivation (Schultz; 2013). Consequently, studies on pro-environmental actions suggest that financial strategies are of greater importance and probably more effective in promoting pro-environmental behaviour than information strategies on their own (Brandon and Lewis, 1999; Steg and Vlek, 2009).

There is evidence to suggest that, unlike information strategies that might not be able to address important barriers such as significant financial cost or inconvenience (Stern, 1999), financial incentives can overcome structural barriers or high-cost behaviours (Stern, 1999; Rothschild, 1999; Diekmann and Preisendorfer, 2003; Thøgersen, 2005), such as investment in home insulation, weatherisation, and upgraded heating systems (Stern, 1999). There is strong evidence that incentives and information interact (Stern, 1999). For example, the effectiveness of financial incentives may also depend on information (Stern, 1999; Gärling and Loukopoulos, 2007; Gärling and Schuitema, 2007). To put this into context, it is information that makes people aware of the Green Deal cashback and home improvement fund and how they work. Given that incentives and information interact, to focus on only one is sometimes inadequate; however, proper combination of the two can be very effective in supporting behaviour change (Stern, 1999).

3.2.5 The financial design of the Green Deal

The cost of energy efficiency measures represents one of the greatest barriers preventing households from making retrofitting changes (IEA, 2008; Caird et al., 2008; EST, 2010b; Niemeyer, 2010; Gadenne et al., 2011; James et al., 2011; Consumer Focus, 2011; Pelenur and Cruickshank, 2012a; Pelenur and Cruickshank, 2012b; Phillips, 2012; Bird and Hernández, 2012). The Green Deal Consumer Survey, aiming to capture initial consumer response to the Green Deal, found that 35% of the survey respondents stated lack of money as the main reason preventing them from making their homes more energy efficient (DECC, 2011c). Similar findings come from DECC (2012) and DECC (2013d), but the Green Deal aimed to remove the upfront cost of measures that prevented energy efficiency investments in the privately rented and owner-occupier sectors (DECC, 2011a). It is argued that it may be less possible to remove cost barriers facing low income tenants in the privately rented sector than removing cost barriers facing owner-occupiers. This is because low income tenants were more likely to face higher interest rates than owners, and so the cost of Green Deal measures were more likely to be more expensive for low income tenants than owner-occupiers. This would lead to lower uptake of the Green Deal in the privately rented sector than in the owner-occupier sector.

Even though not all energy efficiency improvements need to be financed through loans since customers could pay for them directly, affordability of the measures remains an issue. The literature has shown that a high interest rate on energy saving measures is a common problem in the private sector, and could make energy efficiency investment prohibitive (Sanstad and Howarth, 1994; Clinch and Healy, 2000; Brown, 2001). These findings are consistent with the argument that individuals can only save positively if they have a discount rate no higher than the market interest rate (Hausman, 1979 p.51), which is often around a minimum of 10% for energy conservation measures (Clinch and Healy, 2000). Yet, even at a 10% discount rate (the rate individuals use for their costs and benefits calculation to see if investment in energy conservation measures saves some money), the net private benefit of energy efficiency measures to an individual is negative, rendering investment financially unwise (Clinch and Healy, 2000). This individual discount rate used in cost-benefit calculations to arrive at net private benefits (Clinch and Healy, 2000; Clinch and Healy, 2001) substantially exceeds the market interest rate (Defra, 2010; Train, 1985; Gately, 1980; Hausman, 1979). Perhaps, therefore, unless there are attractive financial incentives to increase the benefits ratios or else a very low set interest rate, take up of energy efficiency measures will forever remain unattractive and inaccessible to those who need it most.

Low income borrowers have extreme difficulty accessing capital (Scott, 1997; Clinch and Healy, 2000; Rohdin and Thollander 2006; Schleich and Gruber, 2008, Wilkinson, 2008; Dowson et al., 2012; Ameli and Brandt, 2015). This is because they may face higher rates of interest (Scott, 1997; Clinch and Healy, 2000; Schleich and Gruber, 2008) and they may have limited ability to offer collateral (Weber, 1990; Scott, 1997; Schleich and Gruber, 2008) to secure a loan. Another possible reason is that potential lenders may have to bear higher costs to assess their credit-worthiness (Schleich and Gruber, 2008), which may be lower and thus may justifiably call for higher rates of interest. This is because, for lenders, the price of capital reflects the risk associated with the borrower (Schleich and Gruber, 2008). So, based on above discussion, it is more likely that people on low income in the privately rented sector may face higher interest rates for energy efficiency investments than their colleagues in the owner-occupier sector.

Many studies have indicated that the high interest rate is a principal reason for low uptake of the Green Deal (Great British Refurb Campaign [GBRC], 2010; Guertler, 2011; Laine et al., 2011; UK Green Building Council, 2014). This is because a high interest rate increases the cost of the measures and in turn reduces the energy cost savings from the measures (Guertler, 2011; Laine et al., 2011). It is established that the higher the interest rate, the higher the cost of the measures and the lower the money savings from the measures. So, in effect, a high interest rate makes it difficult for Green Deal measures to meet the golden rule (Guertler, 2011; UKGBC, 2014). It may eventually increase the overall payments that householders make on the measures (UKGBC, 2014). With high interest rates, especially, low income groups may find it very difficult to access capital under the Green Deal (US Department of Energy [DOE], 2010; Laine et al., 2011; Dowson et al., 2012).

In support of this argument, an experience from the US shows that access to a scheme similar to the Green Deal is lower for low-income households than high-income households. The policy makes it easier for creditworthy people, who may be the least in need of financing to access capital for energy efficiency improvements, than for low-income, poor credit households in the privately rented sector (US DOE, 2010). Based on the evidence so far, it is assumed that tenants are likely to find it more difficult than owner-occupiers to access the Green Deal because, on average, they are on lower income, considered very high risk, and may get higher interest rates as the price of capital reflects the risk associated with the borrower. In contrast, owner occupiers have highly paid jobs; they own houses with very small mortgages

and hence low loan to value (positive equity), and therefore can get cheaper loans from their banks because they are less risky—even though they may have no interest in the Green Deal.

The Association of Residential Letting Agents (ARLA) (2014) supports the view that the privately rented sector was prevented from accessing Green Deal finance. Green Deal providers have refused to offer finance on the basis that the properties were rented and they would not consider any privately rented property for Green Deal finance until the Consumer Credit Act 1974 (CCA) issue was resolved. The BPF (2014) explained that, in the privately rented sector, there was confusion as to who was perceived to be the debtor under the terms of the consumer credit agreement—the landlord signed the Green Deal plan, but the tenant was the person responsible for paying off the loan through the savings the installed measures may bring. On the other hand, in the owner-occupier market, the person who signed the Green Deal plan and consumer credit agreement was the same, making it easier for Green Deal providers to allow access to owners than people in the privately rented sector. It is therefore assumed that rented properties were less likely to be attractive to lenders compared to owned properties. Thus, landlords were less likely to access the Green Deal than owners who were not interested in the Green Deal anyway.

Based on the available evidence in this review, it is assumed that the benefit of the Green Deal finance may have lain more with landlords than tenants, and when tenants defaulted on the loan or vacated the property the repayment of the loan eventually went back to the landlords. Consequently, in the long run, the landlords were considered debtors under the terms of the consumer credit agreement, and so this issue is assumed to have been resolved. Nevertheless, the problem left is that small-scale student landlords, who represent a substantial part of the total market and who aim at high rental incomes from renting out shockingly leaky properties to poor students, are more likely to have their old poorly insulated properties rejected as collateral security and therefore to be refused Green Deal finance. In contrast, landlords who target highly-paid young professional singles or couples by renting high-quality properties to them are more likely to get their properties accepted as collateral security, leading to favourable rates of interest under the Green Deal finance. Laquatra (1992) proved that small-scale landlords find it difficult to borrow money to finance energy efficiency improvements, because lenders are reluctant to accept rental units as loan collateral. Hence, according to Laquatra (1992), a higher percentage of large-scale landlords were seen to make such investments than small-scale landlords.

Chapter 3

On average, tenants have lower incomes than owner-occupiers (Bradbrook, 1991). Between 50% and 53% of privately rented stock were built before 1945, compared to 39% of owner-occupied properties (DCLG, 2011; DCLG, 2013). This suggests that, on average, low-income tenants may live in older and less efficient homes than owner-occupiers. A range of studies have shown that the least energy efficient households are more likely to be lower income households (Clinch and Healy, 1999; Whyley and Callender, 1997; Boardman, 1991; Brechling and Smith, 1994). It may therefore be true that low-income tenants living in less efficient and older homes may face higher cost of improvements under energy efficiency investments than owner-occupiers. The latter may live in comparatively new and efficient homes, thus bearing lower cost of improvement, leading to lower adoption levels of energy efficiency measures in the privately rented sector than the owner-occupier sector. Older houses may be less amenable to retrofitting than newer homes, due to relatively higher cost of measures, and maybe also the potentially high interest rate that low income tenants living in these worse efficient homes may face (Laquatra, 1992; Brechling and Smith, 1994; Scott, 1997; Dowson et al., 2012; Tovar, 2012).

Laine et al. (2011) noted that a total number of 2.4 million households in England would be considered a risk by lenders. Findings indicate that the privately rented sector, which on average contains a greater proportion of low-income households than the owner-occupier sector, may not have been well targeted or fully served by Green Deal providers. They are less likely to be attractive to Green Deal providers, who would prefer able-to-pay customers with lower levels of financial stress since this reduces the risk of non-payment. Thus, they may be explicitly refused Green Deal finance (GDF) packages or ignored in providers' marketing strategies, or else offered GDF on less favourable terms. It is argued that providers and participants in the Green Deal may have gone to the private rented sector last after owner-occupiers, because (tenants for example), are often unable to pay customers (ECCC, 2013a). This may create lower take up in the private rented sector. Yet, comparatively, low income households in the privately rented sector were the ones most in need of the Green Deal energy efficiency package.

A high interest rate indirectly increased the cost of Green Deal measures for customers and thus the Energy Company Obligation (ECO) grants (see Appendix 1, to read more) could help cushion the effects of the high rate of interest to facilitate uptake of the scheme. That said, consumers may not have been able to access the ECO to support Green Deal uptake despite being on a low income (Consumer Focus, 2010 p.4). In particular, tenants on low income are expected to have found it more difficult to access ECO than owner-occupiers,

given that on average owners may need relatively small grants to support uptake of the Green Deal, which would help Green Deal providers to deliver ECO at a lower cost.

People on low incomes, privately rented sector tenants, and those struggling to pay energy bills, including those already behind with payments, were identified as the most in need of the Green Deal (GDPHRH, 2014). Yet, modelling results from Laine et al., (2011) found that Green Deal consumers on low income who did not get support through the ECO may have fallen behind on their payments and may thus have been penalised for non-payment of their Green Deal charge. The study argued that the Green Deal charge is a fixed financial commitment with attached penalties for non-payment which may, worryingly, result in disconnection of the property's energy supply. As a result, households that were in financial stress were more likely to be averse to taking on Green Deal measures as the repayment charge was an inflexible fixed sum, which cannot be varied as easily as the household's energy use.

The ECCC explained that while disconnection represented a very extreme situation, it may happen that, if you were a prepayment customer, then you needed to pay some of your arrears on a proportionate basis to the amount of energy that you are consuming. If for example you bought a £10 top-up card, then a certain proportion of that—say £4—would be spent on your arrears, leaving you with £6 worth of credit (ECCC, 2013a). But, this action may put prepayment customers in a position where they are at risk of self-disconnecting if they cannot afford the Green Deal charge but can afford the cost of energy supply (Laine et al., 2011). These authors estimate that 8.8 million people live in homes that use prepaid meters (PPM) to pay for their energy, and around 16% (1.4 million) self-disconnect at least once year.

It is a very difficult conversation for landlords to have with their tenants, to explain that they should benefit from the Green Deal, but if they don't they might get disconnected. From the tenant's point of view, the subject is very high risk (ECCC, 2013a). Given that tenants' decisions are driven by the expected outcome of their actions, they may protect themselves from this possible punishment by not taking up the Green Deal in the first place. Prepaid meter users are more likely to be in the privately rented sector than the owner-occupier sector. It is assumed that poor tenants were more likely to risk disconnection under the Green Deal than home owners as tenants were less likely to be able to pay for the Green Deal charge than home owners. The repayment charge is fixed regardless of energy savings and may form a more significant part of tenants' income than owners' income. This may explain inequality of uptake of the scheme between the two sectors.

Studies have found that long payback time is one of the main barriers to energy efficient improvement in the domestic sector (Soratana and Marriott; 2010). This problem may also be caused by the high interest rate, since it increases the cost of improvements, so the money savings that may be gained from the measures may be very low and eventually payback times may increase. To this end, there is evidence to show that consumers require short payback times for energy efficiency investments rather than long payback times (Cavanagh, 1988; Oxera, 2006; EST, 2010b). The first of these studies suggested that, if an energy saving measure does not pay for itself in six months to three years, many consumers will not want to acquire it (Cavanagh, 1988). Indeed, payback time analysis has been a commonly used technique by households in the evaluation of energy efficiency investments. According to Laquatra (1992, p.817), this technique measures the elapsed time between the point of initial investment and the point at which accumulated savings, net of accumulated costs, is sufficient to offset the initial costs. If costs and savings are adjusted to account for the changing value of money over time, this tool is referred to as discounted payback. If this time adjustment is omitted, the technique is termed simple payback.

In this view, a study conducted by the GBRC (2010) before the launch of the Green Deal found that majority of the study participants were uncomfortable taking on repayments of the cost of Green Deal measures or on their energy bills over a long period of time. The DECC commissioned Ipsos MORI to qualitatively explore consumer response to the Green Deal proposition. The research did not test a market-ready version of the Green Deal, but rather the framework behind it, and thus findings do not therefore provide evidence of the likely consumer reaction to the Green Deal. The study found that participants preferred a shorter payback period (DECC 2011b). A more recent study showed that landlords were also concerned about payback periods for Green Deal measures (Ambrose, 2015). It is assumed therefore that tenants on low incomes in the privately rented sector tend to prefer shorter payback periods than owners, as tenants are less certain about their income than owners. It is assumed that student landlords will prefer shorter repayment times than young professional landlord. This is because student landlords think that longer payback times will reduce their incomes but young professional landlords consider that they can have shorter payback times depending on what type of measures they intend to take up.

Also, it is argued that the flexibility whereby customers could part-finance the Green Deal, choose shorter repayment periods, or especially repay early within the terms of the agreement (DECC 2011a), could be the strength of the policy. However, in practice, for example, if

landlords wanted to pay early, they may be charged hefty early payment fees. These may form a relatively greater part of their incomes and in effect mean that the option of a shorter payback period is to a large extent taken away from them. This may be prohibitive to uptake of the Green Deal. It is assumed that landlords are more likely to be deterred by Green Deal early repayment charges than owners, as landlords may pay early repayment charge on several of their properties but owners may pay on one property. We still do not know how student landlords and young professional landlords may respond differently to this hefty early repayment charge.

Other studies have noted that the Green Deal charge may not be seen as a barrier to uptake of the Green Deal (UKGBC, 2009; DECC, 2011a; Tovar, 2012; DECC, 2013). Reports have shown that the Green Deal charge might deter future buyers and so be considered a reason for low uptake of the scheme (GBRC, 2010; DECC, 2011). One reason why landlords may not take up the Green Deal was the possibility of the Green Deal charge becoming a debt on their property, deterring future tenants and reducing the property's sale value (DECC, 2011b; Centre for Regional Economic and Social Research [CRESR], 2013; Ambrose, 2015).

According to DECC (2011b), some landlords argued that even if they were able to sell, the outstanding amount of the charge (which could be thousands of pounds) would be seen as debt on the property that potential purchasers would want to deduct from its price. So, to avoid Green Deal charges becoming debts on properties, landlords would discuss the Green Deal recommendations with the tenants and work through which improvements they would agree to, but would not install them through the Green Deal so as to avoid the Green Deal charge becoming a debt on their property (DECC, 2011b).

It is presumed that landlords were more likely to be deterred by the Green Deal charge attached to their properties, as they may reduce the value of their property in terms of both rental income and selling price. In contrast, the Green Deal charge may only reduce sale value of the property for home owners. It is probable that student landlords are more likely to view the Green Deal charge attached to the property as deterrent to prospective tenants than young professional landlords, as often student tenants are on lower incomes than young professional tenants.

It is well established that low-income households may feel financially unstable (Schipper and Hawk, 1991; GDPHRH, 2014), of which many are in the privately rented sector. It is assumed

Chapter 3

that tenants hold a strong aversion to taking on “debt” and are more interested in cost saving than owners are—because they are poor and so the ongoing payment may form greater part of their income than it would for owners. Owners, instead, might be in highly paid jobs, and be less loss-averse, so cost savings may be less relevant to them. Student landlords are more profit oriented (Rugg, Rhodes and Jones, 2002), and may see this ongoing debt as having the potential to impact negatively on their tenants with low income and eventually their rent. It is also true that low income students are typically without the financial resources to spend on energy efficiency measures (Wilkinson and Goodacre, 2002). On the other hand, landlords of young professionals serve people in well paid jobs and are therefore less likely to be deterred by the possibility that ongoing payment cost may affect their rent.

Another problem with the Green Deal is that take-up by landlords means they have agreed to make payment on the Green Deal charge even during void periods (when the property is unoccupied by tenants and is therefore generating no rental income). In contrast, owners who take up the Green Deal may not experience this sort of void charge on their Green Deal loans, as they do not rent them out and are more likely to occupy them until they are sold. So this may be another reason that makes the Green Deal more expensive for landlords to take it up. Literature on the Green Deal has found that the majority of landlords may not have taken up the Green Deal because they felt concerned that, should the tenant move, they would be responsible for making repayments on the loan during void periods or if tenants defaulted (CRESR, 2013; Ambrose 2015). It is assumed that landlords are less likely to take up the Green Deal as a result of the requirement to make repayments on the Green Deal loan during void periods when they are not getting any income from their properties. This is compared to owner owners who may not need to pay any void charge on the Green Deal loan.

Another principal problem for low take-up of energy conservation measure is low money savings from investing in those measures. That said, a study argued that savings from energy efficiency measures are typically bigger than the repayments and interest (Tommerup and Svendsen, 2006). But if the benefits of energy efficiency are so great, why are they not taken up? In contrast to the assertion that there are significant money savings from this investment, a leading environmentalist, Chris Goodall, pointed out that the annual savings from loft insulation on 21,000 homes tracked by the DECC have been around £15.50 a year (The Guardian, 2014 p.2). Similarly, Caird et al. (2008) showed that savings from such measures are not worth the cost. This is a very serious issue because people consider the cost of the energy-efficiency measures, and compare it to the reduction in energy bills they expect to receive

from the measures, to arrive at a net private benefit (Peters, 1999; Clinch and Healy, 2000; Jackson, 2005; Andersen and Bleischwitz, 2009). Studies have found that financial benefits and costs of retrofits are important factors in retrofit decisions (Gamtessa, 2013; Michelsen and Madlener, 2013).

A study by Poortinga et al. (2003) reported that respondents with high environmental concern found measures with small energy savings relatively more acceptable than measures with large energy savings, whereas the reverse applied to respondents with low environmental concern. This suggests that energy savings may be more relevant to tenants than owners, and thus may have more influence on tenants' purchasing decisions than owners'. Oxera (2006) found that future savings are weighted much less in householders' decision-making, and that price has much more influence on their decision. The study suggested that upfront costs are generally much more important determinants of customers' decisions to take up than benefits. The study argued further that, over time, if energy costs fall relative to income, the influence that savings have over purchase decisions may become even weaker, and investment in energy savings measures may fall further. This is partly because a conservation measure involves spending in the present and expectations of savings in the future, so households may employ a higher discount rate for energy savings than the cost of the measure, or place more value on cost than energy benefits.

However, energy savings appear to be very relevant to Green Deal customers. Studies have shown that households were unlikely to take up the Green Deal for energy efficiency improvements due to low energy savings (DECC, 2011b; DECC, 2012; CRESR, 2013), as well as the fact that savings can even be negated by continued energy price rises (CRESR, 2013), and, finally, the lack of guarantee for the savings (DECC, 2011b; DECC, 2011c; DECC, 2012). The desire for a guarantee was particularly strong for those who struggled to pay their energy bills (DECC, 2011c; DECC, 2012). Again, this suggests how relevant energy savings are to low-income households of which, on average, the privately rented sector contains the majority.

Thus, the fear is that the Green Deal—which calculated consumers' estimated financial savings from improvements and the need for the financial savings to be sufficient to pay for the cost of the measures—may have had lower uptake by low-income tenants than owner-

Chapter 3

occupiers because low-income tenants may see energy savings as more relevant to their purchasing decisions than owners. Consequently, it is assumed that it is unclear to customers whether the golden rule of the Green Deal would work but tenants are interested in energy savings or deterred by lack of guarantee for energy savings and are more interested in short term money savings. This is compared to owners who are less deterred by lack of guarantee for energy savings and their decision to take up the Green Deal is based on savings on their energy bills in the long-run

Another point is that low income group use less energy (Kasulis et al., 1981; Dresner and Ekins, 2004; Druckman and Jackson, 2008; Roberts, 2008b; Buchs and Schnepf, 2013) and they are less likely to undertake retrofit investment (Hausman 1979; Kasuliset al., 1981; Walsh, 1989; Long, 1993; Scott, 1997; DECC, 2011). Low energy users may save less under the Green Deal (DECC, 2012; Laine et al., 2011). The explanation is that before improvements, on average, low-income tenants are more likely to use less energy than owners because they are more likely to manage their energy use via curtailment than owner-occupiers on low income. So, after retrofitting, tenants on low income are more likely than owners to try to increase their energy usage to meet their needs. So tenants on low income are more likely to save less under the Green Deal than owners. In short, take-up of the Green Deal may be lower in the privately rented sector than the owner-occupier sector because tenants on low income are more likely than owners to save less under the Green Deal.

3.2.5.1 The reinforcement of the Green Deal for the rental market's split

People may invest in energy efficiency measures if they are sure that such investments will significantly increase the price or value of their property (capital appreciation) and/or increase their rental income. However, to date, we do not know for sure if this is the case. Indeed, there are studies which suggest that capital appreciation may occur following energy efficiency improvements (EST, 2008; Guertler, 2011; DECC, 2013i), but the increase may not be adequate (Tuominen et al., 2012; Phillips, 2012) and may depend on the type of measure installed, for example double glazing (Guertler, 2011; Phillips, 2012). Alternatively, the improvement may only secure the value of the building for a limited number of years (Tommerup and Svendsen; 2006).

Other studies have challenged this idea with their findings that energy efficiency improvements do not at all increase property value (California Energy Commission, 1985; Ambrose, 2015) or rental incomes (California Energy Commission, 1985; Shelter, 2009;

Guertler, 2011; CRESR, 2013; Ambrose, 2015). This is a significant barrier to take-up of the Green Deal among landlords (California Energy Commission, 1985; Ambrose, 2015). Based on these findings, it is assumed that landlords were less likely to take up the Green Deal for improvements as it was unlikely to increase their rental or significantly increase their resale values. In comparison, owners' decisions to take up the scheme may have depended mainly on environmental benefits.

There is evidence to suggest that student landlords purely focus on rental income (Rugg, Rhodes and Jones, 2002). So it is expected that student landlords were less likely to take up the Green Deal measures for improvements, as these measures may not increase their rental incomes at all. This is compared to young professional landlords who may focus on capital gain, and so may be keen on Green Deal improvements that may help them to achieve capital gain on their property when they come to sell.

3.3 Expectation

Based on the theories and literature reviewed, it is assumed that high interest rate may not be attractive to customers but tenants will face higher interest rates than home owners, because tenants are usually on lower incomes, and considered higher risk borrowers, than home owners. It is expected that rented properties are less likely to be attractive to Green Deal lenders than owned properties. Landlords and tenants are also less likely to pass credit rating check to enable them access the Green Deal loan than homeowners. It is assumed that low saving on energy bill from Green Deal measures is more of a problem for poor tenants than owners. Poor tenants are more likely to be deterred by the risk of self-disconnection or disconnection from energy suppliers than homeowners under the Green Deal than homeowners, as tenants are on low incomes and are less likely to be able to pay for the Green Deal charge compared to owners. Also, tenants on low income tend to prefer shorter payback periods than owners, as tenants are less certain about their income than owners.

Landlords were more likely to be deterred by the Green Deal early repayment charge than owners, as landlords may pay early repayment charge on several of their properties but owners may pay on one property. It is assumed that Green Deal improvements were unlikely to increase rental or significantly increase resale values for landlords, but were attractive to owners because of their environmental benefits. There is a requirement to make repayments

Chapter 3

on the Green Deal loan during void periods, but owner-occupiers may not end up needing to pay it. Landlords may have been more deterred by the Green Deal charge attached to their properties than homeowners, as it may have a negative impact on the value of their property and their rental income as well. Owners, on the other hand, may only have the value of their property reduced.

Properties in the student rented market are likely to be rejected as collateral security for Green Deal finance, or may be accepted for loans at higher interest rates than properties in the young professional rented market. Student landlords were more likely to prefer shorter repayment times than young professional landlords. This is because student landlords think that longer payback times will reduce their incomes but young professional landlords consider that they can have shorter payback times depending on what type of measures they intend to take up. Another key expectation is that landlords in the student market focus on rental income (which the Green Deal may not have increased), whilst young professional landlords focus on capital gain. The Green Deal measures may have increased the value of their property when they come to sell. It is assumed that Green Deal charge will be more of a deterrent to student landlords than young professionals, as their tenants are poorer than young professional tenants. In short, these different reasons for understanding the difference in uptake between the two sectors and types of landlords are surprisingly absent in literature. These are gaps that need to be filled by this study.

3.4 Decision making reasons

3.4.1 Power theories

When policy take-up depends on interaction between agents, theorists have suggested that its failure may be as a result of lack of collaboration or joint action by actors (Hill and Hupe, 2002; Pressman and Wildavsky, 1973; Scharpf, 1978; O'Toole, 1988). This is particularly the case where action depends on a number of links in an implementation chain, where even relatively small failures of co-operation between the different actors could easily multiply to create a major implementation deficit (Pressman and Wildavsky, 1973). They highlighted the importance of “veto” or “clearance” points—those instances in which an actor has the power to hinder the success of policy objects. Consequently, Pressman and Wildavsky proposed the need to reduce the number of links in the chain, and thereby reduce the potential implementation deficit. Similarly, Hogwood and Gunn (1984) set out ten preconditions for perfect implementation, and one of them was policy makers' ensuring minimal dependency relationships. To achieve cooperation, actors within the network need to be managed or controlled to improve interaction between them (Klijn and Koppenjan, 2000; O'Toole, 1988).

More generally, according to Emerson (1962), balance can be restored to an imbalanced power relationship through various changes in the structure of dependencies across actors. These power-balancing processes consist of changing the value of the exchange relative to the actors, by increasing its value (importance) for the less dependent actor or decreasing its value (importance) for the more dependent actor; or by altering the availability of alternatives in the network, by increasing alternatives for the more dependent actor, or decreasing the alternatives for the less dependent actor. The Government has unique resources, unique objectives and considerable and legitimate power in a network, and this view is pertinent to the Government's situation (Hill and Hupe, 2002; Dunbar, 2015), which may include these steering mechanisms. With respect to tenants' and landlords' relationship, when there is power inequality or when conflict arises, changing the distribution of resources can shift the outcome (Dillahunt et al., 2010).

This may require a change in monetary benefit asymmetry between landlords and tenants, a change in resource strength brought on by collective action, or, perhaps, a change in authority—power which is obeyed because it is accepted as fair and right (Browne, 2011).

Chapter 3

Maybe, using monetary incentives to increase one's benefit from an investment becomes more understandable if we use the general assumption of theoretical approaches to power that individuals will act to maximise their interpersonal rewards and minimise their interpersonal costs (Molm and Cook, 1995). By implication, when financial incentive is provided for the less dependent partner, his or her benefit is increased to instigate take-up.

Power is defined in terms of relationships between people, where A exercises their power over B, and succeeds in getting B to do something that he would not otherwise do (Dahl, 1957 p. 212). In other words, A has influence over B (Schmid Mast, Jonas, and Hall, 2009). This definition reflects the observation that not all relationships are symmetrical, but that there are situations in which the balance of power is unequal (Dunbar, 2015; Shove et al., 2012). Power imbalance may also suggest that actors in this sort of network unequally need each other's resources (money, information, and so on) to achieve their goals (Scharpf, 1978; Benson, 1982; Rhodes, 1988). As a result, exchange has been defined as a transfer of resources from one actor to another (e.g., Markovsky, Willer, and Patton, 1988).

Molm (1989) has criticised this definition by arguing that it is difficult to generalise it to punishment, another form of power. Thus, social exchange has long been defined as an exchange of activity, tangible or intangible, and more or less rewarding or costly, between at least two persons (Homans, 1961 p.13). There is also social exchange, if A's behaviour contains rewarding or punishing consequences for B. Consider for example, a situation in which A has refused to allow B to invest in energy efficiency measures, and as a result, B is living in an inefficient property which is very expensive to heat. Given that A's action has a punishing effect on B, we can talk about social exchange. Molm (1989) writes that it is this capacity of A's behaviour to affect the quality of B's outcomes that gives A more power than B. Molm noted that the less powerful actor may constantly live in fear of the other's punishment (Molm, 1989).

The pluralist view of power studies actual, concrete or observable behaviour (Polsby, 1963 p.12; Merelman, 1968 p.12). The focus of observable behaviour in identifying power involves the central task for pluralists of studying decision-making (Lukes, 1974). Thus, in this approach, power can be envisaged most easily in a decision-making situation (Dahl, 1958 p.13; Polsby, 1963). Conflict, according to the pluralist view of power, is crucial in identifying power

(Lukes, 1974 p.14). Consequently, theorists have pointed out that in this approach power in decision-making only shows up where there is conflict (Lukes, 1974 p.14; Bachrach and Baratz, 1963; Polsby, 1963). For instance, Polsby argued that identifying who prevails in decision making seems the best way to determine which individuals and groups have more power in social life, because direct conflict between actors presents a situation most closely approximating an experimental test of their capacity to affect outcomes (Polsby, 1963 p.13).

Conflicts between parties are driven by lack of common goals and interests (O'Toole, 1988; Dillahunt et al., 2010). For example, the landlord is running a business with the goal of making money. In contrast, the goals of most tenants are to have a comfortable, safe, and affordable living environment. These goals may not always align (Dillahunt et al., 2010), leading to conflict. But it is power that determines who wins when conflict is present. It is argued that the pluralist view of power ignores the crucial point that power is not always connected to conflict, and power is even used to prevent such conflict from arising in the first place (Lukes, 1974 p.23). Nevertheless, in the pluralist view of power, power is studied by investigating decision making in the public arena, where there is an actual, observable conflict of (subjective) interests, seen as express policy preferences or conflict of preference (Dahl, 1958 p.13; Polsby, 1963 p.12; Merelman, 1968 p.12; Lukes, 1974 p.15).

The pluralist view of power has been criticised on the grounds that it does not study non-decision making, the kind of power that will make less powerful people withhold grievances and avoid conflict due to fear of retaliation, or latent power. This is the sort of power that prevents grievances from getting on the political agenda or keeps potential issues from becoming real issues or being discussed in the relevant decision-making arena (Bachrach and Baratz, 1963 p.19). For example, Vaughan's work suggests that tenants may worry about the burden their requests may have on landlords (Vaughan, 1968), and that they may take no action or may not complain in order to avoid conflict. In this view, powerless tenants can be said to have engaged in a non-decision if they fear the consequences of asking for energy saving measures, and for that matter do not make demands of their landlords. As a result, a satisfactory analysis of two-dimensional power involves examining both decision making and non-decision making (Bachrach and Baratz, 1963 p.19).

Chapter 3

However, according to Lukes (1974 p.20), these two-dimensional power analyses still assumed that non-decision making is a form of decision making, This allows for consideration of the ways in which decisions are prevented from being taken on potential issues over which there is an observable conflict of subject interests, such as in express policy preferences and sub-political grievances (Lukes, 1974 p.20). Lukes (1974 p.22) criticised the two-dimensional view of power as too methodologically individualist because it ignores collective action or socially structured behaviour of groups, and practices the of institutions. The author went on to argue that collectives and organisations are made up of individuals, but the power they exercise cannot be simply conceptualised in terms of individuals' decisions or behaviour. To Lukes, power cannot be adequately analysed unless it is seen as a function of collective forces and social arrangements. But it is also true that it is individuals that constitute social classes.

More importantly, Hargreaves (2011) stated that we do not adequately understand the role of power relations in the performance of practices, and suggested that closer attention should be given to this role, particularly in studies concerning attempts to change practices. Similarly, a study has pointed out that research looking at the role of power in behaviour change is almost non-existent (Schmid Mast, 2010). This study hopes to contribute empirically to the role of decision-making power, focusing on energy efficiency practice, especially the take-up of the Green Deal.

3.4.2 Empirical evidence on the role of power in decision making

There is a range of studies that suggest that power has influence on people's behaviour (Dahl, 1957; Etzioni, 1961; Parsons, 1963; Pérez-Cirera and Lovett, 2006; Molm, 1989a; Molm, 1989b; Dillahunt et al., 2010). Yet an experiment has found that punishment power advantage has no effect on action (Molm, 1988). Regarding power imbalance, there are environmental studies that indicate that powerful people may promote collective action (Baland and Platteau, 1996; Baland and Platteau, 1999). But these findings are at odds with most studies that have found that greater power inequality may lead to unsustainable behaviours (Boyce, 1994; Baland and Platteau, 1999; Boyce et al., 1999; Pérez-Cirera and Lovett, 2006; Dillahunt et al., 2010).

3.4.3 The role of decision making reasons

Power inequality clearly does not really exist in the owner-occupier sector because owner-occupiers can simply decide what to do with their property so they have full power over it. In contrast, landlords and tenants do not have full power on their own to decide what can be done to their properties. This is because within the private rented sector, the eligibility for the Green Deal was dependent on both the tenant and landlord being in mutual consent about the proposed improvements (DECC, 2013d; DECC, 2013e; DECC, 2013f; DECC, 2014a). Therefore, the question arises: who of these parties is more interested in taking up the Green Deal and why? What would prevent them from trying to convince the other party to take up the Green Deal?

Related to this question, there is evidence to suggest that some domestic tenants and landlords are not happy with the idea of the tenant making decisions about improvements to the property. Landlords explained that there was a material difference between a tenant asking for repairs or minor renovation work at the start or during their tenancy, and a request for expensive major improvements. The former was felt to be acceptable but the latter was not, because the tenant could have too much authority on what improvements should be made to the property (DECC, 2011b). There is also a possibility that the landlords may not be interested at all in investing in energy efficiency measures, let alone in agreeing to some types of improvements that may be suggested by tenants. There is therefore potential conflict of interest and goals which may lead to the likelihood of the landlord using their greater power to achieve their agenda.

These findings also confirm earlier results that tenants might not have the right to invest in energy efficiency improvements of their rented accommodation (Brandon and Lewis, 1999; Clinch and Healy, 2000a; Baker and Lainé, 2010). These results reflect much of the research on landlord–tenant relationships that have found that landlords have power over their tenants (Vaughan, 1968; Popplestone, 1972; Keller, 1988). Vaughan argued that low-income tenants are “relatively powerless” in the landlord–tenant relationship (Vaughan, 1968 p. 215). More recently, evidence can be found to suggest that landlords have greater power than their tenants when it comes to energy conservation improvements (CAB, ACE, and Friends of the Earth, 2011; ECCC, 2012). The effect of this unequal power comes from a study that looks at

Chapter 3

landlord–tenant conflicts on energy use that demonstrate that imbalance of power can prevent tenants from taking action (Dillahunt et al., 2010).

Based on the evidence from the papers cited above, landlords may not have been interested in investing in the Green Deal because it prevented them from having full power over their property, unlike owners who could decide what to do with their properties. Also, tenants are less likely to have taken up the Green Deal for improvements because they have limited authority to make housing improvement decisions. Owners, on the other hand, may be considered fully autonomous with respect to improvement-making decisions.

Owners may not have often needed to get consent from several people before they could take up the Green Deal. However, an additional problem for rented properties was that both landlords and tenants needed consent from each other before they could take up the scheme. Laine et al. (2011) confirmed that tenants seeking permission from landlords may have complicated the uptake of the Green Deal in the privately rented sector, especially if there are absentee landlords involved in the decision (DCLG, 2010a). However, the situation may have been much more challenging for landlords, particularly if they required consent from multiple bill payers for the Green Deal to proceed in multi-tenant properties (DECC 2011a; Laine et al., 2011; Tovar, 2012; GDPHRH, 2014). Within the privately rented sector, for example, the landlords for both the student and the young professional who wanted to take up the Green Deal may have needed consent from their tenants—but the student landlord may have needed consent of, say, five different shorter-stay students in a larger flat. In comparison, the young professional landlord may have needed consent from two younger couples in a smaller flat, who were less volatile (Rugg, Rhodes, and Jones, 2002; Rugg, Rhodes and Jones, 2008). So student landlords may have found it more difficult to gain consent from several student tenants than the young professional landlords needing consent from a smaller tenant group. This may explain inequality of uptake of the Green Deal between these rented markets.

A range of studies have shown that tenants have shorter lengths of stay in their homes than owner-occupiers (Rugg, Rhodes and Jones, 2008; Department of Housing and Urban Development, 2008; The Economist, 2009; DCLG, 2010; DGLG, 2013; DGLG, 2014; DGLG, 2015). These results reflect numerous studies that have found the short stay of tenants and other associated problems to be reasons for low take-up of energy conservation

measures. They specifically highlight that tenants are unwilling to invest in energy efficiency measures for homes they do not own, or for homes they are not responsible for undertaking improvements on, or for homes they may move shortly from (Bird and Hernández, 2012; Pelenur and Cruickshank, 2012a; DECC, 2011b; Black et al., 1985; Clinch and Healy, 2000b; Bradbrook, 1991; Walsh, 1989). Black et al. (1985) explained that homeowners gained personal benefits from investment into energy efficiency home improvements, either by gaining financial savings on energy expenditure, or rising property values. In contrast, tenants' benefits from energy conservation investments were relatively low due to a shorter tenure in their dwellings (Black et al., 1985; Walsh, 1989). Consequently, renters have lower adoption of energy efficiency measures than owners (Curtis et al., 1984; E.ON and the University of East Anglia 2004; Sardanou, 2007; Davis, 2010; Tovar, 2012; Dowson et al., 2012; Burfurd et al., 2012; Gillingham et al., 2012; Ameli and Brandt, 2015).

In the private sector, repayments of the costs of Green Deal measures were made by homeowners and tenants via their energy bill savings (DECC, 2013d; DECC, 2013e; DECC, 2013f; DECC, 2014). Usually, in the privately rented sector, the tenant holds responsibility for paying the bills and the landlord is responsible for financing major improvements (DECC, 2011b; DECC, 2011c). In an attempt to address the issue of split incentive, the Green Deal's financial mechanism deviated from this typical practice in the sector: tenants, instead of landlords, financed major improvements (DECC, 2011b). So, DECC commissioned Quadrangle to conduct qualitative research among potential consumers of the Green Deal to explore in part the barriers around the Green Deal take-up among landlords and tenants in the privately rented sector.

They found that the financial mechanism of the Green Deal was perceived to be counterintuitive as it challenged the existing market dynamics of who funds improvements to rented property. In the study, both domestic tenants and landlords admitted that under normal circumstances it is the landlord, and not the tenant, that should fund improvements. Tenants on short term tenancies who intended to move soon could not see the need to improve the property for their landlords under the scheme (DECC, 2011b). This reason of short stay is what relevant literature has described as a temporary split incentive (Bird and Hernández, 2012). Even with the advent of the Green Deal, the split incentive problem (which in part has held back progress in the privately rented sector, and therefore the Green Deal sought to overcome (DECC, 2011a)) still exists in the privately rented sector.

Chapter 3

The split incentive problem has been defined as a circumstance in which the flow of investments and benefits are not properly rationed among the parties to a transaction, impairing investment decisions (California Sustainability Alliance, 2015). The split incentive barrier may be a principal reason for low uptake of the Green Deal in the private sector, and it can only be overcome with a package solution which must include financial incentives (Bird and Hernández, 2012; Ástmarsson et al., 2013). More related to the above problem, findings from DECC (2011b) showed that domestic tenants could not understand why they should fund the full cost of the improvements when they did not make any significant saving, and in their view the benefit seemed to lie more with the landlord. They felt that it would be fairer if the landlord were made to fund some of the cost of the improvements (DECC, 2011b). Even though this plan may distort the financial mechanism of the scheme, they would then be more convinced of making a financial saving on their total energy bills. These findings imply that if tenants are not ready to accept responsibility for improvements, then it may rest on the shoulders of the landlords—a situation that, again, may cause split incentives problem for the landlords where they may not want to invest in energy efficiency measures including the Green Deal, since they do not benefit from the corresponding reduced energy bills (Guertler, 2011; DECC, 2011b).

It is important to note that it is very difficult to determine the appropriate balance of incentives for both landlord and tenant (Bird and Hernández, 2012), in a way that is consistent, even if tenants are changing (Stone, 2001). Yet fairness in benefits is an important concern in any public policy design (Stone, 2001). Putting all these findings together, tenants were less likely to invest in the Green Deal as they may have thought that it was not their responsibility to improve their landlords' property or else that they may move shortly. Conversely, owner-occupiers who may have fulfilled their own responsibility or have full power to improve their homes and also have a relatively long length of stay in their homes in which to receive financial savings.

On the side of landlords, findings from a more recent study suggests that many of them did not want to take up the Green Deal as they felt that many of their tenants would not remain in the property long enough to witness any savings on their energy bills (Ambrose, 2015). There is no data on differences in the length of stay of student tenants and young professional tenants, and their implication for inequality of take-up between student landlords and young professional landlords, In its absence, it is assumed based on Ambrose's finding that student landlords are less likely to take up the Green Deal than young professional landlords, because

student tenants are more transient or move more often than young professional tenants (Rugg, Rhodes, and Jones, 2002; Rugg, Rhodes and Jones, 2008).

A “retaliatory eviction” is the practice whereby a landlord seeks to evict tenants because they complain about property repairs (Rugg, Rhodes and Jones, 2008) and it is made possible by Section 21 of the Housing Act 1988 (CAB, ACE and Friends of the Earth, 2011). Many tenants are deterred from making requests of their landlords for improvements and maintenance works because they are afraid of being evicted (DCLG, 2007; Crosby, Formby and CAB, 2007; Shelter, 2011; CAB, ACE and Friends of the Earth, 2011; DECC, 2011a; DECC, 2011b; ACE, 2012; CRESR, 2013). A recent survey of environmental health and tenancy support officers found that 100% of respondents (29 in total) in 20 authorities had encountered tenants who were unwilling to enforce their rights to repair due to fears of eviction (Citizens Advice and Shelter Cymru, 2013). This finding indicates that people have the most power when the resources they possess are hard to come by or are in high demand. In other words, property is a source of power in landlord–tenant relationships (Galbraith, 1984). Indeed, it is right to say that the success or failure of a policy is explained by the structural characteristics of the network, such as the degree to which actors possess veto power because of indispensable resources (Hill and Hupe, 2002 p.78).

Relevant literature suggests that the “retaliatory eviction” is very real in the privately rented sector, affecting mainly young professional tenants (CAB, ACE and Friends of the Earth, 2011; ECCC, 2012). A possible explanation is that, unlike student tenants who tend to have short term tenancies and are less likely to ask for energy efficiency improvements, young professional tenants are less transient and may enter the market with high property standards in mind. They are therefore more likely to require energy efficiency measures from their landlords, and so are more likely to become victims of this practice. Indeed, it appears besides other specific reasons such as rent arrears and issues relating to antisocial behaviour in which “retaliatory eviction” may be applied (Rugg, Rhodes and Jones, 2008) that the practice is becoming a legal reciprocal tool used by landlords to end tenancy agreements when tenants demand energy efficiency measures.

However, despite landlords’ power to evict provided in the Housing Act 1988, the Government still included a provision in the Energy Act 2011 (clause 45) which means that

Chapter 3

from 2016 landlords cannot refuse consent for reasonable requests by tenants for energy efficiency measures funded under the Green Deal (Baker and Lainé, 2010; EST, 2011; DECC, 2011a; ACE, 2012; EST, 2012; BPF, 2013). It is argued that regulation should place the onus on landlords to make improvements or meet minimum energy efficiency standards, rather than rely on tenants to demand “reasonable” energy efficiency improvements of their landlords (Baker and Lainé, 2010). The act of tenants requesting energy efficiency improvements presents evidence of a significant power asymmetry between tenants and landlords, as tenants already have a very limited ability to demand improvements.

ACE (2012) identified some loopholes in the tenant request legislation which may affect uptake of the Green Deal. First, many tenants do not know what their existing rights are, so it is extremely unlikely that they will learn about their new rights under this legislation. Second, they are merely entitled to have their reasonable request acceded by their landlord; there is, however, no requirement on landlords actually to undertake or finance the improvements. But it may also be true that, even if tenants became aware of the legislation, they still could not use it to demand improvements under the Green Deal from their landlords due to fear of retaliatory eviction. Consequently, the Government predicted in its own Energy Act impact assessment that only tenants who are in residence for more than five years (22% of the total) will have an incentive to request measures and that only 10% of these will do so (DECC, 2011a). The Energy Act 2011 impact assessment explained that the impact of the “tenants request” measure would be limited because, for those tenancies of a few years or less, it is unlikely the bill savings under the Green Deal would repay the hassle costs of requesting consent for a measure from their landlords. Equally, even longer-term tenants who might benefit more may not want to risk losing their tenancy by confronting their landlord, especially in case a tribunal is required (DECC, 2011a).

Tenants who make energy efficiency requests using the provisions in the Energy Bill are not protected against retaliatory eviction, and the Government is encouraging tenants to demand energy efficiency measures from landlords under the Green Deal without giving them protection from the potential consequences (CAB, ACE and Friends of the Earth, 2011). So, the Energy Act 2011 impact assessment predicted that only 2.2% of the measures taken up in F and G rated properties would be due to requests by tenants for energy efficiency improvement. Based on these findings, young professional tenants are less likely to take up the Green Deal due to fear of retaliatory eviction, whereas owner-occupiers who do not face this

practice at all. It might be true that tenants' request regulation is unlikely to drive uptake of the Green Deal measures in the privately rented sector and eliminate the inequality of uptake between this sector and the owner-occupier sector.

3.5 Expectation

Based on the theories and literature reviewed in this section, it is expected that owner-occupiers are free to make decisions about energy efficiency improvements on their properties. In contrast, landlords have greater power than tenants when it comes to decision-making processes. In addition, mutual agreement between landlord and tenant needs to be reached beforehand. This requirement may not exist in the owner occupier market. Landlords own the property but may not be interested in making it more energy efficient as they are not paying the energy bill and may mainly be interested in making a profit from the rent. There is also the argument that, even though tenants may be interested in lower energy bills through energy efficiency improvements, it is not tenants' responsibility to improve landlords' properties if they plan to move shortly, while homeowners may improve their homes and have a longer length of stay in their homes. It is my conjecture that there will be fear of retaliatory eviction in the professional tenant market, but that retaliatory eviction is not practised in the owner-occupier sector. Within the rented market, I expect that it will be more difficult to reach consensus in the student rented market than the young professional rented market because the former is made up of more transient and larger tenant groups than the latter.

3.6 Awareness reasons

3.6.1 Information deficit model

The information deficit model assumes that providing information will lead to increase in knowledge and awareness to change attitudes towards the behaviour and leads to a change in the behaviour (Eden, 1996; Schultz, 2002; Kollmus and Agyeman, 2002; Jackson, 2005; Steg and Vlek, 2009; Simcock et al., 2014). This model has been extensively criticised for its failure to consider contextual or structural factors (Blake, 1999; Schultz, 2002; Lutzenhiser, 2002; Lopes et al., 2012; Owens and Driffill, 2008; Lutzenhiser, 2008; Hargreaves et al., 2010; Shove, 2010; Michelsen and Madlener, 2013; Catney et al., 2013).

One more criticism levelled against this model is that when people get information they will interpret it in the light of pre-existing frames (Owens and Driffill, 2008). They may be limited in processing the information (Kempton and Montgomery, 1982; Jackson, 2005; Lopes et al., 2012) or use a wide range of simpler decision rules to help reduce cognitive requirements (Gigerenzer, 2007; Gigerenzer and Todd, 1999; Goldstein, 1996), or settle for “good enough” or satisfactory rather than “best” or optimal information (Simon, 1955; Brown, 2004) when they are under time pressure (BenZur and Breznitz, 1981; Maule and Svenson, 1993). This leads to people often making worse decisions or avoiding action altogether when faced with too much information (cognitive overload) or too many options (choice overload) (Greifeneder et al., 2010; Scheibehenne, 2010; Iygnar and Lepper, 2000). Besides, by assuming that people lack the right information (Jackson, 2005; Burgess et al., 1998), the model fails to take into account the knowledge that people already have (Burgess et al., 1998). For instance, contrary to the classic “empty vessel” image suggested by the information-deficit model, people have at least a basic knowledge of energy efficiency (Simcock et al., 2014), suggesting that information might not be a priority for pro-environmental behaviours.

The theory of planned behaviour (TPB) has variables such as attitude, perceived behavioural control, and intention (Jackson, 2005). Its intervention is information (Stern, 1999). It is capable of explaining behaviours involving relatively high cost (in terms of cost, effort, and convenience) such as car use or energy use (Lindenberg and Steg, 2007). Andersson et al. (2013) suggested the same view, and both findings could suggest the effectiveness of the information deficit model in this respect. However, another study argues this claim to be

untrue (Abrahamse and Steg, 2011), which reflects an important argument expressed by numerous studies that the information deficit model works only on easier behaviours but not when the behaviour is difficult, expensive, very inconvenient, or not supported by social norms (Stern, 1999; Diekmann and Preisendorfer, 2003; Harland et al., 2007; Steg and Vlek, 2009).

Overreliance on the information deficit model to change behaviour means that people may be aware or show concern, but more structural or situational barriers such as lack of access to finance or difficulty in gaining consent may prevent awareness and concern being translated into action (Agyeman and Angus, 2003). This phenomenon is described as the attitude-behaviour, or the value-action, gap (Blake, 1999; Flynn et al., 2010) and is simply the difference between people's attitude and what they do (Blake, 1999; Agyeman and Angus, 2003; Frederiks, et al., 2015). Otherwise, this gap could simply be an issue of misreporting in surveys. To date, no definitive explanation has yet been found for this gap (Kollmuss and Agyeman, 2002).

A wide range of studies on pro-environmental behaviour have confirmed this gap and also suggested that it cannot be overcome simply by using the information deficit model, as these obstacles can be motivational and contextual (Frederiks et al., 2015; Hope and Booth, 2014; Sweeney et al., 2013; Miroso et al., 2011; Niemeyer, 2010; Young et al., 2010; Nye and Hargreaves, 2009; Steg and Vlek, 2009; Lorenzoni et al., 2007; Jackson, 2005; Poortinga et al., 2004; Kollmuss and Agyeman, 2002; Blake, 1999; Baron and Byrne, 1997; Guagnano et al., 1995; Hallin, 1995; O'Riordan, 1981).

One example among many is Blake's study, the aim of which was to shed light on the value-action gap by asking the respondents themselves to identify the barriers or reasons that prevented them from carrying out particular environmental actions, despite a general concern for the environment. He identified three different themes of obstacles—namely individuality, responsibility and practicality—that exist between concern and action (Blake, 1999). However, clinging to this “information deficit model” without moving beyond the core assumption that the main barrier between environmental concern and action is lack of appropriate information may be due to the strong empirical support that the model has received—thus the need to review this evidence.

3.6.2 Environmental concern theories

We talk about value in relation to the importance we attach to something and the moral principles we hold. However, talk of this sort focuses more on the altruistic nature of people, and so perhaps a broader definition is the one that states that values are the guiding principles in people's lives (Rokeach, 1973). These principles show how people are concerned about the environment. So environmental concern is the different principles or values that influence our behaviour towards the environment (Schultz 2000, 2001). Attitude concerns a person's beliefs regarding the consequences of undertaking a specific behaviour, as a function of the person's valuation of the consequences (Ajzen and Fishbein, 1980). Simply put, attitudes are formed from the individual's beliefs about the behaviour (installing energy efficiency measures), as well as an evaluation of its likely outcomes (e.g. a reduction in energy bills) (Pettifor et al., 2015). Maybe what is common about these definitions is most clearly given by Kollmus and Agyeman (2002) who defined attitudes as enduring positive or negative feelings about some person, object, or issue. Therefore attitudes, whether favourable or unfavourable, are produced by behavioural beliefs (Ajzen, 2002).

Schwartz (1992, 1994) stated that values can be categorized along two dimensions: self-transcendence (concern for others) versus self-enhancement (concern for self), and openness to change (variation) versus conservatism (tradition). Truly, there are many studies that have mentioned other values in pro-environmental literature, but most of the studies on value models draw on empirical evidence of two or three main values that influence behaviour (Jackson, 2005; de Groot and Steg, 2008). These are termed (a) egoistic, where people act for their self-interest (b) altruistic, where people act for the concern of others, and (c) biospheric, where people act for the environment (Schultz, 2000; Schultz, 2001; Stern, 2000; Stern et al., 1999; Stern et al., 1993). Schwartz called the first one and the last two values self-enhancement and self-transcendence respectively (Schwartz, 1992; 1994); representing what Cameron et al. (1998) termed "pro-self" and "pro-social" values, respectively. The former is an expression of self-interest, and the latter an expression of communal interest (Karp, 1996).

A study gave some examples to distinguish between these values. If the behaviour is to perform an act of turning down a thermostat, individuals with egoistic concern may perform

this to save money, whereas people with altruistic concern may do so because high energy use affects and endangers other people, and people holding biospheric concern may do so because the emissions are harmful to the environment and other species living in it (Koletsou and Mancy, 2011). In line with these variations, Schultz (2000), Schultz (2001) and de Groot and Steg (2008) provided strong support for this distinction; but Stern and Dietz (1994) and Stern et al. (1999) argued that altruistic and biospheric concerns cannot be distinguished in the general population, and so the distinction between altruistic and biospheric values is still unresolved (Jackson, 2005; Stern, 2000). Nevertheless, this distinction provides one explanation for the fact that people may carry out the same behaviour, but for different reasons (Koletsou and Mancy, 2011; Schultz et al., 2005).

Schwartz's norm activation theory (Schwartz, 1977) suggested that a personal norm to take pro-environmental action is activated in individuals who believe that their own action has negative consequences on the environment - awareness of consequences, and they can act to reduce these environmental problems - ascription of responsibility (Dietz et al., 2005; Stern, 2000; Stern et al., 1999; Bleamey, 1998; Schwartz, 1977). There is support for this model across a range of environmental issues (Black et al., 1985; Widegren, 1998; Schultz and Zelezny, 1999). Stern's value belief norm theory is an extension of Schwartz's norm activation model (1977), incorporating general values and concern about the environment, and reflecting the new environmental paradigm (NEP) developed by Dunlap and his colleagues (Dunlap et al., 2000). In this model, the values that people hold tell us how concerned they are about the environment. As a next step, environmental concern is related to the extent to which individuals believe their own behaviour has negative environmental consequences (awareness of consequences). People with stronger concern for the environment will be more aware of the environmental impact of their actions. Next, the more people are aware of these consequences, the more likely it is that they will accept responsibility for environmental problems (ascription of responsibility). In turn, feelings of responsibility will lead to the activation of personal norms or a sense of moral obligation to act. Feelings of moral obligation will lead to the desire to act pro-environmentally, and to actual pro-environmental behaviours (Abrahamse and Steg, 2011).

Value-Belief-Norm (VBN) theory is considered one of the best theories among value models (Stern, 1999) and has received immense support in studies of pro-environmental behaviour (Dietz and Stern, 1994; Stern et al., 1995; Karp, 1996; Widegren, 1998). It is important to note

Chapter 3

that VBN theory is also built from Bandura's (1982) concept of self-efficacy, which refers to the extent to which an individual believes that they have the ability or responsibility to reduce environmental problems. This capacity is influenced by past experience, the example of others, and perceived skills (Bandura, 1977; Lopes et al., 2012). VBN theory is linked to the concept of self-efficacy and this concept has already been considered as powerful in predicting behaviour change (Bandura 1995; Luszczynska and Schwarzer, 2005; Koletsou and Mancy, 2011).

However, these value models exclude contextual or structural factors (Jackson, 2005; Lopes et al., 2012; Michelsen and Madlener, 2013), and often fail to adequately explain some types of energy behaviour. Behaviours related to energy conservation can be divided into two sub-categories: high-cost energy behaviours, and low-cost energy behaviours (Diekmann and Preisendorfer, 2003). Turning off the lights in rooms where no one is present is one example of low-cost behaviour, whereas using a bicycle instead of a car calls for greater sacrifice and is therefore an example of high-cost behaviour. Andersson et al. (2013) gave similar examples.

Even though Abrahamse and Steg (2011) claimed otherwise, another wide range of studies have found that in environmental concern theory, a "value belief norm" is only able to change simple or low-cost behaviours rather than difficult or high-cost behaviours (Lopes et al., 2012; Ibtissem, 2010; Lindenberg and Steg, 2007; Nordlund and Garvill, 2003; Stern, 2000; Stern et al., 1999), thus leading to the attitude-behaviour or value-action gap. Perhaps another justification for the acceptance of the criticisms discussed by Stern and his colleagues is the advent of the attitude-behaviour-context (ABC) model, which incorporates context. In this model, attitudes lead to behaviour change only if contextual variables (physical, financial, legal, or social) provide either incentives or disincentives (Lopes et al., 2012).

Critics may be cautious, however, due to some support these value models have received empirically. Like cognitive models, normative decision models focus on individual behaviour or individual as appropriate units of analysis in social action, and so fail to address the debate between agency and structure (Granovetter, 1985; Zey, 1992; Jackson, 2005; Shove, 2010; Hargreaves, 2011). Other studies have demonstrated the importance of agency and structure (Bourdieu, 1977; Giddens, 1984; Schatzki, 1996, Bourdieu, 1990; Blake, 1999; Reckwitz, 2002; Schatzki, 2002; Warde, 2005; Shove and Pantzar, 2005; Lorenzoni et al., 2007; Shove and

Pantzar, 2010) in determining action (Blake, 1999; Lorenzoni et al., 2007). Nevertheless, these models are not without strong empirical support.

3.6.3 Empirical evidence on information deficit model

Regardless of the criticisms against the information deficit model, some studies have found support for the assertion that information strategies can change behaviour if

- they provide feedback (Wilhite and Ling, 1995; Gardner and Stern, 1996; Darby, 2006; Burgess and Nye, 2008; Fischer, 2008);
- the message is coming from a trusted source (Craig and McCann, 1978; Wynne, 1992; Green et al., 1998; Boardman and Darby, 2000; Pollitt and Shaorshadze, 2011; Simcock et al., 2014);
- the message is very simple, clear and easy to understand rather than being complex or technical (Kempton and Montgomery, 1982; Wynne, 1982; Yates and Aronson, 1983; Hargreaves et al., 2010; Simcock et al., 2014);
- the message takes into account the heuristic decision making rules of consumers (Pollitt and Shaorshadze, 2011); or
- they are tailored to the perceived barriers of individual (e.g., Abrahamse et al., 2007; Daamen, et al., 2001) or recipients' lives and context (Montgomery, 1982; Yates and Aronson, 1983; Green et al., 1998; Stern, 1999; Brandon and Lewis, 1999; Boardman and Darby, 2000; Henryson et al., 2000, McMakin et al., 2002; Abrahamse et al., 2005; Wilson and Dowlatabadi, 2007; Steg, 2008; Sweeney et al., 2013; Catney et al., 2013; Simcock et al., 2014).

Providing information about the behaviour of others appeared to be successful in supporting pro-environmental behaviour (Schultz et al., 2007; Abrahamse et al., 2005; Lehman and Geller, 2004; Nair et al., 2010; Young et al., 2010), especially if the provider is similar to the target group (Winnett et al., 1982; Winnett et al., 1985), or if it is from personal experiences of receivers' peers (Strengers, 2012; Simcock et al., 2014). Hearing about the experiences of others can also be important for raising awareness of the potential for positive action, from which further, more detailed investigation is undertaken (Boardman and Darby, 2000).

If the intervention reminds people that there are social norms supporting the desired behaviour (Cialdini et al., 1991), if it is in line with their values or experience (Lorenzoni et al., 2007) and, finally, if it is able to capture the attention of its audience and gain their involvement (Stern, 1999; Fischer, 2008), it may raise awareness. Raising awareness or having knowledge is more relevant for early stage decision making (Roger, 2003; Wilson and Dowlatabadi, 2007; Golubchikov and Deda, 2012), as it informs individuals' choices (Golubchikov and Deda, 2012). Debatably, carefully designed information strategies with all these relevant features bring about only modest short-term change in behaviours (Stern, 1999).

In contrast, however, a wide range of studies have found that, generally, providing information to raise awareness on the benefits of pro-environmental behaviours does not simply change behaviour (Hirst, Berry and Soderstrom, 1981; Geller 1981; McDougall, et al., 1983; Geller et al., 1983, McKenzie-Mohr, 2000, Kollmus and Agyeman, 2002; Abrahamse et al., 2005; Wilson et al., 2007; Owens and Driffill, 2008; Steg and Vlek, 2009; Catney et al., 2013; Sweeney et al., 2013). However, information is one important part of the package of elements required for action (Kenis and Mathijs, 2012; Owens and Driffill, 2008; Faiers et al., 2007; Darby, 2006; Salmela and Varho, 2006; Lutzenhiser, 2002; Dietz and Stern, 2002; Stern, 1999). Customers in the private sector, for example, (i.e. owner-occupiers, landlords and tenants) lack information about energy efficiency (Schipper and Hawk, 1991; Laquatra, 1992; Brechling and Smith, 1994; Jaffe and Stavins, 1994; Jakob, 2006; EST, 2010b; CRESR, 2013; Hope and Booth, 2014; Ambrose, 2015). Generally, however, information alone is not effective in changing behaviours (Van Houwelingen and Van Raaij, 1989).

3.6.4 Empirical evidence on environmental concern

The way values or attitudes affect behaviour are not well understood (Miroso et al., 2011; Schultz et al.; 2005; Stern 2000). Literature on environmental attitudes and values has shown that there is often a gap between environmental attitudes or values and behaviours, which means that other reasons might be more important influencers of people's behaviour (Gilchrist and Craig, 2014; Andersson et al., 2013; Abrahamse and Steg, 2011; Miroso et al., 2011; Gadenne et al., 2011; Ibtissem, 2010; Steg et al., 2005; Kaiser et al., 2005; Steg et al.,

2005; Schultz et al., 2005; Poortinga et al., 2004; Nordlund and Garvill, 2003; Garling et al., 2003; Gatersleben et al., 2002; Kollmus and Agyeman, 2002; Joireman et al., 2001; Stern, 2000; Stern et al., 1999; Zelezny, 1999; Brandon and Lewis, 1999; Schultz and Zelezny, 1998; Stern et al., 1995; Karp, 1996; Stern, Dietz and Guagnano, 1995; Vining and Ebreo, 1992; Becker et al., 1981). Putting together available evidence leads to the expectation that attitudes and values are likely to play less of a role than financial reasons in decision making.

3.6.5 The distribution of Green Deal information

Information diffusion tends to be a voluntary and communicative strategy for activating energy-conserving behaviour (Held, 1983). There are various approaches towards information diffusion, including pamphlets enclosed in utility bills, and advertising campaigns (McDougal et al., 1981). Similarly, the main sources of diffusion of Green Deal information to create awareness were television advertising/programmes and newspaper or magazine articles, advertising, and the DECC's website (DECC, 2013d). In a recent study, the government's key information strategies were the most common source of awareness for the Green Deal, including a direct marketing approach comprising door-to-door sales, telephone call, street/instore approaches, leaflets through their door or letters in the post (DECC, 2015b).

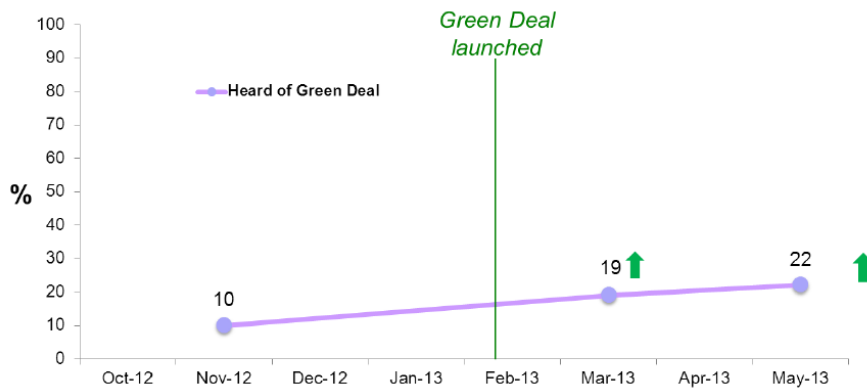
A report produced by the GDPHRH recommended that the DECC's communication strategy develop a very strong consumer benefits message in its marketing campaign, drawing on existing well-documented research of key drivers in order to increase awareness and hence uptake (GDPHRH, 2014). Evidence suggests that these strategies might increase the level of awareness for energy efficiency policies (ARLA, 2014; ECCC, 2013a; Fischer, 2008; Stern, 1999; Olsen, 1981). However, how effective these measures are to create awareness and encourage uptake of the Green Deal may be debatable.

3.6.6 Awareness of the Green Deal and related issues

The literature suggests that, generally, awareness levels of some energy efficiency measures are low among homeowners and tenants (Linden et al., 2006; Russell, 2012; DECC, 2011h; DECC, 2014d; Nair et al., 2010). GfK NOP was commissioned in 2012 by the DECC to carry out tracking research to test five key subject areas, including awareness and understanding of the Green Deal. Respondents were shown a list of initiatives including the Green Deal and

Chapter 3

asked whether they had heard of them. Findings from Wave 1 and 2 of the quantitative tracking study and short dips showed that, prior to the official launch of the scheme, awareness stood at 10% in Wave 1. This increased by 9% in Wave 2 and only by 3% in the May dip (DECC, 2013d). This is shown in figure 13. Even though the report gave the impression that awareness had increased by using the word “significantly”, looking at the ambitious CO₂ emissions target of UK government, the level of awareness of the scheme at the time was a serious cause for concern.



Base: All respondents (W1 = 3,562; W2 = 3,409, May Dip = 1,648)

Significant wave on wave increases are indicated by a green arrow (↑) on the chart.

Figure 13: The awareness of the Green Deal, (DECC, 2013d p.6)

This argument is supported by recent finding which showed that, from January 2013 to April 2014, fewer than 400,000 people called the ESAS, and 4,408,245 people viewed the Green Deal webpage (DECC, 2014). Comparing these numbers to the estimated 22 million households in England (Office for National Statistics, 2013; DGLG, 2013) depicts a clear picture of low awareness of the Green Deal. Besides, these figures may include double or even triple counting, as the same people may call or view the website more than once. What is more worrying is that these figures showed a downward trend in the last three months. Similarly, but more specifically, results from a recent study show that awareness on the Green Deal HIF stood at 50% in Wave 3, and moved down to 46% in Wave 4 and further down to 44% in Wave 5, as shown in Figure 14.



Base: All respondents (wave 3: 904; wave 4: 878; wave 5: 796)

A significant change across several waves is indicated by arrows (↑↓)

Figure 14: The awareness of the Green Deal HIF (DECC, 2015b p.8)

Indeed, it is now clear that low awareness of the Green Deal is a common problem in the private sector (Vaughan, 2013; ECCC, 2013cp.32, ECCC, 2014cp.29; GDPHRH, 2014; DECC, 2015b). This means that also private landlords have heard very little about the scheme (ECCC, 2012p.31; Association of Residential Lettings Agents [ARLA], 2014; Hope and Booth, 2014). Based on the available evidence in this review, it is assumed that awareness levels of the Green Deal were fairly similar between the privately rented sector and the owner occupied sector. It is plausible that there were fairly similar levels of Green Deal awareness between the students rented market and the young professionals rented market.

3.6.7 The understanding of the Green Deal

The results of Phillip's study suggest that private tenants may have a lower level of understanding about energy conservation measures than property owners and they may be less inclined to take up energy efficiency measures for improvements than property owners (Phillip, 2012). Likewise, generally the public do not fully understand the Green Deal (DECC, 2012; ECCC, 2013c p.32; ECCC, 2014 p.29; Pettifor et al, 2015). The first of the above listed four studies, found that some customers did not know what the Green Deal measures were, and some did not know that repayments for the Green Deal measures would be made through electricity bills. Some found it difficult to understand where savings would be seen (was it on their electricity bills or heating bills?), and specifically did not make the link to the savings mostly being made on their heating energy bills (DECC, 2012). For example, specifically homeowners did not understand the Green Deal (Pettifor et al., 2015). But private landlords' understanding of the Green Deal and how it worked were severely limited (ARLA, 2014; Hope and Booth, 2014).

Chapter 3

As a result, GDPHRH (2014) recommended that the DECC should ensure that privately rented sector landlords in particular fully understand the Green Deal via running seminars, providing materials, and ministerial involvement to encourage action. Yet, Hope and Booth found that no landlord claimed that a lack of information deterred them from making improvements (Hope and Booth, 2014). This mirrors the claim that barriers to action do not lie primarily in a lack of information or understanding (Agyeman and Angus, 2003). Overall, based on the available findings in this review, it is assumed that landlords and tenants will have lower understanding of the Green Deal than home-owners. It is expected that understanding of the Green Deal will be lower in the student market than in the young professional market.

The new energy performance certificate (EPC) provides information about the Green Deal to help Green Deal customers understand, for example, the energy efficiency rating of the building from A (the most efficient) to G (the most inefficient) (EST, 2008; DCLG, 2011c), the energy costs of their homes, as well as how to cut energy bills and carbon emissions (IEA, 2008; Friends of the Earth and ACE, 2013). What measures are suitable for their homes, how much these measures may cost them and at what repayment charge, the energy cost savings they may gain from these measures, and so on, can be understood through the EPC (DECC, 2012; DECC, 2013a; DECC, 2013b; DECC, 2013c; DECC, 2013e; DECC, 2013f; DECC, 2014a). The assumption is that EPC information on the Green Deal will lead to understanding of how the scheme works and bring about take-up of energy saving measures.

Since 1 October 2008, it has been mandatory in the UK to produce an EPC whenever a building is constructed, sold or rented out. Yet around 58% UK consumers do not know or are unsure of what an EPC is (EST, 2008). They do not receive their EPC (James et al., 2011; Adjei, Hamilton and Roys, 2011; Consumer Focus, 2011a), and this is of particular concern in the rental sectors (Consumer Focus, 2011a; DECC, 2011b; Friends of the Earth and ACE, 2013; CRESR, 2013). Some 48% of buyers and renters did not receive an EPC before signing a contract, and of the 44% who received the EPC, just 31% of tenants who moved in the past two years received it, compared with 79% of owner-occupiers (Consumer Focus, 2011). Surprisingly, none of the tenants interviewed had ever asked to see the EPC, and all of the domestic landlords claimed that they had never been asked to show the EPC to a tenant (DECC, 2011b).

A study found that some 79% of recipients of EPC did not act on the recommendations after moving into the property, and only 6% of EPC recipients used the information when negotiating the sale or rental price of their current home. Only one person belonging to this group was in the rental sector (Consumer Focus, 2011a). Also, findings showed that 38% of private landlords did not have an EPC for their property and did not plan to get one. Of the landlords that did have one, 70% did not plan to make any changes to their property as a result (DCLG, 2011b). Similarly, Hope and Booth (2014) noted that no landlords in their study acquired an EPC to learn more about the energy efficiency of their rented homes or how they could improve them.

Taking all these findings together, people in the privately rented sector may be more likely to have a lower level of understanding about energy efficiency measures than owners. This may explain the inequality of uptake of energy efficiency measures between the privately rented sector and the owner-occupier sector. The results also show how information may be less relevant to tenants and landlords (Hope and Booth, 2014; Ambrose, 2015) than to owners. The results from these studies contradict results from other studies that have found that EPC information may influence consumers' decisions to improve their properties (Gruber 2005; Shorrocks, 2008; Sunnikka, 2005), but support the findings that an EPC is highly unlikely to result in take-up of recommended measures (James, et al., 2011; Consumer Focus, 2011b; Consumer Focus, 2011a).

A House in Multiple Occupation (HMO) is defined as property rented to at least three people who are not from the same household or family, but share facilities like the bathroom, toilet and kitchen. There are between 236,000 and 379,000 HMOs in England (DCLG, 2010). Recent estimate shows that there are around 1 million individual HMO units in England (Friends of the Earth and ACE, 2014). However, this study revealed that landlords of HMO properties which were created or converted before the EPC regulations came into force in 2008 do not currently require an EPC when one of the rooms is let until the whole property is sold or let. This is regardless of how many times the individual rooms it contains are rented out. The logic behind this is that a room is not defined as a building, and therefore is not technically covered by the Energy Performance of Buildings Directive (EPBD) (DGLG, 2010; Friends of the Earth and ACE, 2013).

Chapter 3

Nevertheless, “many Houses in Multiple Occupation are old and highly inefficient in terms of energy use” (DCLG, 2010 p.21). Given that a significant number of landlords with HMO properties are not required to have or issue an EPC (EST, 2012), both landlords and tenants of HMOs may not have understood measures fundable under the Green Deal, the energy rating of their property, and cost savings from energy efficiency measures that may influence their decision to take up the Green Deal improvements. Essentially, they may not have participated in the Green Deal because the EPC acts as a gateway to take up of the Green Deal. Uptake of the Green Deal may be lower in the privately rented sector than the owner-occupier sector where HMOs are not present, and EPCs cover all homes in the sector.

It is assumed that over 25% of privately rented properties are HMOs, and that the majority (assumed 80%) of these properties belong to student landlords while just (assumed 20%) belong to young professional landlords. Given that there are more HMOs in the student market than the young professional market, EPC information on the Green Deal may be lacking in the student market where the law rarely requires an EPC to be issued. For example, consider a student landlord who holds a house or flat rented out to a number of tenants who have exclusive use of their bedrooms but share a kitchen and bathroom. In this case, since each tenant has a contract with the landlord for the parts they have access to, but not for the whole dwelling, an EPC is not required each time a tenant moves, although one will be required for the whole house if it is sold or rented as a whole.

Renting out a property as a whole is relatively rare in the student market, compared to the young professional market where renting the entire property to working young professionals and their families. Holding a single contract with the young professionals’ landlord is relatively common, and so they may be more likely to have an EPC and therefore to understand EPC information on the Green Deal. Young professional landlords may be more likely than student landlords to become aware of the energy ratings of their properties and to understand the Green Deal, and this might cause inequality of uptake of the Green Deal between the two sectors. Cowi (2001) confirmed that the owners of labelled houses carry out energy saving measures to a larger extent than those without an energy label.

The Green Deal was expected to be supplemented with minimum standard regulations to ensure that the private rented sector delivered its share of energy efficiency improvements

(DECC 2011a; BPF, 2013). So, from April 2018, landlords will not be able to rent out F and G rated properties which the Green Deal and ECO are able to improve (EST, 2012; BPF, 2013). But landlords may understand better the need to take up the Green Deal for improvement now only if they become aware of the regulation and they understand from the Green Deal information on the EPC that their properties are rated F or G. According to the Energy Act 2011 (Section 43) this regulation will apply to landlords of a property “in relation to which there is an energy performance certificate” (DECC, 2011a). This means that the minimum energy efficiency standard regulation will not apply to HMO properties or HMO landlords that do not require EPC. The implication is that properties’ F and G ratings cannot be seen on an EPC, so there is no opportunity to enhance landlords’ understanding of their property energy performance to drive take up of the Green Deal.

Friends of the Earth and ACE (2014) supported that the minimum standard only applies to privately rented properties let under a single tenancy, and misses out those that are let via multiple tenancy agreements, as is the case with most HMOs. HMO student landlords with a greater percentage of F and G rated properties that are more relevant to improvement have no EPC and are not required to meet the regulation. Student landlords may therefore hold no information on the energy rating of their rented homes, or the cost savings they may gain from energy efficiency measures, and they may not know what to do to meet this regulation. In contrast, young professional landlords may understand from the EPC that they have F and G rated properties and thus may take action via the Green Deal to improve them. This may explain inequality of uptake between the student landlord and the young professional landlord.

Unless this flaw is urgently corrected to help stimulate people’s understanding of energy efficiency issues and uptake of the Green Deal, the scheme may make no difference in improving the student housing stock. This argument is in line with the finding that 94% of respondents agreed with the proposal to extend EPCs to rented properties let under multiple tenancy agreements, in order to promote energy efficiency amongst landlords and tenants of houses in multiple occupation (DCLG, 2010).

3.6.8 Attitudes to energy efficiency

Generally, people do not view energy efficiency improvements as a high priority (Scott, 1997; Bell and Lowe, 2000; Ravetz, 2008; Power, 2008; Royal Institution of Chartered Surveyors, 2010; Guertler, 2011; Adjei, Hamilton and Roys, 2011; James et al., 2011; DECC, 2012). One of the barriers preventing potential demand of the Green Deal was that energy efficiency was not a priority (DECC, 2012). However, a more recent study found that energy efficiency potentially appeals to owner-occupiers (Pettifor et al., 2015). UK surveys of private landlords have found that the proportion who report taking energy efficiency into account when buying a property fell from 38% in 2005 to just 27% in 2009 (Harris Interactive, 2009). Also, private landlords have improvements to make but have no intention to make them in the near future (Harris Interactive, 2009; CRESR, 2013; Hope and Booth 2014). The main focus of tenants when looking for a property to rent is the level of rent, the location and physical appearance of the property, but not energy efficiency per se (DECC, 2011b; Ambrose, 2015). This may be a reason why landlords have attached very little value to energy savings improvements (Ambrose, 2015). By implication, there are few incentives for both landlords and tenants to invest in energy conservation measures and so they may both show negative environmental attitudes towards retrofitting compared to owners. Thus, Green Deal uptake may be expected to be lower in the privately rented sector than owner-occupier sector.

Rugg, Rhodes and Jones (2002) confirmed that students prefer to live close to their place of education in order to minimise travel costs (Rugg, Rhodes and Jones, 2002), suggesting their priority for making rental decisions is more likely to be location and rent than energy efficiency measures. In response to these attitudes, student landlords may decide to supply any type of property, with the only requirement being that it is furnished and capable of being shared by two or more students (Rugg, Rhodes, and Jones, 2002), especially when the property is close to the university. In other words, regardless of how inefficient those properties are, landlords can still get higher returns on them and so are less likely to have energy efficiency as part of their business model.

Comparatively, the young professional landlord may meet more exacting property specifications and other requirements (Rugg, Rhodes, and Jones, 2002). Consequently, they are relatively more likely to have energy efficiency as part of their business model, with the intent to their target market and get more money when they sell. Student landlords may be less

likely to pay attention to energy efficiency improvements, and hence the Green Deal, than young professional landlords. Based on these results, people in the privately rented sector may be more likely to have negative attitudes to energy efficiency than owners. Also, student landlords are expected to show less interest in energy efficiency, as their target market may be more likely to be interested in location and rent, whereas young professional landlords' target market may be more likely to be interested in energy efficiency.

3.7 Expectation

Based on the theories and literature reviewed in this section, it is expected that low awareness levels of the Green Deal were fairly similar between the privately rented sector and the owner-occupied sector. Maybe landlords and tenants will have lower understanding of the Green Deal compared home owners. It is expected that people in the privately rented sector will be less likely to understand the energy efficiency rating of their properties than owners. It is plausible that there were fairly similar levels of Green Deal awareness between the students rented market and the young professionals rented market. It is expected that understanding of the Green Deal will be lower in the student market than the young professional market. Student landlords are less likely to understand the energy rating of their properties based on EPC information than young professional landlords, who may have Green Deal information on their EPCs. In relation to attitudes, it is expected that energy efficiency is less of a priority to landlords and tenants than owners. It is also possible that student landlords will show lower interest in energy efficiency than young professional landlords, as rental income is what motivates student landlords and capital gain is what drives young professional landlords.

3.8 Summary of the literature review

The review of literature shows that there are no studies that examine how awareness, decision-marking power and financial motives compare between the privately rented and owner-occupier sectors, and between student landlords and the young professional landlord market, as reasons for inequality of uptake of the Green Deal. We do not know very well the relative importance of financial motives, decision-marking power and awareness reasons in helping us to better understand the differences in uptake of the Green Deal between the different sectors.

3.9 The framework of the study

While financial motives, decision-making power and awareness are covered in the literature, it remains unclear how relatively relevant they are for us to understand differences in uptake of the Green Deal between the different sectors. This justifies why I have combined them to construct a framework to analyse the empirical data for this thesis. The framework is presented in Figure 15.

The principle is that all three themes may interact (Sweeney et al., 2013; Stern, 1999). For example, people may have had information on the Green Deal but not have acted on it simply because it did not save them money, and this may in turn cause them to refuse consent to works. In other words, while I will argue that it is important to consider awareness factors such as lack of information or understanding to examine the low uptake of the Green Deal, they cannot explain uptake or differences in uptake of the Green Deal on their own. Instead, other structural or situational important factors also need to be considered. For instance, the financial arrangements made the Green Deal unattractive or difficult to access for certain actors due to high interest rates and low money savings, especially in the early period after uptake; the uptake of the Green Deal may have been too time consuming or inconvenient; and there were decision making factors such as power imbalances associated with the scheme which made it difficult to get consent from all parties involved in the rented sector, preventing uptake of the scheme.

The study framework is constructed on the assumption that, overall, financial reasons are more important for explaining why uptake of the Green Deal was lower in the privately rented sector than in the owner-occupied sector. This is maybe because the high interest rate may not be attractive to customers but tenants will face higher interest rates compared to home owners as, on average, tenants are usually on lower incomes and considered higher risk borrowers than homeowners. It is possible that rented properties were not attractive to Green Deal lenders compared to owned properties. It is anticipated that landlords and tenants are less likely to pass credit rating checks than homeowners as tenants are often on lower income compared to home-owners. It is unclear to customers whether the golden rule would work but tenants are interested in energy savings or deterred by lack of guarantee for energy savings and are more interested in short term money savings. This is compared to owners who are less deterred by lack of guarantee for energy savings and their decision to take up the Green Deal is based on savings on their energy bills in the long-run. Tenants are more likely to be

deterred by risk of self-disconnection or disconnection from energy suppliers than homeowners as tenants are more likely to be unable to pay for the Green Deal charge than home-owners. Tenants tend to prefer shorter payback period than owners as, tenants are less certain about their income than owners.

Landlords are more likely to be deterred by early repayment charges than owners because, landlords may pay early repayment charge on several of their properties but owners may pay on one property. It is assumed that Green Deal improvements will not increase rental income or significantly increase the value of the property for landlords, but will be attractive to homeowners for their environmental benefits. It is presumed that landlords are more deterred by the Green Deal charge attached to their properties than homeowners as, apart from the charge, reducing property value for both owner occupiers and landlords, the charge will further deter future tenants and reduce rental incomes for landlords. There is a requirement to make repayments on the Green Deal loan during void periods which predominantly affects landlords, while owners do not experience void periods.

Financial factors are also relevant to understand why uptake of the Green Deal is lower in the student rented sector than the young professional sector. This is perhaps, student tenants are often on lower incomes than young professional tenants, and it is plausible that properties in the student rented market will be rejected as collateral security by the Green Deal providers, or they may be accepted for loans at higher interest rates than properties in the young professional rented market. It is assumed that student landlords will prefer shorter repayment times than young professional landlords as, student landlords think that longer payback times will reduce their incomes but young professional landlords consider that they can have shorter payback times depending on what type of measures they intend to take up. It is also expected that student landlords will focus on rental income whilst young professional landlords will focus on capital gain because, student landlords think that the Green Deal improvements may not increase their rental incomes but young professional landlords are of the view that such improvements may slightly increase capital growth.

Decision-making power may be equally important for explaining the inequality of take-up of the Green Deal between the privately rented sector and the owner-occupier sector. This is possibly because that owner occupiers are free to make decisions about energy efficiency improvements of their properties. In contrast, landlords have greater power than tenants when it comes to improvement decision-making processes, and mutual agreement between

Chapter 3

landlord and tenant needs to be reached in advance. This requirement does not exist in the owner occupier market. Landlords own the property but may not be interested in making it more energy efficient as they are not paying the energy bill and may mainly be interested in making a profit from the rent. There is also the argument that, even though tenants may be interested in lower energy bills through energy efficiency improvements, it is not tenants' responsibility to improve landlords' properties if they plan to move shortly, whereas homeowners improve their own homes and have a relatively longer length of stay in the same place.

When it comes to the difference between the privately rented sectors, decision-making power may be relevant to explaining the low uptake of the Green Deal in the student rented sector compared to the young professional sector. This may be because it is more difficult to reach consensus in the student rented market than in the young professional rented market, because the student market is made up of more transient and larger tenant groups than the young professional rented market.

Awareness may not be very important for explaining why uptake of the Green Deal was lower in the privately rented sector than the owner-occupied sector. It is assumed that the low awareness level of the Green Deal was fairly similar between the privately rented sector and the owner-occupier sector. It is assumed that landlords and tenants are less likely to understand the Green Deal than homeowners. Landlords with HMOs who do not require EPC will be less likely to understand the energy efficiency ratings of their properties to instigate them to improve their homes using the Green Deal than owners who will have EPC to understand the energy ratings of their properties and to encourage them to participate in the uptake of the Green Deal.

Equally, awareness may not be very important for understanding why uptake of the Green Deal was lower in the student rented market than the young professional rented market. It is plausible that there were fairly similar levels of Green Deal awareness between the student rented market and the young professional rented market. Maybe the level of understanding of the Green Deal will be lower in the student market compared to that of the young professional landlords. It is assumed that student landlords are less likely to understand the energy rating of their properties based on EPC information than young professional landlords who may have Green Deal information on their EPC.

Environmental attitudes may be relevant to explaining why uptake of the Green Deal is lower in the in the privately rented sector than in the owner occupied sector, as landlords and tenants consider energy efficiency a lower priority than owners do. Environmental attitudes may also be relevant for understanding why uptake of the Green Deal is lower in the student rented market than the young professional rented market. This is probably because student landlords are expected to show lower interest in energy efficiency than young professional landlords due to their different business models: student landlords are driven by rental income and young professional landlords are motivated by an increase in capital gain.

Some of the important questions that will be addressed in the methodology chapter are how the entire research was designed, how data was collected and, and how it was analysed to address the main question.

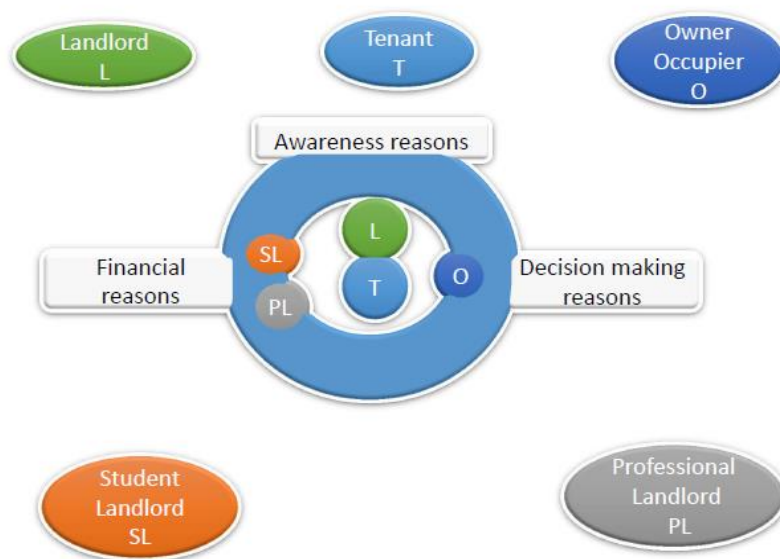


Figure 15: The framework of the study

Chapter 4: Methodology

4.1 Introduction

The study aims to investigate how financial incentives, decision-making power and awareness as reasons for inequality of uptake of the Green Deal compare between the privately rented and owner-occupier sectors, and between student landlord young professional landlord markets. Defining a project's theoretical framework is one of the basic elements of any research process (Crotty, 1998) and an important part of an effective and clear research design (Mason, 2002). Therefore, I will talk briefly about the ontological and epistemological assumptions that underpin various research designs and the associated two main different research approaches. Next, I will present my positions on the debate. After this will follow discussion of the data collection methods that were employed to address the research question. How participants were recruited and data analysed will also be addressed. Ethical issues will be considered and pilot interviews will be highlighted before a conclusion is drawn.

4.2 Research strategy and design

A researcher's ontological perspective can be described as the way they perceive social reality, their ideas of the "very nature and essence of things in the social world" (Mason, 2002 p.14). There are two main distinct ontological positions. One position assumes that there is a real world that is fixed, that exists independent of our interrogation of it (Moses and Knutsen, 2007 p.143; Gibbs, 2007 p.6; Bryman, 2008 p.19). In other words, there exists a real unchanged world out there that is independent of how we perceive it. For natural scientists, the world is objective and we can easily observe that objective world. We can see a thing falling down; we can measure how quickly it falls down and how much it weighs, and these are objective facts. Another stance is that the real world does not exist, but that the world is socially constructed or manmade, and is a context-dependent concept varying from context to context (Bryman, 2012; Blaikie, 2010; Barbour, 2008; Moses and Knutsen, 2007; Bryman, 2008; Crotty, 1998). Different authors use different terms to refer broadly to these two positions: the first position is often described as objectivism (Bryman, 2012; Bryman, 2008; Crotty, 1998). While the second stance is referred to as constructivism (Moses and Knutsen, 2007; Bryman, 2008). The problem is still that social reality is not universally perceived or viewed in the same way. In other words, we all have subjective ways of seeing that reality.

Chapter 4

Some studies have concluded that the world itself truly depends on and is influenced by how people see it (Moses and Knutsen, 2007 p.146; Bryman, 2008 p.19).

Epistemology refers to the big question of how can we know exactly what social reality is (Blaikie, 2010; Mason, 2002) There are two conflicting epistemological positions. One position is the assumption that we can access knowledge or know about social reality through objective investigation and explanation of phenomena. In contrast is the belief that the only way of gaining knowledge or knowing about social reality is through subjective understanding and interpretations (Bryman, 2012; Blaikie, 2010; Barbour, 2008; Bryman, 2008; Crotty, 1998). Again, a range of terms in the relevant literature are used to refer to the first position, including “positivism” (Bryman, 2012; Bryman, 2008; Crotty, 1998). “Interpretivism” is among the terms used for the second position (Bryman, 2012; Bryman, 2008; Crotty, 1998).

The different methodological assumptions imply that the natural scientist may often use a quantitative approach, a term which generally refers to research designs that involve numerical, objective measurements and usually to try to produce causal explanations of the phenomena. The results from this approach are considered to be hard data, easy to generalise and to replicate. On the other hand, the social scientist may often use qualitative approaches that involve research designs that explore meaning, interpretation, and deeper understanding of social reality not obtainable by quantitative research, using data mainly in the form of words and ideas rather than numbers. The description suits well, qualitative methods which may include interviews and documentary research (Bryman, 2012; Bryman, 2008).

My ontological and epistemological position is that the world is socially constructed, and all knowledge that we can have about it is subject to interpretation, which may suit the qualitative approach. In line with my philosophies, I perceive the phenomenon under investigation as ideas, human constructs and other equally important components of social reality that form part of the social world and may require an interpretive approach. The phenomenon under investigation places emphasis on seeking understanding of the meanings of human actions and experiences (Davidson et al., 2002, Gibbs, 2007; Bryman, 2008). My convictions call for a qualitative approach that describes and explains people’s experiences, behaviours, interactions and social contexts (Davidson et al., 2002 p.717).

4.3 Data collection methods

The selection of data collection methods should be of primary importance because careless selection can result in worthless data (Fairclough, 1977; Veal, 2006). Some studies have stated that the selection of a research method depends on its appropriateness and effectiveness to achieve the aims of the research problem (Fairclough, 1977; Oppenheim, 1992; Bryman, 2008). Based on the problem of this study, examination of documents and qualitative interviewing are appropriate data collection methods.

There is still great scope for extending the use of the documentary method in social research as it has been underutilised (Bryman, 2008; Mason, 2002; Mogalakwe, 2006). (Exceptions are studies such as Kapsis (1989), Forster (1994) and Abraham (1994).) Consequently, apart from the appropriateness of this method to tackle the research question, it is also to bridge the gap of marginalising the method. Qualitative interviewing was also one appropriate method that had the potential to address issues in a more detailed manner. Therefore, both methods are discussed sequentially below.

4.3.1 Documentary research

Documents were analysed to answer the research question posed. Documents are meaningful parts of the social world in themselves, as we can read or trace aspects of the social world through them (Mason, 2002; Bryman, 2008; Bryman, 2012). They do count as evidence (Mason, 2002). Policy documents on the Green Deal from the government, third-sector organisations, and companies were the main sources of documents for documentary analysis.

Documents can be obtained from a wide range of sources, the appropriateness of which depends upon the research question (Dew, 2005). The study examined 17 substantial documents. Eight of these documents were from the government sector. Five of them came from third-sector organisations, and four of them were from companies. The study employed purposive sampling, as the researcher relied on his judgement to select documents that met the purpose of the study (Bryman, 2008 p.169). This made it possible for relevant documents to be selected. See Appendix 3 for these documents and sources that I used for documentary

Chapter 4

analysis. All these documents were readily available, and easy to access (Dew, 2005; Mason; 2002).

The ECCC is appointed by the House of Commons to examine government policies (ECCC, 2012; ECCC, 2013a; ECCC, 2013b; ECCC, 2013c) and legal proposals. This committee explicitly invited people from different sectors and with different positions to make public statements about energy efficiency policies, including the Green Deal, to enable the committee to collect evidence. From these government documents, I investigated different interests or positions that these people represented, as well as their views on reasons for the low uptake of the Green Deal. There were often disagreements and conflicting views in these documents that were interestingly uncovered following critical analysis. Actors from companies and third-sector organisations made public statements before the ECCC, and these were documented. They also made public statements in their own documents in response to government consultations on the Green Deal. So different views from these actors, who had specific interests that were embedded in these documents, were critically analysed as well.

Scott (1990) identified four criteria for evaluating documents: authenticity, meaning, credibility, and representativeness. Authenticity here means not that these kinds of documents were faked, but that they are not authentic in term of what the actors expressed in them. Documents are considered as having meaning in the sense of being clear and comprehensible to the researcher (Bryman, 2008 p.521–522). The content of these types of documents were not accepted at face value, as it was upon critical analysis that underlying motives could become clear and understandable. In relation to whether these documents could be considered representative, there was the possibility that these documents might not be representative of policy documents (Bryman, 2008 p. 522).

Finally, in terms of credibility, these documents had limited credibility, as actors in them presented their strategic interests, and it was not clear whether they presented their personal opinions or spoke for the organisations they represented. For example, in the case of government documents, they might have been written with the purpose of convincing the public or voters and/or raising the government's profile, and so they might not be entirely credible. Likewise, responses from companies and third-sector organisations might not be factual as their responses might reflect what they think their constituencies or those they

represent may want to hear and not their true feelings, i.e. they are strategic communicators. In line with this argument, Bryman observed that documents are written in order to convey an impression, that will be favourable to the authors, those whom they represent, and those they address (Bryman, 2008 p.527). Nevertheless, these kinds of documents could be very interesting because of the biases they might reveal (Bryman, 2008 p.521–522).

Forster (1994) provided a strategy in addressing the credibility criteria suggested by Scott. The strategy was to interview the authors of the documents under examination about what they had written. With this strategy, the accuracy of the documents could be validated by the individuals who had produced them (Forster, 1994 p.155). But this plan was not always possible, and could be time consuming if researchers were to chase numerous authors to validate the credibility of what they have said or written. So credibility remained an issue with these documents.

4.3.2 Qualitative interviews

The study complemented documentary analysis with background interview surveys and more qualitative semi-structured interviews (carried out from 15 October – 8 December 2014) to get a more detailed, and possibly more authentic, picture of reasons for low uptake of the Green Deal. Semi-structured in-depth interviews are the most widely used interviewing format for qualitative research (DiCicco-Bloom and Crabtree, 2006; Longhurst, 2009). One reason is that it allows the researcher to design the interviews to have a flexible structure. The flexible nature of semi-structured interviewing creates an opportunity for interviewers to depart significantly from any guide that is being used; they can ask new questions that follow up interviewees' replies and can vary the order of questions (Bryman, 2008). The open and discursive nature of semi-structured interviews permits an iterative process of refinement, whereby lines of thought identified by earlier interviewees could be taken up and presented to later interviewees (Beardworth and Keil, 1992 p.261–2).

The research question required taking cues from ongoing dialogue with interviewees about what to ask them next, and this cannot be anticipated in advance, in a highly organic way (Mason, 2002). Given this, qualitative interviewing had a significant role to play in addressing the research question. Conversely, none of these flexibilities could be achieved with

Chapter 4

quantitative interviewing, because doing any of these would compromise the standardisation of the interview process, and hence the reliability and validity of the measurement (Bryman, 2008).

Qualitative interviewing contains open questions that have the advantage of giving respondents an opportunity to answer questions in their own terms or words without the interviewer forcing any answers on them, thus capturing respondents' views in more detail (Bryman, 2008). This is not true for quantitative, standardised interviews. Additionally, in qualitative interviewing, the interviewee may be interviewed on more than one—and sometimes even several—occasions, whereas in structured interviewing, unless the research employs longitudinal design, the person will only be interviewed once (Bryman, 2008). Thus the relevance of follow-up is completely lost.

I employed a semi-structured interview because it is helpful for attempting to understand complex behaviours, experiences, and opinions of people (Barriball, 1994; Davidson et al., 2002; Longhurst, 2009). Another logic is that semi-structured interviewing allows both researchers and interviewees to develop unexpected themes (Mason, 2002) needed for comparison and better understanding of inequality of uptake of the Green Deal. In order to achieve depth and roundedness of data on the research question, we need people's arguments, explanations, situated or contextual accounts or knowledge and experiences, rather than the kind of broad surveys of surface patterns which, for example, questionnaires might provide (Mason, 2002). To this end, qualitative interviewing is appropriate since it allows the relevant contexts to be brought into focus so that situated knowledge and other elements can be produced. In other words, it allows the interview itself to be structured in a manner to provide the situational and contextual knowledge of participants as fully as possible, to adequately address the research question. This is because qualitative interviewing is seen as involving in the construction (generation) or reconstruction of knowledge more than the excavation (collection) of it (Mason, 2002).

Challenges associated with the in-depth interview method included cost, time, and limited access to research participants (Denzin and Lincoln, 2005; Gubrium and Holstein, 2002; Patton, 2002; Strauss and Corbin, 1998; Taylor and Bogdan, 1998). Overall, however, its advantages outweigh its disadvantages, and even if provision of rich data was the only merit

that we could point to about this method, as against structured interviewing, we would still have a range of qualitative researchers who would find it more appropriate to use based on the nature of their research questions.

4.4 Justification for combining documentary research with qualitative interview

Triangulation entails using a variety of methods to collect data as opposed to relying on one single form of evidence as the basis for findings (Longhurst, 2009). Combining two methods may provide different findings or complementary information (Hammersley, 1996). There is the possibility that the findings of one method could be used to elaborate and expand upon the findings of another (Creswell, 2003). This study will employ documentary research in tandem with interviewing.

All these documents are publicly made statements, and these writers or communicators can be easily identified by their names and positions. Thus, their views tend to be biased. Conversely, interviews are not publicly made statements. Participants are guaranteed that their names and responses will be anonymised in all outputs including oral presentations, correspondence, conversations, and research publications. So they may have greater opportunity to express their true views about the problem under investigation compared to views the need to be expressed and made public. This provides strong justification for using documentary research and interviews.

There is a range of studies that have suggested that documents can be cannot be treated as firm evidence of what they report regardless of their official nature (Bryman, 2008; Atkinson and Coffey, 2004; Mason, 2002; Abraham, 1994; Forster, 1994). Actors in these documents may produce inconsistent or conflicting views (Abraham, 1994; Forster, 1994), or express via the documents certain perspectives that reflect their positions (Bryman, 2008 p. 522). So documents should be interrogated and examined in context of other sources of data (Bryman, 2008), such as interviews (Mason, 2002 p. 108). The use of different methods in the same study can overcome the potential bias and sterility of single-method approaches (Hussey and Hussey, 1997).

Moreover, qualitative interviews might help to find reasons for low uptake of the Green Deal that have not yet been mentioned in the public debates, because public debates do not always represent the true views of the actors but rather those of the people they represent. The reason for doing interviews is therefore not only to check what I find in the interviews, but also to uncover new reasons, and especially for more detailed comparison between different types of landlord that have not been much explored in the source documents. Triangulation makes it possible to address the research question in a more holistic manner, to gain a deeper understanding (Higgs and Titchen, 1995).

It is worth noting that semi-structured in-depth interviews tend to be time consuming. Formulating a schedule of questions, recruiting participants, organising times and locations in which to conduct interviews, and transcribing and analysing interviews all add up to many hours of work (Longhurst, 2009). Comparatively, in documentary research (with the exception of examining documents in detail), there may be no requirements such as recruiting participants and transcribing data, so documentary research may be less time consuming. Gibbs (2007) confirmed that the transcribing of data alone takes between four and six times as long as it takes to collect the data. So secondary analysis of data has the advantage of allowing researchers more time to spend on the analysis and interpretation of new data (Bryman, 2008) that they may collect via interviews.

4.5 Pilot interviews

According to Bryman (2008), it is always desirable, if at all possible, to conduct a pilot interview before administering an interview guide to your sample. Based on this recommendation, pilot interviews (see Appendix 4 for pilot interview schedule) were carried out on nine accredited Green Deal providers, using mainly semi-structured face-to-face interviews. Pilot interviews were meant to gather background information on the Green Deal and also to develop questions around the topic for landlords, tenants and owner-occupiers. Pilot participants were recruited through “web sniffing” followed by the “snowball” sampling method. First, the researcher visited the website of “Gemserv”, a company that worked on behalf of the UK government to provide certification for Green Deal providers, and retrieved

contacts' details including the emails, telephone numbers and postcodes of energy companies and Green Deal organisations.

Second, in an attempt to establish an initial relationship with these companies, I called and introduced myself and the study to these companies. Some companies showed interest in the study, so I sent an official email letter containing my contact details—telephone number, email address and a link to a website: www.energy.soton.ac.uk/gd, created for this purpose—to enable potential participants to gain access to my contact details and an overview of the study. These companies were asked to pass the letter on to potential participants who may be interested to take part in the study, so that they could contact me via email and telephone for face-to-face interviews.

After two to four follow-up calls to recipient organisations, some organisations passed the email on to some Green Deal providers who contacted me for face-to-face interviews. Just like the actual interviews, consent forms and participant information sheets—to inform prospective interviewees about all the relevant information they may need to know about the study—were given to participants to read and sign before the interview began. Data collected from face-to-face interviews were found to be more detailed than those gained from email interviews, reinforcing my decision to use face-to-face semi-structured interviews for landlords, tenants and owner-occupiers.

4.6 Recruitment of landlords, tenants and owner occupiers

Semi-structured interviews and background surveys were conducted with landlords, tenants and owner-occupiers (See Appendix 5, under 5L, 5T, 5O and Appendix 6, under 6L, 6T, 6O, for the interview schedules and survey guides respectively). Participants were eligible to take part in the study if they had not yet taken part in the Green Deal. The participants were recruited to take part in the research by leafleting various areas, mainly in Southampton, and by using the “snowball” sampling method. With the “snowball” approach to sampling, I made initial contact with a small group of people who were relevant to the research topic, and then used them to establish contacts with others (Bryman, 2008; Longhurst, 2009). “Snowball” sampling is a non-representative form of sampling, but the study ensured to get a good coverage of different landlords, tenants and owner-occupiers in order to capture different

Chapter 4

views on why uptake of the Green Deal was lower in the privately rented sector than the owner-occupier sector.

With the approach of “snowball” sampling in mind, and as a student of the University of Southampton, I had a personal relationship with student accommodation officers. I built on this relationship by going to their office and officially introducing myself to them, and verbally asking for their assistance in the recruitment of private landlords. I went ahead to email an official letter to support my request. I attached to this official letter a recruitment letter which gave an overview and eligibility criteria of the study, and contained my contact details, and gave it to the Southampton student accommodation officers. I asked them to forward the recruitment letter to private landlords who were part of the Southampton Accreditation Scheme for Student Housing (SASSH) and wished to take part in the study, to contact me either via email or telephone for face-to-face interviews. Landlords who received these recruitment letters were asked to send them on to other landlords they knew to contact me. This approach, facilitated by SASSH, provided me with ten landlords. I also gave freepost postcards with my contact details to these ten landlords I initially interviewed, to pass on to any private landlords they knew, and this plan added three more landlords. This strategy was relatively effective. (See Appendix 7, 8 and 9 for the copies of the request letter, the recruitment letter and the postcard respectively).

Again, to recruit tenants, I asked Southampton’s student accommodation officers to provide me with all the addresses of homes rented out by private landlords, to enable me to go to those homes to put postcards in the letterboxes for tenants living in them: leafleting. Whilst I was unable to get hold of the list, as a student of the University of Southampton, I physically distributed some postcards to PhD student tenants and put some of these postcards in the letterboxes of properties in some areas of Southampton such as Portswood and Shirley, and on roads, such as Broadlands Road and London Road which are mainly populated by student rented accommodations. I used some of these postcards to recruit tenants outside Southampton. These strategies also yielded some good results. I also accessed some properties advertised under SASSH on their website for student tenants. Likewise, I also looked at properties to rent and those just rented out on “Rightmove”, mainly in Southampton, and put in the letterboxes of these properties some postcards for both student tenants and young professional tenants.

Another option that was used to recruit study participants was that I searched and asked for seminars or meetings of landlords, tenants and owner-occupiers, where I could attend to distribute postcards at the meeting, or at the entrance where the meeting was strictly by invitation. It was through this strategy that I came into contact with Highfield Residents' Association, which granted me the opportunity to attend their seminar and solicit participants after a short presentation on the Green Deal. This strategy gave me four owner-occupiers. Properties for sale on "Rightmove" were accessed to enable me put in those properties recruitment postcards for owner-occupiers. The nature of some properties gave me a clue as to whether they were owned or rented. For example, detached, semi-detached, bungalows and relatively newer houses are often owned, and this was another strategy for recruiting owners mainly in the Southampton area of Highfield.

Finally, estate agents found it very difficult to give out the contact details of landlords, tenants and owner-occupiers. I visited some estate and letting agents such as Romans, Bridges, Vibes, Homelife, and Fosters, to mention but a few, and pleaded with them to help me recruit my study participants, and they agreed to help. I met these agents again on the same issue and to renew my relationship with them. After this, I electronically mailed an official letter requesting them to assist me in recruiting landlords, tenants and owner-occupiers. I attached to this official letter a recruitment letter, and asked the agents to kindly forward it to private landlords, tenants and owner-occupiers. I expected participants who may have received the recruitment letter to contact me and also pass it on to other interested participants they knew to contact me. I did not receive any response from any participant to suggest that this approach was helpful. Either the agents I contacted did not forward the recruitment letters as promised, or potential participants did not like this strategy at all.

In total, the study was able to recruit thirteen landlords, who were made up of student and young professional landlords, thirteen tenants, and thirteen owner-occupiers, even though I distributed about 500 postcards in total. I labelled landlords as "L", tenants as "T", and owners as "O" when I provided quotes in my findings chapters. The next section talks briefly about some of the characteristics of the study participants.

Table 3: Source of documents and number of documents examined, and number of participants interviewed.

| Source of documents, number of documents examined, and number of participants interviewed | | | | |
|--|---|--|--|---|
| Source of documents | Number of documents from each source | Participants for background surveys | Participants for semi-structured interviews | Number of participants for both interviews |
| Government sector documents | 8 | Landlords | Landlords | 13 |
| Third sector documents | 5 | Tenants | Tenants | 13 |
| Company sector documents | 4 | Owners | Owners | 13 |
| Total | 17 | | | 39 |

4.7 Other background characteristics of the study participants

4.7.1 The age of the property

The background survey findings show that the privately rented sector contains older properties than the owner occupier sector. In my study, most of the privately rented properties, especially those that were converted flats and whole terraced houses, belonged to the age band that was built in 1919–1944. In comparison, most properties in the owner-occupier sector, which are mainly whole detached houses and whole semi-detached houses, were built post-1945. Analysis of the background survey revealed that student landlords' properties are older and less efficient than those of young professional landlords.

4.7.2 The duration of landlordship

The results from the background survey showed that student landlords have been renting for more years than young professional landlords. This result reflects the previous finding that some 41% of properties owned by longer-term landlords were built before 1919, compared with just over a quarter (27%) of properties owned by new landlords (DCLG, 2011b).

4.7.3 Gender of respondents

The background survey finding from my interviews shows that the privately rented sector contains more males than the owner-occupier sector. This result implied that gender is a barrier to energy efficiency adoption (Pelenur and Cruickshank, 2012a) and that men are less environmentally concerned than women (Schahn and Holzer, 1990; Mohai, 1992; Stern et al., 1993; Stern et al., 1995; Hunter et al., 2004), and disagrees with the findings that men are more concerned about the environment than women (Arbuthnot and Lingg, 1975; Arcury and Christianson, 1990; Shen and Saijo, 2008).

4.7.4 Number of adults in property

The background survey finding shows that renters are more likely to have fewer adults in their properties than owner-occupiers. Renters in the study have an average number of 2.1 adults in their properties, compared to an average number of 2.4 adults in owners' homes. This finding is similar to the finding that the mean number of persons per household in the owner-occupier sector is 2.4, compared to 2.3 in the privately rented sector (DCLG, 2012). This finding implies that small family sizes tend to have lower adoption levels of energy saving improvements (Tovar, 2012; Mills and Schleich, 2012; Ameli and Brandt, 2015) than homeowners with large families (Sardianou, 2007).

4.1 Ethics consideration

In line with international standards, the University of Southampton has set up an ethics committee within the Faculty of Social Sciences to deal with all ethics applications from researchers. They ensure that studies are conducted in line with the best ethical practices

Chapter 4

produced by several professional associations such as British Sociological Association, the American Sociological Association and the Social Research Association. According to Bryman (2012), ethical issues cannot be ignored, as they relate directly to the integrity of a piece of research and of the disciplines that are involved.

As a result, I submitted an ethics application, risk assessment forms and other prerequisite documents such as consent forms, (Appendix 10), participants' information sheets, (Appendix 11) and interview guides, and so on, to the Ethics Committee for approval before the data collection commenced. These processes were completed for semi-structured interviews with Green Deal providers which served as my pilot interviews. In relation to this, an application for ethics approval was submitted on 28 June 2012 and, following vigorous reviews, the study was given clearance on 28 September 2012. (See Appendix 12 for ethical approval confirmation and review processes). I went through another lengthy process to gain approval on 2 October 2014 for semi-structured interviews with landlords, tenants and owner-occupiers (See Appendix 13 for ethical approval confirmation and review processes).

4.2 Data analysis procedure

The study followed a thematic analysis approach. It conducted a comprehensive literature review and identified three main themes: financial motives, decision-making power and awareness. These themes were coded as top-down codes. They were found to be relevant for describing low uptake of energy efficiency measures. In explanation, thematic analysis is a search for themes that emerge from literature as being important to the description of the phenomenon (Gibbs, 2007; Dew, 2005; Ritchie et al., 2003; Boyatzis, 1998; Daly, Kellehear and Gliksman, 1997), through “careful reading and re-reading of the data” (Rice and Ezzy, 1999 p.258). These identified themes are then analysed and reported within the data (Braun and Clarke, 2006). Thematic analysis provides a method for systematic detailed analysis of qualitative data (Braun and Clarke, 2006; Pelenur and Cruickshank, 2012). It can be a useful tool to summarise key features of a large dataset, highlight similarities and differences across the dataset, generate unanticipated insights, and it can also be useful for producing qualitative analysis suited to informing policy development (Braun and Clarke, 2006).

I used these three principal themes to analyse the data from the survey, documentary research and the interviews. The analysis developed sub-themes within these broader themes. This was in line with the recommendation that identified themes are then used to develop sub-themes (Fereday and Muir-Cochrane, 2008). Sub-themes that emerged from the documents and interviews, that had been covered or mentioned by these three main reasons but not already coded, were added to these themes respectively as bottom-up codes. For example, sub-themes such as the issues of short-termism and loan accessibility were added to the financial theme. The broader decision-making theme had a sub-theme added in relation to the issue of difficulty in gaining consent. The problems of awareness and understanding were added to the main theme of awareness. My analysis was interested in discovering any other reasons that had not yet been discovered within these three main reasons. For example, the issue relating to capital gain verses rental income was a new part of the financial theme.

Moreover, my analysis was very interested in finding out the relative relevance of each of these three main themes for understanding differences in uptake of the Green Deal between the different sectors. This action was in line with the view that thematic analysis may also account for the prominence given to some themes over others when writing up the fruit of qualitative data analysis (Bryman, 2008). For various reasons provided within the literature review, it was assumed that awareness may be less relevant to low uptake in the privately rented sector than in the owner-occupier sector, and in the student rented market than in the young professional rented market. Decision-making power may be more important for understanding lower uptake in the privately rented sector than the owner-occupier sector, and the student rented market than the young professional rented market. Finally, it was expected that financial reasons may be more relevant barriers for understanding the difference in uptake in the privately rented sector than the owner-occupier sector, and in the student rented market than the young professional rented market.

The relative importance of these reasons was not directly obtained from participants, but found by interpreting the text or what these participants said in the interviews based on some strategies. For example, the order in which interviewees talked about these issues was an important indication of what was more important to them, as people often start talking about what is more important to them first. Another factor was how people responded to questions they were asked. For example, if they hesitated too much to answer or struggled to answer, that might indicate they were not quite sure about what they said, while if they immediately

Chapter 4

talked about the topic then it showed that they had already thought about it. In short, some non-verbal clues were important pointers in the analysis. Some words such as “especially”, “particularly”, and “importantly” were important indicators that one thing was more important to them than another. How often they stressed or mentioned a word was also one of the indications.

Braun and Clarke (2006) noted that the process of thematic analysis is all too often left unspoken. Most of the studies in this area, such as Nair, Gustavsson and Mahapatra (2010) and Scott (1997), do not describe in detail how they analyse their data. An exception is Pelenur and Cruickshank (2012). If we do not know how people went about analysing their data, it is difficult to evaluate their research and to compare or synthesise it with other studies on that topic. It can prevent other researchers from doing related projects in the future (Attride-Stirling, 2001). From this point of view, this study provided a clear method for its data analysis including both qualitative interviews and documentary data.

4.3 Concluding remarks

I have highlighted the aim of the study. I have presented the assumptions that underpin various research designs, the associated two main approaches, and my own beliefs. Data collection methods and their justification have also been presented. Pilot interviews, recruitment procedures, some characteristics of the participants, ethical issues, and procedure for data analysis have all been thoroughly discussed. The next chapter will present and discuss findings on the financial concepts.

Chapter 5: Presentation and discussion of findings on financial reasons

5.1 Introduction

The findings presented in this chapter are from interviews, surveys and documentary research. Before the first half of this chapter, there will be a brief summary of the assumptions upon which my findings were based. The first half of this chapter then presents findings on the financial reasons why people in the privately rented sector are less likely to invest in energy efficiency provided by the Green Deal than owners in the owner-occupier sector, and the financial reasons why student landlords are less likely to take up energy efficiency measures than young professional landlords. Financial reasons appeared to be the pivot around which all other reasons for low uptake of the Green Deal revolved, and so uncovering them will enable policy makers to replace the policy with a new one which will be more attractive to people in the privately rented sector in particular. The second section of this chapter discusses the results in the same way described above.

In the literature review, and at the end of it, I formulated several conjectures. Several of them related to different reasons for lower uptake of the Green Deal in the owner-occupier sector than the privately rented sector:

- On average, tenants are usually on lower incomes than homeowners.
- Landlords and tenants will face higher interest rates than homeowners.
- Rented properties will not be attractive to Green Deal lenders compared to owned properties.

When it comes to the different reasons that may explain lower uptake of the Green Deal in the student market compared to the young professional market:

- Student tenants are often on lower incomes than young professional tenants.

Chapter 5

- Properties in the student rented market will be rejected as collateral security by the Green Deal providers or they may be accepted for loans at higher interest rates than properties in the young professional rented market.
- Student landlords will focus on rental income, while the young professional landlords will focus on capital gain.

Within the literature, I discussed the heated debate between neoclassical economics and behavioural economics, and have shown that tenants and student landlords in particular are more interested in short-run money savings or have limited patience for long-run benefits from investments. Overall, my expectations are based on the premise that consumers are hyperbolic discounters (Epper et al., 2011; Halevy, 2008; Frederick et al., 2004; Laibson, 2003; Frederick et al., 2002; Harris and Laibson, 2001; Gintis, 2000; Holcomb and Nelson, 1992; Loewenstein and Prelec, 1992; Ainslie, 1992; Laibson, 1997; Thaler, 1981). This is related to prospect theory's assumption that consumers value losses more than gains (Kahneman and Tversky, 1979; Persson and Westermark, 2013). My expectations deviate from the assumption under rational choice theory that people act only in their self-interest, but meet the assumption that people are both self-interested and altruistic in their investment decisions (Andreoni, 1990; Rabin, 2002; Jackson, 2005; Gowdy, 2008; Collier et al., 2010; Pollitt and Shaorshadze, 2011). This shares the views of value theories, such as Schwartz's (1994) and Stern's (1999, 2000) value belief norm theory.

Finally, my assumptions draw on the argument that people are very responsive to financial incentives (Peters, 1999) and, for that reason, financial incentives may support behaviour change (Geller et al., 1982; Derbaix, 1983; Cameron, 1985; Stern et al., 1986; Carpenter and Chester, 1988; Bradbrook, 1991; Long, 1993; Hassett and Metcalf, 1995; Williams and Poyer, 1996; Stern, 1999; Geller, 2002; Scanlon and Kochan, 2009; Nair et al., 2010; Young et al., 2010; BioRegional, 2011; Schultz, 2013; Sweeney et al., 2013; Frederiks et al., 2015).

To ensure that the empirical results from my study are easy to navigate, I will present them in order of (1) the financial design of the Green Deal with a subtheme of the reinforcement of the Green Deal for rental market's split; (2) landlords' motivations and expectations; and (3) energy efficiency improvements.

5.2 Presentation of findings

5.2.1 The financial design of the Green Deal

Overall, financial reasons are very important for explaining why uptake of the Green Deal was lower in the privately rented sector than the owner-occupier sector. I found that, in general, customers found the Green Deal finance too expensive; but people in the privately rented sector may have found it more difficult than owner-occupiers to get money under the scheme.

Generally, the high interest rate associated with the Green Deal loan was one of the principal barriers to uptake of the Green Deal. An organisation called Which?, representing consumers in their written submission to ECCC, expressed this concerns by stating that: *“the high rates of interest that have been mooted, with DECC’s June 2012 impact assessment estimating a range of 6.5% to 9.5%, may not be attractive to consumers.”* (Written evidence submitted to ECCC by Whch? (ECCC, 2013a p.78))

To show how significant the interest rate of the Green Deal was to the public, the written submission to the committee debate by Scottish and Southern Electric (SSE) compared the interest rate of the Green Deal with a similar scheme in Germany. It reported that:

“A more publicised barrier to uptake is the perceived high cost of Green Deal finance from the Green Deal finance company—now purported to be 8%—adding a significant cost of the lifetime of any Green Deal. As has been noted by a number of media commentators, this does not compare favourably to similar markets such as Germany, which offers a similar scheme at near 1%.”
(Written evidence submitted by SSE (ECCC, 2013c.p28))

In my interviews, a tenant expressed concerns that poor tenants may find it more difficult to access the Green Deal than rich owners. He made clear that this lack of access to capital was a more relevant problem to tenants in particular by using the phrase *“poor people who need it most”*:

“I am pretty sure I hardly qualify for the Green Deal because as a matter of fact, I am poor, I have low paid job and I’m just a bank worker, they call me when they need me, so will be considered as high risk borrower. The rich out there is more likely to get the scheme but he is not that interested. As his bank will happily throw money at him at cheaper rate of interest because he is highly paid, he has small mortgage with low loan to value [positive equity] and therefore considered low risk borrower.

Chapter 5

You will not be sitting here to ask why take up is low if all poor people who need it most can have it. It targets wrongly, true or false?" (T13)

The seriousness of the inability to obtain Green Deal finance as a barrier in particular to the privately rented sector is highlighted by ARLA:

"Whilst 9,976 Green Deal assessments were undertaken in the private rented sector by 30 September 2013, no Green Deal plans have been signed and no measures installed because of the inability to obtain Green Deal finance." Therefore, at this point in time, 100% of the private rented sector drops out at the Green Deal Assessment stage." (ARLA, 2014 p.4. (ECCC, 2014c)).

Unlike owners who were solely responsible for signing the Green Deal plan and at the same time paid for the loan, the landlord may have signed the Green Deal plan for the poor tenant to pay the loan. Green Deal providers have found this to be an issue, so have ceased offering loan to landlords. One landlord interviewee explained that:

"If you own a home and you want to use the scheme, Green Deal provider finds it easier to put you down as a debtor but if you are landlord and you want to use the scheme with your tenant then they have a big issue with you because they don't know whether to put you or the tenant as debtor. So, to be on the safe side, they just simple say no to you." (L12)

Financial factors are also relevant to understanding why uptake of the Green Deal is lower in the student rented sector than the young professional rented sector. This study found that student landlords were less able to access the Green Deal than young professional landlords. This was because properties in the student rented market were likely to be rejected as collateral security by Green Deal providers, or they were likely to be accepted for loans at higher interest rates than properties in the young professional rented market. One interviewee landlord explained why this is so in more detail:

"Student landlords represent substantial part of the total rental market but, admittedly, we often have poor quality standard properties compared to professional landlords whose properties are often high quality standards. Assuming I want to apply the Green Deal to my properties, it may be true that the Green Deal providers may expect to secure their loans with high quality standard properties, which may go in favour of young professional landlords compared to student landlords. So properties for student landlords that are in bad state which need improvement may not be accepted at all for Green Deal finance, or accepted for unfavourable rate of interest." (L12)

I have found that the hefty early repayment charge on the Green Deal loan is more likely to inhibit landlords from taking up the scheme as the exit fee on one or several properties may form significant part of their rental income compared to owners who often pay exit fee on one property. The evidence below supports this finding.

Depending on the lifetime of the Green Deal loan and when one decides to pay it off, one can pay a huge exit fee to lenders. Thus, hefty early repayment fees have been identified as one barrier to uptake of the Green Deal. One organisation in their written submission to ECCC gave evidence that uptake of the Green Deal could be low for this reason. It stated that, “*Early repayment fees could be substantial for Green Deal plans of 15 years or more*” (Which? written evidence (ECCC, 2013a p.80))

The quotation below suggests, that unlike owners who may often want to improve the property they live in and so may not see early repayment charges as a barrier, some landlords with several properties may face hefty early repayment charges under the Green Deal. One landlord narrated his experience as:

“Just last year—January—I applied for the Green Deal loan, but the main reason why I did not sign the Green Deal plan was the fact that I noticed that if I am to take the loan for, say, 15 years or more and I want to pay it off in the next five years or so, then the lender can charge me 10 years’ total interest that they would have gained from me if I had not redeemed the loan 10 years early. This is too much for early redemption fee if landlords decide to improve all his properties. That is why I call the Green Deal a daylight robbery deal for landlords with more properties especially.” (L13)

Under the Green Deal, households may undergo credit scoring before taking up the scheme for improvements. Generally, low income households have low credit ratings and could prevent them from accessing the Green Deal. However, I found tenants are less likely to pass credit rating checks than homeowners as tenants are usually on lower incomes than homeowners. Consequently, they were less likely to get Green Deal finance or may have accessed it at a very high interest rate compared to owners.

So, poor credit scoring affecting low income households, and expensive interest rate may be some of the factors that could have brought about low uptake of the Green Deal. The National Housing Federation expressed its view along the same lines:

“The Green Deal Finance Company has recently revealed that there will need to be individual credit checks on households taking out Green Deal finance... it will be very important for DECC to track whether finance is available to low income households and at what cost, the extent to which the cost varies according to household income and whether particular types of households are being disproportionately excluded from access to Green Deal finance. The interaction of Green Deal finance with these groups needs to be closely tracked to ensure it is not providing another significant barrier to access.” (ECCC, 2013c p.13–14).

Landlords’ representative submissions to the ECCC indicated that credit rating is a more important barrier for tenants and landlords in particular:

“Whilst we have continuously raised this issue during consultations regarding the Green Deal, it has only just become clear that normal financial assessments will apply in accordance with Office of Fair Trading requirements. ... DECC and the OFT have made it clear that this is not enough and an individual credit assessment is going to be needed. This could bear down particularly in the privately rented sector which increasingly is having to house more and less well-off people in the community... Indeed, we are worried that this may prove to be a significant problem for uptake of Green Deal in domestic PRS.” (Written evidence submitted to ECCC by the Residential Landlords Association (ECCC, 2013a p.83))

Poor credit rating goes with high interest rates on Green Deal finance or a complete inability to get finance at all. This is bad news, and more relevant a barrier for the poor tenants than owners, as one tenant made it clear by using words like “there is no way” they can get money under the scheme and drew our attention to the fact that:

“Think about the poor tenants living in poorly insulated home, already in debts and have track record of lots of defaults. There is no way such people can access the Green Deal even if they desperately want to do it. I suspect most owners may have better ratings and may find it easier to have a lower interest rate, but they may not really need the loan, or even find it very offensive having to be credit rated” (T13).

I found that tenants prefer shorter payback times compared to owners, and so are less likely to have taken up the Green Deal. Tenants are also less certain about their income than owners.

Examining the first and second statements from owners and tenants respectively revealed contrasting phrases like “quite a long time to pay that back”, compared to “I can’t take on debt for God knows when”, suggesting that poor tenants tend to prefer a shorter payback period or view longer payback period as a more important barrier for Green Deal uptake than owners. These statements are provided below:

“Thinking of the Green Deal, I could possibly have more efficient boiler but again replacing boiler is quite expensive so it takes quite a long time to pay that back so I will probably wait until boiler runs its course. It is quite old but there is still plenty of life left in that boiler, and I don’t want to throw it out when it’s still working one. I’m a pensioner, you know.” (O3)

“I can’t take on debt for God knows when. I’m not certain about my income. I can end up paying more than promised under the scheme.” (T12)

I found that student landlords tend to prefer a shorter payback time than young professional landlords. This is because student landlords think that longer payback times will reduce their income, but young professional landlords consider that they can have shorter payback times depending on what type of measures they intend to take up.

One student landlord demonstrated how relevant and serious the long payback times may have been for Green Deal uptake by showing its impact on his income. He remarked that:

“I do not want a [Green Deal] loan to hang on my neck up to 25 years or so... Business may not always be great. The longer the years, the higher the interest rate and higher the repayment, and this has to come from my income, for what?” (L7)

Conversely, some young professional landlords at least consider that they can have shorter payback periods, depending on which measures they plan to take up. This suggests that they may see longer payback times as a less important issue than student landlords do. Perhaps the difference becomes clearer when we see that one young professional gave a representative comment that, “Long payback is an issue with these schemes [including the Green Deal], but depending on what measure you’re using the scheme for, it might worth a try.” (L11)

When you take up the Green Deal, the Green Deal loan will remain on the property and not the individual. As long as the loan is not paid off, it may have to pass on to future renters or buyers—when a buyer comes to rent out the flat to a new tenant, or sells it, depending on their status as landlord or owner-occupier.

I found that, whereas the Green Deal charge attached to the property may reduce its sale value for both landlords and owners when they come to sell the property, the charge might be more of a barrier to landlords, as it might not only reduce their sale value but, again, deter future tenants and reduce their incomes. The evidence below supports this finding.

A Green Deal charge attached to the property but not the individual is unattractive to customers. Consumer Focus, which represented consumers in the committee debate, had some evidence to show. They reported that:

“Current consumer research suggests consumers are likely to ask for any Green Deal charge to be cleared or will look for a property without the charge, undermining the unique selling point of Green Deal finance, the charge being attached to the property. If this remains the case, paying off the charge could be an unexpected cost for the occupier and uptake of Green Deal finance will be reduced.”
(Consumer Focus) (ECCC, 2013a p.91).

The Residential Landlords Association in their written submission reported that, *“there is the likelihood that if the landlord comes to sell the property Green Deal will have to be repaid in full as the buyer would discount the price to reflect the loan repayments under the GD plan.”* (Residential Landlords Association, 2014 p.3)

Moreover, one landlord stated that:

“As landlord I won’t do it or allow my tenants to do it because I see that as something that could put off a new tenant if I lose my current tenants. I think it might put off a new tenant coming in, if they were taking on what appears to be a debt. In fact, it is a debt in legal terms—surely it must be a debt, whether it is on the property or on the person paying it. I want to know the legalities of that, is it on the property or is it on individual? Correct, it is on the property, but I don’t think it will feel that way to the tenants. I think you have to really do a lot of work on this scheme because then the tenant will be taking on a debt but the landlord will be liable for it, presumably.” (L1)

One interviewee landlord made clear what the difference was between landlords and owners in terms of the Green Deal charge. They suggested that the charge may have been a major issue for landlords in particular, as, unlike owners who may only face a reduction in sale value of their properties when they come to sell, landlords may lose tenants and eventual rental income in the conduct of their business in addition to a reduction in sale value when they decided to sell. He explained that:

“I think it will affect the saleability of the property, as prospective buyers may choose to buy a property without the Green Deal charge, or at best buy from me and ask me to remove the Green Deal outstanding loan from the asking price if I really want to sell, so be it. Also, tenants may be deterred by the charge and perhaps this is what makes this problem serve for landlords than owners because the charge represents two strong blows for landlords. You lose money, one, at the time of renting and two, at the time of sales. It is a serious issue for our business.” (L12)

So, whereas, a Green Deal charge may drastically reduce both rental income and capital value of landlord’s property, it may only reduce the capital value of owners’ property—and that is only when they come to sell, as they do not hold properties for rental incomes or for business purposes.

Analysis suggests that student landlords are more likely to view the Green Deal charge attached to the property as a deterrent to prospective tenants than young professional landlords, as often student tenants are on lower incomes than young professional tenants.

One interviewee landlord read the profile of student tenants to show that they were poor and so they couldn’t pay the charge. He compared this profile to that of young professional tenants and concluded that taking up the Green Deal would not be a wise decision for student landlords as, among other reasons, uptake of the scheme is optional. He strongly argued that:

“If you are dealing with people like nurses, social workers, lecturers and so on who find themselves in secured jobs, maybe they rent, regardless of this sort of attachment. Students have limited income and some may not agree to rent from me if I have Green Deal charge on the property. ... if I use the scheme today, maybe tomorrow my existing tenants may decide to rent from somewhere else where there is no this sort of attachment. And again, prospective tenants will say, “You will hear from me,” and that will be it, because they managed to find themselves some properties without the charge. I’m afraid I will not risk my business.” (L12)

Chapter 5

A void period is a period of time when a landlord's property is unoccupied by tenants, and so is generating no rental income. Yet the findings indicate that, whilst owners may not pay for Green Deal charges during void periods, landlords may still be responsible for making repayments on loans during void periods. One landlord gave evidence to show that the Green Deal charge paid in void periods was a barrier to uptake. He stated that:

“Well, there is that [Green Deal charge] to consider, supposing I was interested—which I’ve made it clear that I’m not. With tenants, they could just move out, but legally they are obliged to give you a month notice or so. So yes, if the scheme was in place I would be concerned because I wouldn’t want this loan to be paid in void periods.” (L4)

Similarly, one landlord pointed out that, *“unlike owners, the benefits aren’t there... in the event of a void rental period the landlord is responsible for the repayments.” (L6)*

I found that poor tenants were more likely to risk disconnection under the Green Deal than homeowners, as tenants were less likely to be able to pay for the Green Deal charge.

Generally, some poor customers may face the risk of getting themselves into debt and disconnection even if they were able to pay their energy bills but were unable to pay the Green Deal charge. Consumer Focus in the committee debate expressed surprise by commenting that *“there are issues around debt and disconnection for people with the Green Deal plan. It is the first time where a charge, other than energy supply, has had the same status, in that a consumer can be disconnected for non-payment of a Green Deal charge.” (Peter Broad, Policy Manager, Consumer Focus (ECCC, 2013a p.63))*

Low income tenants using prepayment meters were unlikely to benefit from the Green Deal due to the fact that they may not be able to pay for the Green Deal charge, and they could be in debt, and eventually self-disconnect. These can be bitter experiences for Green Deal tenants in particular, as stated below by customer's representatives, Consumer Focus, in their written submission to the ECCC:

“We are concerned about this group [low income tenants] as they are particularly vulnerable due to their ability to self-disconnect. We are also concerned that they will not have the Green Deal charge, the benefits of measures, and the continuing importance of managing energy use adequately explained to them by landlords or salespeople.” (Consumer Focus (ECCC, 2013a p.92)).

It appears that it would hurt tenants more than owners to lose something for the sake of the Green Deal. One tenant pointed out that disconnection was a barrier, particularly to tenants on low incomes, if they still had to pay the Green Deal charge on top of the energy bills despite not getting the savings from the scheme: *“If people were not making the savings they were supposed, to and having to pay more on their energy bills than they were paying before, then disconnection is a real risk for poor tenant especially.”* (T10)

Another reason why the Green Deal was expensive is that customers may have had to pay up to £150 before having their properties assessed and home occupancy assessments carried out to enable uptake of the Green Deal. From this view, I found that assessment cost might have been more acute a barrier for tenants than owner-occupiers, as assessment cost formed a greater part of tenants’ income than owners’ income.

SSE, a UK-owned and based energy company, in their written submission to the ECCC stated that they strongly believe that assessment cost may have been a more significant barrier for low uptake of the Green Deal than awareness barriers. This is because assessment costs prevented people acting even after they became aware of the Green Deal.

They wrote that,

“an example of this consumer “drop-off” at an early stage in the process is evident once Green Deal assessment calculations are introduced. Green Deal providers are expected to charge in the region of £95–150 per assessment. SSE is concerned that even if consumers are sufficiently engaged with the Green Deal to arrange a home assessment, this financial commitment could potentially be a barrier, particularly as much of the initial promotion of Green Deal has focused on the fact that it is delivered at “no upfront cost”. SSE is concerned that the overall reputation of the Green Deal programme may be damaged by this and similar negative customer experiences.” (Written evidence submitted by SSE (ECCC, 2013c p.27))

One interviewee tenant demonstrated how relevant and substantial assessment cost was to low uptake of the scheme. He said, *“Remove assessment cost and make it free for anyone who wants to apply for it. Being the first stage of the process, I think is a big barrier that needs to be addressed.”* (T13)

The statements below from owners used phrases like, *“the assessment cost is not what actually put me off”*, and, *“let’s put aside the cost, it’s not an issue here”*. This, compared with the statement above from a tenant with phrases of command like, *“Remove assessment cost and make it free for anyone who*

Chapter 5

wants to apply for it”, implies that owners are less likely to have viewed assessment cost as a barrier to uptake than people in the privately rented sector. However, one issue for owners was that they could not trust the judgments of assessors, which may have included the recommended measures and so on. They also thought assessors may persuade them to take up the scheme against their will, as presented their statements below.

“The assessment cost is not what actually put me off, but in a way there is also a fear of the kind of you might be sold something. You know, someone might be coming round your house trying to get you to do something you might not feel comfortable with—especially, you know, people selling double glazing have a bit of reputation, and being very hard sellers. You know, you get them into your property and you can’t get rid of them. I think there is a kind of theory, in a way you feel that maybe the person coming into your property isn’t being partial and making scientific judgment; they are trying to sell you something.” (O3)

“Let’s put aside the cost, it’s not an issue here. I know my house pretty well and I know what could be done to reduce the energy consumption of the house, and also any assessor would have to show that they knew what they were talking about by going up with these ideas that I already had. Being an engineer, I sort of feel that I know quite a lot really, and probably much more than the assessor. I know this in a D rated house already, and we’ve done cavity wall insulation since that D rating so we probably down to C rating already for this property. I can’t trust all their judgments.” (O4)

I found that, in general, customers were faced with the problem of transaction cost. Nevertheless, transaction cost was more viewed as a barrier to tenants than owners, as tenants were more likely to think that the hassle of Green Deal investment was far more than the benefit, and the process of the Green Deal was more time consuming as it involved consent seeking. This is compared to owners whose transaction cost could sometimes be reduced by long-term savings, and could be relatively less time consuming if there were no consent-seeking issues.

Broadly speaking, transaction cost may include the time taken to find and wait for an appointment, the hassle of having energy efficient equipment installed, and so on. Specifically, hassle is the disruption which may include off-loading the loft for loft insulation, the need to redecorate the internal walls after internal solid wall insulation, and the possibility of changing the physical appearance of the property after external solid wall insulation. All these kinds of costs were mentioned by these actors in committee debate and in the interviews, and, combined with the actual cost of the measures, could make the measures more expensive and

directly reduce significantly the utility associated with energy efficiency improvements. In other words, these costs may not have had a direct impact on consumers' finances, but they may further reduce the little financial savings (satisfaction) that customers may gain from the Green Deal measures.

SSE, in their written submission to ECCC, considered hassle cost, as a component of transaction costs, a significant barrier to up take of the scheme. They said that:

The “hassle-factor” that consumers face when improving the energy efficiency of their properties is not a new challenge for suppliers; it has been evident since such programmes were introduced. However, it remains a challenge to the uptake of the Green Deal. (Written evidence submitted by SSE (ECCC, 2013c p.27))

Also, Citizens Advice, a representative of customers, pointed out that:

“30% of those taking part in the DECC survey who did not intend to act on their GD assessment cited practical issues as a factor preventing take up of the scheme. Among them are hassle and disruption of making improvements, changing the character/appearance of the house and the possibility of losing space” (Citizens Advice, 2014 p.4) (ECCC, 2014c).

One tenant interviewee explained why transaction cost may be more of a barrier to tenants than owner-occupiers:

“I hate to spend so much time in arranging things or off-loading and packing the loft. The disruptions under the installation of Green Deal measures may not be worth the savings, especially if you are a tenant and you plan to leave shortly after the measures are installed. Maybe owners may think the saving worth the Green Deal disruption, as they tend to live longer in their properties to enjoy the saving. That could be their compensations.” (T12)

Finally, there is a statement to suggest that tenants who require consent to use the scheme are more likely to face the barrier of transaction cost of time to seek consent from their landlords. On the other hand, it is easier for owners, who may need no permission. The statement reads:

“I think seeking consent is a bit off-putting, as the process already involved a lot of work. It's a lot of appointment, it's a lot of time on one's days off, that kind of thing, to make it happen—and if there

Chapter 5

was another party involved that one needed to get permission from, I suppose that will add a stage to that process that is already off-putting in its own right.” (O1)

It is worth noting that I did my interviews before the Green Deal was briefly replaced by the grant known as “the Green Deal home improvement fund”. Therefore, it was found that Green Deal lacks highly attractive and sustainable forms of grants, but that such grants were more relevant to people in the privately rented sector than to owners.

Without very generous financial incentives the cost of the Green Deal measures may be expensive and, as a result, customers may not be able to gain energy savings that the scheme may have promised them. The cashback scheme gives only £100, £250, and £650 respectively for loft, cavity wall, and solid wall insulations (DECC 2013e). Consequently, low take-up could be attributed to the fact that, *“the levels of cashback per measure are not of a significant value to engage and drive behavioural change.”* (Carillion, Energy Company and Green Deal provider, 2014 p.2) (ECCC, 2014c).

Given that the cashback scheme is less attractive, it appears the scheme did not actually stimulate interest in the Green Deal. It seems it was more unattractive to landlords, as could be indicated by a statement from one representative for landlords, Richard Lambert, reporting that, *“Looking at the applications we have had from landlords for our Green Deal service, I do not think cashback was a significant driver for anybody applying.”* (Richard Lambert, Chief Executive, National Landlords Association (ECCC, 2014a p.36)).

Statements below from British Gas and the Residential Landlords Association opined that the lack of other forms of incentives in addition to the cashback scheme was one problem that explained low uptake.

British Gas, energy company and Green Deal practitioner in the committee debate, stated that, *“Our experience to date suggests that unless the incentives are very generous, cashback alone is not enough to reach customers who have previously not shown any interest in the Green Deal.”* (British Gas, 2014 p.3) (ECCC, 2014c).

The Residential Landlords Association wrote to the committee debate that, *“Direct cash incentives as well as a much improved tax regime are vital if we are to achieve the required energy efficiency improvements across the PRS”* (Residential Landlords Association (GRE0012), 2014 p.9).

The Green Deal offered no long-term incentives such as stamp duty and council tax rebates, and consequently, people in the committee debate were of the view that the absence of financial long term incentives was one of the reasons why uptake of the scheme was very low: *“Those could be fiscal measures, so stamp duty differentiation depending on energy efficiency performance of a house, local council tax differentiation”* (Dr David Kennedy, Chief Executive, Committee on Climate Change, gave evidence (ECCC, 2013a p.54)).

The three statements presented below demonstrate that money is more relevant to tenants and landlords. It appears that the Green Deal failed because of its nature—pay as you save, instead of the well-known grant approach. One landlord discussed this:

“It’s hard to see a system that doesn’t involve some form of grant approach being successful on a broad basis. I think tax incentives e.g. a lower rate of VAT on insulation products or specific schemes (e.g. Landlord Energy Saving Allowance) to encourage landlords to have more energy efficient properties would be more attractive to landlords than the current Green Deal scheme.” (L11)

As long as the Green Deal measures were not free, or the scheme did not offer attractive grants to landlords, the scheme suffered low uptake as landlords wanted more attractive grants from the Green Deal. A landlord demonstrated the role of incentives for low uptake of the Green Deal:

“If it was free, if it was no cost involved in making improvement, there were grants available, when landlord bear the word grants, they think they gonna get money for nothing. In the past, I remember it was possible to get grants to do things like replace roofs and improve properties in certain areas in Southampton and there was tremendous amount of building activities in those areas ... And so people thought fantastic, I am getting something for nothing, it won’t cost me anything... if there were highly attractive grants available on the Green Deal landlords especially would have become interested simply because there is money they could have for nothing.” (L13)

Similarly, a statement that reflects the view of most of the tenants I interviewed read that: *“Pay as You Save scheme like this, is a problems for tenants on a low income. Many tenants will be happy with policy based on subsidies”.* (L 8)

Overall, financial reasons are very important for understanding why uptake of the Green Deal was lower in the privately rented sector than the owner-occupier sector. I found that generally it was unclear to customers whether the golden rule would work, but tenants were more likely

Chapter 5

to be uninterested in low or no savings, a lack of guarantee on energy savings, and long-run energy savings compared with homeowners whose decision to take up the scheme was based on long-run energy savings.

In support of this assertion, one manager of Energy Services noted in the committee debate that:

“customers may be disappointed as they break even—they may neither save money nor lose money... I could easily see customers being confused into believing that they are going to see significantly lower bills, when in reality their energy savings are just effectively funding the capital investment.” (Simon Stacey, Managing Director of Energy Services (ECCC, 2013a p.60))

Also, low income households are low energy users before retrofitting and so they need to use more energy after improvements to enable them to heat their homes to a healthy level. Thus a system based on financing energy efficiency improvements and repayment made through energy savings may not benefit them much, as they may hardly save money following some Green Deal improvements. AC talked about low income households, saying that they

“often cut back on their energy use, meaning that the magnitude of energy savings under a PAYS arrangement may not be achieved in reality. This is especially relevant if the improvements allow the household to improve their level of comfort—in which case fuel bill savings would be much less likely to exceed the repayment charge.” (ACE, 2010 p.5)

Unlike owners, tenants saw no point to taking up the Green Deal if they couldn't save money:

“If it is not my house and I am not getting the savings I will not use the scheme. Let say currently, under this worse energy performance condition, I am paying a hundred pounds for energy bills. So, now make modifications to the house, and now I don't pay hundred pounds again—let's say I pay seventy pounds now. So I'm saving thirty pounds, and the thirty pounds may be used to pay for the measures. If you look at it carefully, without the changes I was paying a hundred pounds and after doing the changes I'm still paying a hundred pounds. So why should I do it? Because it is almost like struggling to break even. With or without it, money out of my pocket is the same.” (T3)

Unlike owners, tenants showed that money savings are more relevant by often wanting to have a guaranteed savings from the Green Deal measures. For example, one tenant doubted savings under the scheme and seemed to be deterred by its lack of guarantee for savings:

“You are not guaranteed any saving under the scheme [Green Deal], very tricky. You know, you buy a car and they tell you that you will get sixty miles to a gallon and you drive it and you never get more than forty miles a gallon, you think where on earth they get these numbers from. They said that I was going to get this kind of efficiency from my car ... I am suspicious.” (T1)

One of the statements from a homeowner may suggest that they will take up the scheme as it may save them energy bills in the long run: *“Well, if you think of energy savings in the long-run, you may take up the scheme but you cannot be 100% sure if it will be enough to pay for the cost of the measures.” (O3)*

Unlike owner-occupiers, whose decision to take up the scheme may have been based on savings on their energy bills in the long run, some tenants were more interested in short-term money savings. In other words, tenants were more interested in immediate savings than owners, and it appears tenants were more impatient for energy cost savings.

Two statements from tenants show how relevant quick money saving was to them, by using impatient words such as *“now”*, *“right away”* and *“sooner than later”*:

“I do not want to operate on experimental bases. I should really know whether I’m going to get the savings. It should be something proven that I am going to get this x amount of money. If I don’t see that now, there is no way I’m going to invest in something like this that is not my house.” (T3)

“Come out with actual figures like in money terms, this is what you are going to save at the moment you are paying a hundred pounds a month for your electricity and gas. If you do this one, right away you are going to save seventy pounds. At the moment they do that, probably people will start to listen. Because I know sooner than later I will have extra 30 pounds in my pocket. But at the moment I am not the only one to say I could doubt about that.” (T1)

5.2.1.1 The reinforcement of the Green Deal for the rental market's split

Analysis indicates a new insight that Green Deal measures would not increase rental income or significantly increase capital value for landlords, and so they were less likely to take up the scheme. On the other hand, even though the Green Deal measures may not significantly increase capital value for homeowners, they may take it up to satisfy their greener conscience.

This claim is supported by the quotation which reads that:

“As a senior lecturer, I have been involved with a number of students who have written projects on energy efficiency, and I have been involved in with projects that sort of look to improve the energy efficiency and the change to the rental or capital value of properties, and with residential properties it does not seem to be a direct correlation at all between investing in energy efficiency and change in the value of the property—perhaps with the exception of double glazing that may increase capital value. What is most extreme is solar panel, which, arguably, can possibly reduce the capital value of the property. So yes, whilst you need to think about value, which unfortunately the Green Deal measures do not count that much, you may still get a handful of owners who may act purely based on moral obligation, but I doubt you may find few landlords taking the scheme for the sake of being greener.”
(O2)

Financial reasons are very important for explaining why uptake of the Green Deal was lower in the student rented sector compared to the young professional sector. One of my novel findings is that student landlords, who focused on rental income, were less likely to take up the Green Deal than young professional landlords, who focused on capital gain. This was because student landlords thought that Green Deal improvements may not increase their rents, but young professional landlords were of the view that such improvement may slightly increase capital growth.

One landlord indicated that he may not take up the Green Deal measures for his student rented property as those measures do not add to his rental income, but he may take up double glazing under the Green Deal for the property he rents to young professionals, as this measure may increase the capital value of the property when he comes to sell:

“I buy the property, rent it out and ensure that the rent is able to service the mortgage on the property and other running costs. So for now, that is revenue neutral, but all that I need to see is that the

property goes up in value when I come to sell. So, it is worth taking the Green Deal for example, to double glaze this property. At present, this property is worth around £300,000 and in the next 15 years, it may grow in capital of say extra £100,000 and I can sell and pocket £100,000. But with my other properties, I just make sure they are at the right locations; they are able to share, and so on. I don't need to spend on them in terms of improvements of this sort as they do not add to income I generate from students.” (L13)

Similarly, a statement from one landlord interviewee suggested that young professional landlords focused on capital growth, and so he may have considered at least some Green Deal measures as he thought it may increase the property value. However, student landlords focus on rental income and so may not have taken up Green Deal measures as such measures may not increase rental income.

“I have a financial advisor who advises me what to buy, either a property that will enable me gain rental income or capital gain. So I buy for rental income or capital gain but sometimes you can get both. Sometimes the capital gain may be high but the rental income may be low. For example, I have one property in Oxford occupied by professionals. The rent is only £1800 but it worth £600,000 at the moment. I may increase its value by considering some of the measures under the scheme... somewhere else in Oxford also, I have a flat for students which worth about £200,000 but the rent is £5500—applying the Green Deal measures will not increase my income at all. And to be frank, when I started this business in 2003 I didn't have experience and with high insight and looking back there is a lot I know now and I wish I knew that, yes.” (L1)

Moreover, unlike student landlords, some young professional landlords may have used the Green Deal during renovation to increase their property value before they rented out their properties on long term tenancies, often at zero income. Then, after the expiration of the lease, the property reverts back to them—reversionary interest, as described by one landlord:

“As a result of the recessions, whether this one or early 1990s, a lot of companies and people went bankrupt, and when those properties go for sale they have to sell quickly because of what the bank requires as part of the liquidation. So our tactic is to jump in there when those are happening. We often buy freehold properties quite cheap and add value to them by carrying out refurbishment and do reversionary interest with young professionals, they are typically high capital investment with zero income. Oh, maybe during refurbishments is when this scheme may be considered... if you buy a house, you rent to students, you get a lot of income... you don't need these Green Deal measures as you cannot increase rent as a result.” (L2)

Finally, the Green Deal improvements made it practically impossible for landlords who do not pay energy bills to raise rent, because under the Green Deal it is the tenants who often pay for the cost of the measures via savings on their energy bills. Therefore, unlike young professional landlords who may be interested in increasing the value of their property, student landlords may not have been interested in making their properties more energy efficient through the Green Deal as they were less interested in the long-term improvement of the value of the property:

“Perhaps, professional landlords may... take up... to improve their properties and sale price... but speaking from my own experience as student, student landlords will never be keen on Green Deal as they just see the properties as money generators and they do not want to put money into them and they just want income from them.” (T13)

5.3 The landlords’ motivations and expectations

The answers to the question, “Why did you become a landlord?” show that student landlords see renting as business, or focus on rental income, and young professional landlords see renting as investment, or focus on capital value. The finding can suggest that student landlords are less likely to invest in energy efficiency measures than young professional landlords due to their differences in motivation.

One landlord drew a clear distinction between student landlords and young professional landlords, to show that whilst student landlords aim to do business, young professional landlords aim to invest. This also suggests that student landlords for example, may not be interested in energy efficiency measures if such investment do not give them financial benefit they want. It also suggests that perhaps some landlords may give a clearer picture of student properties that are not theirs than describing their own ones. He stated that:

“Renting to students in 1988 just came by accident. My son was a student in Southampton and the house he looked at after first year when he came out of campus were very, very dirty. Really, the standard was very low, so we ended buying one. I said to him look, we’re going to buy a house so that you stay in and we get two of your friends to share so that we get some income as well. And that is how we become student landlords. But, I became professional landlord in 2003. I owned a hotel business and sold the hotel in 2003. I have always been self-employed so I had no pension except the state pension, so I decided to invest in properties as my pension... I aim to sell... and after I have paid

the mortgage whichever is left will take me through up to my 80s and that is fine. So it is calculated you know, I don't want to be a burden to my children.” (L1)

Landlords were asked if they targeted specific tenant groups, and if so which ones and why. Part of the answer to this question showed that most of the landlords in my study targeted students rather than young professional tenants. This finding is consistent with the result from a study which found that 53% of landlords in the study rent to students, and 34% of them rent to young professionals (Hope and Booth, 2014). These researchers explained that data such as these are useful when attempting to understand landlords' motivations when deciding whether to upgrade the energy efficiency of their tenanted stock. In view of this, the findings from this study indicated that renting to students was more likely to be lucrative than renting to young professionals, and so upgrading the energy efficiency of the property may be less of a concern for student landlords than young professional landlords. The reasons why student landlords and young professional landlords target who they target draw a clear distinction between them, and can explain why student landlords especially may not be interested in energy conservation measures.

One landlord who happened to target both student and young professional markets confirmed that landlords may target students instead of young professionals because of high income. He demonstrated that, depending on the type of property which a student landlord may rent out, there could be a huge profit margin difference of £250 between renting to students and young professionals. However, young professionals have secure jobs, high income and one can have long-term tenancies with them. He explained:

“But I then found that the student rent is actually much higher so a house now like this, 3 bedroom, is £,1150. If it is rented to a family, and I know for Southampton, it will be around £,900. So it is more lucrative than renting to family in my experience. Again, it is the security of tenancy as they may rent for the whole year. I know that every year I have a set of students to stay in the property. Sometimes they stay for just a year, sometimes they stay for two years. On the other hand, my financial advisor advised me that young professionals have disposable income; their rents are secured because they have good jobs, and more importantly, when you have professionals they do not move much and the turnover will be much lower.” (L1)

Additionally, one landlord targeting both tenants talked about the fact that you can be guaranteed of student tenants, meaning there is demand, no or reduced cost of void periods.

Chapter 5

Students are easy to find, and accommodation is shared to boost the landlord's income. He compared the student market and the young professional market by saying that:

"You got guaranteed new students coming in every year. Their rent is good they pay more than young professional tenants per unit of space that they are using. I think young professionals are willing to pay good rent for city centre properties or larger apartments, say two or three bedroom apartment, and you won't normally expect students to go into two-bedroom apartment". (L2)

The statement below suggests that some student landlords rent to students because it is cost effective and, in effective, lucrative. One student landlord narrated that

"I know you don't need to impress them with the type of the property. The rent from students is relatively higher and they pay on time. They can even walk to your house with their rents. They look for you—we don't look for them. You don't have to pay to get them. If they're moving from the property you just tell them to bring their friends." (L11)

Another question posed to landlords was if they do include a payment for energy consumption in the rent or not, and why. Based on this question, I found that, with the exception of one landlord, all the landlords in the study do not include energy bills in rent. This suggests that the majority of landlords do not have an incentive to invest in energy efficiency measures. Within the rented markets, result shows that student landlords are less likely to include energy bills in rent as they are more likely to think that students may misuse energy if energy bill is included in the rent. They argued that including energy bills can even make renting less lucrative, which suggests that student landlords are less likely to have an incentive to invest in energy conservation measures. In comparison, young professional landlords are less likely to see energy bill inclusion in rent as a major issue, implying that they may be more likely to have an incentive to invest in energy conservation measures.

The reason provided by one young professional landlord as to why he includes energy bills in the rent is that it is a way to avoid fallings out among his tenants if they were to share energy cost among themselves. He argued that: *"Yes, I include energy consumption in the rent because it saves any arguments between tenants."* (L7) This may suggest that some professional landlords may do this on humanitarian grounds or may be interested in energy savings measures to enable them reduce energy cost they may incur as a result.

In contrast, student landlords were more likely to think that students may misuse energy if energy bills are included in the rent, and that doing so can make renting less lucrative. One student landlords gave some reasons why she does not include energy bills in the rent:

“Energy bill is not included in rent because we can calculate the rent and it is a fixed cost so we can run a fixed budget, but it would be difficult to estimate or calculate energy usage. Sometimes our student tenants do not manage to pay on time and then we would be even more out of pocket if we had also paid all of the energy. Additionally, by giving the responsibility for energy payments to the tenants, they are looking after their own costs and perhaps may between themselves try to be energy conscious.”

(L11)

Another student landlord justified why she does not include energy bill in the rent, and concluded that excluding energy bills from rent is a norm in the rental market. She answered that:

“No, I don’t the rent is just for the house... Last year the house was let to Pakistani students and they liked the house very, very hot and it was up to them to pay for the heating bills if they want the house very hot. ... I haven’t heard of any conversation about any landlord including energy bills in rent. As a general rule, most landlords don’t provide gas or electricity; they just provide accommodation.” (L8)

The numerous answers as to why landlords do not include payment for energy consumption in rent confirmed past findings that tenants overheat their homes or misuse energy when energy bills are included in rent (Munley et al., 1990; Levinson and Nieman, 2004; Maruejo and Young, 2011; CRESR, 2013). This will ultimately reduce landlords’ rental income as they have no control on tenants’ use of energy (DECC, 2011b), which in turn disincentives landlords to invest.

5.4 Energy efficiency improvements

Energy conservation improvements undertaken by my study participants to upgrade their properties were explored during the interviews. I found that, unlike tenants who did not want to install because such improvements offer low energy savings, owners have done some minor and major improvements to their properties mainly for financial and environmental reasons.

Chapter 5

The owners who I interviewed have installed both lower cost insulation measures and expensive ones, to save themselves some money and also to protect the environment. Examples of their answers to the question whether they have ever made energy efficiency improvements to their property/ies, and why or why not, are given below as:

“We have. We installed cavity wall insulation, which was the first objective. We then installed loft insulation. We have also in recent years installed double glazing in the house for all the windows... We also have PV on the roof and have solar water on the roof. Why? Well, they save money and it was purely rather selfish to save on energy bills but we could save significant amount. The latest ones, PV panels and solar water, because my wife retired, she got lump sum, the stock market wasn't good so we said we will invest in PV and hot water. So, a bit selfish, but yeah, the environment was not entirely out.” (O5)

“As I said, we have changed the windows to double glazing, and we knew that that will keep the house warmer as well. Oh, the loft is insulated and I think it was under government scheme that we did that. It was through the council and I paid very little. All the improvements were done in order to pay less for energy. It is better for the environment as well.” (O8)

Conversely, when tenants were asked if they have ever made energy efficiency improvements to the property, for example draught proofing their doors or putting foil behind their radiators, why and why not, surprisingly, none of the tenants in the study has ever made such improvements. One tenant answered that:

“No, we haven't actually done that in the time we've been in this property because it seems to me that the proposed benefit that we will get from putting in these measures isn't worth the time we would have to invest in trying to get these measures done... It will be more hassle than the money we will save intuitively.” (T9)

Likewise, another tenant responded that

“None of the above, [minor improvements] ... you know when you're a tenant such things are not really a priority or, let me say, a responsibility unless probably when you sort of feel the pocket has been dented by wide margin ok and so on. It is not something that has ever crossed my mind ... and you can't be sure as to whether actually sort of lead to a serious reduction in the energy cost.” (T1)

Even though one tenant has not done any of these specific improvements he said he has installed LED light bulbs and commented that, *“I wouldn’t consider doing anything more expensive or substantial because we think... we wouldn’t get the benefit for doing it... Spending money for other people’s benefit is not good economics.”* (T4)

This statement suggests that even if tenants one day changed their minds to improve landlords’ properties, it would only be very minimal improvements with little cost to them. This evidence is in line with the finding from Ameli and Brandt (2015), which argued that even though tenants are less likely than owners to invest in energy conservation measures, tenants nevertheless do invest frequently in lightbulbs.

On the other hand, unlike owners, when landlords were asked the above question, overall their answers showed that landlords have made very little improvements to their properties. However, within the rented sector, my finding suggests that young professional landlords are more likely to be interested in energy efficiency improvement than student landlords, because young professional tenants are more responsive to improvements than student tenants.

Unlike young professional landlords who have carried out some upgrades (such as replacing single glazing with double glazing, and installing cavity wall insulation) student landlords do not seem to care about students’ wellbeing. All that they need is the profit, and not energy efficiency improvements. Some student landlords pride themselves on making no improvement at all to their properties. Possibly, because student tenants refuse to take into consideration energy efficiency measures, so do student landlords, as indicated here: *“In terms of energy efficiency improvement, I think I haven’t done any. You ask me why, and I ask you, does it really matter to students? I am doing business so I only give to them what they ask for, ok?”* (L9)

5.5 Discussion of findings

5.5.1 The Green Deal financial mechanism

Overall, financial reasons are very relevant for understanding why uptake of the Green Deal was lower in the privately rented sector than the owner-occupier sector. Previous studies have found that household income may influence energy efficiency investment (Held, 1983; Dowson et al., 2012). There is evidence to show that owner-occupiers have higher income than tenants (Maruejo and Young, 2011). In line with this finding, I have shown from my survey result that on average tenants are on lower income than owners. Whereas this finding suggests that tenants may have lower adoption of energy efficiency measures than owners, it contradicts the findings that low income households have higher adoption levels than high income households (Ashby, 2010; Tovar, 2012).

Within my literature review, I pointed out that high interest rates are a common problem in the private sector, and could make energy efficiency investment very prohibitive (Sanstad and Howarth, 1994; Clinch and Healy, 2000; Brown, 2001). Moreover, I discussed that low income borrowers have extreme difficulty accessing capital for energy efficiency improvements (Scott, 1997; Clinch and Healy, 2000; Rohdin and Thollander, 2006; Schleich and Gruber, 2008; Wilkinson, 2008; Dowson et al., 2012). Similarly, I have found that generally Green Deal finance was too expensive for customers, but that tenants may have found it more difficult than owners to access the Green Deal finance because, on average, tenants are usually on lower incomes than home owners.

Putting these together, my findings on the difficulty in accessing the Green Deal finance confirmed the finding that high interest rate was a principal reason for low uptake of the Green Deal (GBRC, 2010; Guertler, 2011; Laine et al., 2011; UKGBC, 2014), and that low income groups may have found it more difficult to access capital under the Green Deal (US DOE, 2010; Laine et al., 2011; Dowson et al., 2012) than rich owners who may be the least in need of financing (US DOE, 2010). Here, using an insight from behavioural economics, my findings somewhat confirm why discount rates are higher for liquidity-constrained or poorer individuals than for unconstrained or higher income ones (Lawrance, 1991; Clinch and Healy, 2000; Oxera, 2006; Epper et al., 2011).

Also, comparing landlords to owners, I have found that landlords are less likely to have been able to access the Green Deal finance, as rented properties were less attractive to Green Deal

lenders than owned properties. This evidence supports the finding that, unlike owners, the privately rented sector was prevented from accessing Green Deal finance. Green Deal providers refused to offer Green Deal finance on the basis that the properties were rented (ARLA, 2014). This study found for the first time that student landlords were less able to access the Green Deal than young professional landlords, because properties in the student rented market were more likely to be rejected as collateral security by Green Deal providers. Otherwise, they may have been accepted for loans at higher interest rates than properties in the young professional rented market.

A finding from the Smith School of Enterprise and the Environment and the University of Oxford on understanding the risks of the Green Deal concluded that allowing providers to recoup the lifetime interest payments due on the Green Deal loan was excessive, and when consumers discover this provision in the Consumer Credit Act, the Green Deal may turn out to be wildly unpopular (The Smith School of Enterprise and the Environment and the University of Oxford, 2011). Whilst the present study does not have answers to the role of early repayment charges in uptake of the Green Deal between the privately rented and owner-occupier sectors, it does bridge this gap in the literature. I have found that hefty early repayment charges on the Green Deal loan were more likely to inhibit landlords from taking up the scheme, as the exit fee on several properties may form a significant part of their rental income. In comparison, owners may often only pay exit fees on one property.

It has been established in the literature that some customers were not able to pass a Green Deal loan credit check (ECCC, 2014); and generally, low income households have low credit rating which could have prevented them from accessing the Green Deal. However, I found that tenants are more likely to have worse credit scores than owner-occupiers, as tenants are on lower income than owners and so were less likely to get the Green Deal finance. Alternatively, they may have accessed it at a very high interest rate compared to owners.

As discussed within my literature review, previous studies have found that long payback time is one of the main barriers to energy efficient improvement in the domestic sector (Soratana and Marriott, 2010), and consumers prefer short payback times for energy efficiency investments to long payback times (Cavanagh, 1988; Oxera, 2006; EST, 2010b). Similarly, I have argued from the viewpoints of the GBRC (2010), and DECC (2011b) that participants were uncomfortable taking on repayments of the cost of Green Deal measures over a long period of time. Here, by comparing tenants to owners, I have found that tenants prefer shorter payback times than owners, because tenants are less certain about their income than

Chapter 5

owners, and so were less likely to take up the Green Deal than owners. Tenants are more afraid than owners to use the money they have to pay more on the cost of the measures than they expect to gain from energy efficiency investments.

Financial reasons are very relevant for helping us to understand why uptake of the Green Deal was lower in the student rented sector than the young professional sector. Within my literature review, I referred to a finding from Ambrose (2015) to show that landlords view payback period as a barrier to uptake of energy efficiency measures. In view of this, I have contributed to knowledge by showing that student landlords tend to prefer shorter payback times than young professional landlords. This is because student landlords think that longer payback times will reduce their incomes whereas young professional landlords consider that they can have shorter payback times depending on what type of measures they plan to take up.

I found that the Green Deal charge attached to a property may reduce the property's sale value for some landlords and owners because, even if they were able to sell, potential purchasers would deduct the outstanding charge from the price of the property. On the other hand, the charge might further deter future tenants and reduce rental income for landlords. My finding validates the broader view that the Green Deal charge was a barrier to uptake of the Green Deal because it deterred future buyers (GBRC, 2010; DECC, 2011b), and tenants, and reduced properties' sale value (DECC, 2011b; CRESR, 2013; Ambrose, 2015). It contradicts findings that show that Green Deal charge was not a reason for low uptake of the Green Deal (UKGBC, 2009; DECC, 2011a; Tovar, 2012; DECC, 2013b).

Analysis suggests a new insight that student landlords are more likely to view the Green Deal charge attached to the property as a deterrent to prospective tenants, as often student tenants are on lower incomes than young professional tenants. Furthermore, I have found that, unlike owners who may not pay for Green Deal charges at void periods, landlords may still become responsible for making repayments on the loan during void periods and so they are less likely to take up the scheme. My result is in line with the finding that the majority of landlords may not have taken up the Green Deal because they felt concerned that if, the tenant moved, they would be responsible for making repayments on the loan during void periods (CRESR, 2013; Ambrose, 2015).

I have found that poor tenants were more likely to risk disconnection under the Green Deal than homeowners, as tenants were less likely to be able to pay for the Green Deal charge than owners. Therefore tenants were less likely to use the Green Deal than owners. Looking

through the interview material in the light of prospect theory, suggests that tenants are more loss averse than owners. For example, tenants are more afraid than owners that they may get disconnected if they are unable to receive the energy savings that the Green Deal measures promise. This is in line with the finding from a study that suggests that fear of disconnection was a barrier to uptake of the Green Deal by low income customers (Laine et al., 2011) or, to be specific, tenants (ECCC, 2013a).

So, the question is how could we have reduced loss aversion to encourage take up? I would suggest that financial risk relievers could have improved the loss aversion nature of people in general, and in particular for the tenants who are more loss averse. In effect, uptake of the Green Deal could have increased. This is because empirical findings from Epper et al. (2011) suggest that people without incentives in their choices are more likely to be loss averse than those with incentives.

Previous studies have found that transaction cost is a barrier to uptake of energy efficiency improvements (Sanstad and Howarth, 1994; Jaff and Stavins, 1994; Convery, 1998; Scott, 1997; Clinch and Healy, 2000; Healy and Clinch, 2004; Oxera, 2006; EST, 2010b; DECC, 2011g; Phillips, 2012). To some extent, my finding supports these studies by showing that in general customers are deterred by the problem of transaction cost, but disagrees with the finding from DECC (2015) that suggests that transaction cost was not seen as a significant barrier to uptake of the Green Deal.

I also found that transaction cost was more viewed as a barrier to tenants than owners, as tenants were more likely to think that the hassle of Green Deal investment was far more than the benefit, and also due to the complex and expensive nature of the process of the Green Deal in terms of time needed for consent seeking and possible refusal. This is compared to owners whose transaction cost could sometimes be reduced by long-term savings, and could be less time consuming if there were no consent-seeking issues. Maybe satisfaction from the Green Deal is viewed as low for tenants in particular because its uptake was a high-cost behaviour involving a lot of time and inconvenience. In this case, the best way that could have made the scheme more attractive was to increase its energy cost saving or expected utility via monetary incentives.

Overall, financial reasons are very important for explaining why uptake of the Green Deal was lower in the privately rented sector than the owner-occupier sector. Within the literature it has been well documented that financial benefits are important factors behind retrofit decisions

Chapter 5

(Gamtessa, 2013; Michelsen and Madlener, 2013). What we do not know from these studies is the relative importance of financial benefits for different actors in relation to the Green Deal. In view of this, I have shown that the Green Deal lacked highly attractive and sustainable forms of grants, and that such grants are more relevant to people in the privately rented sector than to owners. In other words, owners also, but tenants and landlords in particular, were more likely to take up the Green Deal when provided with monetary incentives.

By extension, my findings confirm the findings that suggest that very strong financial incentives were needed in the private rented sector to encourage take-up (Oxera, 2006; CRESR, 2013). The result is consistent with studies that have found that financial incentives such as council tax rebates and stamp duty refunds would have incentivised Green Deal customers (Laine et al., 2011; GBRC, 2010; UKGBC, 2009). This finding is further validated by the DECC (2011b) which found that a significant discount off council tax with the property could incentive both tenants and landlords to take up the Green Deal.

Examining this finding from the behavioural economics perspective calls for an empirical finding from Epper et al. (2011) which suggests that individuals without real monetary incentives are much higher impatience than those facing real monetary incentives. By implication, people without monetary incentives are less likely to invest than those with incentives. Therefore, providing strong monetary incentives to make tenants and landlords in particular less impatient, or to reduce their discount rates and thus improve their energy cost savings from the Green Deal, should never be underestimated. The role that monetary incentive can play for people, in the privately rented sector especially, is so important that I would support the idea that any attempts at changing behaviour are bound to fail—unless direct monetary incentives are provided to change cost-effectiveness calculations of the tenants and landlords in favour of take-up of the Green Deal.

The relevance of financial reasons in enhancing our understanding of the differences in uptake of the Green Deal between the privately rented sector and the owner occupier sector is again shown here. I found that customers were unsure if the golden rule would work, but tenants were more disinterested than homeowners in low or no savings, and the lack of guarantee for energy savings and long run energy savings. In comparison, homeowners were less deterred by lack of guarantee for energy savings, and their decision to take up the scheme was based on long-run energy savings.

My finding is broadly in line with finding from Poortinga et al. (2003) that suggests that energy savings may be more relevant to tenants than owners. My finding confirms finding that low energy savings (DECC, 2011b; DECC, 2012; CRESR, 2013), and lack of guarantee for the savings (DECC, 2011b; DECC, 2011c; DECC, 2012) were reasons for low uptake of the Green Deal. Again from behavioural economics' point of view, I would position tenants in my study as more hyperbolic discounters than owners. This is because tenants seem to react more to the size of the energy savings they expect from the uptake of the Green Deal than owners. By, implication tenants are more likely than owners to use a higher discount rate for small energy savings compared to owners and so are less interested in taking up the scheme than owners.

Relating the insight that, unlike owner-occupiers whose decision to take up the scheme may be based on savings on their energy bills in the long-run, some tenants are more interested in short-term money savings due to their hyperbolic discounting behaviours. I would suggest that tenants in my study appear to be less committed to long-term energy savings even if there are any savings from the Green Deal measures at a later date. Tenants are more impatient or present-biased, and more short-sighted when calculating the present value of cost savings from the Green Deal measures. This is simply because they are typically on low incomes compared to owners, and so they are more desperately in need of immediate savings rather than later ones. Also, what this finding implies is that monetary incentives are more relevant for tenants than owners.

Overall, my arguments developed so far fit well with the hyperbolic discounting theory that states individuals use higher discount rates over short time horizons than over long time horizons (Epper et al., 2011; Halevy, 2008; Frederick et al., 2004) for investment decisions. By implication, this behaviour may cause low uptake of energy conservation measures (Hepburn and Duncan, 2010; Oxera, 2006; Camerer and Loewenstein, 2004). However, in the context of uptake of the Green Deal, my analysis disagrees with the exponential discounting theory's conjecture that households treat the present, now, the immediate, today, the same as past, future, tomorrow, and soon (Pollitt and Shaorshadze, 2011; Frederick et al., 2002; O'Donogue and Rabin, 1999). Here, I would argue that Green Deal may have failed because policy makers might have designed it from the neoclassical economics point of view of human investment behaviour which is very different from the way households actually behave.

Chapter 5

Together, my findings contradict the assumption of rational choice theory that people are only self-interested (Peters, 1999; Jackson, 2005), and support studies such as Gowdy (2008), Collier et al. (2010), and Pollitt and Shaorshadze (2011) that have argued that this assumption is untrue. This is because, even though there are some tenants and student landlords who may not take up the energy efficiency measures if they do not get any monetary benefits, there are also some owners and young professional landlords who may selflessly take up energy efficiency measures for environmental reasons rather than only for the desire to save money. Overall, my findings disagree with studies that suggest that financial incentives may play no role in the uptake of energy efficiency measures (Gadenne et al., 2011; Walsh, 1989; Held, 1983).

5.5.1.1 The reinforcement of the Green Deal for the rental market's split

I have discussed previous studies in my literature review that have found that energy efficiency improvements do not increase rental incomes (California Energy Commission, 1985; Shelter, 2009; Guertler, 2011; CRESR, 2013; Ambrose, 2015) or capital values (California Energy Commission, 1985; Ambrose 2015). Analysis indicates that some landlords are of the view that Green Deal measures did not influence rental or capital value of their properties (with the exception of double glazing). They were less likely to take up the scheme than owners who may have acted to satisfy their greener conscience. Whilst broadly my finding disagrees with the second set of findings that capital values do not at all increase energy efficiency improvements, it confirms previous studies within my literature review that have found that energy efficiency improvement slightly influences capital growth of the property (Tuominen et al., 2012; Phillips, 2012), if it is double glazing (Guertler, 2011; Phillips, 2012). Energy conservation measures do not increase rental incomes (California Energy Commission, 1985; Shelter, 2009; Guertler, 2011; CRESR, 2013; Ambrose 2015).

Financial factors are very relevant to understanding why uptake of the Green Deal was lower in the student rented sector than the young professional rented sector. I have made a contribution to the literature by showing another novel insight: that student landlords who focus on rental income were less likely to take up the Green Deal for improvements because such improvements do not increase their income. In contrast, young professional landlords focus on capital gain as they think that Green Deal measures, such as double glazing, could slightly increase the capital value of their properties in the future. My result partly challenges the finding from Ambrose (2015) that landlords think that energy efficiency improvements do

not increase capital value of their property, but supports Ambrose's finding that landlords were of the view that the Green Deal would not increase rent.

My interview data show that the young professional landlords hold the view that they buy the property, often with a mortgage, rent it out and ensure that the rent is able to service their mortgage on their properties and all other running costs. So they are revenue-neutral and all that they need to see is that the property goes up in value when they come to sell because that is how they make their money. This also explains why they were interested in uptake of some specific Green Deal measures. In contrast, student landlords did not have the incentive to take up the Green Deal measures if they couldn't increase rent as a result. This result is very relevant as it informs policymakers that the Green Deal reinforced a split in the rental market where the decision to invest in private residential property, for the purpose of letting, tends to depend on two factors: rental yield and capital growth (Scottish Government, 2009; Shelter, 2009; National Landlords Association, 2012). This is discussed below, under landlords' motivations and expectations.

The results also mean that the financial mechanism of the Green Deal, whereby the tenant had to pay the Green Deal via their energy bills rather than the landlord investing in the scheme and recouping their money by increasing rent, is not the best model, especially for student landlords for whom income is the strongest motivator. Examining this result from the behaviour economics perspective, I would suggest that inequality of uptake of the Green Deal between these two types of landlord was caused by the fact that student landlords are interested in short term profits whilst young professional landlords prefer long term investments. By implication, student landlords may use higher discount rates for Green Deal investments than young professional landlords.

Building on this main evidence, I investigated from Zoopla, one of the UK's most comprehensive property websites. I used 30 purposively selected samples of so called "six-bedroom" properties in Southampton, advertised for rent to students, and two-bedroom flats in Southampton also advertised for young professional couples on Zoopla. My investigation revealed that student landlords who focus on rental income charge much higher rent per poor-energy-efficient property than young professional landlords. This is because they can easily get six students to share a rundown property which originally had three bedrooms but changed to six bedrooms, charging on average over £450 per student and gaining around £2800 per calendar month.

Chapter 5

In contrast, the young professional landlords focusing on capital gain may rent a relatively warm, new and maybe double glazed two-bedroom property to professional couples or sharers, charging less than £800 per calendar month. This echoes the previous evidence that student landlords enjoyed economic advantages (McDowell, 1978) or charge higher rent than non-student landlords (Scottish Government, 2009), as students are in the position of being able jointly to pay a higher rent than would normally be affordable to a single household (Rugg, Rhodes and Jones, 2002). Nevertheless, students live in relatively worst energy efficient shared properties (Scottish Government, 2009).

Again, landlords’ focus on rental income can be clearly demonstrated by which type of property they rent out, and the tenant type they target for this exorbitant rent. Looking at Figure 16 shows that the rental yield of property type HMO is 7.2%, which was the highest among all type of properties covered in the study. The figure also shows that landlords targeting students may gain the second highest tenant type rental yield of 6.9%. This is compared to the next lowest rental yield by property type of 6.4% (flats of individual units) which the young professional landlord may often rent out to professionals. Here, the landlords targeting professionals may gain a tenant type rental yield of 6.1% which is 0.5% less than the income that may be gained by targeting students (NLA, 2014b). This analysis demonstrates that, unlike student landlords, landlords of young professionals do not focus on rental income.

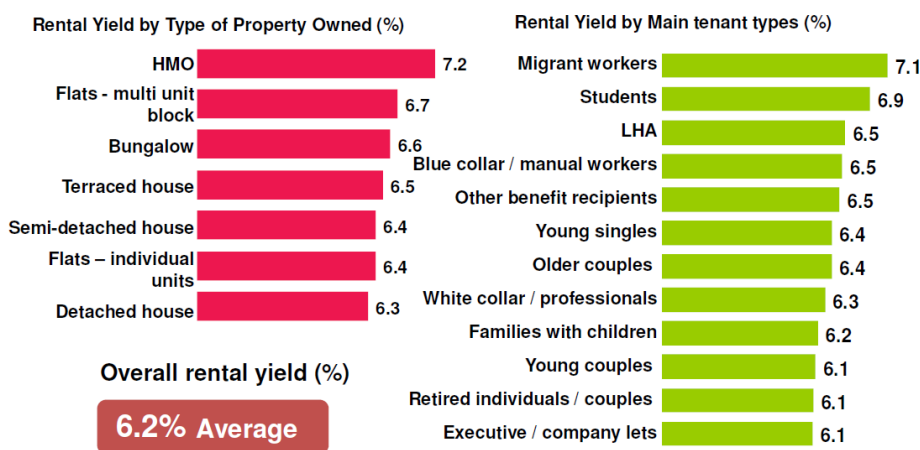


Figure 16: Rental yield by type of property and by main tenant types (NLA Landlords Panel, 2014b)

To buttress my point, I found from Zoopla that property value had gone up in the last three years by £30,731, representing 14.10%. As a result, out of the 1,478 properties that were for sale at the time of the study, as many as 643 properties were two-bedroom properties which are often rented out by young professional landlords to professional couples. This is compared to just three of the six-bedroom properties often rented out by student landlords to group of students that were found on the market. This evidence supports that capital appreciation is the focus of young professionals as they have been shown to sell when capital has appreciated. It is this capital appreciation that may have driven their interest in uptake of the Green Deal. In comparison, student landlords have demonstrated that they hardly sell their properties. They want to keep them in order to generate more rental income without any interest in improvements.

5.6 Landlords' motivation' and expectations

Studies such as Scottish Government (2009), DCLG (2011b), and more recently Hope and Booth (2014) have found that a large majority of landlords consider themselves to be part time—in that their main business or occupation is not letting residential accommodation, or letting is not their primary source of income. In accordance with the findings from these studies, my survey shows that, within the privately rented sector, the majority of landlords were part-time landlords. This is a barrier to committing to the financial cost of undertaking energy efficiency measures (Hope and Booth, 2014).

However, following comparison between different landlords, my survey result has shown that student landlords are more likely to be part-time landlords than young professional landlords. This result implies that part-time student landlords may be less interested or financially motivated to invest in energy efficiency measures than full-time young professional landlords. On the contrary, a finding from Shen and Saijo (2008) indicates that that full-time persons are less likely to invest in energy conservation measures than others. This difference can be explained by the fact that my finding emerged from comparison between landlords, whilst those of Shen and Saijo, (2008) were more generic and could not give an accurate picture of different landlords' investment actions.

Another related finding is that, whereas student landlords see renting as a business, young professional landlords view renting as an investment, and this is a reason for the low uptake of energy efficiency measures in the student market compared to young professional market—as

Chapter 5

the results from Joint Centre for Housing Studies (2006) suggested. This finding agrees with the studies that have found that rental capital growth (Monk et al., 2014; National Landlords Association, 2012; Jones Lang Lasalle, 2012; Shelter, 2009; Scottish Government, 2009; Joint Center for Housing Studies, 2006) and yield are mainly the two reasons for becoming landlords (National Landlords Association, 2012; Shelter, 2009; Scottish Government, 2009).

My finding contradicts the finding from a survey that suggested that all young professional landlords stated that their primary reason for continuing to own property was the income they received from rents, the same reason they originally bought the property (Property Owners and Managers Survey [POMS], 1995). The difference in result may be because the survey was conducted in US among multifamily owners on rented property improvements in general, but my study was conducted in the UK among young professionals and student landlords in relation to uptake of energy efficiency measures.

The CRESR found that there was a consensus amongst landlords that the privately rented sector is buoyant (CRESR, 2007). While this study does not tell us which area of the rented market is more buoyant, my findings have indicated that renting to students is more likely to be lucrative than renting to young professionals, and so upgrading the energy efficiency of the property may be less of a concern for student landlords than young professional landlords. The finding is similar to a previous study which found that a high rental yield is the main advantage for letting to students (Rugg, Rhodes and Jones, 2002). I found that, with one exception, all the landlords in my study do not include energy bills in rent. This suggests that the majority of landlords do not have an incentive to invest in energy efficiency measures for reason such as tenants mismanaging energy or not being energy conscious if landlords are responsible for payment of energy bills (Munley et al., 1990; Levinson and Nieman, 2004; Maruejo and Young, 2011; CRESR, 2013).

So, taken together, my result confirms other previous findings that if energy bills are not included in rent there are no or few incentive for landlords to invest in energy efficiency measures (Laquatra, 1992; Jaffe and Stavins, 1994; Smith, 1994; Sweeney et al., 2013). By implication, if the Green Deal is asking tenants to pay the cost of the Green Deal measures via their energy bill savings, then the scheme seems to endorse landlords' low energy savings improvement actions. Such endorsements may affect the student market more than the young professional market.

Following comparison, I have found new evidence that student landlords are less likely to include energy bills in rent than young professional landlords. Reasons include that students may misuse energy, and that including energy bills can even make renting less lucrative. This suggests that student landlords are less likely to have an incentive to invest in energy conservation measures. In comparison, young professional landlords are less likely to see energy bill inclusion in rent as a major issue because, according to one of them, it may help to avoid any disagreement among tenants if they were to share energy bills. This implies that they are more likely to show concern for tenants by investing in energy conservation measures, or may invest to reduce the energy cost that they pay for tenants. Here, I would suggest to position young professional landlords as a bit altruistic.

5.7 Energy efficiency improvements

I found that, unlike tenants who do not want to install because such improvements offer low energy savings, owners have done some minor and major improvements to their properties, mainly for financial and environmental reasons. This finding supports previous results that homeowners are more likely to invest in energy efficiency measures than tenants (Curtis et al., 1984; E.ON and the University of East Anglia, 2004; Sardianou, 2007; Davis, 2010; Tovar, 2012; Dowson et al., 2012; Burfurd et al., 2012; Gillingham et al., 2012; Andersson et al., 2013; Ameli and Brandt, 2015). Within my literature review, I have shown that landlords have very little interest in energy conservation improvement (Harris Interactive, 2009; CRESR, 2013; Hope and Booth, 2014). In line with these findings, my study finds that landlords have made very few improvements to their properties. However, I have provided new evidence to suggest that young professional landlords are more likely to take up energy efficiency measures than student landlords, as their young professional tenants are more interested in improvements than student tenants.

5.8 Conclusion

I have shown why the Green Deal as a financial mechanism has failed. Consequently, the study has thrown its weight behind the argument that better designed financial incentives could have prevented the Green Deal from failing. I have shown, among other reasons, how hyperbolic discounting or interest in immediacy has resulted in a high short-term discount rate and therefore contributed to low uptake of the Green Deal. With this in view, I have shown the need to formulate policy bearing in mind that customers are hyperbolic discounters and not exponential ones. I have drawn readers' and policy makers' attention to the fact that that people value losses more than gains when undertaking investment decisions. I have pointed out that that investment decisions are influenced by both egoistic and altruistic factors.

Chapter 6: Presentation and discussion of findings on reasons relating to decision making

6.1 Introduction

This chapter of the thesis presents findings from interviews, a survey and documentary examination. Before the first half of this chapter, there will be an overview of the suppositions upon which my findings were based. The first section of the chapter presents evidence on the decision-making reasons for low uptake of energy efficiency measures through the Green Deal, comparing the privately rented sector and owner-occupier sector, and the student and young professional landlord sectors. There are limited data on comparisons of this nature and for that matter some of these results bridge some gaps in literature in relation to our understanding of the reasons for the failure of the Green Deal. The second half of this chapter will discuss the results in a very similar manner as already discussed above. I have formulated my expectations within the literature review and also at the end of the review, but some few of them are stated here. It is possible that:

- Owner-occupiers are free to make decisions about energy efficiency improvements of their properties.
- In contrast, landlords have greater power than tenants when it comes to improvement decision-making processes.
- A consensus between landlords and tenants is required in the rented sector but not in the owner-occupier sector. It is expected that it will be more difficult to reach consensus in the student rented market than in the young professional rented market, as the former is made up of more transient and larger tenant groups than the latter.

A critical look at these conjectures appears to support one of the general assumptions of power theories: that individuals will act to maximize their interpersonal rewards and minimize their interpersonal costs (Molm and Cook, 1995), suggesting that power may work together with monetary incentives. Taken together, my expectations support the debate that power as a concept may play a role in the uptake of energy conservation measures (Dahl, 1957; Etzioni, 1961; Parsons, 1963; Pérez-Cirera and Lovett, 2006; Molm, 1989; Dillahunt et al., 2010), and that people with greater power may invest less in such measures (Boyce, 1994; Baland and Platteau, 1999; Boyce et al., 1999; Pérez-Cirera and Lovett, 2006; Dillahunt et al., 2010) as the results from these assumptions show.

6.2 Presentation of findings

6.2.1 The role of power in decision making

Decision-making power is very important for explaining the inequality of take-up of the Green Deal between the privately rented sector and the owner-occupier sector. One of the key findings in this study in relation to the concept is that mutual agreement between landlord and tenant needed to be reached in the privately rented sector before the scheme could be taken up. This requirement did not exist in the owner-occupier market. Therefore the issue of consent has been identified as one of the greatest barriers to the uptake of the Green Deal in the privately rented sector. A policy document from Consumer Focus backed this claim, saying that:

“The private rental sector has some of the least energy efficient properties and our consumer research shows that renting is one of the major barriers to uptake of energy efficiency measures. The Green Deal could help increase installations in this sector by overcoming the barrier of split incentives, however, consent is required from the landlord and tenant and it is unclear how the sector will respond to the scheme.” (Consumer Focus (ECCC, 2013a p.92))

The problem of consent for landlords is compounded in large multi occupant dwellings as explained in the committee debate by the consumers’ representative from ACE: *“In large blocks of flats, there may be pretty nightmarish consent situations whereby, potentially, one or two withholdings of consent will scupper green deal activities throughout a whole block.”* (Jenny Holland, ACE (ECCC, 2012 p.26))

The quotation below shows evidence from an interviewee who generally represents consumers in the ECCC debate that, *“it becomes even more complicated when you try to use the Green Deal, because you have to get consent not only upwards from the freeholder, but downwards from all the bill payers.”* (David Timms, Friends of the Earth (ECCC, 2012 p.27))

Also, Sue Walker of the London Borough of Newham explained before the ECCC how difficult it could be for tenants to gain consent from their landlords that live far away from their rented properties. She said: *“obviously, with the private rented sector you need the consent of landlords. If they are absentee landlords or difficult to trace, it can be a real problem to implement schemes on the ground.”* (ECCC, 2012 p.31)

Another statement to highlight that tenants had to seek consent because they did not have the right to make improvement decisions under the Green Deal came from one tenant interviewee who argued that:

“I don’t have the authority to choose the type of improvements I may wish to do under the scheme. The landlord will always have the final say because the property is not for me and you can’t decide for the landlord or if you want a better word force the landlord to do what you want yet you will pay for them. If I’m the owner then yes, I will have the right to do whatever I want so that is my concern.” (T13)

Two statements from owner-occupiers I interviewed confirmed that tenants may find consent seeking from their landlords extremely difficult: *“I think it’s just easier for an owner-occupier to introduce the measures under the Green Deal because they often need no one elsewhere [outside the family] to ask and they just get on with it. You know you haven’t got to ask your landlord.”* (O3)

I might ask consent from, *“my hubby [husband] and my children, out of courtesy, I suppose, but that does not necessarily mean they will stop me from taking up the Green Deal.”* (O13)

On the issue of consent on even minor improvements, I would refer to a policy document called “Model Agreement for an Assured Shorthold Tenancy and Accompanying Guidance”. An excerpt from this policy document, DCLG (2016b, p.25), states *“that tenant must take reasonable steps to keep the property adequately ventilated and heated so as to prevent damage from condensation.”* These documents further explain that there is a legal duty on tenants,

“to do minor acts necessary to keep the property in a reasonable state. This would include jobs such as changing light-bulbs, unblocking sinks and doing other little jobs around the property that a reasonable tenant would do. This is known as the duty to behave in a tenant-like manner.”

This poses the question: can DIY measures like draught-proofing the doors or putting foil behind the radiator come under “minor acts that need no consent from the landlord”, as such improvements might not actually alter the property or potentially damage it?

However, some tenancy agreements may say that all types of improvements require the landlord’s consent. Some may say that certain alterations do not need the landlord’s consent at all, but others do. In short, different tenancy agreements say different things (DECC, 2016a p.11). As a result, regardless of the so-called doctrine of obligation on the part of the tenant to use the premises in a tenant-like manner, the energy efficiency improvements provision states

Chapter 6

that “*even where there is no provision in the tenancy agreement that improvements require the landlord’s consent the general law may well imply a requirement to obtain the consent of the landlord.*” (DECC, 2016a p.12)

By implication, consent may play a role in tenants’ decisions to make even minor improvements depending on the terms of their tenancy agreements. It was based on this background that I wanted to find out from tenants if they needed consent from their landlords to carry out minor improvements like draught-proofing the doors or putting foil behind the radiator. Here, I have found that the majority of the tenants in my study needed consent from their landlords to do even minor improvements, and this might have played a role in the low uptake of energy efficiency measures by tenants.

A quotation to suggest that tenants needed consent for minor improvements reads that: “*Yes, I am pretty sure that in tenancy agreement it says that if you want to fix anything to the walls or any improvements like these [minor improvements] you need to have express permission from the landlord to do that.*” (T5)

The claim that seeking consent is a reason for low uptake of energy efficiency improvements in the privately rented sector is supported by a statement made by one tenant that: “*Well, seeking consent on every improvement simply tells you that you have a boss and it is not your house, so why bother with improvements?*” (T3)

Based on this statement, I would argue that if truly this is the situation that some tenants find themselves in when it comes to even minor improvements decisions, then landlords are the cause of low uptake of energy efficiency measures in the sector. Their powers to grant consent to all sorts of improvements in the tenancy agreement may somewhat prevent tenants from doing some improvements.

This argument reflects a statement from one landlord that, “*I own the property and I decide what I want my property to be. [T]hey have signed a contract and in the tenancy contract they are not permitted to make any improvements or alterations to the property.*” (L9)

My research data also show that, unlike most owner-occupiers amongst my interviewees, tenants perceived the Green Deal process as too complicated and expensive. They might have to go through the process of paying for assessment, and the hassle of arranging a financial deal with lenders, after which the landlord could simply refuse consent. One tenant explained the

power of landlords when he decided to go through the complex and costly process of Green Deal take-up:

“I guess the consultation with the landlord has to come first before I even incur the cost of assessment or contacting the lender. Otherwise, one wouldn’t want to find themselves in a situation where they go to the lenders, and the lenders say, “Yes, we are happy to give you a loan,” and you come back to the landlord and the landlord says no. I wouldn’t want to find myself in a situation where I pay for something and then I don’t get the product itself.” (T1)

Decision-making power is important for explaining the lower uptake of the Green Deal in the student rented sector compared to the young professional sector. Comparing consent seeking between student landlords and young professional landlords, I have addressed a gap in the literature by showing for the first time that it is more difficult to reach consensus in the student rented market than in the young professional rented market, because the student market is made up of more transient and larger tenant groups. In contrast, the young professional rented market contains fewer tenants who plan to stay for longer.

In relation to the claim that student landlords have more transient tenants and that is a reason for lower uptake in the student market, a comment was given by one owner when asked if she had anything to say that was relevant to the topic under discussion. She came out with a strong argument which suggested that student landlords are less likely than young professional landlords to have taken up the Green Deal because students may plan to move shortly:

“So both landlord and tenant will need to agree, I suppose. In that case... it’s [the Green Deal] only going to benefit a minority of the rental market you know a lot of the rental market is a lot more transient, especially the student market, and people wouldn’t take it on.” (L8)

Another related evidence from interviews was that:

“I can imagine that if you need consent from families or professionals you may not experience extreme difficulty like you may experience when you need one from students, because families are more likely to live together in the property for a longer period than students, who may come from their separate ways and may go their separate ways shortly.” (L12)

Chapter 6

The student market does not only have tenants who are plan to move shortly, but also often they have larger tenant groups than the young professional market. This also make consent seeking more acute a barrier in the student sector. This evidence also supports this claim:

“I have three flats in four blocks of flats. It is a house that has been converted, so to do the Green Deal I have to have agreement from at least 12 students because each flat is for a minimum of three students, and if all of them don't agree then I will be stuck. If I was renting the same property to families, I may probably need consent from just three bill payers, which is still a headache but not as difficult as having to convince about 12 tenants to agree. Certainly, the scheme puts unnecessary headache on landlords who are eager to use it.” (L1)

Analysis suggests that uptake of the Green Deal is lower in the privately rented sector than the owner-occupier sector, as landlords own the property but may not be interested in making it more energy efficient. This is because they are not paying the energy bill and may mainly be interested in making a profit from the rent. However, even though tenants may be interested in lower energy bills through energy efficiency improvements, they may not be interested in paying for the improvements through their energy bills if they are planning to move on after a short period of time. This is compared to homeowners who improve their homes and have relatively longer lengths of stay in their homes.

Under the Green Deal, tenants were to improve their landlords' properties even though this responsibility originally belonged to the landlords. The quote below suggests that the landlord owns the property but may not be interested in making it more energy efficient, just as tenants may not be interested in paying for the improvements or carrying the burdens of their landlords. A representative for tenants in the committee debate argued along this line:

“Tenants are already paying their rent to the landlord for a housing service and thus it is the responsibility of landlords to provide properties of a good standard for tenants to live in. It seems a bit odd that tenants are then being asked to reach further into their pockets, in very difficult financial times, to pay for things that landlords should pay for.” (Robert Taylor, National Private Tenants Organisation (ECCC, 2012 p.35))

Another tenant in the interview added that, *“I will say it is not fair from the tenant’s perspective because the landlord is responsible for improvements. Here, the landlord is winning and the tenant is losing because the property will be improved at no cost to the landlord.”* (T5)

One tenant argued in the interview that, at best, the cost of the Green Deal measures should be borne by the landlords, or, at worst, it should be shared between the landlord and the tenant. Their argument reads:

“I would prefer that the cost of the measures be deducted from the rent. That is fairer. I come from Africa; you see in Africa where I lived, I had my landlord’s consent to carry out improvements. I remember I finished one improvement, the landlord came in and looked at the place and said this place is now too good for the rent you were paying so we needed to sit down and renegotiate the rent. I paid for the cost of the improvement but was deducted from my rent. The cost of the improvement was ultimately borne by the landlord. It was like an advance payment or a loan to the landlord, and over time it was gradually deducted. I felt that was fairer but, in this case, I am going to bear the cost entirely by myself to the benefit of the landlord. No, it’s very unfair.” (T4)

The Green Deal is particularly unfair to tenants as they plan to move sooner than owners. For example, one interviewee tenant said that:

“If it was my house it would have been different because if I make those improvements with time, I would have paid for them and the residual thing will be my house which has been well maintained or improved. For a tenant, you do that and leave, so you don’t have any residual benefit, so that is one challenge which will not let me look into that direction.” (T3)

Chapter 6

Moreover, a statement emerged from an interview with one owner which showed that tenants may be less likely to take up the Green Deal than owners as tenants did not intend to stay in their rented homes as long as homeowners. The statement reads:

“Tenants wouldn’t be in the property for that long. Unlike owners, they will probably be in there typically six months, maybe a year, possibly two or three years, maximum. I don’t think it will benefit them because they may be moving on by the time they negotiate with the landlord they would think is about time to move out.” (O3)

Decision-making power is very important for explaining the inequality of take-up of the Green Deal between the privately rented sector and the owner-occupier sector. Perhaps the role of power in the uptake of the Green Deal is well demonstrated in my evidence that, unlike for homeowners, fear of retaliatory eviction is one barrier for tenants to request energy efficiency improvements through the Green Deal from their landlords.

Retaliatory eviction is expected to be a measure of last resort for the landlord, for example, if a tenant does not pay the rent or has seriously damaged something or provides a danger to other tenants. But it now appears to be a legal reciprocal tool used by some landlords to end tenancy agreements when their tenants demand energy efficiency measures. The following quotes from the discussion of committee debate on fear of retaliatory eviction are from Teresa Perchard of Citizens Advice, Robert Taylor of the National Private Tenants Organisation, David Timms of Friends of the Earth, and one tenant who I interviewed. They demonstrate that fear of retaliatory eviction is recognised as a barrier to uptake of the Green Deal amongst tenants within the sector.

Teresa Perchard from Citizens Advice provided evidence on the issue and expressed concern that tenants have no protection from the potential consequence of seeking improvements via the Green Deal from their landlords. She remarked that:

“We regularly come across cases in which people have asked their landlord to improve their property, sometimes seeking to use help from a grant scheme like Warm Front or its predecessors, sometimes because it is damp and mouldy. They can end up being evicted for no reason. In one case in our submission, someone was in a property for many years, with no debts. The tenant had finally taken action to try to get the landlord to improve the property and had involved the local authority, which issued an improvement notice. Lo and behold, the tenant was evicted. It seems a real pity to us that we

have the 2018 and 2016 standards, but no protection for tenants who might be threatened with eviction because they have taken action to try to get the property to meet the legal standard. We are disappointed that there is no protection there". (Teresa Perchard, Citizens Advice (ECCC, 2012 p.28)).

A representative for tenants from the National Private Tenants Organisation in the committee debate gave evidence on retaliatory eviction that he personally experienced from his landlord. He admitted that it is a real problem and concluded that the shortage of rental housing reinforced the fear of retaliation eviction:

As an experienced housing professional, I have been a victim of retaliatory eviction—that was in direct response both to the fact that I was complaining about how cold the property was, literally on the second day that I had moved in there, and the fact that I had called the environmental health officers round to come and have a look at the property. The agent issued me with an illegal notice to quit within the first two months of occupying the property. The agent said to me, "We know this is illegal but the landlord has asked us to do it, so that's why we have issued you with this document." I know retaliatory eviction exists. There is an issue with recording these things, but from the evidence I have seen, from my personal experience, and given that the market is skewed at the moment towards landlords, not tenants, I appreciate and understand that retaliatory eviction is a problem. (Robert Taylor, National Private Tenants Organisation (ECCC, 2012 p.38))

One interviewee who can be referred to as a lobbyist, and represents consumers in general, gave evidence in the committee debate from the DECC's own impact assessment for the Energy Act 2011 which accepts that the take-up of the tenants request measures would be limited by the fact that tenants may not want to risk losing their tenancy by confronting their landlord. He reported that:

"DECC themselves in its own impact assessment is accepting that its own legislation on tenants making requests will be limited by the fact that tenants do not want to make these requests because they are scared of losing their homes. It seems strange to me that DECC are accepting it itself in its own impact assessment, which was not available to us in the latter stages of the Bill going through the House, which is a shame. It then did not accept the case, which seems to me a moral one, that if you are bringing in a piece of legislation which encourages tenants to make demands of their landlords for energy efficiency, you should give them the protection that they deserve if that brings about some form of retaliatory consequence. That seems to be only fair. It is a real shame that that was not included."
(David Timms, Friends of the Earth (ECCC, 2012 p.29))

One tenant pointed out that tenants are in a weak position to ask improvements of their landlords due to fear of retaliatory eviction. They wondered why the law does not simply put the onus on the landlord. The statement reads that:

“I don’t think it’s going to work, personally. I mean, why don’t they just ask the landlord to improve their poor energy performing properties and stop involving the tenant? The landlords in this country are untouchable. I mean if the landlord does not like you today they can just say to you, “I want to sell my property,” and give you a month notice, right, to vacate. So I don’t think it will work, and if you are being a difficult tenant they can just get rid of you. The landlords can say I can’t afford and go ahead to do whatever they wanna do to any tenant who may try to force this on them. So what leverage is the law providing for tenants?” (T10)

This highlights that perhaps the perception was that that landlords’ decision-making power over energy efficiency improvements may have been reduced when they did not allow tenants to take up the scheme. One of the landlord interviewees impliedly described a problem along this line of argument that:

“I don’t really understand what is going on really underneath the scheme. That is what I don’t get. So, for me it’s no. Maybe, there are unscrupulous landlords out there who might think that well, ok; this is another way that I can offload responsibility onto the tenant, but there could be legal implication with this, because, you know, if the tenant improves the property does it mean that he or she could have some kind of claim on it? You know, some sort of estoppel [landlords being prevented from having full decision-making power over improvements] because they have made improvements to the property. Could they have some right of ownership? It seems to be a bit of a mindful; I don’t know enough about the law in this particularly aspect to be able to comment in any depth but—these are idle speculations I hasten to ask. So I’m not making authoritative statements about it but it just doesn’t feel right. You know, you own the property so if you allow somebody who is an occupant to improve it, then there could be some sort of unforeseen consequence... It is inverted thing. I don’t think it’s been taught out very well.” (LA)

6.3 Discussion of findings

6.3.1 The role of power in decision making

The majority of the tenants in my study needed the consent of their landlords to do even minor improvements. Could one reason why landlords do not want tenants to improve their properties be that that, if tenants improve the properties they live in, it reduces the decision-making power that a landlord has over their property? While this is not a fact, some landlords' perceptions about the Green Deal suggested so. The perception demonstrates that power is relevant to landlords, and as a result they may prevent tenants from taking up the scheme in order to protect their source of power: in this case, their properties, so that they could continue to be powerful.

The interviews with tenants showed new evidence that, unlike most owner-occupiers studied, tenants perceived the Green Deal process as too complicated and expensive. This was because any improvements decisions that tenants could make were subject to the approval of their landlords. Therefore, tenants argued that they might pay for assessment and even organise loans with the Green Deal providers, the final decision was based on landlords' decision to grant consent. This implies that tenants themselves admit that the landlord has decision-making power over them and that this can cost them greatly. Within Chapter Five of my thesis, I provided evidence in relation to financial reasons for low uptake to show that landlords in general are interested in money, suggesting that they will not make tenants go through hassle for nothing if they can clearly see the monetary benefit following consent. Perhaps, it is in this instance that providing financial incentives for landlords or putting legal obligations on them to achieve certain energy efficiency standards in their properties become relevant: that is, when we want them to consent by compromising their power.

As I explained within Chapter Two of my thesis, electric heaters tend to be the least cost effective (DGLG, 2013; Cooper and Palmer, 2011) and relatively inefficient method of heating homes (DGLG, 2013) in terms of carbon emissions. However, from this point of view, the survey result shows that the primary heating source for owners is gas, but primary source of heating for tenants is split between electricity and central gas heating. None of the 13 owners in the study uses electricity, but almost half of tenants (6 out of 13) use electricity. This finding confirms that privately rented homes were the most likely to have electric heating—19%, compared with 7% of owner occupied homes (DCLG, 2012). In other words, the private sector is more relevant to take up of central gas heating compared to owner

Chapter 6

occupied sector. However, firstly, let us compare this finding to past results, and the qualitative finding of this study which show that landlords do not include energy bills in the rent for commercial reasons. This suggests that another reason why landlords may not include energy bills in the rent, or do not have the motivation to invest in central gas heating measure via the Green Deal, is that they have already installed electric heaters in their rented properties. I would speculate that they find these easier to install and maintain.

Also, there is currently no law that states that a landlord must perform annual electrical safety checks, or that they need an annual safety electric certificate. But there are gas safety regulations in rental properties, which stipulate that the landlord is legally obligated to get an annual safety gas certificate (Health and Safety Executive, 2009). This can cost up to £100 every year, and can amount to a huge cost for landlords with several properties. Furthermore, electric heaters tend to be three times more expensive to use than gas boilers (Cooper and Palmer, 2011). This means that, to landlords, taking up the responsibility of paying energy bills, particularly if they do not intend to install a gas condensing boiler, would not be financially wise.

Secondly, perhaps, these results are more related to my qualitative evidence that tenants might not have the authority to take up the Green Deal for the type of improvements they may have wanted to invest in—in this case, central gas heating—as it may conflict with what the landlord wanted under the Green Deal. Conversely, owner-occupiers may have full authority over the type of improvements under the Green Deal. These findings support those from Consumer Focus (2012) that consumers with storage heating tend to have less control over their choice of heating system because they rent the property. Moreover, the finding reflects well the qualitative finding that tenants might not have had the authority to take up the Green Deal for the type of improvements they may have wanted to invest in, while owner-occupiers may have had full authority over the type of improvements they took up under the Green Deal.

Taken together, these results are in line with earlier results that, unlike owners (Clinch and Healy, 2000a), tenants might not have the right to invest in energy efficiency improvements of their rented accommodation (Brandon and Lewis, 1999; Clinch and Healy, 2000a; Baker and Lainé, 2010; DECC, 2011b) because landlords have greater power than their tenants (CAB, ACE and Friends of the Earth, 2011; ECCC, 2012; Vaughan, 1968; Popplestone, 1972; Keller, 1988) when it comes to energy conservation improvements (CAB, ACE and Friends of the Earth, 2011; ECCC, 2012).

As already presented within the financial reasons chapter, landlords own the property but may not be interested in making it more energy efficient as they are not paying the energy bill and may mainly be interested in making a profit from the rent. Evidence in relation to decision-making power has also suggested that landlords may not want to take responsibility for improvements so that tenants benefit from an efficient property or lower energy bills. Likewise, even though tenants may be interested in lower energy bills through energy efficiency improvements, they may not be interested in paying for the improvements through their energy bills if they are planning to move on after a short period of time. As already argued within the literature review, the split incentive problem still exists in the privately rented sector even with the advent of the Green Deal. In comparison, owner-occupiers may improve their own homes, stay longer in their homes, and hence appropriate some benefits under the scheme.

In view of this, my finding has confirmed that tenants may not have taken up the Green Deal because they were not supposed to fund improvements (DECC, 2011b), or else they were likely to move soon (DECC, 2011b; DECC, 2012), or otherwise they were required to pay the full cost of Green Deal measures (DECC, 2011b). The survey result confirmed the findings from a range of studies that tenants have a shorter length of stay in their homes than owner-occupiers (Rugg, Rhodes and Jones, 2008; Department of Housing and Urban Development, 2008; The Economist, 2009; DCLG, 2010; DGLG, 2013; DGLG, 2014; DGLG, 2015).

Taken together, my findings from both survey and qualitative interviews contradict the finding from Ameli and Brandt (2015), which found that the longer households have lived in their homes, the less they invested in energy efficiency measures because households were more likely to invest in energy upgrades when they first moved into their homes. Maybe the difference in results is because my study focused on a small sample of the UK population concentrated mainly in Southampton, and did not directly examine the role of length of stay or adoption levels of my participants. However, Ameli and Brandt (2015) directly investigated this using a large sample of more than 12,000 respondents across 11 countries. Nevertheless, considering the mix evidence known to me, my results support the stronger side of the debate.

Decision-making power is as important as financial reasons for explaining the inequality of take-up of the Green Deal between the privately rented sector and the owner-occupier sector. I have discussed within the literature review the practice of retaliatory eviction, where powerful landlords prevent tenants from taking up home improvements in general (DCLG,

Chapter 6

2007; Crosby, Formby and CAB, 2007; Shelter, 2009; Scottish Government, 2009; Shelter, 2011; DECC, 2011a; DECC, 2011b; ACE, 2012; CRESR, 2013). While I have found evidence to support these studies, my result is different in the sense that these studies do not provide us with any data on the role of power in relation to Green Deal uptake, let alone to compare data between sectors and landlords. This is where new evidence that, unlike for homeowners, fear of retaliatory eviction is one barrier for tenants requesting energy efficiency improvements through the Green Deal becomes relevant.

Perhaps, at face value, this result simply calls for the removal of the retaliatory eviction. But the question is, how sure are we that just removing the regulation is a strong driver for landlords to agree to tenants' requests? Whilst I would agree that there is no guaranteed way of making this happen, perhaps what is clear from this study is that landlords are mainly driven by financial aspects, as shown within Chapter Five of my findings. Therefore, I would confidently suggest that providing monetary incentives for landlords could make them accept tenants' requests under the Green Deal. Here, I would specifically refer to the argument made by Stern which implied that if money seems to be the cause of low uptake of energy conservation measures, providing incentives should unsurprisingly increase uptake (Stern, 1999).

The results of the study show that a requirement for consent between landlord and tenant (which does not exist in the owner-occupier market) is a key reason for lower uptake of the Green Deal in the privately rented sector. Overall, my findings are consistent with previous findings that the need for the landlord to get consent from multiple bill payers to proceed with the Green Deal in multi-tenant properties poses challenges (DECC, 2011a; Laine et al., 2011; Tovar, 2012; GDPHRA, 2014). They are also in line with the finding that tenants with an absentee landlord may have difficulty seeking consent (DCLG, 2010a; Laine et al., 2011). However, what the few studies focused on the Green Deal failed to tell us is that consent seeking is less of a barrier in the owner-occupier sector than the privately rented sector, and my study has bridged that gap. My results imply that, whereas owners may incur no or very limited transaction costs seeking consent, landlords and tenants may find consent seeking to be a very high-cost action in terms of time and effort. It is plausible that they may expect some monetary benefit from their actions.

Decision-making power is relevant for understanding the lower uptake of the Green Deal in the student rented sector compared to the young professional sector. Previous studies such as Hill and Hupe (2002), Pressman and Wildavsky (1973), Scharpf (1978) and O'Toole (1988)

have suggested that if a policy requires joint action or one has to go through a long chain to take it up, then the policy may suffer low uptake. My finding suggests that landlords in general may face such a long chain in seeking consent from their tenants for the uptake of the Green Deal. Here, I reveal a novel result that student landlords are more likely to face difficulty in seeking multiple consents short-term student tenant bill payers living in large blocks of flats, compared to young professional landlords who may equally seek consent in a large blocks of flats, but from smaller groups of professionals who may live there for a longer period of time and therefore find the process of consent seeking easier.

In relation to duration of stay of these different tenants, student tenants have a shorter length of stay—a mean of 1.6 years compared to young professional tenants with a mean of 2.5 years (National Landlords Association, 2014b). What we did not know is the role of duration of stay in uptake of the Green Deal between student landlords and young professional landlords. This is part of the gap I have filled with my study. Perhaps the question that comes next is: if tenants can collectively refuse consent, why can't they put their smaller powers together to overpower the landlord if they are really keen on reducing their energy bills through Green Deal measures? Nevertheless, as already argued, it is important to note that landlords are always powerful than tenants in such decisions, as they own the source of power, in this case the property. Overall, my findings support the assumption that individuals will act to maximize their interpersonal rewards and minimize their interpersonal costs (Molm and Cook, 1995). This is because landlords and tenants may need money to incentivise them to take action. In the absence of monetary incentives, landlords themselves may not take up the Green Deal and/or may prevent tenants from doing so. Based on my analysis, my findings suggest that power plays a role in behaviour change (Dahl, 1957; Etzioni, 1961; Parsons, 1963; Pérez-Cirera and Lovett, 2006; Molm, 1989; Dillahunt et al., 2010). They disagree with Molm (1988), which empirically found that power did not influence decisions. In terms of unequal power, I have found support that people with greater power (in this case landlords) are more likely to behave unsustainably (Boyce, 1994; Baland and Platteau, 1999; Boyce et al., 1999; Pérez-Cirera and Lovett, 2006; Dillahunt et al., 2010). However, I have no evidence to support studies such as Baland and Platteau 1996 and Baland and Platteau (1999) that suggested that greater power may promote investment in energy conservation measures.

6.4 Conclusion

I have provided evidence on the role of decision making power in the uptake of the Green Deal, and have made my position clear that the limited decision making power of both landlords and tenants in the privately rented sector has been a barrier to uptake of the Green Deal. I have demonstrated that the split incentive problem still exists in the privately rented sector. I have talked about the co-ordination problem that existed under the scheme, and suggested that based on the general assumptions of power theories and evidence gathered so far, monetary incentives could have been a better option for bringing about behaviour change or supporting uptake of the Green Deal.

Chapter 7: Presentation and discussion of findings on awareness reasons

7.1 Introduction

This chapter presents findings from interviews, surveys and documentary research. Before the first half of this chapter, there will be an overview of the assumptions upon which my findings were based. The first half of the chapter presents results on the role of awareness for uptake of the Green Deal between the privately rented sector and the owner occupier sector. This is followed by evidence on the role of information for the uptake of the Green Deal between the student landlords and the young professional landlords. We know very little about the difference between the privately rented sector and owner occupier sector and the differences between these two rented markets with respect to uptake of the Green Deal. Yet, comparison of this sort is crucial for designing a new policy in place of the abolished Green Deal to target people in the privately rented sector and in particular student landlords who have more inefficient homes compared to owner (DCLG, 2012; DCLG, 2013). In other words, comparative results from this study are very relevant for policy makers. Given that the success of energy efficiency policy depends on how well it targets (Druckman and Jackson, 2008). Next, it presents findings on environmental concern or interest in energy efficiency of people in the privately rented sector compared to home owners. This is followed by presentation of results on interest in energy efficiency of student landlords compared to young professional landlords. Understanding why respondents may not be interested in energy efficiency matters is a pre-requisite for any policy aimed at change. The second section of this chapter will discuss the results in the same order as already described in the above.

In the literature review and at the end of it, I formulated several conjectures. A few of them are as follows:

- The low awareness level of the Green Deal is fairly similar between the privately rented sector and the owner occupied sector.
- There are fairly similar levels of Green Deal awareness between the student rented market and the young professional rented market.
- Landlords and tenants consider energy efficiency a lower priority than owners.

Chapter 7

- Student landlords will show lower interest in energy efficiency than young professional landlords, as student tenants are less interested in energy efficiency than young professional tenants.

The literature suggests that consideration of awareness and/or attitude is important for examining the reasons for low uptake of the Green Deal. The information deficit models assume that providing the right information may raise awareness and lead to uptake of energy efficiency measures (Eden, 1996; Schultz, 2002; Kollmus and Agyeman, 2002; Jackson, 2005; Steg and Vlek, 2009; Simcock et al., 2014). Ajzen's (1991) theory of planned behaviour, Schwartz's (1992, 1994) model and Stern's value belief norm theory assume that attitudes—here, interest in the energy efficiency of a home—affect people's behaviour.

I have mentioned within my literature review that attitude behaviour theories suggest that people may be aware and/or hold supportive attitudes, but they may not translate their awareness into actions due to other barriers (Catney et al., 2013; Sweeney et al., 2013; Owens and Driffill, 2008; Steg and Vlek, 2009; Wilson et al., 2007; Abrahamse et al., 2005; McKenzie-Mohr, 2000, Kollmus and Agyeman, 2002; McDougall et al., 1983; Geller et al., 1983, Hirst, Berry and Soderstrom, 1981; Geller, 1981; Gilchrist and Craig, 2014; Andersson et al., 2013; Abrahamse and Steg, 2011; Miroso et al., 2011; Gadenne et al., 2011; Ibtissem, 2010, Steg et al., 2005; Kaiser et al., 2005; Steg et al., 2005; Schultz et al., 2005; Poortinga et al., 2004; Nordlund and Garvill, 2003; Garling et al., 2003; Gatersleben et al., 2002; Kollmus and Agyeman, 2002; Nordlund and Garvill, 2002; Joireman et al., 2001; Stern, 2000; Stern et al., 1999; Zelezny, 1999; Brandon and Lewis, 1999; Schultz and Zelezny, 1998; Stern et al., 1995; Karp, 1996; Stern, Dietz and Guagnano, 1995; Vining and Ebreo, 1992; Becker et al., 1981). In the light of these conflicting theories, I will examine my evidence to see if awareness and/or attitudes played any major role in the low uptake of the Green Deal.

7.2 Presentation of findings on awareness

7.2.1 Awareness of the Green Deal and its supported regulations

7.2.1.1 Awareness of the Green Deal

In comparison with financial and awareness reasons, it is less clear how important awareness reasons are to explain why uptake of the Green Deal is lower in the private rented sector than owner occupier sector. Generally, there are low levels of awareness of the Green Deal in the private housing sector. This is supported by the evidence obtained from my documentary analysis and interviews.

In a more general way, Carillion, Energy Company and Green Deal provider, responded to the ECCC that, in their view, there continues to be low levels of public awareness generally. To them, *“from experience of speaking to potential customers and households, very few are aware of Green Deal; how it operates and its potential benefits.”* (Carillion (ECCC, 2014c p.1))

Similarly, British Gas, energy company and Green Deal practitioner, wrote in the committee debate that:

“In our experience, the level of public awareness about the finer details of the scheme—how it works, what is available, how you apply, how you repay, how finance works etc.—is low and consequently acts as a barrier to consideration and take-up of the Green Deal.” (British Gas (ECCC, 2014c p.3))

Also, a quotation from a landlords’ representative in the committee debate was that, *“landlords have not heard an awful lot about it.”* (Dave Princep, Residential Landlords Association (ECCC, 2012 p.31))

Likewise, in the interviews, I found that private landlords and tenants had not heard about the Green Deal, just as owners had not. When respondents were asked if they had heard about the Green Deal 14 respondents out of 26, from the privately rented sector said they had not

Chapter 7

heard of the scheme compared to 7 out of 13 owner-occupiers. A statement that reflects most of the tenants I interviewed who said they have not heard about the scheme reads, “*No, I’m sorry, it doesn’t ring any bells with me.*”(T3)

Similarly, often landlords replied that, “*I haven’t heard about it.*” (L9) A representative statement from most of the homeowners who had not heard about the Green Deal was, “*No, I haven’t heard about it.*” (O13)

Awareness is not very important in explaining the difference in uptake between the student market and the young professional market. There were equal levels of Green Deal awareness between the student rented market and the young professional rented market. Comparative data showed that “*I haven’t heard about it*” was a common statement in both the student rented market and the young professional rented market.

7.2.1.2 Awareness of the tenant request legislation

In order to help increase uptake of energy efficiency measures using the Green Deal, tenants were expected to ask for Green Deal improvements from their landlords in 2016, and their landlords were required to agree to their requests. But this study found that none of the tenants interviewed was aware of the tenant request legislation, which suggests that tenants would not have used it to request Green Deal improvements from their landlords. In effect, take up of the Green Deal would have still been very low within the private rental market. My finding is new in academic studies and therefore bridges a gap in literature. Yet it reflects the prediction that only 2.2% of the measures taken up in F and G rated properties would be due to a request by tenants for energy efficiency improvement (DECC, 2011a).

Looking through the lens of attitude–behaviour theory, I argue that, even if tenants became aware of the legislation, they may still have found it very difficult to take up the Green Deal with their landlords. This is due to more situational problems such as the lack of incentive for tenants to put any effort in making improvement requests if they planned to move away from the property after a short period. Also, tenants are more likely to receive the response of retaliatory eviction for making such a request, as demonstrated within my findings on decision-making power. A possible reason is that tenants who make energy efficiency requests

using the 2011 Energy Bill Act are not protected against retaliatory eviction, and the Government encouraged tenants to demand energy efficiency measures from their landlords under the Green Deal without giving them any protection from the potential consequences (CAB, ACE and Friends of the Earth, 2011).

7.2.1.3 Awareness of the energy efficiency minimum standard

Landlords need to be aware of the energy efficiency minimum standard (EEMS). This regulation requires landlords to ensure that their F and G rated properties meet the minimum standard E by 2018, otherwise they cannot legally rent them out. It is when landlords become aware of this legislation that they may use the Green Deal to improve their worst performing properties. Yet, findings from the documentary analysis show that awareness of the EEMS regulation is very low among landlords. If majority of landlords do not know much about the regulation and are unsure about when it is coming into force, they may not take up the Green Deal in advance for home improvements to reach this minimum standard.

A representative of landlords made an interesting reading before the ECCC that

There is so little information out there, landlords themselves are not aware so much and there is so much uncertainty. Certainly, the idea that landlords will go out and carry out works without knowing what the final enforcement provisions will be, is a little unrealistic. (Dave Princep, Residential Landlords Association (ECCC, 2012 p.32))

It was added that

If landlords are not able to get clear information from a reliable source about what those regulations [energy efficiency minimum standard and tenant request legislations] are, and what their duties are under them, they are likely to sit on their hands until they can get that information. (David Timms of Friends of the Earth (ECCC, 2012 p.23))

Chapter 7

In the qualitative interviews, when landlords were asked if they are aware that, from 2018, they cannot rent out inefficient properties (i.e. F and G rated homes), and what their plans were for meeting this regulation, their responses showed that young professional landlords were better aware of the regulation than student landlords. So they are more likely to have taken up the Green Deal for improvements to meet the standard. To support this claim, I present two quotations from student landlords who responded that:

No, I'm not aware of that. Well, when 2018 comes, maybe I will check if my properties are not in the right category then take the necessary action to make them higher ratings... Maybe, put some more insulation in the loft. I don't need somebody [Green Deal installer] to come and do it for me because I can do that. (L8)

No, in that case what I will do is I will ask somebody to come and rate it, to do this energy performance certificate again, and I will take advice from that person at a time to say, "Ok so you've told me that it fails on this and this; how do I rectify this?" And if they say new windows or more insulation, then I will take steps myself to put that right, and absolutely not through the Green Deal. (L4)

The argument about the role of information for the uptake of the Green Deal becomes more interesting if I point out that these questions were asked (see order of the interview schedule) after these particular landlords had told me that they had not heard about the Green Deal, and so I had to clearly explain the Green Deal process to them. Thus, words such as *"I don't need somebody [Green Deal installer]"* and *"absolutely not through the Green Deal"* suggest that they might have identified in my explanation other more important obstacles that might prevent them from taking up the Green Deal to meet the regulation.

It is based on these two materials that I argue that, even if landlords had become aware of the legislation, they would still have found it very difficult to take up the Green Deal with their tenants to meet this regulation. This is because there are situational barriers like the high transaction costs, the difficulty for landlords to gain consent from several tenants, or the high cost of Green Deal they may face especially if they decide to take up Green Deal for several of

their worst properties. These barriers need to be addressed, and without removing them, the role of information is likely to be drastically limited.

7.3 Understanding of the Green Deal

Evidence from documentary research shows that, generally, the level of understanding of the Green Deal is low in the private sector. For instance, a landlords' representative in the committee debate stated that *“there is still quite a lot of uncertainty around how the Green Deal will operate and the procedures that will have to be followed through.”* (Dave Princep, Residential Landlords Association (ECCC, 2012 p.31))

Specific to the privately rented sector, ARLA, a professional body in the private rented sector representing consumers, wrote to the debate committee that:

Based on feedback from both landlord and letting agent forums, where the Green Deal has been presented and discussed, there is limited knowledge of the Green Deal among landlords, tenants and letting agents. Even where people have heard of the scheme, their understanding of its benefits and how it works in practice are severely limited. (ARLA, 2014c p.2).

However, comparing the reasons for inequality of uptake of the Green Deal between the owner-occupier sector and the privately rented sector, I found that on average private landlords and tenants are more likely to have limited understanding of the Green Deal than owners.

In this study, unlike homeowners whose understanding of the scheme was found to be good on average, people in the privately rented sector made several comments to show that they had relatively low level of understanding of the Green Deal. For example, a representative statement from homeowners reads, *“my understanding of the Green Deal is that it is energy efficiency policy aimed to improve homes by offering loans with interest. The loan is paid back through savings on energy bills.”* (O3) In contrast, some tenants and landlords I interviewee who said they had heard about the Green Deal showed severely limited understanding of the scheme. This was

Chapter 7

because, at the time of the interview, the Green Deal was still a “pay as you save” scheme, but some in the private rented sector often referred to the Green Deal as a grant for homeowners

A statement that reflects most of the tenants I interviewed was that: *“It gives grant to homeowners.”* (T9).

Similar statements came from landlords. For example, one landlord said, *“It is a grant scheme, but an assessor has to determine if your property qualifies for the grant.”* (L10).

One landlord who said he knew about the scheme confirmed that he did not understand the scheme after I explained to him. He admitted that:

I have discovered a few new facts! I didn't know you could borrow money under the Green Deal to do it. I didn't know that the loan remains with the property if the property is sold. I didn't realise the cost would be recovered from the electricity bills. One more thing to ask you [interviewer] can you help me with measures covered by scheme? I don't think it includes loft insulation because I believe you can now get loft insulation for free from virtually anybody. (L13)

7.3.1 HMO landlords do not require energy performance certificates

An EPC communicates the energy rating of the property to improvers, and as a result promotes uptake of energy conservation measures using the Green Deal. However, HMO landlords (that is, landlords who rent out property to at least three people or individuals, who are not from the same household or family but share facilities like bathroom, toilet and kitchen) do not require an EPC until they are letting the entire property under a single contract. By implication, HMO landlords may have less knowledge of the energy ratings of their worst-performing properties to instigate uptake of the energy efficiency measures via the Green Deal.

Unsurprisingly, I found that, unlike owners who may have an EPC and so are more likely to understand the energy ratings of their properties, HMO landlords who did not require EPC were less likely to understand how inefficient their properties were to encourage them to participate in the uptake of the Green Deal.

One speaker for landlords, Dave Princep of the Residential Landlords Association, explained in the ECCC debate why HMOs may not have an EPC. The statement also suggests that if HMO landlords do not have EPC, they may not understand the energy efficiency of their properties to instigate uptake of energy efficiency measures in the privately rented sector:

My understanding is that you do not need an EPC if you rent out the property, but you do need an EPC if you sell—one of the issues about the EPC generation software is that it is not designed for properties that are in multiple occupations. It is designed for a standard dwelling with one bathroom, one kitchen, bedrooms and lounges, not properties with several bathrooms, several kitchens and a mixture of shared kitchens and individual kitchens. So the results generated would not be reliable and could be challenged, because some major assumptions would have to be made about the layout of the property. Yet, I disagree with that idea EPCs do not cover HMOs, because EPC is really a key to driving energy efficiency in the private rented sector. (Dave Princep, Residential Landlords Association (ECCC, 2012 p. 37))

A tenant representative, Robert Taylor from the National Private Tenants Organisation, expressed surprise that HMOs are excluded from needing an EPC, and showed that it is a big challenge to uptake of energy efficiency measures, which must be addressed:

It seems odd to me that what is often one of the worst areas of the private rented sector, HMOs, would be excluded on the basis that there are some technical issues: we can send people to the moon, but we cannot resolve issues to do with energy performance certificates in HMOs, I find that rather strange. Let us make the EPC apply to every property in the private rented sector. (Robert Taylor, National Private Tenants Organisation (ECCC, 2012 p.37))

Chapter 7

On interviewed landlord gave us a clear picture of why HMOs landlords having no EPC may be one of the principal reasons behind low uptake of the Green Deal in the private rented sector. To him, HMO landlords are essentially not part of the scheme, implying that they may not understand how energy inefficient their properties might be:

If I'm right, there are over a million HMOs in England, and in general HMOs are very inefficient, yet HMOs landlords are excluded from the Green Deal because they do not have EPC. This means that there are more landlords who are not part of the Green Deal, whereas there is no owner-occupier who has been excluded from the scheme as a result of having no energy performance certificate. (L7)

HMO student landlords do not require an EPC and so they are less likely to understand energy ratings of their tenanted homes, which would cause them to take part in the uptake of the Green Deal. In comparison, young professional landlords may have EPCs and so are more likely to understand how inefficient their properties are, which would motivate them to be part of the Green Deal.

One owner-occupier explained in the interview why uptake of the Green Deal in the student market is lower than in the young professional market. He stated that:

Green Deal applies only to private rented properties let under a single contract and does not apply to significant number of inefficient properties that are rented out under multiple contracts as is in the case of most HMOs. HMOs landlords do not have EPC information on energy ratings of their tenanted homes and so they are not part of the Green Deal. Yet, their properties are more relevant to improvements. But almost all young professional landlords may understand energy ratings of their property based on EPC information" (O7).

Besides this, very similar point was that, there is a clear distinction between how student landlords and young professional landlords may choose to rent out properties to their respective tenants. This difference means the student landlords need no EPC, and by implication they find it difficult to understand how leaky their rented properties are, which would encourage them to take up the scheme:

Student HMOs landlords are more likely to rent out rooms to individual students under different tenancy agreement compared with young professional landlords who often rent out the whole property to families under single contracts. So, student landlords are more inclined to have no EPC and as a result fundamentally excluded from taking up the Green Deal than young professional tenants. (L7)

Even if the people in the privately rented sector have understood the Green Deal better or have had an EPC to understand their energy ratings, they would still not have taken up the scheme in the face of more structure barriers. For ease of understanding, the potential effect of having or not having EPC on take-up of the Green Deal between the student landlord and the young professional landlord is shown in Figure 17. So far, my expectations on awareness, as formulated within my literature review and summarised at the end of the review, have been met.

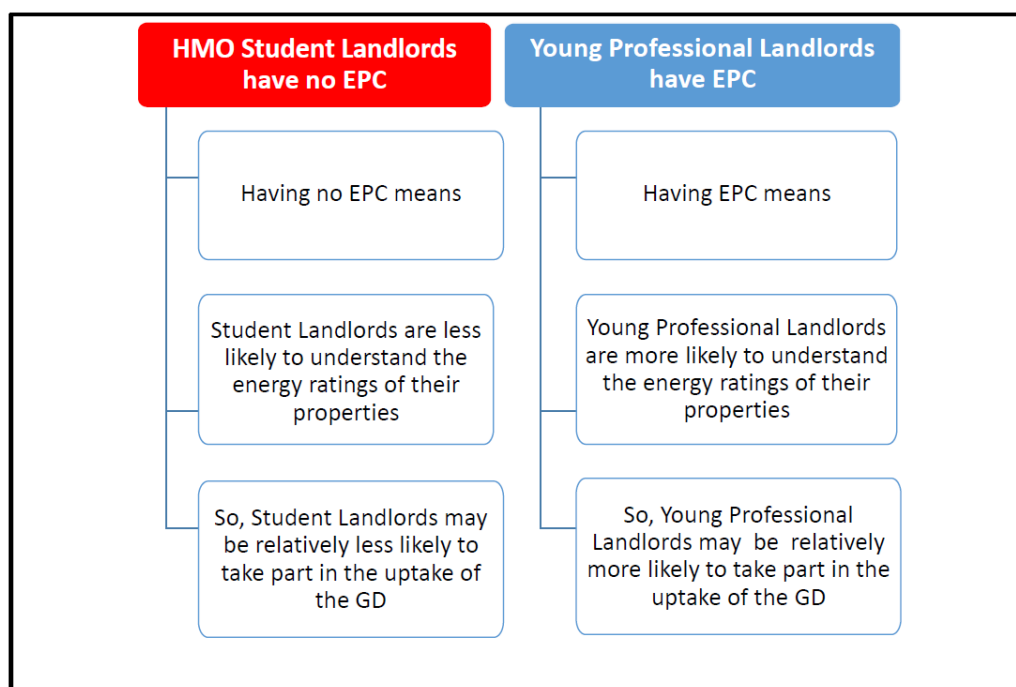


Figure 17: The potential role of understanding home energy rating on EPC, for uptake of the Green Deal

7.4 Attitudes to energy efficiency of the property

I was interested to find out the role that environmental considerations played for my research participants in choosing the type of property to buy or rent. Environmental attitudes of tenants and owners, for example, are potentially relevant in understanding the difference in uptake of the Green Deal in the privately rented sector and the owner-occupier sector. As expected, I found that tenants are only interested in location but not energy efficiency when renting, but owners consider energy efficiency in their buying decisions.

Some 11 tenants out of the 13 tenants in my study did not consider the energy efficiency of the property before they decided to rent it. But nine out of the 13 owners in my study considered the energy efficiency of the property before they bought them.

Sharing similar views with other tenants in the study, one interviewee tenant said that, *“I rented the property in December 2012 because the flat was close to the University but also quite close to the shop in Portswood and within easy access to the city centre.”* (T5)

Added to this, is another tenant who said that

“Actually, I didn’t consider the energy efficiency of the property. All that I was interested was how close the accommodation was to the university. Although now with the benefit of hindsight my flat is really cold and I wish that I had considered it better detailed before.” (T5)

Apart from location and size of the property, one owner’s decision (which was similar to other owners) was also based on the fact that the house was new. He said that, *“I bought it I think around 1985. Because it was a brand new house and in a very prime location in the centre of Highfield, Southampton, and seemed that it was a very good and unique opportunity.”* (O6)

This motive suggests that attitudes to the energy efficiency of the properties played a role in his choice, as a brand new property is likely to incorporate reasonable energy efficiency measures.

Conversely, the majority of owners considered the energy efficiency of their properties when they bought them because they thought it could save them money in the future or it could help to protect the climate. For example, one owner, who had before paid expensive bills in his previous property, considered the energy efficiency of his second property to avoid that experience. His answer to the question whether he considered the energy efficiency of the property when he bought it was that:

“In very broad terms yes, because I lived in before that, a 1930s property which was expensive to heat and involved a lot of maintenance, so at the time I wanted to move into a slightly modern property and this one is built in the 1970s. That was easier to look after both maintenance and, I suppose, energy-wise.” (O2)

Another owner made his decision based on financial and environmental reason. He remarked:

“I considered it because there is a talk that sometime in the future the energy banding of a house can be linked to council tax. I don’t know when that is coming in or even if it is coming in, there has been a talk about that. I am also interested in efficiency anyway because I got to reduce my own personal CO₂ footprint.” (O7)

Put together, these findings show that tenants are less likely to show concern or interest in energy efficiency when they are choosing a property to rent, than owners when finding a place to buy. So tenants may be less likely to take up energy efficiency measures than owners.

Almost all the 13 landlords I interviewed did not much consider the energy efficiency of the properties when they bought them. The environmental attitudes of different landlords are potentially relevant in explaining the difference in uptake of the Green Deal in the student

Chapter 7

market and the young professional market. My study suggested that energy efficiency was not a major consideration for student landlords, because they think students are mainly interested in location, and not experienced enough to be concerned about properties' energy efficiency. In comparison, the interviews with landlords in the young professional market suggested that energy efficiency might play a role in their decision to buy a property, because they perceive young professionals to be more interested in home energy efficiency.

The student rental market has high demand due to the shortage of accommodation, and therefore some student landlords do not care about the energy efficiency of the property they buy to rent. All that they care about is ensuring that the property is capable of sharing, is near the university, and so on. One student landlord boldly pointed out that:

"I didn't really [consider the energy efficiency], because I bought the property for renting, and in the student market energy efficiency is less of an issue. If the layout of the property suit students, the accommodation is not dirty, it's got new carpet, the room are decent size, there is one double room, each room has wardrobes and it is located close to the university then you've got no problem at all. We have shortage of student accommodation in Southampton. We are now a twin universities couple of years now. So both universities had... huge new departments growing more international students." (L11)

Surprisingly, only one professional landlord out of the 13 landlords interviewed thought that considering the energy efficiency of the property was important because an energy-efficient property can be used as a renting point. This landlord even put aside money for future energy efficiency improvements. He said that:

"We did consider that, but we also put money aside to invest in improving the energy efficiency of the building. Whether it is injecting insulation, improving roof insulation or upgrading to double glazing. These are all capital cost we account for when we look for new properties. If the new property is an old house and it needs to have some upgrades, we do that to make it more efficient and more rentable." (L2)

When landlords were asked if they thought the energy efficiency of the property is an important factor for potential tenants to decide whether or not to rent it, and why, it was found that on the whole, landlords think energy efficiency is less relevant in tenants' decisions to rent a property from them. This finding indicates that student landlords are less likely than young professional landlords to have incentives to invest in energy efficiency measures, as student tenants are less likely than young professional tenants to take into account energy efficiency when renting.

The evidence below suggests that student landlords may hardly invest in energy saving measures, as their tenants do not often take those measures into account when renting. It reads:

“Obviously, I am looking at this from the landlord’s perspective, so only in my experience as landlord in terms of what tenants want to know from me before they rent out my property... the students are more concerned with location of the property. They wanted somewhere that was fairly local to the town and to the University [Southampton] they didn’t raise any issue about energy efficiency of the property. So I can only assume that is not the case.” (L4)

A statement from one young professional landlord indicated that young professional landlords may at least consider investing in double glazing to meet the needs of their tenants, as they want to see that measure installed.

“I don’t think the tenants are too concerned about certificate and what is written on paper. I think location and physical appearance of the property are more important to them than energy efficiency. What those tenants want to see is double glazing... rather than looking too much upgrade in many cases. I think it’s [energy efficiency of the property] a point to be considered but for most tenants it’s not a deal-breaker.” (L2)

So far, my expectations on participants' attitudes to energy efficiency, as formulated within my literature review and summarised at the end of the review, have been met.

7.5 Discussion of findings

7.5.1 Awareness of the Green Deal and its supported regulations

In comparison with other reasons, awareness is less able to explain the differences in uptake of the Green Deal between the different sectors. I found that generally, there was low awareness of the Green Deal in both the privately rented and the owner occupier sectors. My findings confirmed findings from previous studies in my literature review, which suggest that generally awareness level of the Green Deal was low in the private sector (DECG, 2015b; GDPHRH, 2014; DECC, 2014; Vaughan, 2013; DECC, 2013d), including among private landlords (ARLA, 2014; Hope and Booth, 2014). Similarly, awareness is not very important to explain the differences in uptake between the student market and the young professional market, as there were fairly similar levels of Green Deal awareness between the student rented market and the young professional rented market.

I found that none of the tenants interviewed was aware of the tenant request legislation, which suggests tenants would not have used it to request Green Deal improvements from their landlords come 2016 as planned. While my finding admits that it is important that people become aware of the regulation, it does not show that awareness of it would guarantee an increase in uptake of the Green Deal, due to other, more important, contextual barriers. My findings show that awareness of the minimum standard regulation is very low among landlords. This implies that, if majority of landlords do not know much about the regulation and are unsure about when it is coming into force, landlords would not have been simply motivated to take up the Green Deal in advance for home improvements to reach this minimum standard. But again, there was no guarantee that becoming aware of the regulation might have increased take up of the Green Deal due to more structural barriers that landlords could still face—for example, the high cost of improving several of their properties. My findings provide the insight that student landlords are less likely to be aware of the minimum standard regulation than young professional landlords, and so student landlords are less likely to have taken up the Green Deal for home improvements to meet the standard.

7.5.2 Understanding of the Green Deal

Generally, the level of understanding of the Green Deal is low in the private housing sector. However, comparing the reasons for inequality of uptake between the owner-occupier sector

and the privately rented sector shows that private landlords and tenants are more likely to have limited understanding of the Green Deal than owners. Similarly, I have shown in my literature review that landlords, tenants and owners have limited understanding of the Green Deal (DECC, 2012). My finding partly concurs with the results from ARLA (2014) and Hope and Booth (2014) that landlords have limited understanding of the Green Deal. The difference between my results and these two previous studies is that they did not compare landlords' understanding of the scheme to owners', and also did not cover tenants' understanding in relation to owners. However, I share the same argument as Hope and Booth (2014) that barriers to uptake of the Green Deal are not as a result of lack of information or understanding. Provision of information may not necessarily lead to uptake of the Green Deal because there might be other more important barriers to uptake.

Within my literature review, I referred to a wide range of literature such as DECC (2014a), DECC (2013d), DECC (2013e), DECC (2013f), Friends of the Earth and ACE (2013), DCLG (2011c), EST (2008), IEA (2008), and DECC (2012), which suggested that, among other reasons, without EPC information households may not understand energy ratings of their properties to instigate them to use the Green Deal. I found that owners may have an EPC to help them understand the energy ratings of their properties, and therefore may have been encouraged to take part in the Green Deal; but on the other hand, HMO landlords do not require an EPC and may be denied the opportunity to know about their inefficient tenanted homes. As a result, they may not have had the drive to take part in the uptake of the Green Deal.

My finding mirrors the findings that suggest that no HMO landlords took up the Green Deal, or claimed the Green Deal Home Improvement fund, as they have no EPC (DECC, 2015). The finding also validates the long-held view that the EPC should also apply to all HMO properties (DGLG, 2010a; DGLG, 2010b; EST, 2012; Friends of the Earth and ACE, 2013; Friends of the Earth and ACE, 2014). Whilst my finding shows that lack of understanding or information may have been a barrier to uptake of the Green Deal, it does not mean that providing information to enhance HMO landlords' understanding, in this case, may necessarily have made them take up the Green Deal. EPC information is less relevant for landlords in particular (Ambrose, 2015; Hope and Booth, 2014; DCLG, 2011b; Friends of the Earth and ACE, 2013; CRESR, 2013; Consumer Focus, 2011a; DECC 2011b).

Also, making a comparison between the two types of landlords, I found a new insight which has not been published in any academic journal, that HMOs student landlords do not require an EPC so they may not know their worst performing properties. For that reason they may not have participated in the uptake of the Green Deal. In comparison, young professional landlords may have an EPC showing them the energy ratings for their properties, and this may serve the purpose of promoting the uptake of the Green Deal among them.

My results raise the crucial question: is it true that, as the existing literature suggests, providing the right information is very effective in supporting mass uptake of the Green Deal? Based on my findings, I would argue that providing information is not what would have necessarily prevented low uptake of the Green Deal. The argument developed from my findings contradicts the conjecture of the information deficit model that providing people with the right information may raise their awareness and eventually lead to behaviour change (Eden, 1996; Schultz, 2002; Kollmus and Agyeman, 2002; Jackson, 2005; Steg and Vlek, 2009; Simcock et al., 2014). My argument disagrees with previous studies that suggest that providing people with the right information can bring about behaviour change (Henryson et al., 2000, Daamen, et al., 2001; McMakin et al., 2002; Abrahamse et al., 2005; Darby, 2006; Wilson and Dowlatabadi, 2007; Abrahamse et al., 2007; Steg, 2008; Burgess and Nye, 2008; Fischer, 2008; Hargreaves et al., 2010; Pollitt and Shaorshadze, 2011, Sweeney et al., 2013; Catney et al., 2013; Simcock et al., 2014).

However, the argument developed from my results is in line with several studies that found that providing information to raise awareness does not necessarily change behaviour (Hirst, Berry and Soderstrom, 1981; Geller, 1981; McDougall et al., 1983; Geller et al., 1983, McKenzie-Mohr, 2000, Kollmus and Agyeman, 2002; Abrahamse et al., 2005; Wilson et al., 2007; Owens and Driffill, 2008; Steg and Vlek, 2009; Catney et al., 2013; Sweeney et al., 2013). Examining my findings through the lens of attitude-behaviour theory, I argue that even if people in the rented sectors, for example, had the right information and had come to understand the Green Deal very well, they might not have taken up the Green Deal due to structural barriers.

7.6 Attitudes to energy efficiency of the property

The environmental attitudes of my participants are potentially important in explaining the difference in uptake of the Green Deal between the different sectors. In relation to attitudes to home energy efficiency, I have presented evidence to show that whereas location is the main focus for tenants and owners to choose a place to rent or buy, owners' decisions are also strongly influenced by interest in energy efficiency. I have provided a case that the energy efficiency of the property is less of a consideration and priority to tenants than owners. I have also shown that landlords generally have less interest in energy efficiency when they are buying a property to rent. My findings are a cause for concern, as the Green Deal scheme aimed to address the cost barrier but not the lack of priority barrier (James et al., 2011). In sum, these findings support the claim within the literature that tenants and landlords do not view energy efficiency as a high priority (Scott, 1997; Bell and Lowe, 2000; Ravetz, 2008; Power, 2008; Harris Interactive, 2009; Royal Institution of Chartered Surveyors, 2010; Guertler, 2011; Adjei, Hamilton and Roys, 2011; James et al., 2011; DECC, 2011b; EST, 2011; DECC, 2012; CRESR, 2013; Hope and Booth, 2014). The main focus of tenants when looking for a property to rent is location (DECC 2011b; CRESR, 2013), rather than energy efficiency (DECC, 2011b, EST, 2011; DECC, 2012; Ambrose, 2015). This disagrees with the National Landlords Association survey's result where 35% of tenants said they considered the energy efficiency of a property to be an important factor when choosing a place to live (National Landlords Association, 2016).

Within my literature review, I argued from the viewpoint of Harris Interactive (2009) that landlords' attitude to energy efficiency when buying a property is becoming more negative. Whilst Harris Interactive's study does provide us with different reasons for landlords' attitudes without reference to types of landlords, I have contributed to the literature by showing that my interviews with student landlords suggested that energy efficiency was not a major consideration for them. This was because they think students are mainly interested in location and not experienced enough to be concerned about properties' energy efficiency. In comparison, the interviews with landlords in the young professional market suggested that energy efficiency might play a role in their decision to buy a property, because they perceive young professionals to be more interested in home energy efficiency.

Chapter 7

I have presented another new finding which indicates that student landlords are less likely than young professional landlords to have an incentive to invest in energy efficiency measures, as student tenants are less likely than young professional tenants to take into account energy efficiency when renting. This finding implies that student landlords' attitudes to energy conservation improvement are due to student tenants' disinterest in such improvements when they are looking for a place to rent.

However, it is also possible that student landlords know very well that they are renting to students, for whom who often it is the first time they have ever rented a property in their lives. They have never lived in poorly insulated properties, but in high-value warm houses as they may come from rich backgrounds. They do not even know or have ever experienced the inefficiency of the property they are locking themselves into, and so they do not even consider energy efficiency. They are probably the most inexperienced tenants in the rental market (Rugg and Rhodes, 2008).

Students live in university halls of residence in their first year, and then in their second year they meet friends and rent a house together. So six students at the end of their first year agree to rent a house together, they then go and find a house and sign a contract in June because they have ended their first year. They pay rent to the landlord over the summer, from say 1st July, yet they don't occupy the property till September as they are already locked in a contract for six months. So their earliest exit point will be somewhere in January, which is when they are doing their exams, and so they are likely to find it more difficult to move at that point. They discover in January that the house is freezing cold, and they become miserable in the poorly-insulated singled glazed house. But then it is too late to move. At the end of 12 months, a lot of students move back to university halls if they can, because they appreciate the free heating they get from the good-quality university halls in their third year. The cycle begins with another set of inexperienced second year students, and the student landlords know this process very well and so are not keen on energy savings improvements. Figure 18 is the pictorial representation of students' rental contract.

In contrast, young professional landlords may serve more experienced tenants, who may have experienced living in poorly insulated houses before and therefore will want to see that they live in a property with some energy efficiency measures installed. My finding concurs with the view that student landlords have letting practices which are specifically modelled to student tenants (Rugg, Rhodes and Jones, 2002). Moreover, my findings fit well the findings from

Rugg and Rhodes (2008), which suggest that young professional landlords may hold positive attitudes toward energy saving improvements because professional tenants enter the market in search of quality housing.

Additionally, my results throw some light on the findings that perhaps the only requirement of students from landlords is that the property is furnished and capable of being shared by two or more students, whereas other household types (including young professional tenants) may have a number of specialised requirements (Rugg, Rhodes and Jones, 2002; Rugg and Rhodes, 2008). Students in general are not experienced renters and may find it difficult to pinpoint efficient property without landlords' assistance, and this opens an opportunity for student landlords to shun energy saving improvements.

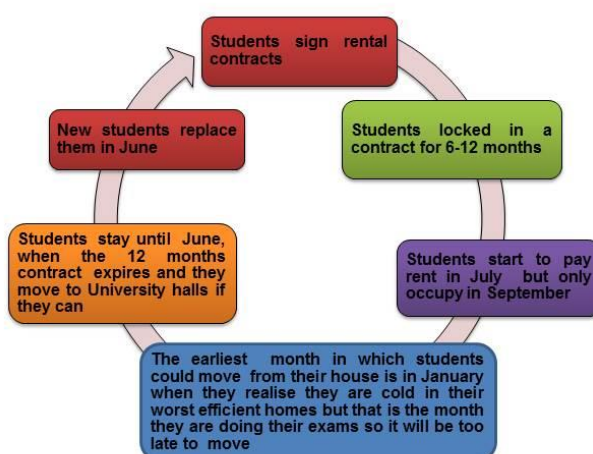


Figure 18: A cycle of students' rental contract

I cannot argue based on these findings that pro-environmental attitude may always reflect pro-environmental behaviours, or vice versa. However, it is safe to say that my interviews have demonstrated that there may be a relationship between my respondents' attitudes and their behaviours—in this case, uptake of energy efficiency measures. To this aim, my overall findings on my respondents' interest or disinterest in home energy efficiency support the idea that environmental attitude or concern may play a role in the way people act (Gilchrist and Craig, 2014; Andersson et al., 2013; Abrahamse and Steg, 2011; Miroso et al., 2011; Gadenne

Chapter 7

et al., 2011; Ibtissem, 2010; Schultz et al., 2005; Steg et al., 2005; Poortinga et al., 2004; Nordlund and Garvill, 2003; Nordlund and Garvill, 2002; Gatersleben et al., 2002; Kollmus and Agyeman, 2002; Brandon and Lewis, 1999; Karp, 1996; Stern, Dietz and Guagnano, 1995; Becker et al., 1981). But my overall findings contradict a few older studies which found that value, environmental concern or attitude did not lead to pro-environmental behaviour (Kempton et al., 1995; Bickman, 1972).

Overall, my results have provided support for some models including Schwartz's (1992, 1994) model and Stern's (1999) value belief norm theory. The table below provides an overview of relevance of the three dimensions for explaining differences in uptake between sectors.

Table 4: Relevance of the three dimensions for explaining differences in uptake between sectors

| | Homeowners versus tenants and landlords | Student versus young professional rented sector |
|-------------------|--|--|
| Financial reasons | <p>Very important:</p> <ul style="list-style-type: none"> ✓ Tenants usually on lower incomes than homeowners ✓ Landlords were more likely to pay exit fee on several properties which form major part of their rental income than owners, who are more likely to pay exit fee on a property ✓ Unlike owners, GD charge deterred future tenants and reduced rental incomes for landlords | <p>Very important:</p> <ul style="list-style-type: none"> ✓ Student tenants often on lower incomes than young professional tenants ✓ Student landlords focused on rental incomes and believed that GD improvement would not increase their rental incomes, but young professional landlords focused on capital gains and understood that GD improvements would slightly increase capital growth. |

| | Homeowners versus tenants and landlords | Student versus young professional rented sector |
|-----------------|--|--|
| | <ul style="list-style-type: none"> ✓ Landlords were required to make repayments on the GD loan during void periods whilst, owners did not experience void periods. | <ul style="list-style-type: none"> ✓ Properties in the student rented market were more likely be rejected as collateral security by GD providers, or accepted for loans at higher interest rates than properties in the young professional rented market. |
| Decision-making | <p>Very important:</p> <ul style="list-style-type: none"> ✓ Requirement for consensus between landlord and tenant in rented market; this requirement does not exist in owner-occupier market ✓ Tenants thought that it was not their responsibility to pay for improvements as they plan to move on after a short period of time. Conversely, homeowners fulfil their own responsibility and have a relatively long length of stay in their homes. | <p>Very important:</p> <ul style="list-style-type: none"> ✓ More difficult to reach consensus in student market than young professional rented market, because of more transient and larger tenant groups. |

| | Homeowners versus tenants and landlords | Student versus young professional rented sector |
|-----------|---|--|
| | <p>✓ Unlike for homeowners, fear of retaliatory eviction is a barrier for tenants requesting energy efficiency improvements through the GD.</p> | |
| Awareness | <p>Not very important:</p> <p>✓ Fairly similar low levels of GD awareness was found between the privately rented sector and the owner occupied sector.</p> <p>Environmental attitudes, potentially relevant:</p> <p>✓ Landlords and tenants had lower interest in energy efficiency than owners and therefore owner-occupiers might be more willing to act on their pro-environmental attitudes than landlords and tenants.</p> | <p>Not very important:</p> <p>✓ Fairly similar low levels of GD awareness between the student rented market and the young professional rented market.</p> <p>Environmental attitudes, potentially relevant:</p> <p>✓ Student landlords showed lower interest in energy efficiency than young professional landlords. The latter might be more willing to act on their pro-environmental attitudes than the former. Young</p> |

| | Homeowners versus tenants and landlords | Student versus young professional rented sector |
|--|--|---|
| | But further research would be required. | professional landlords' motivation to rent out their properties is based on long-term enhancement of capital value, unlike student landlords' motivations based on short term profit. But further research would be required. |

7.7 Conclusion

I have shown in this chapter that it is less clear how important awareness reasons are to help us understand the differences in uptake of the Green Deal between the different sectors. My results have had some support for Ajzen's theory of planned behaviour, Schwartz's model, and Stern's value belief norm theory. This chapter has discussed my research findings on the concept of awareness, in relation to information deficit models and attitude-behaviour theories. I have shown in this chapter which of my findings have contributed to the literature. I have also shown which of my findings have confirmed or disagreed with previous literature and how.

Chapter 8: Conclusions

8.1 Introduction

This study examined how financial incentives, decision making power and awareness as reasons for inequality of uptake of the Green Deal compare between the privately rented and owner-occupier sectors, and between the student landlord market and the young professional landlord market. This question is relevant to policy, as answers from it will help policymakers develop new policies to effectively target people within the privately rented sector and, especially, the student landlord sector. The first half of this chapter will discuss the key findings on financial reasons, followed by the principal results on decision-making power, and finally, findings on awareness as reasons why uptake of the Green Deal is lower in the privately rented sector than the owner-occupier sector. As my main contribution to the literature, I will proceed by showing which of these concepts is most important for understanding the difference in uptake of the Green Deal between the privately rented and owner-occupier sectors.

Next, in the same order, the key results on financial reasons, decision-making power and awareness as reasons why uptake of the Green Deal was lower in the student sector than the young professional rented sectors will be discussed. Showing the main contribution of this thesis, this will be followed by considering the comparative importance of these three concepts for helping us to understand the difference in uptake of the Green Deal between these rented sectors.

The second half of this chapter will start with a discussion on how these three main concepts interact. I will follow this with justification of my main contribution to the literature. Next, I will present policy recommendations, and end the thesis with the limitations of the study and avenues for future research.

8.2 Comparison of financial reasons between the privately rented and owner-occupier sectors

8.2.1 The financial design of the Green Deal

There is a need for more effective policy that will target the privately rented sector to ensure that the UK Government meets its 2050 emissions reduction target of 80% by 2050 against the 1990 emissions baseline (Climate Change Act, 2008). As it stands, the Green Deal has proved ineffective in the private rented sector. Many reasons why the privately rented sector still remains a much less energy efficient sector than the owner-occupier sector (DCLG, 2013; DCLG, 2012; DCLG, 2011; DCLG, 2010) can be explained by the conclusions I have drawn in relation to the failure of the Green Deal.

Several reasons that may explain the major barriers to uptake of the Green Deal resulted from the design of the Green Deal financial mechanism, including the high interest rate. I have found that the Green Deal finance was too expensive for customers in general, but tenants found it more difficult than owners to access loans under the scheme because, on average, tenants were on lower incomes than homeowners. Homeowners are generally on higher incomes and so they can more easily get loans at lower interest rates for energy conservation improvements, and therefore were less interested in Green Deal finance. In spite of this, the scheme was aimed primarily at owner-occupiers, and gave them more access to funds to enjoy the associated benefits that come with lower rates of interest than poor tenants were able to receive. My results in relation to the financial mechanism of the Green Deal have confirmed the findings that the high interest rate was a principal reason for low uptake of the Green Deal (GBRC, 2010; Guertler, 2011; Laine et al., 2011, UKGBC, 2014), and low income tenants found it more difficult to access capital under the Green Deal (US DOE, 2010; Laine et al., 2011; Dowson et al., 2012) than rich owners who may be the least in need of financing (US DOE, 2010).

Another related design problem was that rented properties which accommodate poor tenants—that tend to be leaky and therefore more in need of improvement—were not accepted by Green Deal lenders for loans as often as owned properties. Also, landlords and particularly tenants were less likely to pass Green Deal loan credit checks than homeowners with better credit ratings, as tenants are often on lower incomes than homeowners. Moreover,

with the high interest rate, the Green Deal offered tenants a longer payback time than it offered owners, and so tenants were less likely to take up the Green Deal because they were less certain about their income than owners.

Green Deal payment plans could be up to 25 years, as I discussed within the chapter describing the Green Deal. The early repayment fee could be substantial for those who may take up the loan for, say, 20 years but decide to pay it off after 10 years—particularly if they have more properties. Therefore, another hurdle was the hefty early repayment charge on the Green Deal loan for landlords with several properties, which prevented landlords from taking up the scheme as the exit fee on several properties formed a significant part of their rental income. In comparison, owners often paid exit fees on one property.

It was clear from the interviews that landlords were more deterred by the Green Deal charge attached to their properties than homeowners, as the charge might not only reduce sale values (just as it might reduce for owners), but the charge would further deter future tenants and reduce rental incomes. I have pointed out that, even though this finding validates the broader view that the Green Deal charge was a barrier to uptake of the Green Deal because it deterred future buyers (GBRC, 2010; DECC 2011b) and tenants and reduced properties' sale value (DECC, 2011b; CRESR, 2013; Ambrose, 2015), it contradicts with findings that show that Green Deal charge is not a reason for low uptake of the Green Deal (UKGBC, 2009; DECC, 2011a; Tovar, 2012; DECC, 2013).

Analysis indicated that some landlords were less likely to take up the Green Deal because they were of the view that the Green Deal measures would not increase rental income or capital value, with the exception of double glazing. Nevertheless, some homeowners thought that, even though such measures would not significantly increase capital value, taking them up would satisfy their greener consciences. My finding has shown to broadly disagree that energy efficiency improvements do not at all increase capital values (California Energy Commission, 1985; Ambrose, 2015), but has confirmed previous studies that found that energy efficiency improvements somewhat impact on capital growth of the property (Tuominena et al., 2012; Phillips, 2012), if it is double glazing (Guertler, 2011; Phillips, 2012). Energy conservation measures do not increase rental incomes (California Energy Commission, 1985; Shelter, 2009; Guertler, 2011; CRESR, 2013; Ambrose, 2015).

Chapter 8

This evidence makes me draw a conclusion, in line with Ambrose (2015), that if the Green Deal were to be successful in convincing landlords to take action, then it should have been designed based on a detailed understanding of landlords' concerns, motivations, and the business models within which their investment decisions are taken.

I have found that, in contrast to owners' positions, there was a requirement for landlords to make repayments on the Green Deal loan during void periods. I have pointed out that this is in line with the finding that the majority of landlords may not have taken up the Green Deal because they felt concerned that, should the tenant move, they would be responsible for making repayments on the loan during void periods (CRESR, 2013; Ambrose, 2015). One central conclusion from respondents was that the Green Deal lacks highly attractive and sustainable forms of grants, but such grants are more relevant to people in the privately rented sector than owners. This result is consistent with studies that have found that financial incentives, such as council tax rebates and stamp duty refunds, may have incentivised Green Deal customers (Laine et al., 2011; GBRC, 2010; UKGBC, 2009). This finding is further validated by DECC (2011b), which found that a significant discount off a property's council tax could incentivise both tenants and landlords to take up the Green Deal.

I have pointed out that it was unclear to customers whether the golden rule would work, but that tenants were interested in energy savings or deterred by the lack of guarantee for energy savings, and were more interested in short-term money savings. This is compared to owners who were less deterred by the lack of guarantee for energy savings, and their decision to take up the Green Deal was based on savings on their energy bills in the long-run. My finding has confirmed that low energy savings (DECC, 2011b; DECC, 2012; CRESR, 2013), and lack of guarantee for the savings (DECC, 2011b; DECC, 2011c; DECC, 2012) are reasons for low uptake of the Green Deal in the private sector.

Again, from a behavioural economics point of view, I have described tenants and landlords in my study as less altruistic, more driven by financial incentive, and as hyperbolic discounters—that is, people who are more interested in immediate financial savings than owners. Therefore an immediacy effect leads to a higher short-term discount rate, and take-up is delayed. Overall, I would support the conclusion drawn by studies such as Booth and Choudhary (2013), Guertler (2011), Laine et al. (2011), DECC (2011c), DECC (2011b), and ACE (2010) to suggest that the financial mechanism posed a serious limitation to take-up of Green Deal.

Furthermore, I have found evidence that, in general, customers are faced with the problem of transaction cost, but that transaction cost is more viewed as a barrier to tenants than the owners, as tenants are more likely to think that the hassle of Green Deal investment is far more than the benefit. Likewise, the process of Green Deal is more time consuming for tenants as it involves consent seeking. The study found that assessment cost is a barrier for customers in general, but it seemed more acute a barrier for tenants than owner-occupiers as assessment cost formed a greater part of tenants' income than owners' income.

I found that poor tenants are more likely to risk disconnection under the Green Deal than homeowners, as tenants are less likely to be able to pay for the Green Deal charge than owners. Perhaps one area where the Green Deal erred was making the charge fixed for poor tenants in particular without considering the size of their incomes and the possibility of the measures not able to pay for the charge.

One important question for the conclusion is which of these concepts is most important for helping us to understand why uptake of the Green Deal is lower in the rented sector compared to the owner-occupied sector. I argue that financial reasons are the most relevant for understanding why uptake of the Green Deal is lower in the privately rented sector than the owner-occupier sector.

8.3 Comparison of decision-making reasons between landlords, tenants and owners

8.3.1 The role of power in decision- making

In order to take up the Green Deal, you need to have power over the property. With the concept of decision-making power, I have highlighted that owner-occupiers have full decision making power over energy efficiency improvement through the Green Deal. However, tenants do not have sole authority over energy efficiency improvements under the Green Deal. I have confirmed earlier results that, unlike owners, tenants might not have the right to invest in energy efficiency improvements of their rented accommodation (Brandon and Lewis, 1999; Clinch and Healy, 2000a; Baker and Lainé, 2010; DECC, 2011b). Moreover, my results have confirmed previous results that landlords have greater power than their tenants (CAB, ACE and Friends of the Earth, 2011; ECCC, 2012; Vaughan, 1968; Popplestone, 1972; Keller, 1988), when it comes to energy conservation improvements and the Green Deal in particular

Chapter 8

(CAB, ACE and Friends of the Earth, 2011; ECCC, 2012). I have shown that mutual agreement between landlord and tenant needed to be reached before uptake of the Green Deal, and this requirement has prevented landlords and tenants from using the Green Deal. However, this requirement does not exist in the owner-occupier market. My finding confirmed that gaining consent was a key barrier to take up the Green Deal in the privately rented sector (GDPHRA, 2014; Tovar, 2012; Laine et al., 2011; DECC, 2011a; DCLG, 2010a).

The interviews with tenants showed that, unlike most owner-occupiers studied, tenants perceived the Green Deal process as too complicated and expensive: they might have to go through the process of paying for assessment and the hassle of arranging a financial deal with lenders, after which the landlord could simply refuse consent. This implies that tenants themselves acknowledged that they had even become more powerless since the Green Deal was introduced, as seeking consent from the landlords appears to be more difficult than the landlords asking tenants for consent to improvements.

Analysis suggested that landlords are not interested in making their properties more energy efficient through the Green Deal. My results have also confirmed that tenants were less likely to pay for Green Deal improvements or the full cost improvements as they plan to move shortly (DECC, 2012; DECC, 2011b). This is compared to owners who may improve their own homes, stay longer in their homes, and accumulate more benefits under the scheme. Comparative analysis of these results within the private sector suggested that the Green Deal was better suited to owner-occupiers than landlords and tenants, but the Green Deal benefits landlords more than tenants within the privately rented sector. For example, as it was found by DECC (2011b), respondents in the study indicated that the scheme requires a short-term tenant to bear the full cost of improvements without sharing the cost of Green Deal investments with the landlord. This requirement was a cause for inequality of benefit sharing between landlords and tenants. In view of this, I conclude that bad design of the Green Deal prevented it from going far enough to fully remove the split incentive—the unwillingness of tenants to pay for the full cost of measures because the landlords benefit more—and the problem where tenants could not benefit from the Green Deal as the landlords do, due to their short stay. These have held back improvement in the sector for a number of decades.

These findings are policy-relevant because they suggest that perhaps, there was an need to quickly change the design of the Green Deal to the Green Deal Home Improvement Fund scheme, to better encourage landlords to fund improvements and also ensure that tenants remain in their accommodation for longer, so that they could accumulate benefits under the scheme and ensure equity in benefit. Whilst the removal of the split incentive would have been perhaps cost effective using these strategies, well -tested and proven solutions to the split incentive problem have often included financial incentives (Bird and Hernández, 2012; Ástmarsson et al., 2013).

I have shown that, unlike for homeowners, fear of retaliatory eviction is one barrier for tenants requesting energy efficiency improvements through the Green Deal from their landlords. I have confirmed findings from previous studies such as DCLG (2007), Crosby, Formby and CAB (2007), Shelter (2011), DECC (2011a), DECC (2011b), ACE (2012) and CRESR (2013), that landlords may use their power to prevent tenants from asking for improvements. Overall results from the study have shown clearly that there is a strong need to find appropriate ways to reduce the power of landlords, to allow tenants to request energy saving improvements and also act on tenants' requests. I argue that decision-making reasons are as important as financial reasons for helping us to understand why uptake of the Green Deal was lower in the rented sector than the owner-occupied sector.

8.4 Comparison of awareness reasons between the privately rented sector and the owner-occupier sector

8.4.1 Awareness of the Green Deal and its supported regulations.

I have found that awareness levels of the Green Deal were fairly low in both the privately rented sector and the owner-occupier sector. My findings confirmed previous studies in my literature review which suggested that awareness of the Green Deal is low in the private sector (DECC, 2015b; GDPHRH, 2014; DECC, 2014; Vaughan, 2013; DECC, 2013d), and among private landlords (ARLA, 2014; Hope and Booth, 2014). I have found that none of the tenants interviewed was aware of the tenant request legislation, but even if tenants had become aware of the request legislation, they would not have used it to request Green Deal improvements from their landlords. This is due to more situational problems, such as the lack of incentive for tenants to put any effort into making improvements request if they move away from the property after a short period. Other issues are the difficulty in seeking consent from landlords,

Chapter 8

and the retaliatory eviction response which tenants are more likely to receive from their landlords for making such requests.

8.4.2 Understanding of the Green Deal

I found that private landlords and tenants are more likely to have limited understanding of the Green Deal compared to owners. My finding has partly agreed with the results from ARLA (2014) and Hope and Booth (2014), that landlords have limited understanding of the Green Deal. I found that landlords with HMOs who required no EPC were less likely to understand the energy efficiency ratings of their properties, which would instigate them to improve their homes using the Green Deal. On the other hand, owners were more likely to have an EPC, and so to understand the energy ratings of their properties. This encouraged them to participate in the uptake of the Green Deal. I have already shown that this mirrored the findings that have suggested that no HMO landlords took up the Green Deal or claimed the Green Deal Home Improvement Fund, as they have no EPC (DECC, 2015). In relation to attitudes to energy efficiency, I found that tenants and landlords consider energy efficiency a lower priority than owners.

It is less clear how important awareness is to explain the lower uptake of the Green Deal in the privately rented sector than the owner-occupier sector. Fairly similar low levels of GD awareness were found between the privately rented sector and the owner-occupier sector. However, since landlords and tenants have lower interest in energy efficiency than owners, environmental attitudes are potentially relevant as owner-occupiers might be more willing to act on their pro-environmental attitudes than tenants and landlords.

8.5 Comparison of financial reasons between the student rented and young professional rented sectors

8.5.1 The financial design of the Green Deal

The central conclusion drawn from one of the novel findings is that student landlords, who focus on rental income were less likely to take up the Green Deal than young professional landlords, who focus on capital gain. This is because student landlords think that Green Deal improvements may not increase their rents, but young professional landlords are of the view that such improvement may slightly increase capital growth. My result has challenged the finding from a recent study, Ambrose (2015), that landlords believe that energy efficiency improvements do not increase capital value of their property. Conversely, they supported Ambrose's finding that landlords think the Green Deal would not increase rent. This result is highly relevant as it informs policymakers that the Green Deal was reinforcing a split in the rental market, where the decision to invest in private residential property, for the purpose of letting, tends to depend on two factors, rental yield and capital growth (Scottish Government, 2009; Shelter, 2009; National Landlords Association, 2012). The results also meant that the financial mechanism of the Green Deal, whereby the tenant had to pay the Green Deal via their energy bills but the landlord did not invest in the scheme and recouped their money by increasing rent, was not the best model—especially for student landlords who are highly driven by rental income.

Critical analysis of my survey data in relation to property age has shown that, on average, student landlords' properties are older and less efficient than those of young professional landlords. This indicated that properties in the student rented sector are more in need of improvements than properties in the young professional rented sector. However, the Green Deal, like many other energy efficiency policies, failed to sufficiently target the student market. For example, results from my qualitative interviews clearly showed that properties in the student rented market were likely to be rejected as collateral security by Green Deal providers, or else they may have been accepted for loans at higher interest rates than properties in the young professional rented market.

I found that student landlords tend to prefer shorter repayment times than young professional landlords. This is because student landlords were of the view that longer payback times would reduce their incomes, but young professional landlords considered that they could have

Chapter 8

shorter payback times depending on what type of measures they intended to take up. I found that student landlords were more likely to view the Green Deal charge attached to the property as a deterrent to prospective tenants than young professional landlords, as often student tenants are on lower incomes than young professionals. The scheme did not appropriately consider that the student market is made of up relatively poor students who may prefer a property without the charge.

The lack of strong financial incentives appeared to be a challenge that needed to be overcome to prevent the Green Deal from failing in the student market, as some student landlords in particular appear to be self-interested, short-term profit seekers driven by financial incentives. One important question for the conclusion is which of these concepts is most important for explaining why uptake of the Green Deal is lower in the student rented sector compared to young professional rented sector. I argue that financial reasons are most important to help us understand why uptake of the Green Deal is lower in the student rented sector than the young professional rented sector.

8.6 Comparison of decision-making reasons between the student rented and young professional rented sectors

8.6.1 The role of decision making reasons

I found that it was more difficult to reach consensus in the student rented market than in the young professional rented market, because the student market is made up of more transient and larger tenant groups. I argue that decision-making reasons are as important as financial reasons for understanding why uptake of the Green Deal is lower in the student rented sector than the young professional rented sector.

8.7 Comparison of awareness reasons between the student rented and the young professional rented sectors

8.7.1 Awareness of the Green Deal and its supported regulations

I found that there were fairly similar levels of Green Deal awareness between the student rented market and the young professional rented market. Young professional landlords were

more aware of the minimum energy efficiency standard regulation than the student landlords, and were thus more likely to take up the Green Deal for improvements to meet the new standard. As it stands now, student landlords in particular owning properties with an EPC rating of F or G were simply not aware that their properties could soon be legally uninhabitable, so that they could benefit from improving them using the Green Deal. However, if landlords were found to be aware of the scheme, they would still have been prevented from taking up the Green Deal due to structural barriers.

8.7.2 Understanding of the Green Deal

My result showed that the level of understanding of the Green Deal was lower in the student market than that of the young professional landlords. I found that HMOs do not require an EPC, and are therefore student landlords are less likely to understand the energy ratings of their tenanted properties, which would cause them to take part in the uptake of the Green Deal. In comparison, young professional landlords may have an EPC and are therefore more likely to understand how inefficient their properties are, which would motivate them to be part of the Green Deal.

8.7.3 Attitudes to energy efficiency

I found that student landlords are more likely to have lower interest in energy efficiency than young professional landlords, as student tenants are less interested in energy efficiency but young professional tenants are more interested in energy efficiency. Taking all the findings together, I suggest that awareness is not very important for understanding why uptake of the Green Deal is lower in the student rented compared to the young professional rented sectors, since there were fairly similar levels of Green Deal awareness between the student rented market and the young professional rented market. However, since student landlords showed lower interest in energy efficiency than young professional landlords, I argue that environmental attitudes is potentially relevant as landlords in the young professional rented market might be more willing to act on pro-environmental attitudes than landlords in the student rented market. This is because young professional landlords' motivations to rent out their properties are based on long-term enhancement of capital value, as against student landlords' business model which is based on short-term profit.

Chapter 8

As already discussed, my study framework was based on the principle that the three main components would interact (Sweeney et al., 2013; Stern, 1999). My findings have shown that this is true. For instance, student landlords may have information on the Green Deal but may not act on it, simply because it does not save them money, and this may in turn cause them to refuse consent. In other words, provision of strong financial incentives was more important to support student landlords to grant consent and act on available information on the Green Deal, rather than better provision of information on the Green Deal as such.

Whilst my findings have suggested that it is important to consider awareness-related reasons such as lack of information or understanding to examine the low uptake of the Green Deal, it is important to see that they cannot explain inequality of uptake of the Green Deal on their own. Other important structural or situational factors also need to be considered. For example, the financial arrangements made Green Deal finance unattractive or very difficult to access by the actors in the privately rented sector in particular, due to high interest rates and low money savings especially in the early stages after take-up. The uptake of the Green Deal may have been too time consuming or inconvenient, and there are decision-making factors, such as power imbalances and the requirement to build consensus between several parties associated with the scheme, which prevented uptake.

It is important to note that most of the frameworks in this area of study explain environmental behaviours or policy uptake in general (Blake, 1999; Kollmuss and Agyeman, 2002; Lorenzoni et al., 2007; Steg and Vlek, 2009; Gadenne et al., 2011; Miroso et al., 2011; Sweeney et al., 2013; Frederiks et al., 2015). An exception is Pettifor et al. (2015), which focused on the Green Deal but which only discussed the scheme from an informational perspective. With the exception of Steg and Vlek (2009), who pointed out the relative importance of information and incentives strategies in a more general manner, none of these studies clearly talked about the relative importance of information barriers, or financial and decision-making power (structural or situational barriers) in relation to the Green Deal.

I have combined financial reasons, decision-making power and awareness in a comparative framework to explain why uptake of the Green Deal was lower between the privately rented sector and the owner-occupier sector and between the student and young professional privately rented markets, in a fairly systematic way which previous studies have not done. This combination offers a better understanding of the lower uptake of the Green Deal in the privately rented sector generally, and specifically the student rented sector compared to the young professional rented sector. In most of the literature, researchers remain very vague, they

say that information is important but there are other structural reasons that may hinder the importance of information. Often, they do not spell out what these structural reasons are and how important they are. Also, the structural reasons may be different in different situations, because often these theories are abstract in the sense that they are not applied to a specific situation. Examples include current studies such as Frederiks et al. (2015), Sweeney et al. (2013) and Miroso et al. (2011).

However, I have applied my framework to a specific, concrete case—the take-up of the Green Deal—and have specified what the structural reasons are, and showed that they are more important than awareness in helping us to understand why uptake is lower in the privately rented sector than the owner-occupier sector, and lower in the student market than the young professional rented market. Nevertheless, in a broader sense, the model is consistent with a wide range of models (Blake, 1999; Hunecke et al., 2001; Gardner and Stern, 2002; Kollmuss and Agyeman, 2002; Lorenzoni et al., 2007; Steg and Vlek, 2009; Niemeyer, 2010; Young et al., 2010; Miroso et al., 2011; Sweeney et al., 2013; Frederiks et al., 2015), which show that there are other barriers to action and that the large gap between attitude and behaviour is also a result of other structural barriers.

Furthermore, this study argues that information deficit models such as the famous theory of planned behaviour cannot explain well the lack of engagement in high-cost behaviours (Stern, 1999; Diekmann and Preisendorfer, 2003; Harland et al., 2007; Steg and Vlek, 2009; Abrahamse and Steg, 2011), while financial incentives can help to overcome structural barriers related to these behaviours (Stern, 1999; Rothschild, 1999; Diekmann and Preisendorfer, 2003; Thøgersen, 2005), in this case uptake of the Green Deal. This argument contrasts with those from Lindenberg and Steg (2007) and Andersson et al. (2013), that suggest that information deficit models such as the theory of planned behaviour are able to explain the lack of uptake of high cost behaviour. The main argument developed in the literature on the role of financial reasons, decision-making power and awareness enabled me to conclude that both decision-making power and financial strategies are more relevant and effective in promoting pro-environmental behaviour (such as uptake of the Green Deal) than information strategies on their own (Brandon and Lewis, 1999; Steg and Vlek, 2009).

8.8 Policy recommendations

Having identified numerous barriers that contributed to the failure of the Green Deal, it is important that the study make some key policy recommendations as to how to improve uptake of any future home energy efficiency policy that may replace the Green Deal. Consequently, this study outlines some principal policy “directions of travel”. The recommendations are structured under the three main themes of financial design, decision-marking and awareness.

8.8.1 Policy recommendations related to financial design

8.8.1.1 Provide financial incentive for people in the privately rented sector and for the student landlords in particular, and/or regulate the privately rented sector

This study found that the Green Deal lacked highly attractive and sustainable grants, and that such grants are more relevant to landlords and tenants than to owners. While previous studies Pitts and Wittenbach (1981), Held (1983), and Walsh (1989) held the view that subsidies do not induce conservation activities, there are several studies such as Cameron (1985), Long (1993), and Williams and Poyer (1996) with compelling evidence that subsidies are strongly incentivise energy saving improvements. More specifically, Oxera (2006), Hope and Booth (2014) and Ambrose (2015) suggested that stronger subsidies would encourage landlords to make improvements.

Likewise, many studies have found that financial incentives such as council tax rebates and stamp duty refunds would have been able to incentivise Green Deal customers (ECCC, 2014 p.24; Laine et al., 2011; GBRC, 2010; UKGBC, 2009). These findings were further validated by DECC (2011b), which found specifically that a significant amount of discount off council tax can incentive both tenants and landlords to take up the Green Deal.

Similarly, I asked the study respondents if they could imagine ways in which the Green Deal could be improved, or what would encourage them to take up the Green Deal. Financial incentive was a common response among student landlords:

There is no incentive particularly for the landlord to take the Green Deal up because it doesn't improve the rental income from their property in my view, and they are not paying the energy bills, students are paying so I don't think it gonna have a great deal of impact in the student market at all. I think the best way to do with landlords and would not need more legislation is fundamentally through... a carrot system—subsidies or get them a present to make their rented properties more efficient. (L13)

A lesson can be learnt that providing direct financial incentives could have indirectly reduced the interest rate for landlords, tenants and student landlords in particular, and improved their access to Green Deal finance. Perhaps the poorer the energy rating of their property the greater the subsidy on the rate of interest there should have been. Alternatively, the government should have guaranteed underwriting the Green Deal loan so that providers would not have feared to give out loans to landlords, poor tenants, and student landlords specifically, to enable them have fair access to Green Deal finance.

Private landlords need to be financially incentivised, or better still obliged, to make energy efficiency improvements to privately rented properties (Hope and Booth 2014). From this point of view, this study welcomes the legislation that landlords must ensure that their properties meet the minimum standard E and that they cannot legally rent out F and G rated properties from 2018 unless they are improved. However, HMO landlords who are effectively excluded from the 2018 minimum energy efficiency standard should be included. Perhaps covering student landlords with HMOs with this regulation and/or providing them with financial incentives may force student landlords in particular to improve their worst energy rated properties.

When respondents were asked if they could imagine ways in which the Green Deal could be improved, a quotation which formed a representative view of the landlords I interviewed suggested so: *“Student landlords have a big pool of poor rated properties and so they should either be forced or helped to do improvements.” (L2)*

8.8.2 Recommendations regarding decision-making reasons

8.8.2.1 The removal of the retaliatory eviction, and addition of new financial incentives for landlords

This study provided evidence to show that fear of eviction is a barrier for tenants requesting Green Deal measures from their landlords. Therefore, this study supports the Retaliatory Eviction and the Deregulation Act 2015 which came into force on 1 October 2015 which stipulated that landlords cannot evict tenants when they demand energy efficiency improvements. The removal of retaliatory eviction would mean that tenants were well protected when they made reasonable energy efficiency requests of their landlords (DCLG, 2015). The removal of this practice may encourage them to use the request legislation to support uptake of measures including loft, cavity wall, and condensing boiler insulations under any future policy. The move by the government has addressed the initial concerns of this study and many other studies such as Hope and Booth (2014); Citizens Advice and Shelter Cymru (2013); CAB, ACE and Friends of the Earth (2011); and the National Private Tenants' Organisation (2011).

Furthermore, the new regulation addresses the objection raised by Conservative party politician, Grant Shapps, in an interview with Environmental Health News (EHNs) that, *“Retaliatory evictions are completely unacceptable and I throw my weight behind EHN’s campaign... It is absolutely wrong and inappropriate.”* (ACE and Friends of the Earth, 2011 p.6). This regulation and/or financial incentives such as council tax rebates (for landlords and tenants) and stamp duty refunds (for landlords) can make either the landlords or tenants agree to undertake energy conservation improvement using any scheme that will replace the Green Deal.

8.8.2.2 Change the financial design of future energy efficiency policies

My results indicated that landlords own the property but may not be interested in making it more energy efficient, and that tenants were less likely to take up the Green Deal because they are not responsible for the improvement or the full cost of improvement as they plan to move shortly. Also, student landlords are less likely to take up the scheme as their tenants are more transient. Perhaps, to show the relevance of this barrier and the need to remove it, longer tenancies can give tenants the chance to benefit from improvements (Labour Party, 2015; DECC, 2011a). This could save tenants letting agents' fees which could be up to £500 just for signing a new tenancy agreement. There is evidence to show that, in general, those who had

lived in their home for longer pay less rent (DCLG, 2015; DCLG, 2014 p.19), and also that landlords benefit financially from longer-term tenancies (Labour Party 2015; Jones Lang Lasalle, 2012).

Based on these benefits from longer tenancies for both tenants and landlords, the Labour Party proposed a standard three-year contract in the privately rented sector. However, the Scottish Government review found that the main reason why students sought the privately rented sector was that they were explicitly looking for short-term accommodation (compared to only 20% of non-students), and that they intended to move on relatively quickly, with 55% saying that they intended to move within six months—compared to 20% for non-students (Scottish Government, 2009). This suggests that flexibility in the tenancies offered by student landlords is still needed, as different landlords should have different tenancies to serve different groups in the sector.

Maybe one workable option is to find ways to maintain the flexibility in tenancies, and still ensure that these benefits are there for both tenants and landlords to enjoy. From this point of view, I recommend that the design of future energy efficiency policies should put more of the responsibility for financing energy conservation improvements on either the government or landlords, rather than tenants. With these measures in place, tenants may be happy to stay longer in the property when they find themselves in more energy efficient homes and begin to pay lower energy bills. In turn, their longer stay would provide income security for the landlord.

These measures might help to ration equally the benefits under energy efficiency policies between the tenant and landlords, and not put the onus of cost of improvements on the transient tenant. DECC (2011b) attempted to make a similar recommendation. Perhaps the minimum energy efficiency standards that landlords have to meet can help to force landlords fulfil improvement responsibility when it is well-enforced. Changing the Green Deal from a purely market mechanism to the Green Deal Home Improvement Fund scheme to provide grants for homeowners to fund improvements was a fantastic change initiated by the government that needed to be sustained.

8.8.3 Recommendations in relation to awareness

8.8.3.1 Find easier ways of accessing people in the privately rented sector and provide information on the new legislation to landlords and tenants

Numerous studies have shown the relevance of information in changing behaviour. But my results have suggested that lack of information and awareness were not the main reasons for low uptake of the Green Deal in the privately rented sector. Nevertheless, while provision of information would not actually change the structural barriers under which choices are made, it would be wrong to ignore the need to create awareness or provide information in the privately rented sector as part of interventions for future policy. Therefore, this study recommends that, firstly, the government's role should be to work with university student accommodation officers to pass the contact details of landlords to providers.

Secondly, additional boxes could be included on council tax forms for student tenants to tick if they live in a privately rented home, and if so, to include the name and contact details of their landlord if known, as well as their own, which upon receipt can be shared with energy policy providers. If the landlord is not known, the tenanted address can be checked against the Land Registry database and the property owner identified. This system is much less costly than a full registration scheme, saving potentially £300m based on the last government's impact assessment of a national register. A system like this makes it much more difficult for criminal landlords to avoid making themselves known, since it would be the tenant identifying where the properties are (RLA, 2015 p.21). The implementation of this proposal is expected to make it easier for providers to disseminate information to people in the privately rented sector.

Thirdly, any future scheme replacing the Green Deal should be well promoted to the actors in the privately rented sector via communication channels such as face to face, newspapers and news agencies, fliers, Twitter, WhatsApp, Facebook and so on that can raise awareness and thus encourage uptake of policies. Determining which of these delivery routes is most effective for reaching landlords and tenants perhaps still remains a challenge for policymakers.

Ambrose's study (2015) recommends that the minimum energy efficiency standard and tenants' request legislations, which start from 2016 and 2018 respectively to support improvement in the privately rented sector, should be made known to landlords and tenants accordingly. The implementation of this recommendation will ensure that tenants become

aware of their statutory right to demand energy efficiency measures under any future initiative. Likewise, when they become aware of the minimum energy efficiency standard, it may reduce the need for enforcement of this regulation later.

8.8.3.2 Arrange Energy Performance Certificate calculation to cover HMOs with an EPC

The EPC regulation makes it possible for landlords of HMO properties that are rented out to individuals not to have an EPC until they are letting the entire property under a single contract. The reason for their exclusion is often on the basis that there are technical issues, such as that the EPC generation software is not designed for properties with multiple occupancy so the results generated would not be reliable and could be challenged. However, this excuse is not acceptable. Therefore, I recommend that the government must arrange as a priority the EPC calculation to cover HMOs. This recommendation affirms the widely held view that EPCs should apply to all HMO properties (DGLG, 2010a; DGLG, 2010b, EST, 2012; Friends of the Earth and ACE, 2013; Friends of the Earth and ACE, 2014). The implementation of this proposal will ensure that student landlords in particular understand the poor energy performance ratings of their properties, and encourage them to participate in the uptake of any future any energy efficiency policy.

In summary, from a behaviour change point of view, even though information forms part of the study's intervention to address inequality, it is less relevant than financial and regulatory interventions. Rather, information strategies should be combined with these other intervention types that address some of the more structural barriers to uptake (Gardner and Stern, 1996; Steg and Vlek, 2009; Stern, 1999; Stern, 2000), as shown in Figure 19 below.

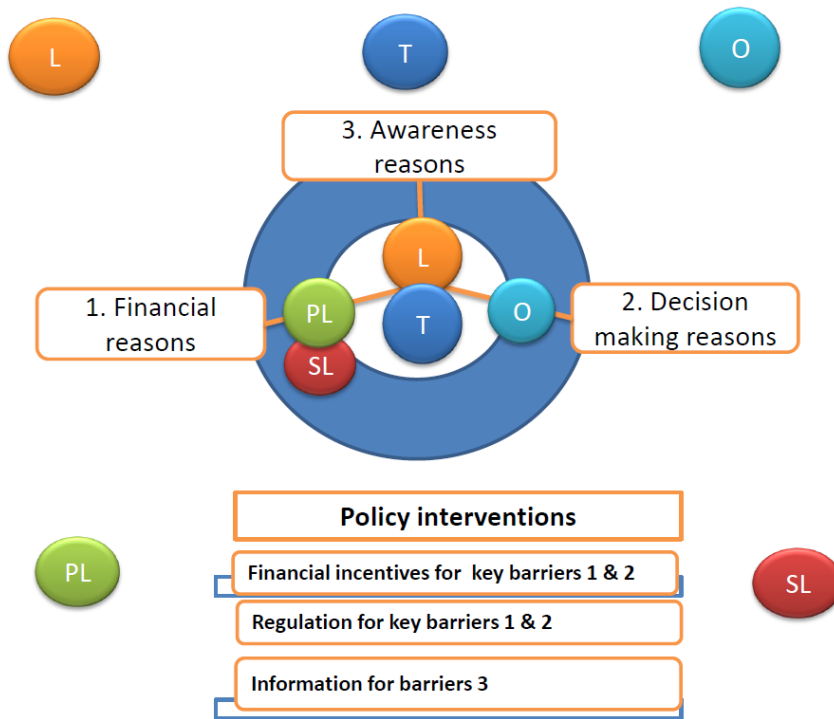


Figure 19: The identified three main barriers and their relative interventions.

8.9 The limitations of the study and direction for future study

While my findings have provided useful and rich insights into the reasons for the failure of the Green Deal, the study has several limitations. One of the limitations of this study is that it is mainly based on qualitative data, which may not be representative of all the sectors that I investigated. However, this approach has provided a deeper understanding of three overarching reasons for inequality of uptake of the Green Deal and how these dimensions might interact. As already admitted, the decision about the relative importance of these main themes was made not via quantitative data. It was made mainly by interpreting the qualitative data from the documentary research and interviews, as described within my methodology chapter. The qualitative approach did not allow for rating these concepts numerically, even though that would have been more accurate.

A second limitation is that the study used a small sample size of 13 tenants, 13 landlords and 13 owner-occupiers, and as a result the study cannot be said to be representative of the sectors as a whole. Thus, like for all qualitative studies, generalising results is not possible. However, even though, around 500 postcards were printed and distributed to landlords, tenants and owner-occupiers, and several recruitment strategies were employed as shown within the methodology chapter, it was difficult to increase the sample size. Even involving household-name letting agents such as Romans, Bridges, Vibes, Homelife, Fosters, to mention but a few, to pass on recruitment letters to landlords, tenants and owners to invite them to take part in the study made little or no difference. Maybe, this is not a surprise, considering the well-documented evidence that it is more difficult to attain adequate response rates from participants in the privately rented sector (University of Ulster, 2014).

The third limitation is that, even though these main themes were sufficient for the purpose of understanding why uptake of the Green Deal was lower in the privately rented sector than the owner occupier sector and lower in the student rented sector than the young professional privately rented sector, it is possible that a larger sample including a wider range of landlords would have generated insights into additional mechanisms that hindered uptake of the Green Deal in the different privately rented sectors.

Chapter 8

Finally, while, detailed examination of the sample documents (Bryman, 2008) is not an issue in this the study, it is still limited by the number of documents it included as they cannot be representative of Green Deal policy documents from the government, companies and third sector organisation sources. However, I tried my best to sample all the available documents.

All these limitations, however, highlight avenues that future research might pursue. So, to address these limitations, a quantitative study, based on representative samples of the respective sectors, could help us understand the failure of the Green Deal with more than three main dimensions related to uptake and more precise rating of the relative importance of these overarching reasons. Further research is required in relation to the role of environmental attitudes for explaining why uptake of the Green Deal was lower in the rented sector than the owner-occupier sector and lower in the student rented sector than the young professional rented sector.

8.10 Concluding remarks

I have summarised the principal findings on the three main concepts of inequality. I have shown which of these concepts is most important for understanding why uptake of the Green Deal was lower in the rented sector than the owner-occupier sector and in the student rented market than the young professional market, and demonstrated the links between these concepts. I have outlined some key policy recommendations for future UK home energy efficiency policy. Finally, I have acknowledged areas of limitations for the study and pointed out directions for future research.

Appendix 1: Description of UK Suppliers Obligation Schemes

The Supplier Obligation Schemes (SO), are Government schemes, for Great Britain that placed legal obligations on energy companies to deliver energy efficiency measures to domestic premises (OFGEM, 2015; DECC, 2013d; DECC, 2012; Rosenow, 2012; Dowson et al 2012; Ofgem, 2013a; Ofgem, 2005; Eoin Lees Energy, 2006 IEA, 2008; Ofgem, 2008, Eoin Lees Energy, 2008). The basic concept of the SO was that the energy suppliers were to achieve energy, carbon (Rosenow 2012; OFGEM, 2005) and cost savings targets in domestic homes (OFGEM, 2015).

- In 1994, the UK government introduced the first Suppliers obligation (SO), Energy Efficiency Standards of Performance (EESoP) (Rosenow, 2012). The total energy savings target which was to be met by energy suppliers in EESoP1, which ran from 1994-1998, was 6.1 TWh. Its successor, EESoP2, which ran from 1998-2000, had a total target of 2.7 TWh and EESoP3 which started from 2000-2002, had a total target of 4.9TWh (Rosenow, 2012). In the Energy Efficiency Commitment (EEC1) which replaced EESoP3, energy suppliers were to achieve an energy savings target of 62 TWh between 1 April 2002 and 31 March 2005 (Rosenow, 2012; Ofgem, 2005; Eoin Lees Energy, 2006 IEA, 2008). Its successor, ECC2, had overall energy savings target of 130 TWh to be met between 1 April 2005 and 31 March 2008 (Rosenow, 2012; Ofgem, 2008, Eoin Lees Energy, 2008).
- ECC2, was followed by the Carbon Emissions Reduction Target (CERT), which covered a period from April 2008 to December 2012 in which suppliers were to meet carbon emission reduction targets of 293 million lifetime tonnes of carbon dioxide (Rosenow, 2012; Dowson et al 2012; Ofgem, 2013a). The overall Community Energy Savings Programme (CESP) target to be achieved between 1 October 2009 and 31 December 2012, was 19.25 million lifetime tonnes of carbon dioxide (Mt CO₂) (Ofgem 2013b; DECC, 2011). The Energy Company Obligation (ECO) was introduced as the successor to the CERT and the CESP (OFGEM, 2015; DECC, 2014; DECC, 2013d). ECO was designed to work alongside the pay as you save market based mechanism, the Green Deal, to make certain expensive improvement measures affordable (OFGEM, 2015; British Property Federation [BPF], 2013). ECO required energy companies to meet three main obligations:
 - Carbon Emissions Reduction Obligation (CERO): suppliers were to deliver total carbon savings of 14.0 MtCO₂ by focusing on insulating hard-to-treat properties (through primary measures such as solid wall insulation and hard-to-treat cavity wall insulation) (OFGEM, 2015).
 - Carbon Saving Community Obligation (CSCO): suppliers were to deliver total carbon savings of 6.8 MtCO₂ by focusing on the installation of insulation measures and connections to district heating systems at domestic premises within low income and rural areas. CSCO had a sub-obligation which required suppliers to deliver a minimum of 15% (1.0 MtCO₂) of this target to low income households in rural areas (OFGEM (2015).
 - Home Heating Cost Reduction Obligation (HHCRO), also known as Affordable Warmth: suppliers were to deliver total cost savings target of £4.2bn lifetime savings by focusing on reducing heating costs for low income and vulnerable householders living in private housing (OFGEM, 2015; DECC, 2012, BPF, 2013; DECC, 2013).

Target setting and administering body in SO: In EESoP 1 and 2, the overall target of energy savings was set by the Office of Electricity Regulation (OFFER), whilst in EESoP 3, the target setting was in the hands of the Office of Gas and Electricity Markets (OFGEM) (Rosenow, 2012). The Department for Environment, Food and Rural Affairs (Defra) took the responsibility in ECC1, ECC2 (OFGEM, 2008, Eoin Lees Energy, 2008; IEA, 2008; OFGEM; 2005). In CERT, CESP and ECO, the Department of Energy and Climate Change (DECC) was responsible for setting the overall target (OFGEM, 2015; OFGEM, 2013a; OFGEM 2013b; DECC, 2011). EESoP 1 and 2 were administered by the Office of Electricity Regulation (OFFER) (Rosenow, 2012). In EESoP3, ECC1, ECC2, CERT, CESP and ECO, the Office of Gas and Electricity Markets (OFGEM) administered them (OFGEM, 2015; OFGEM 2013b; Rosenow, 2012; IEA, 2008; OFGEM, 2008, Eoin Lees Energy, 2008; OFGEM; 2005). That is, OFGEM set the individual suppliers' targets, monitored activities and enforced compliance against targets when necessary (OFGEM; 2005; IEA, 2008).

Percentage of savings in priority group in SO: With regards to social equity, the first three SO schemes, EESoP1-3 did not set a specific target for disadvantaged customers. However, EEC 1 and ECC2 required at least 50% of the energy savings target to be achieved from households in the 'Priority Group' (IEA, 2008; Ofgem, 2008; Eoin Lees Energy, 2008; Eoin Lees Energy, 2006; Ofgem, 2005). The Priority Group was defined as those households who received certain income-related benefits and tax credits (Defra 2008; IEA, 2008; Energy, 2006; Ofgem, 2005; Eoin Lees Defra 2005). In CERT, at least 40% of the carbon saving target was to be achieved from priority group, 15% in super priority, those aged or over 70s (Ofgem, 2008; DECC, 2011g; EST, 2012; Ofgem 2013a). Though CESP and ECO did not set a specific target for the priority group, the logic was still the same as suppliers were obliged in those schemes to deliver measures in the homes of low income group.

Appendix 2: Description of other UK home energy efficiency policies

Other UK home energy efficiency policies, Decent Homes (DHs) which existed from 2000-2010 (Dowson et al., 2012; Morrison, 2013), Warm Front (WF) which ran between 2000 and 2013 (Hope and Booth 2014), Enhanced Capital Allowance (ECAs) which covered a period from 2001-2015, and Landlords' Energy Saving Allowance (LESA) which operated between 2004 and 2015 (IEA, 2008), worked alongside some of the SO policies.

2000-2010: Decent Homes (DHs), aimed to improve the quality and efficiency of social housing in England (Hulme, 2012). The scheme placed improvement responsibility on local authorities, registered social landlords and, to a limited extent, private sector landlords (Dowson, 2012). For a property to meet the decent homes standard, it must satisfy four requirements: a minimum statutory standard, a reasonable state of repair, a reasonably modern facilities and thermal comfort (DCLG 2013; Dowson, 2012; DCLG, 2006; Darby, 2005; House of Commons Library, [HCL], 2003).

2000-2013: Warm Front (WF), was a government funded scheme which tackled fuel poverty by providing grants to vulnerable owner occupiers and tenants to improve energy efficiency of their homes (International Energy Agency [IEA], 2008; DECG, 2009; EST, 2012; Hope and Booth 2014). Qualifying households must be on means tested benefits who owned their own homes or who rented from private landlords (EST, 2012).

2001-2015: Enhanced capital allowances (ECAs), were to be claimed by companies and large-scale private landlords that paid corporation tax and invested in energy-saving equipment such as boiler, pipework insulation, combined heat and power (CHP) and so on (HM Treasury, 2003). The Enhanced Capital Allowances (ECAs) allowed companies and large-scale landlords to offset 100% of the costs of their investments in qualifying energy saving technologies against their taxable profits in the year of purchase (Watson, 2004). This meant that a company or cooperate landlord paying 30% corporation tax and spending £1 million on energy-saving equipment in this financial year could benefit from an effective capital cost reduction (tax relief) of £300,000 (HM Treasury, 2003; Watson, 2004, Carbon Trust, 2008).

2004- 2015: Landlords' Energy Saving Allowance (LESA), aimed at landlords who pay their income tax and corporate tax and invest in certain energy saving measures such as cavity wall, loft and floor insulation, solid wall insulation, draught proofing and hot water system insulation to claim up to £1,500 against their profits per property (HM Treasury, 2007). For example, a landlord who invested in LESA covered measures, costing £1,500 and earned annual taxable income of £20,000 was entitled to deduct £1,500 from annual taxable income and paid tax on the remaining £18,500.

Appendix 3: Policy documents' sources & their titles for the documentary analysis

| Policy documents from government source and their titles used for the documentary analysis |
|--|
| <p>1. House of Commons Energy and Climate Change Committee (2013). <i>House of Commons Oral Evidence: Green Deal Watching Brief</i>. London: ECCC</p> <p>2. House of Commons Energy and Climate Change Committee (2012). <i>Fuel poverty in the private rented and off-grid sectors: oral and written evidence</i>. House of Commons, London: The Stationery Office</p> <p>3. House of Commons Energy and Climate Change Committee (2014a). <i>Oral evidence: Green Deal watching brief (part 2), HC 1111 Tuesday 1 April 2014</i> House of Commons, London: The Stationery Office</p> <p>4. House of Commons Energy and Climate Change Committee (2014b). <i>Oral evidence: Green Deal watching brief (part 2), HC 950 Tuesday 17 June 2014</i>. House of Commons, London: The Stationery Office</p> <p>5. House of Commons Energy and Climate Change Committee (2013c). <i>The Green Deal: watching brief: First Report of Session 2013–14 volume II, additional written evidence</i> London: The Stationery Office</p> <p>6. House of Commons Energy and Climate Change Committee (2013a). <i>The Green Deal: watching brief, First Report of Session 2013–14 volume I: Report, together with formal minutes, oral and written evidence</i>. House of Commons, London: The Stationery Office</p> <p>7. House of Commons Energy and Climate Change Committee (2013b). <i>The Green Deal: watching brief: Government Response to the Committee's First Report of Session 2013–14</i>. London: The Stationery Office</p> <p>8. House of Commons Energy and Climate Change Committee (2014c). <i>The Green Deal watching brief (part 2), Third Report of Session 2014–15 Report, together with formal minutes relating to the report</i>. House of Commons, London: The Stationery Office</p> |
| Policy documents from third sector organisations and their titles used for the documentary analysis |
| <p>1. Association for the Conservation of Energy (2012). <i>Energy and Climate Change Committee written evidence</i>. UK: Parliament.</p> <p>2. Association of Residential Letting Agents [ARLA], (2014). <i>Written evidence submitted by the Association of Residential Letting Agents (ARLA) (GRE0011)</i> London: ARLA</p> |

3. Friends of the Earth and the Association for the Conservation of Energy (2013) *Private Rented Sector*. UK: Parliament
4. Residential Landlords Association, (2014) *Written evidence submitted by Residential Landlords Association (GRE0012)* London: RLA
5. National Landlords Association (2014). *Written evidence submitted by the National Landlords Association (GRE0031)* London: NLA

Policy documents from a company source and their titles used for the documentary analysis

1. Consumer Focus (2011c). *Green Deal no deal: building customers confidence in energy efficiency services*. London: Consumer Focus
2. Consumer Focus (2011d). *Making the Green Deal a fair deal* London: Consumer Focus
3. Consumer Focus (2012). *Filling the gaps: accuracy of Green Deal advice for cavity-walled homes*. London: Consumer Focus
4. Consumer Focus (2010). *Green Deal: redress* London: Consumer Focus

Appendix 4: A copy of pilot interview schedule

Appendix 4: A copy of pilot interview schedule for Green Deal providers

1. How did you become a Green Deal provider? And when?
2. Do you think the Green Deal will be successful tool for increasing the energy efficiency of the UK housing stock, why and why not?
3. What are the problems that you can foresee in relation to the scheme?
4. How could these problems be addressed?
5. Are you planning to target any particularly market? (e.g. private home owners vs. rented; professions vs. students within the rented sector)
 - o Probing question: Thinking about the young professionals and student rented markets, which one are you likely to target and why?
6. What type of customers would you like to focus on and why?
 - o Probing question: How do you deal with customers who are already indebted with energy suppliers but need Green Deal measures? Will you check customers' credit ratings? What can you do if customers cannot pay for the installed measures?
7. How profitable do you think will the Green Deal be for you and why?
8. In the event of a property being repossessed, how will you get the Green Deal finance back?
9. How do you intend to motivate consumers financially to take up the Green Deal measures?
10. What do you think would happen if customers were not able to realise financial savings from installed measures?
11. Do you think comfort take is an issue with the Green Deal scheme? (explain if necessary: comfort take = increase in "comfortable temperature" or number of rooms heated in accommodation, thus reducing or negating energy savings resulting from greater energy efficiency. If that happens, customers' savings on energy bills will be reduced, potentially making them net-payers for the Green Deal measures).
12. Do you have any particularly concerns and/or policy recommendations regarding the Green Deal in the privately rented sector?
 - o Probing questions: e.g. multiple consent required; problems re landlord-tenants coordination, etc.)
13. What measures have you put in place to train installers and assessors for the Green Deal delivery?
14. What influence, if any, did you have on the policy making process of the scheme? (e.g. did you respond to the consultation process? If so, do you feel your concerns have been listened to?)

Appendix 5: Copies of interview Schedule

Appendix 5L: A copy of the interview schedule for landlords

1. When and why did you become a landlord?
2. Which type(s) of properties do you rent out?
3. Why did you choose this/these property/ies?
4. Do you target specific tenant groups? If so which one(s)? Why?
5. Do you include a payment for energy consumption in the rent or not, why?
6. Did you consider the energy efficiency of the property when you bought it, why or why not?
 - a. Probing question: Do you think the energy efficiency of the property is an important factor for potential tenants to decide whether or not to rent it?
7. Have you ever made energy efficiency improvements to your property/ies or asked tenants to make any improvements, why and why not?
8. Have you heard about the Green Deal?

Probing questions

 - a. If yes, can you explain to me your understanding of the Green Deal?
 - b. [to the interviewer: If no or if any points about the Green Deal need clarification, show flowchart and explain Green Deal].
9. Would you consider taking up the Green Deal for one or several of your properties? Why or why not?

Probing questions:

 - a. Would negotiating consent with the tenants play a role in your decision?
 - b. Thinking of what I have explained to you, do you think the financial mechanism of the Green Deal will work as anticipated by the government in your situation? Why or why not?
 - c. How concerned are you about tenant turnover and how might that affect your decision to take up the Green Deal?
 - d. Are there any other reasons that make you hesitant to take up the Green Deal?
10. Can you imagine ways in which the Green Deal could be improved to increase take up?
11. Are you aware that from 2018, you cannot rent out inefficient properties? (i.e. F and G rated homes)?
12. What are your plans in meeting this regulation?
13. Considering what we have discussed today, is there anything that we have not yet mentioned that you think is important to this topic?

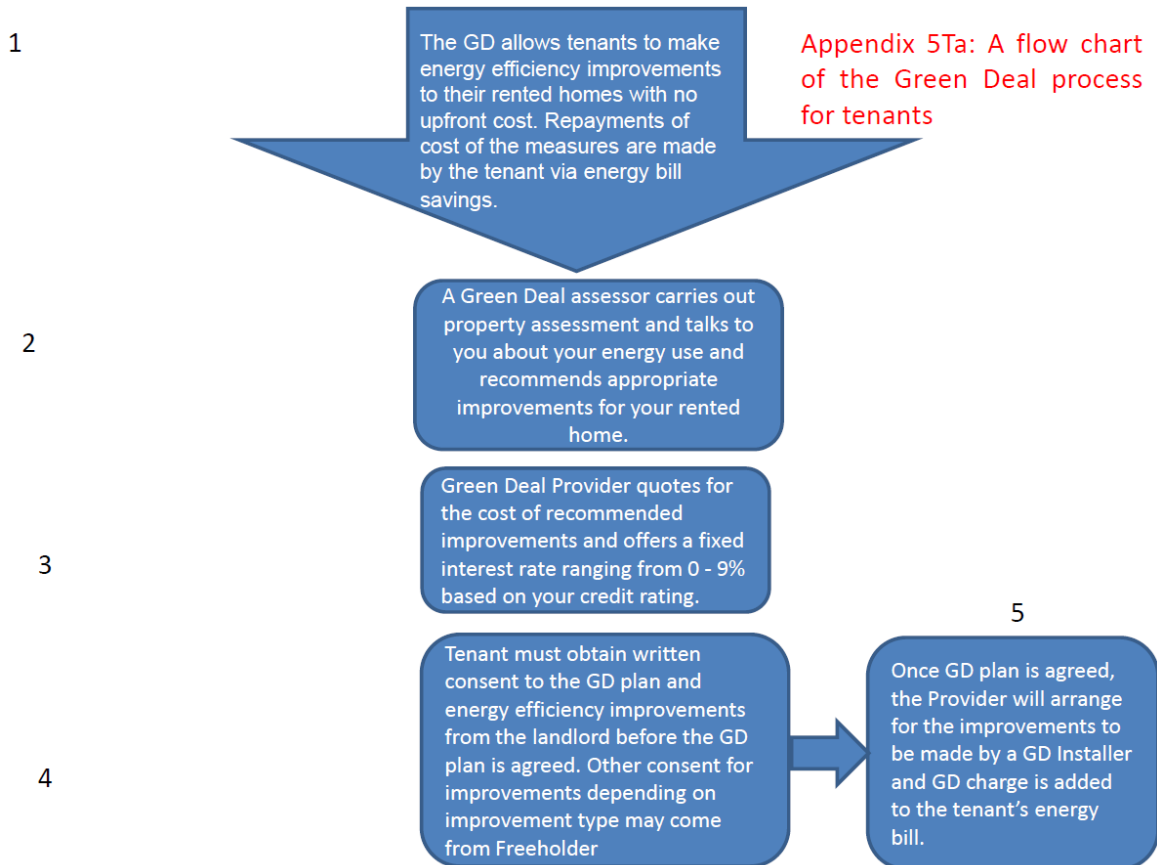
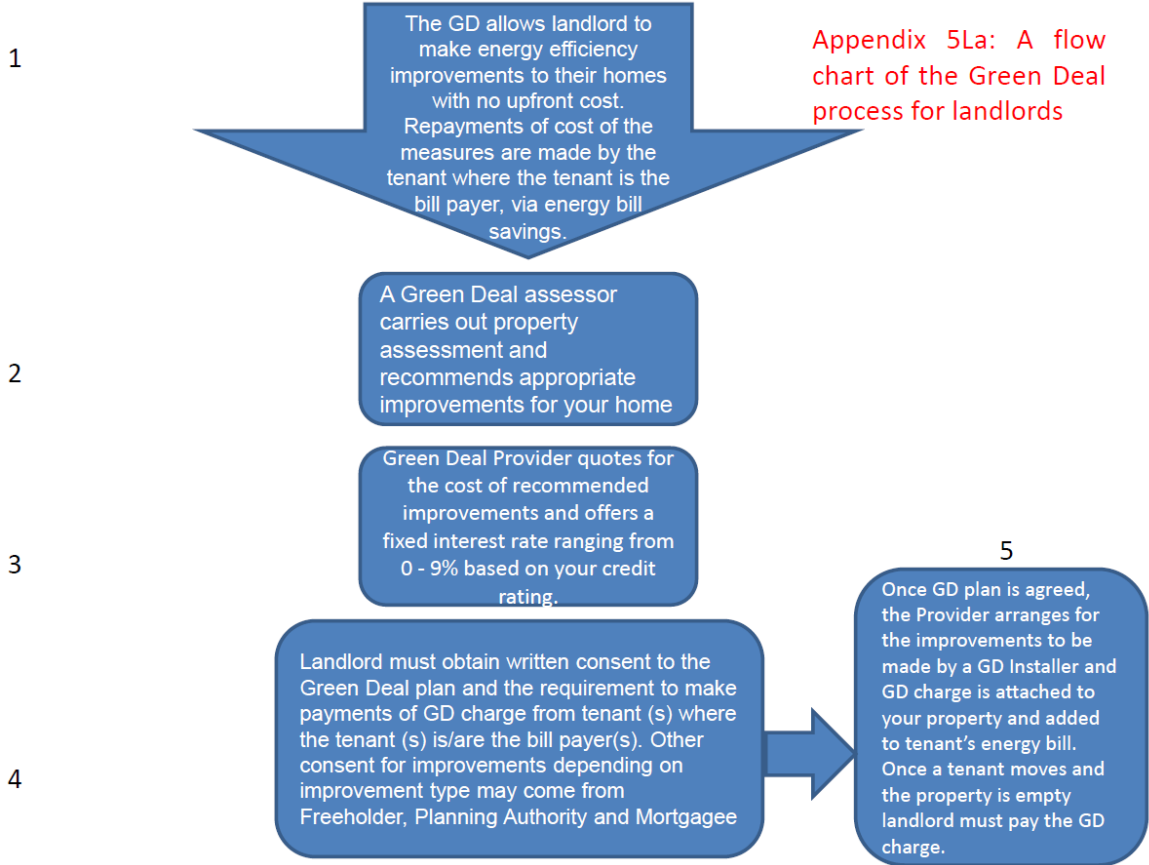
Appendix 5T: A copy of the interview schedule for tenants

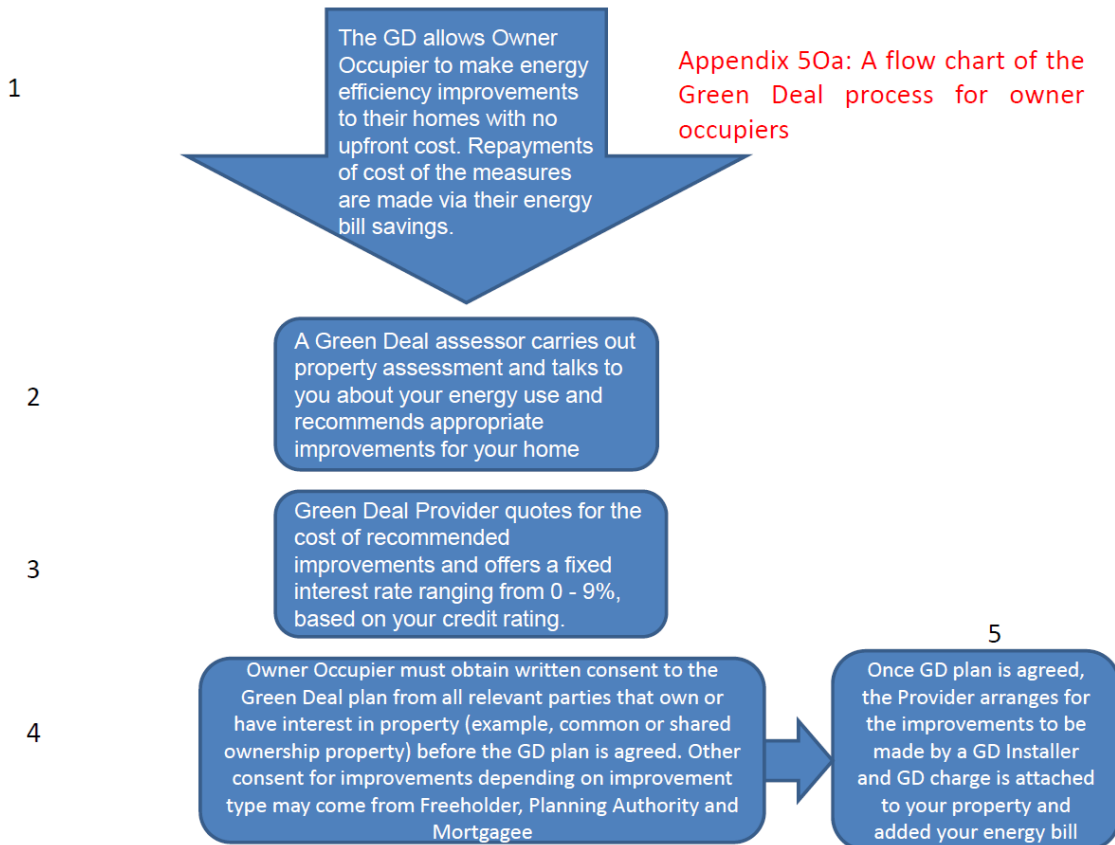
1. When and why did you choose to rent this property?
2. Did you consider the energy efficiency of this property before you decided to rent it? Why or why not?
3. How do you contact your landlord if there are any issues with this property?
4. Have you ever made energy efficiency improvements to the property, for example draught proofing your doors or putting foil behind your radiator - why and why not?
5. Do you need consent from your landlord to carry out these improvements?
 - a. If so, would this or has this played a role for your decision to make improvements to this property (or not)? Why?
6. Have you heard about the Green Deal?
Probing questions
 - a. If yes, can you explain to me your understanding of the Green Deal?
 - b. [to the interviewer: If no or if any points about the Green Deal need clarification, show flowchart and explain Green Deal].
7. Would you be interested in taking up the Green Deal with your landlord? Why or why not?
 - a. Thinking of what I have explained to you, do you think do you think the financial mechanism of the Green Deal would work as anticipated by the government in your situation? If not, why not?
 - b. Would the requirement to achieve a consensus with your landlord be an issue? Why or why not?
 - c. Are there any other reasons that make you hesitant to take up the Green Deal?
8. As how "fair" do you regard the Green Deal scheme? Why?
9. Are you aware as a tenant that in 2016, the landlord cannot legally refuse your request for improvement that can be financed under the Green Deal?
 - a. Do you think this change in law will influence your or others decision to request home improvements from their landlords?
10. Can you imagine ways in which the Green Deal could be improved to increase take up?
11. Considering what we have discussed today, is there anything that we have not yet mentioned that you think is important to this topic?

Appendix 5O: A copy of the interview schedule for owner occupiers

1. When and why did you buy this property?
2. Did you consider the energy efficiency of this dwelling/flat when you bought it? Why or why not?
3. Have you ever made energy efficiency improvements to the property since you moved in, why or why not?
4. Have you heard about the Green Deal?
Probing questions
 - a. If yes, can you explain to me your understanding of the Green Deal?
 - b. [to the interviewer: If no or if any points about the Green Deal need clarification, show flowchart and explain Green Deal].
5. Would you consider taking up the Green Deal for your property? Why or why not?
Probing questions:
 - a. Thinking of what I have explained to you, do you think the financial mechanism of the Green Deal will work as anticipated by the government in your situation? Why or why not?
 - b. If you were to take up the Green Deal, would you have to seek permission from any other owner(s) of this property? If so would, how might that influence the decision making process?
 - c. Are there any other reasons that make you hesitant to take up the Green Deal?
6. As how "fair" do you regard the Green Deal scheme? Why?
7. Can you imagine ways in which the Green Deal could be improved to increase take up?
8. Considering what we have discussed today, is there anything that we have not yet mentioned that you think is important to this topic?

Appendix 5





Appendix 6: Copies of survey guide

Appendix 6L: A copy of the survey guide for landlords

1. What type(s) of property/ies do you rent out? Please enter the number for each type:

| | | |
|--------------------------------|-----|-------|
| Purpose built flat | [] | |
| Converted flat / part of house | [] | |
| Whole detached house | [] | |
| Whole semi-detached house | [] | |
| Whole terraced house | [] | |
| Other | [] | |

2. What age bands do think your properties belong to? Please enter numbers for each band.

| | |
|-----------|-----|
| Pre 1919 | [] |
| 1919-1944 | [] |
| 1945-1964 | [] |
| 1965-1980 | [] |
| 1981-1990 | [] |
| Post 1990 | [] |

3. How do tenants contact you if there are any issues with the property?

| | |
|---------------|-----|
| Letting Agent | [] |
| Telephone | [] |
| Face to face | [] |
| E-mail | [] |
| Post | [] |
| Other | [] |

4. How would you contact your tenants to discuss the Green Deal?

| | |
|---------------|-----|
| Letting Agent | [] |
| Telephone | [] |
| Face to face | [] |
| E-mail | [] |
| Post | [] |
| Other | [] |

5. Do you have an occupation (next to being a landlord)? Yes [] No []
6. If yes, what is your occupation? [.....]
7. What is your gender? Male [] Female []
8. Which age group do you belong to?

| | |
|-------------|-----|
| 18 – 24 | [] |
| 25 – 34 | [] |
| 35 - 44 | [] |
| 45 - 54 | [] |
| 55 – 64 | [] |
| 65 and over | [] |

Appendix 6T: A copy of the survey guide for tenants

1. What type of property do you rent?

| | |
|--------------------------------|-----|
| Purpose built flat | [] |
| Converted flat / part of house | [] |
| Whole detached house | [] |
| Whole semi-detached house | [] |
| Whole terraced house | [] |
| Other | [] |
2. How long have you lived in your current property?

| | |
|------------------------------------|-----|
| Less than 1 year | [] |
| More than 1 but less than 2 years | [] |
| More than 2 but less than 10 years | [] |
| 10 years or more | [] |
3. How old is your current boiler? [] years
4. What is the primary heating source in your property?

| | |
|---------------------|-----|
| Gas central heating | [] |
| Electricity | [] |
| Oil | [] |
| Other | [] |
5. Is your energy bill inclusive in your rent? Yes [] No []
6. What is your gender? Male [] Female []
7. How many adults live in the property that you rent?
8. What is your employment status?

| | |
|---------------|-----|
| Student | [] |
| Employed | [] |
| Self-employed | [] |
| Unemployed | [] |
| Other | [] |
9. If you are in employment or self-employed, what is your occupation?
10. Which age group do you belong to?

| | |
|-------------|-----|
| 18 - 24 | [] |
| 25 - 34 | [] |
| 35 - 44 | [] |
| 45 - 54 | [] |
| 55 - 64 | [] |
| 65 and over | [] |
11. What age band do you think your property belongs to?

| | |
|-----------|-----|
| Pre 1919 | [] |
| 1919-1944 | [] |
| 1945-1964 | [] |
| 1965-1980 | [] |
| 1981-1990 | [] |
| Post 1990 | [] |
12. What (annual) income band do you belong to after tax?

| | |
|--------------------|-----|
| Under £10,000 p. a | [] |
| £10,000 - £14,999 | [] |
| £15,000 - £19,999 | [] |
| £20,000 - £29,999 | [] |
| £30,000 - £39,999 | [] |
| £40,000 and above | [] |

Appendix 6O: A copy of the survey guide for owner occupiers

1. What type of property do you live in?
 - Purpose built flat []
 - Converted flat / part of house []
 - Whole detached house []
 - Whole semi-detached house []
 - Whole terraced house []
 - Other []
2. How long have you lived in your current property?
 - Less than 1 year []
 - More than 1 but less than 2 years []
 - More than 2 but less than 10 years []
 - 10 years or more []
3. What is the primary heating source in your property?
 - Gas central heating []
 - Electricity []
 - Oil []
 - Other []
4. How old is your current boiler? [] years
5. What age band do you think your property belongs to?
 - Pre 1919 []
 - 1919-1944 []
 - 1945-1964 []
 - 1965-1980 []
 - 1981-1990 []
 - Post 1990 []
6. What is your gender? Male [] Female []
7. How many adults live in this property?
8. What is your employment status?
 - Full time student []
 - Employed []
 - Self-employed []
 - Unemployed []
 - Other []
9. If you are in employment or self-employed, what is your occupation? [.....
10. Which age group do you belong to?
 - 16 - 24 []
 - 25 - 34 []
 - 35 - 44 []
 - 45 - 54 []
 - 55 - 64 []
 - 65 and over []
11. What (annual) income band do you belong to after tax (including income from salaries/wages, rent, benefits, pensions, etc.)?
 - Under £5,000 []
 - £5,000 - £10,000 []
 - £10,000 - £14,999 []
 - £15,000 - £19,999 []
 - £20,000 - £29,999 []
 - £30,000 - £39,999 []
 - £40,000 and above []

Appendix 7: A copy of the request letter



Alexander Afful
University of Southampton
Sociology and Social Policy
Building 58, Room 1010
Highfield, Southampton
SO17 1BJ
E- mail: aa6e11@soton.ac.uk
Tel: 07447417321

University of Southampton
Accommodation Service
Building 37, University Road, Highfield
SO17 1BJ
14 April 2014

Dear Sir or Madam

Re: Request to help recruit research participants

My name is Alexander Afful, a PhD student in Sociology and Social Policy with student ID: 25044788. I am conducting research on the reasons for low uptake of Green Deal in the privately rented sector under the supervision of Dr Milena Buchs (Sociology and Social Policy and Dr. Patrick James (Civil Engineering and Environment).

The study wishes to recruit private landlords who are part of the Southampton Accreditation Scheme for Student Housing (SASSH) and the private tenants who live in these rented homes to participate in the study.

Hence, I am writing to ask whether you would be willing to pass on the attached recruitment letter to private landlords who may wish to take part in the study to contact me either through e-mail or telephone for interviews. Also, it would be very much appreciated if you could provide me with all the addresses of the homes rented out by these landlords to enable me to distribute recruitment letters to student tenants.

Thank you for your time and consideration for this research.

Yours faithfully,

A handwritten signature in blue ink, appearing to read "Alexander Afful".

Alexander Afful
PhD Student

Appendix 8: A copy of the recruitment letter



Alexander Afful
University of Southampton
Sociology and Social Policy
Building 58, Room 1010
Highfield, Southampton
SO17 1BJ
E- mail: aa6e11@soton.ac.uk
Tel: 07447417321

Dear occupant / landlord

I am Alexander Afful and conduct research on the reasons for low uptake of Green Deal in the privately rented sector. You have received this letter because you may be eligible to take part in the interviews. Participants will receive free valuable information about the Green Deal.

If you are a private landlord, tenant or owner occupier who has not yet taken part in the Green Deal, I would like to speak to you about the Green Deal scheme and energy saving in the home. I will very be interested in your critical views of the Green Deal and the reasons behind its limited success so far at a place and time convenient to you. Your views would make an invaluable contribution to this research. Please see the attached information sheet for further details.

If you are interested in participating or would like to learn more about this project please contact me (07447417321 or aa6e11@soton.ac.uk). Please help to pass this letter on to other potential participants.

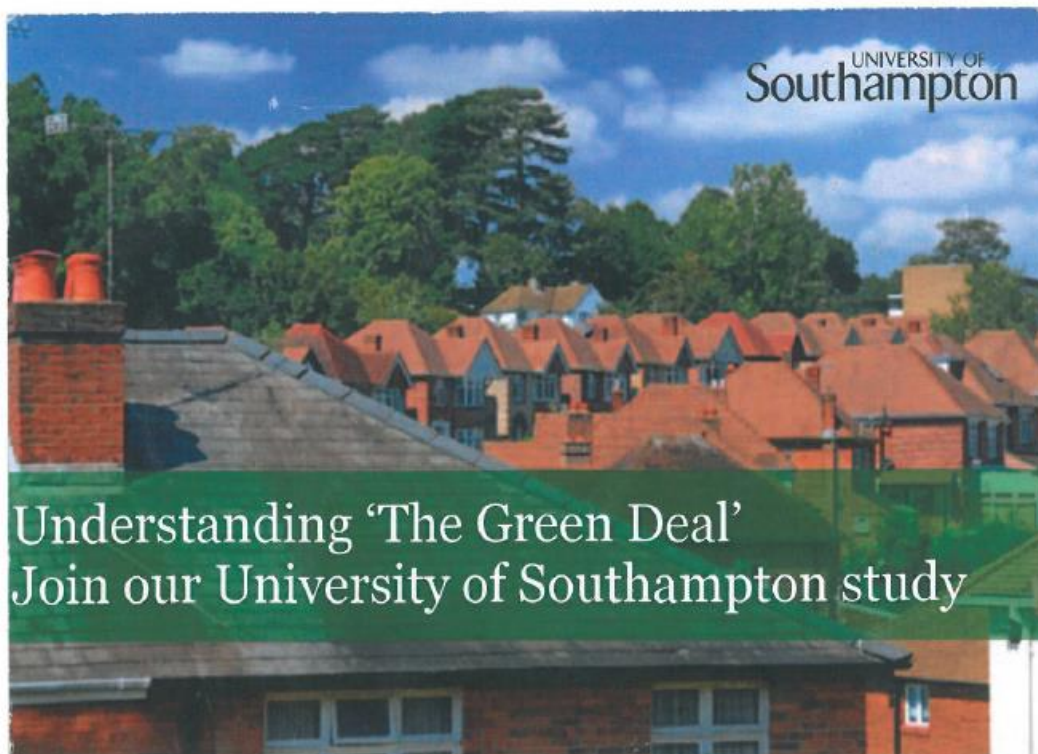
Your help is very much appreciated!

Sincerely,

A small, square image containing a handwritten signature in blue ink, which appears to be "Alexander Afful".

Alexander Afful
Researcher

Appendix 9: Front and back of the postcard



Want to share your views and learn more about the Green Deal scheme?

Are you tenant, owner occupier or landlord who has not yet taken part in the Green Deal? Yes, I am tenant [] owner occupier [] landlord []

Then I would like to speak to you about the Green Deal scheme and energy saving in the home. I will very be interested in your critical views of the Green Deal and the reasons behind its limited success so far at a place and time convenient to you.

Please get in touch if you'd like to take part and want to learn more. You can:

- Send this postcard back for free
- Phone on 07447417323
- Email on a46e11@soton.ac.uk

Yes, I/we are interested in taking part and would like to learn more about the project

Name: _____

Phone number: _____

Email: _____



ENERGY
NO STAMP
REQUIRED

RTHT—TBHY—ZJR
University of Southampton
Dr Milena Buchs
Sociology and Social policy, Bld
58/4087
Highfield
Southampton

UNIVERSITY OF
Southampton

Appendix 10: A copy of the consent form

UNIVERSITY OF
Southampton

April 2014

CONSENT FORM FOR POTENTIAL GREEN DEAL PARTICIPANTS

Study title: Green Deal ideal? Examining reasons for low uptake of the Green Deal in the privately rented sector

Researcher name: Alexander Afful

Study reference:

Ethics reference: (9847)

Please initial the box (es) if you agree with the statement(s):

I have read and understood the participant information sheet (26/09/2014/ Version 3) and have had the opportunity to ask questions about the study.

I agree to take part in a semi-structured interview and a background survey and agree for my data to be used for the purpose of this study

I agree to the interview being recorded on a digital recorder. I understand that this is for the purpose of transcription only.

I understand that my responses will be anonymised in reports of the research

I understand my participation is voluntary and I may withdraw at any time without my legal rights being affected

Data Protection

I understand that information collected about me during my participation in this study will be stored on a password protected computer and that this information will only be used for the purpose of this study.

Name of participant (print name).....

Signature of participant.....

Date.....

Date: 26/09/2014 Version number: 4

Appendix 11: Participant information sheet



Participant Information Sheet for potential study participants

Study Title: Green Deal ideal? Examining reasons for low uptake of the Green Deal in the privately rented sector

Researcher: Alexander Afful

Ethics number: 9847

Please read this information carefully before deciding to take part in this research. If you are happy to participate you will be asked to sign a consent form.

What is the purpose of the study?

The study examines the reasons for low uptake of the Green Deal in the privately rented sector and inequality of uptake of the scheme by comparing the privately rented and owner occupier sectors. This research is conducted as part of an educational qualification (MPhil/PhD) at the University of Southampton.

Why have I been chosen?

The study will involve landlords, tenants and owner occupiers who have not yet taken part in the Green Deal. You have been chosen because you belong to one of these groups. It is hoped that your views will contribute essential information on the reasons for low uptake in the privately rented sector.

What will happen if I take part?

You will be asked to participate in a face to face, semi-structured interview, followed by a very brief survey. The interview and survey will together last around one hour, at a location and time convenient to you. Your participation will be completely voluntary. You will be able to pause or terminate the interview at any time. Interviews will be recorded with your consent and you will be free to ask for the recording to be stopped at any time or for your comments to be off the record.

Are there any benefits in my taking part?

Yes, participants will receive information about government schemes to improve the energy efficiency of dwellings. Beyond this individual benefit, your views provided in the interview will feed into policy recommendations formulated through this research which can improve the Green Deal in the future.

Are there any risks involved?

There are no anticipated risks to your participation.

Will my participation be anonymous?

Your name and contact details will only be known to me, the researcher. All your responses will be anonymised in all outputs of this research, including oral presentations, correspondence, conversations and research publications. Information from tenants will not be disclosed to their landlords and vice versa and at no time will the identities of participants be disclosed to third parties. The researcher works in compliance with the Data Protection Act as well as the University of Southampton's ethic policy. Data collected will be kept securely on a password protected computer. Information will only be used for the purpose of this study.

Ethical Approval

This study has been approved by the Faculty of Social and Human Sciences Ethics Committee.

What happens if I change my mind?

You can withdraw at any time without your legal right being affected in any way. You may decline answering any questions you feel you do not wish to answer.

What happens if something goes wrong?

You may have the right to make a formal complaint to Head of Research Governance (02380 595058, rgoinfo@soton.ac.uk)

Where can I get more information?

Should you need more information regarding your participation in this study, please feel free to contact Alexander Afful (07447417321, aa6e11@soton.ac.uk).

Many thanks for your help with this study.

[26/09/2014] [Version 3]

Appendix 12: Ethical approval for pilot interviews

Ethics Application Form for Alexander Afful (PhD Student)

Submission ID: 3054

Approved by the Ethics Committee on 28/09/2012

| Date | Activity | Comments | Attached Documents |
|---------------------|--|---|--------------------|
| 28/09/2012 8:03 pm | Reviewed and approved by the ethics committee | | |
| 27/09/2012 6:01 pm | Approved by supervisor and sent to ethics committee | | |
| 27/09/2012 3:05 pm | Submitted to supervisor Milena Buchs (mbuechs) | | |
| 25/09/2012 10:06 pm | Revision request by supervisor | Hi Alex, sorry to be a pain but could you please change the version number on the info sheet and the reference to the info sheet on the consent form to "version 4"? (As it will be the fourth version not the first)? Many thanks Milena | |

Appendix 13: Ethical approval for the actual interviews

Second phase fieldwork with tenants, landlords and owner-occupiers.

Submission ID: 9847

Approved by the Ethics Committee in 52 day(s) on 2/10/2014

| Date | Activity | Comments | Attached Documents |
|---------------------|---|--|--------------------|
| 2/10/2014 1:18 pm | Reviewed and approved by the ethics committee | | |
| 29/09/2014 8:57 am | Approved by supervisor and sent to ethics committee | Hi Alex, thanks for resubmitting, I think you have addressed all the issues raised. Milena | |
| 28/09/2014 10:40 pm | Submitted to supervisor Milena Buchs (mbuechs) | | |
| 23/09/2014 3:03 pm | Revision request by supervisor | Hi Alex, many thanks for resubmitting - I think there are still a couple of remaining inconsistencies that the reviewers have pointed out, especially the start date of the study (sorry, should have spotted this, this was due to the viva delay). Please make sure you are addressing all the points raised by the reviewers, Many thanks! Milena | |

List of References

- Abraham, J. (1994). Bias in science and medical knowledge: the open controversy. *Sociology*, 28, 717 - 36.
- Abrahamse, W., Steg, L. (2011). Factors related to household energy use and intention to reduce it: the role of psychological and socio-demographic variables. *Human Ecology Review*, 18, 30 - 40.
- Abrahamse, W., Steg, L., Vlek, C., and Rothengatter, J. A. (2005). A review of intervention studies aimed at household energy conservation. *Journal of Environmental Psychology*, 25, 273 -291.
- Abrahamse, W., Steg, L., Vlek, C., and Rothengatter, J. A. (2007). The effect of tailored information, goal setting and feedback on household energy use, energy related behaviors and behavioral determinants. *Journal of Environmental Psychology*, 27, 265 - 276.
- Ackers, L. (1999). Context, culture and values in migration research on children within the EU. *International Journal of Social Research Methodology*, 2, 171 - 81.
- Adjei, A., Hamilton, L., and Roys, M. (2011). A study of homeowners' energy efficiency improvements and the impact of the energy performance certificate. Retrieved October 3, 2013, from http://www.idealepbd.eu/download/homeowners_questionnaire_wa.pdf
- Agyeman, J., Angus, B. (2003). The role of civic environmentalism in the pursuit of sustainable communities. *Journal of Environmental Planning and Management*, 46, 345 - 363
- Ainslie, G. (1975). Specious reward: a behavioral theory of impulsiveness and impulse control. *Psychological Bulletin*, 82, 463 - 496.
- Ainslie, G. (1992). *Picoeconomics*. Cambridge: Cambridge University Press.
- Ajzen, I. (2002). Perceived behavioral control, self-efficacy, locus of control, and the theory of planned behavior. *Journal of Applied Social Psychology*, 32,665 - 683.
- Ajzen, I., and Fishbein, M. (1980). *Understanding attitudes and predicting social behaviour*. Eaglewood Cliffs, New Jersey: Prentice Hall.
- Aldous, P., and Whitehead, A. (2016). *Warmer and greener: A guide to the future of domestic energy efficiency policy*. London: PolicyConnect.

List of References

- Ameli, N., and Brandt, N. (2015). Determinants of households' investment in energy efficiency and renewables: evidence from the OECD survey on household environmental behaviour and attitudes. *Environmental Research Letters*, 10, (2015) 044015.
- Andersson, M., Johnsson, F., and von Borgstede C. (2013). Public attitudes to climate change and carbon mitigation: implications for energy-associated behaviours. *Energy Policy*, 57, 182 - 193.
- Andreoni, J. (1990). Impure altruism and donations to public goods: a theory of warm-glow giving. *The Economic Journal*, 100, 464 - 477.
- Ang, A., Bekaert, G., and Liu, J. (2004). Why stocks may disappoint. *Journal of Financial Economics*, 76, 471- 508.
- Arbuthnot, J., and Lingg, S. (1975). A comparison of French and American environmental behaviors, knowledge and attitudes. *International Journal of Psychology*, 10, 275 - 281.
- Arcury, T. A., and Christianson, E. H. (1990). Environmental worldview in response to environmental problems: Kentucky 1984 and 1988 compared. *Environment and Behavior*, 22, 387 - 407.
- Association for the Conservation of Energy (2010). *Identifying options for the future of fuel poverty policy: A fair green deal*. London: ACE
- Association for the Conservation of Energy (2012). *Energy and climate change committee written evidence*. UK: Parliament.
- Association of Residential Letting Agents [ARLA], (2014). *Written evidence submitted by the association of residential letting agents (ARLA) (GRE0011)* London: ARLA
- Ástmarsson, B., Jensen, P. A., and Maslesa, E. (2013). Sustainable renovation of residential buildings and the landlord/tenant dilemma. *Energy Policy*, 63, 355 - 362.
- Atkinson, J. M., and Coffery, A. (2004). Analysing documentary realities in D. Silverman (ed.), *Qualitative research: Theory, methods and practice* (2nd ed.). London: Sage.
- Attride-Stirling, J. (2001). Thematic networks: An analytic tool for qualitative research. *Qualitative Research*, 1, (3) 385-405.
- Bachrach, P and Baratz, M.S (1963). Decision and nondecision: an analytical framework. *American Political Science Review*, 57, 641 – 651.

- Bailey, K. D. (1987) *Methods of Social Research* (3rd ed.). New York: The Free Press.
- Baker, W., and Laine, L. (2010). *A private green deal: the case for minimum energy efficiency standards in private rented sector*. London: Consumer Focus.
- Baland, J. M., and Platteau, J. P. (1999). *The ambiguous impact of inequality on local resource management*. *World Development* 27, 773 - 788.
- Baland, J. M., and Platteau, J.P. (1996). *Halting degradation of natural resources. Is there a role for rural communities?* FAO, Oxford: Rome and Oxford University Press.
- Ball, M. (2011). *Investing in Private Renting: Landlords returns, taxation and the future of the private rented sector*. London: Residential Landlords Association.
- Banks, J. S., and Weingast, B. R. (1992). The political control of bureaucracies under asymmetric information. *American Journal of Political Science*, 36, 509 - 524.
- Baron, R., and Byrne, D. (1997) *Social Psychology* (8th ed.). (Boston, Allyn and Bacon)
- Barr, S., Gilg, A.W., and Ford, N., (2005). The household energy gap: Examining the divide between habitual- and purchase-related conservation behaviours. *Energy Policy*, 33, 1425–1444.
- Barriball, K. L. (1994). Collecting data using a semi-structured interview: A discussion paper. *Journal of Advanced Nursing*, 19, 328 - 335.
- Beardsworth, A., and Keil, T. (1992). The vegetarian option: varieties, conversions, motives and careers. *Sociology Review*, 40, 256 - 293.
- Beaumont, A. (2007). *Hard-to-treat homes in England, W07- Housing regeneration and maintenance, international conference 25th-28th June, sustainable urban area, Rotterdam 2007*, Watford, UK: Building Research Establishment.
- Becker, G. S. (1962). Irrational behaviour and economic theory. *Journal of Political Economy*, 70, 1 - 13.
- Becker, L. J., Seligman, C; Fazio, R. H., and Darley, J. M. (1981). Relating attitudes to residential energy use. *Environment and Behavior*, 13, 590 - 609.
- Bell, M., and Lowe, R. (2000). Energy efficient modernisation of housing: A UK case study. *Energy and Buildings*. 32, 267 - 280.

List of References

- Benson, J. K. (1982). 'A framework for policy analysis', In D. L. Rogers and D. A. Whetten (Ed.), *Interorganizational coordination: Theory, research and implementation* (pp 137 – 176). Ames: Iowa State University Press.
- Benzion U., Rapoport, A. and Yagil, J. (1989). Discount rates inferred from decisions: An experimental study. *Management Science*, 35, 270 - 284.
- BioRegional (2011). *Helping to inform the Green Deal: green shoots from Pay as You Save*. London: BioRegional Solutions for Responsibility
- Bird, S., and Herná'ndez, D. (2012). Policy options for the split incentive: Increasing energy efficiency for low-income renters. *Energy Policy* 48, 506 – 514.
- Black, J. S., Stern, P. C., and Elworth, J. T. (1985). Personal and contextual influences on household energy adaptations. *Journal of Applied Psychology*, 70, 3 - 21.
- Blaikie, N. (2000). *Designing social research*. Cambridge: Polity
- Blake, J. (1999). Overcoming the 'value–action gap' in environmental policy: Tensions between national policy and local experience. *Local Environment*, 4, 257 - 278.
- Blamey, R. (1998). Analysis contingent valuation and the activation of environmental norms. *Ecological Economics*, 24, 47 - 72.
- Boardman, B. (1991). *Fuel poverty: from cold homes to affordable warmth*. London: Belhaven Press.
- Boardman, B. (2012). Fuel poverty synthesis: Lesson learnt, actions needed. *Energy Policy*, 49, 143-148.
- Boardman, B., and Darby, S. (2000). *Effective advice: Energy efficiency and the disadvantaged*. Oxford, UK: Environmental Change Institute.
- Boyatzis, R. E. (1998). *Transforming qualitative information: Thematic analysis and code development*. London: Sage.
- Boyce, J. K., (1994). Inequality as a cause of environmental degradation. *Ecological Economics*, 11, 168-178.
- Boyce, J. K., Klemer, A. R., Templet, P. H. and Willis, C. E. (1999). Power distribution, the environment and public health: A state-level analysis. *Ecological Economics*, 29, 127 - 140.

- Bradbrook, A. (1991). The development of energy conservation legislation for private rental housing. *Environmental and Planning Law Journal*, 91-107.
- Brandon, G., and Lewis, A. (1999). Reducing household energy consumption: A qualitative and quantitative field study. *Journal of Environmental Psychology*, 19, 75 - 85.
- Braun, V., and Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3, 77-101.
- Brechling, V., and Smith, S. (1994). Household energy efficiency in the UK. *Fiscal Studies*, 15, 44 - 56.
- Bremer, M., and Kato, K. (1996). Trading volume for winners and losers on the Tokyo stock exchange. *Journal of Financial and Quantitative Analysis*, 31, 127-142.
- British Gas (2014). *Written evidence submitted by British Gas (GRE0030)*. London: British Gas.
- British Property Federation (2013). *A British property federation guide to energy efficiency and the private rented sector*. London: BPF.
- Brown R. (2004). Consideration of the origin of Herbert Simon's theory of satisficing (1933-1947). *Management Decision*, 42, 1240 - 1256.
- Brown, M. (2001). Market failures and barriers as a basis for clean energy policies. *Energy Policy*, 29, 1197-1207.
- Brown, M., and Rollinson, P. (1985). The residential energy consumption of low-income and elderly households: how "non discretionary" is it? *Energy Systems and Policy*, 9, 271 - 301.
- Browne, K. (2011). *An introduction to sociology* (4th ed.). UK: Polity Press
- Bryman, A. (2008). *Social research methods* (3rd ed.). New York: Oxford University Press
- Bryman, A. (2012). *Social research methods* (4th ed.). New York: Oxford University
- Büchs, M., and Schnepf, S. V. (2013). Who emits most? Associations between socio economic factors and UK households' home energy, transport, indirect and total CO2 emissions. *Ecological Economics*, 90, 114–123.

List of References

- Building Research Establishment (2008). *A study of hard-to-treat homes using the English house condition survey. Part1- dwelling and household characteristics of hard-to-treat homes*. London: Building Research Establishment.
- Building Research Establishment (2011). *The health costs of cold dwellings*. London: BRE
- Burfurd, I., Gangadharan, L., and Nemes, V. (2012). Stars and standards: Energy efficiency in rental markets. *Journal of Environmental Economics and Management*, 64,153–168.
- Burgess, J., and Nye, M. (2008). Rematerialising energy use through transparent monitoring systems. *Energy Policy*, 36, 4454 - 4459.
- Burgess, J., Harrison, C. M., and Filius, P. (1998). Environmental communication and the cultural politics of environmental citizenship. *Environment and Planning* 30, 1445 - 1460.
- Caird, S., Roy R., and Herring, H. (2008). Improving the energy performance of UK households: results from surveys of consumer adoption and use of low-and zero-carbon technologies. *Energy Efficiency*, 1, 149-166.
- California Energy Commission (1985). *Energy conservation in rental housing: Conference proceedings*, report P400- 85-013, p. 3. In A. Bradbrook (1991), *The development of energy conservation legislation for private rental housing*. Environmental and Planning Law Journal, 71-107.
- California Sustainability Alliance (2015). *Green lease toolkit: Glossary*. California: California Sustainability Alliance.
- Camerer, F. C., and Loewenstein G. (2004). Behavioral economics: past, present, future. *Division of Humanities and Social Sciences*, 228 - 277.
- Cameron, T. (1985). A nested logit model of energy conservation activities by owners of existing single family dwellings. *Review of Economics and Statistics*, 2, 205 - 211.
- Carillion (2014). *Written evidence submitted by Carillion (GRE0028)*. London: Carillion.
- Catney, P., Dobson, A., Hall, S.M., Hards, S., MacGregor, S., Robinson, Z., Ormerod, M. and Ross, S. (2013). ‘Community knowledge networks: An action-orientated approach to energy research.’ *Local Environment*, 18, 506 - 520.
- Cavanagh, R. (1988). Responsible power marketing in an increasing competitive era. *Yale Journal of Regulation*, 5, 331 - 358.

- Centre for Regional Economic and Social Research (2013). *Attitudes and perceptions of the green deal amongst private sector landlords in Rotherham: Summary report*. London: CRESR.
- Centre for Sustainable Energy (2009). *Exploring 'energy justice: Prospects for fairness in UK climate policy*. London: CSE.
- Centre for Sustainable Energy (2013). *Home energy advice: The green deal, what it means for householders*. London: CSE.
- Centre for Sustainable Energy and Association for the Conservation of Energy (2010). *Distributional impacts of UK climate change policies: Final report to eaga charitable trust*. London: CSE and ACE.
- Changeworks (2007). *Affordable warmth landlord factsheets: Landlord energy savings allowance*
Retrieved February 20, 2013, from
<http://www.changeworks.org.uk/uploads/AW%20Landlord%20Factsheet%20LESA.pdf>
- Cialdini, R., Kallgren, C. and Reno, R. (1991). A focus theory of normative conduct: A theoretical refinement and re-evaluation. *Advances in Experimental Social Psychology*, 24, 201–234.
- Citizens Advice (2014). *Written evidence submitted by Citizens Advice (GRE0018)*. London: Citizens Advice.
- Citizens Advice and Shelter Cymru (2013). *Making rights real: Preventing retaliatory evictions in Wales*. UK: Citizens Advice and Shelter Cymru.
- Citizens Advice Bureau, the Association for the Conservation of Energy and Friends of the Earth (2011). *Energy bill report stage briefing: minimum energy efficiency standard for private rented homes*. London: CAB, ACE and Friends of the Earth.
- Clement, R. T., and Reilly, T. (2001). *Making Hard Decisions*. Pacific Grove, CA: Duxbury.
- Climate Change Act (2008). *Carbon target and budgeting, Chapter 27, Part 1- the target for 2050*. London: Her Majesty's Stationery Office Limited.
- Clinch J. P., and Healy, J. D. (1999). *Alleviating fuel poverty in Ireland: A programme for the 21st century. Conference Proceedings of the 27th International Association for Housing Science World Housing Congress, June 1- 7, Berkeley*: University of California.

List of References

- Clinch, J. P. and Healy, J. D. (2000b). The benefits of residential energy conservation in the light of the Luxembourg agreement and the Gothenburg protocol. *European Environment* 10, 131 - 139.
- Clinch, J. P., and Healy J. D. (2004). Quantifying the severity of fuel poverty, its relationship with poor housing and reasons for non-investment in energy-saving measures in Ireland. *Energy Policy*, 32, 207 - 220.
- Clinch, J. P., and Healy, J. D. (2000a). Domestic energy efficiency in Ireland: Correcting market failure. *Energy Policy*, 28, 1 - 8.
- Collier, A., Cotterill, A., Everett, T., Muckle, R., Pike, T., and Vanstone, A. (2010). *Understanding and influencing behaviours: A review of social research, economics and policy making in Defra*. London: Defra.
- Committee on Climate Change (2009). *Progress report parliament, meeting carbon budgets- the need for a change*. London: CCC.
- Consumer Focus (2010). *Green deal: Redress*. London: Consumer Focus.
- Consumer Focus (2011a). *Room for improvement the impact of EPCs on consumer decisions-making*. London: Consumer Focus.
- Consumer Focus (2011b). *As easy as EPC? Consumer views on the content and format of the energy performance certificate*. London: Consumer Focus.
- Consumer Focus (2011c). *Green deal no deal: Building customers confidence in energy efficiency services*. London: Consumer Focus.
- Consumer Focus (2011d). *Making the green deal a fair deal*. London: Consumer Focus.
- Consumer Focus (2012). *Filling the gaps: Accuracy of green deal advice for cavity-walled homes*. London: Consumer Focus.
- Consumers Focus (2012). From devotees to the disengaged: a summary of research into energy consumers' experiences of time of use tariffs and consumers focus recommendations. Retrieved June 15, 2013, from <http://www.consumerfocus.org.uk/files/2012/09/From-devotees-to-the-disengaged.pdf>

- Convery, F. J. (1998). *A guide to policies for energy conservation: The European experience*. Cheltenham: Edward Elgar.
- Cook, B., and Wood B. D. (1989). Principal- agent models of political control of bureaucracy. *American Political Science Review*, 83, 965 - 978.
- Cooper, I., and Palmer, J. (2011). *Great Britain's housing energy fact file*. London: DEEC.
- Cormack D.F.S. (1984). *An overview of the research process in nursing*: In *the research process in nursing*. Oxford: Blackwell Scientific Publications.
- Counihan, R., and Nemptzow, D. (1981). Energy conservation and the rental housing market. *Solar Law Reporter*, 2, 1103 - 1132.
- COWI consult (2001). *Evaluation of the Energy Management Scheme (rating for large buildings)*. Copenhagen: The Danish Energy Authority.
- Craig, C. S., and McCann, J. M. (1978). Assessing communication effects on energy consumption. *Journal of Consumer Research*, 5, 82–88.
- Creswell, J. W. (2003). *Research design: Qualitative, quantitative, and mixed methods approaches*, (2nd ed.). California: Sage Publications, Thousand Oaks.
- Crisis (2012). *No room available: Study of the availability of shared accommodation* UK: Crisis.
- Crosby, D. C., Formby., and District Citizens Advice Bureau (2007). *The Tenant's dilemma. Warning: your home is at risk if your dare complain*. London: Crosby, Formby and District CAB.
- Daamen, D. L., Staats, H., Wilke, H., and Engelen, M. (2001). Improving environmental behavior in companies: The effectiveness of tailored versus nontailored interventions. *Environment and Behavior*, 33, 229 - 248.
- Dahl, R. A. (1958). A critique of the ruling elite model. *American Political Science Review*, 52, 463 - 469.
- Daly, J., Kellehear, A. and Gliksman, M. (1997). *The public health researcher: A methodological approach*. Melbourne, Australia: Oxford University Press.
- Darby S, (2005). *The Decent Home programme- background material H for the 40% House report* London: Environmental Change Institute, University of Oxford.

List of References

- Darby, S. (2006). Social learning and public policy: Lessons from an energy-conscious village. *Energy Policy*, 34, 2929–2940.
- Darnton, A. (2008). *Practical Guide: An overview of behaviour change models and their uses*. London: Government Social Research.
- Davidson, L., Fossey E., Harvey. C., and McDermott F. (2002). Understanding and evaluating qualitative research. *Australian and New Zealand Journal of Psychiatry*, 36, 717 - 732.
- Davies, P., and Osmani M. (2011). Low carbon housing refurbishment challenges and incentives: Architects' perspectives. *Building and Environment*, 46, 1691-1698.
- Davis LW (2010). *Evaluating the slow adoption of energy efficient investments: are renters less likely to have energy efficient appliances?* National Bureau of Economic Research working paper 16114. Retrieved February 10, 2016, from <http://www.nber.org/chapters/c12130.pdf>
- De Groot, J. I. M., and Steg, L. (2008). Value orientations to explain beliefs related to environmental significant behavior: How to measure egoistic, altruistic, and biospheric value orientations. *Environment and Behavior*, 40, 330 - 354.
- Deci, E. L. (1971). Effects of externally mediated rewards on intrinsic motivation. *Journal of Personality and Social Psychology*, 18, 105 - 115.
- Defra (2006). *Assessment of EEC 2002-05: carbon, energy and cost savings*. London: Defra.
- Denzin, N. K., and Lincoln, Y. S. (2005). *The sage handbook of qualitative research*. (3rd ed.). London: Sage Publications.
- Department for Communities and Local Government (2007). *Assessment of implementing decent homes in the social sector, housing research summary, number 238, 2007*. London: DCLG.
- Department for Communities and Local Government (2010a). *Evaluation of the impact of HMO licensing and selective licensing* London: DCLG.
- Department for Communities and Local Government (2010b). *Making better use of energy performance certificates and data*. London: DCLG.
- Department for Communities and Local Government (2011). *Private landlord survey 2010*. London: DCLG.

- Department for Communities and Local Government (2011c). *Energy performance certificates for dwellings in the social and private rented sectors* London: DCLG.
- Department for Communities and Local Government (2014). *English housing survey: Headline report 2012-13*. London: DCLG.
- Department for Communities and Local Government (2015). *English housing survey: Headline report 2013-14*. London: DCLG.
- Department for Communities and Local Government (2016a). *English housing survey: Headline report 2014-15*. London: DCLG.
- Department for Communities and Local Government. (2010d). *English housing survey: Household report 2008-09*. London: DCLG.
- Department for Communities and Local Government. (2011a). *English housing survey: Household stock report 2009-2010*. London: DCLG
- Department for Communities and Local Government. (2011b). *Private landlords survey 2010*. London: DCLG.
- Department for Communities and Local Government. (2012). *English housing survey: Homes 2010-2011*. London: DCLG.
- Department for Communities and Local Government. (2013). *English housing survey: Headline report 2011-12*. London: DCLG.
- Department for Communities and Local Government. (2016b). *Model agreement for an assured shorthold tenancy and accompanying guidance*. London: DCLG.
- Department for Community and local Government (2010c). *Focus on behaviour change: Reducing energy demand in homes*. London: DCLG.
- Department for Environment Food and Rural Affairs (2008). *Local authority CO2 emissions estimates 2006: Statistical summary*. London: DEFRA.
- Department of Energy and Climate Change (2009). *Heat and energy saving strategy* London: DECC.
- Department of Energy and Climate Change (2009). *Impact assessment of proposals for implementation of the community energy savings programme (CESP)*. London: DECC.

List of References

- Department of Energy and Climate Change (2011). *Consumer needs and wants for the Green Deal*. London: DECC.
- Department of Energy and Climate Change (2011a). *Energy act 2011: Green deal impact assessment*. London: DECC.
- Department of Energy and Climate Change (2011b). *Green deal and the private rented sector: Consumer research amongst tenants and landlords*. London: DECC.
- Department of Energy and Climate Change (2011c). *Understanding potential consumer response to the green deal*. London: DECC.
- Department of Energy and Climate Change (2011d). *The green deal: A summary of the Government's Proposals*. London: DECC.
- Department of Energy and Climate Change (2011e). *Home energy pay as you save pilot review*. London: DECC.
- Department of Energy and Climate Change (2011f). *The green deal and energy company obligation*. London: DECC.
- Department of Energy and Climate Change (2011g). *Research report: Evaluation of the delivery and uptake of the carbon emission reduction target*. London: DECC.
- Department of Energy and Climate Change (2011h). *Evaluation of the community energy saving programme: A report on the findings from the process and householder experience research streams*. London: DECC.
- Department of Energy and Climate Change (2011i). *Extra help where it is needed: A new energy company obligation*. London: DECC.
- Department of Energy and Climate Change (2012a). *Final stage impact assessment for the green deal and energy company obligation*. London: DECC.
- Department of Energy and Climate Change (2012b). *Green deal providers guidance*. London: DECC.
- Department of Energy and Climate Change (2012c). *Green deal segmentation*. London: DECC.
- Department of Energy and Climate Change (2013a). *Domestic green deal and energy company obligation in Great Britain, Quarterly report*. London: DECC.

- Department of Energy and Climate Change (2013b). *Statistical release: Experimental statistics – estimates of home insulation levels in Great Britain*. London: DECC.
- Department of Energy and Climate Change (2013c). *Domestic green deal and energy company obligation in Great Britain, monthly report, statistical release: Experimental statistics*. London: DECC.
- Department of Energy and Climate Change (2013d). *Green deal household tracker survey: Wave 1 and 2 report*. London: DECC.
- Department of Energy and Climate Change (2013e). *Domestic green deal and energy company obligation in Great Britain, Quarterly report: January – June 2013*. London: DECC.
- Department of Energy and Climate Change (2013f). *Domestic green deal, energy company obligation and insulation levels in Great Britain, Quarterly report*. London: DECC.
- Department of Energy and Climate Change (2014a). *Domestic green deal and energy company obligation in Great Britain, monthly report*. London: DECC.
- Department of Energy and Climate Change (2014b). *Domestic Green Deal, Energy Company Obligation and Insulation Levels in Great Britain, Quarterly report*. London: DECC.
- Department of Energy and Climate Change (2014c). *Annual fuel poverty statistics report, 2014*. London: DECC.
- Department of Energy and Climate Change (2014d). *Public attitudes tracker - wave 8: Summary of key findings*. London: DECC.
- Department of Energy and Climate change (2015a). *Domestic green deal and energy company obligation in Great Britain, headline report. Statistical release: National Statistics*. London: DECC.
- Department of Energy and Climate Change (2015c). *Annual fuel poverty statistics report, 2015*. London: DECC.
- Department of Energy and Climate Change (2015d). *Domestic Green deal and energy company obligation in Great Britain, monthly report*. London: DECC.
- Department of Energy and Climate Change (2015e). *Domestic green deal, energy company obligation and insulation levels in Great Britain, detailed report*.

List of References

- Department of Energy and Climate Change (2016a). *Private rented sector tenants' energy efficiency improvements provision: guidance for landlords and tenants of domestic property on part two of the energy efficiency (private rented property) (England and Wales) regulations 2015*. London: DECC.
- Department of Energy and Climate Change (2016b). Household energy efficiency national statistics, detailed report 2015. Statistical release: National Statistics. London: DECC.
- Department of Energy and Climate change, (2015b). *Green deal customer Journey survey: Summary report: Quantitative survey Wave 5*. London: DECC.
- Derbaix, C. (1983). Perceived risk and risk relievers: an empirical investigation. *Journal of Economic Psychology*, 3, 19 - 38.
- Dew, K. (2005). Documentary analysis in CAM research: Part 1. *Complementary Therapies in Medicine*, 13, 297 - 302.
- Di Maria C., Ferreira S., and Lazarova E. (2010). Shedding light on the light bulb puzzle: the role of attitudes and perceptions in the adoption of energy efficient light bulbs. *Scottish Journal of Political Economy*, 57, 48 - 67.
- DiCicco-Bloom, B., and Crabtree B. F. (2006). Making sense of qualitative research: The qualitative research interview. *Medical Education*, 40, 314-321.
- Diekmann, A., and Preisendorfer, P. (2003). Green and greenback: The behavioural effects of environmental attitudes in low-cost and high-cost situations. *Rationality and Society*, 15, 441 - 472.
- Dietz T., and Stern P. C. (2002). *New tools for environmental protection: Education, information and voluntary measures*. Washington, DC: Natl. Acad.
- Dietz, T., and Stern, P. C. (1995). Toward a theory of choice: Socially embedded preference construction. *Journal of Socio-Economics*, 24, 261 - 279.
- Dillahunt, T., Mankoff, J., and Paulos, E. (2010). Understanding conflict between landlords and tenants: Implications for energy sensing and feedback. *UbiComp*, 10, 26 - 29.
- Dillman, D.A., Rosa, E.A., and Dillman, J. J. (1983). Lifestyle and home energy conservation in the United States: The poor accept lifestyle cutbacks while the wealthy invest in conservation. *Journal of Economic Psychology* 3, 299 - 315.

- Dowson, M., Poole, A., Harrison, D., and Susman, G. (2012). Domestic UK retrofit challenge: Barriers, incentives and current performance leading into the green deal. *Energy Policy*, 50, 294 - 305.
- Dresner, S., and Ekins P. (2004). *Economic instruments for a socially neutral national home energy efficiency programme*. London: Policy Studies Institute
- Druckman, A., and Jackson, T. (2008). Household energy consumption in the UK: A highly geographically and socio-economically disaggregated model. *Energy Policy* 36, 3167 - 3182.
- Dunbar, N. E. (2015). A review of theoretical approaches to interpersonal power. *The Review of Communication*, 15, 1 - 18.
- Dwyer, W. O., Leeming F. C., Cobern, M. K., Porter B. E., and Jackson, J. M. (1993). Critical review of behavioural interventions to preserve the environment: Research since 1980. *Environment and Behavior*, 25, 275 - 321.
- E.ON and the University of East Anglia (2004). *Powergen Energy Monitor*. United Kingdom: E.ON and the University of East Anglia.
- Economic and Social Research Council (2005). *Research Ethics Framework*. London: ESRC
- Eden, S. (1996). Public participation in environmental policy: considering scientific, counter scientific and non-scientific contributions. *Public Understanding of Science*, 5, 183 - 204.
- Emerson, R. M. (1962). Power-dependence relations. *American Sociological Review*, 27, 31 - 40.
- Energy Saving Trust (2008). *Energy performance certificates: Home truth* London: EST.
- Energy Saving Trust (2010a). *F and G banded homes in Great Britain: Research into costs of treatment*. London: EST.
- Energy Saving Trust (2011). *Local energy news policy update: Practical help policy update: Spring 2011*. London: EST.
- Energy Saving Trust (2012). *In from the cold working in partnership to tackle fuel poverty*. London: EST.
- Energy Saving Trust and Energy Efficiency Best Practice in Housing. (2003). *Cavity wall insulation in existing housing*. London: EST and EEBPH.

List of References

- Energy Saving Trust, (2010b). *At home with energy: a selection of insights into domestic energy use in Scotland*. London: EST.
- Energy Saving Trust, (2010c). *Reducing emissions from social housing* London: EST
- Environmental Change Institute (2005). *40% House Report*. Oxford, UK: ECI:
- Eoin Lees Energy (2006). *Evaluation of the energy efficiency commitment 2002-05*.
- Eoin Lees Energy (2008). *Evaluation of the energy efficiency commitment 2005-08*. London: Defra.
- Epper, T., Fehr- Duda H., and Schubert, R. (2011). *Energy-using durables: The role of time discounting in investment decisions. Working paper 16*. Retrieved January 10, 2016, from http://www.thomasepper.com/papers/pub/BFE_WP_GzD.pdf
- Fadden, R. R., and Beauchamp, T. L. (1986). *A History and Theory of Informed Consent*. New York: Oxford University Press
- Faiers, A., Cook, M., and Neame, C. (2007). Towards a contemporary approach for understanding consumer behaviour in the context of domestic energy use. *Energy Policy*, 35, 4381 - 4390.
- Fairclough, E. H. (1977). Personal interviews and postal questionnaire: Some observational and experiences. *The Statistician*, 4, 259 - 268.
- Fereday, J., and Muir-Cochrane, E. (2006). Demonstrating rigor using thematic analysis: A hybrid approach of inductive and deductive coding and theme development. *International Journal of Qualitative Methods*, 5, 80 - 92.
- Fischer, C. (2008). Feedback on household electricity consumption: A tool for saving energy? *Energy Efficiency*, 1, 79 -104.
- Fontes, L. A. (1998). Ethics in family violence research: cross cultural issues. *Family Relations*, 47, 53 - 61.
- Forster, N. (1994). The analysis of company Documentation. In C. Casswell and G. Symon (Ed.), *Qualitative methods in organisational research*. London: Saga.
- Frederick, S., Loewenstein, G., and O'Donoghue, T. (2004). Time discounting and time preference: a critical review. In C. Camerer, G. Loewenstein and M. Rabin, (Eds.),

- Advances in Behavioral Economics* (pp.162 - 222). New York/Princeton, NJ: Sage/Princeton University Press.
- Frederick, S., Loewenstein, G., and O'Donoghue, T. (2002). Time discounting and time-preference. A critical review. *Journal of Economic Literature*, 40, 351 - 401.
- Frederiks, R. E., Stenner, K., Hobman, V. E. (2015). Household energy use: Applying behavioural economics to understand consumer decision-making and behaviour. *Renewable and Sustainable Energy Reviews*, 41, 1385 - 1394.
- Frey, B., and Jegen R. (2001). Motivation crowding theory: A survey of empirical evidence. *Journal of Economic Surveys*, 15, 589 - 611.
- Friends of the Earth and the Association for the Conservation of Energy (2011). *A minimum energy efficiency standard for private rented homes: The case for action on cold rented homes*. London: Friends of the Earth and ACE.
- Friends of the Earth and the Association for the Conservation of Energy (2014), *DCLG review of property conditions in the PRS*. London: Friends of the Earth and ACE.
- Friends of the Earth and the Association for the Conservation of Energy (2013). *Private Rented Sector*. UK: Parliament.
- Friends of the Earth Manchester (2014). *Kept in the dark: are house hunters getting the energy information they need? A study of property listings in greater Manchester* London: Friends of the Earth.
- Gaërling, T., and Loukopoulos, P. (2007). Effectiveness, public acceptance, and political feasibility of coercive measures for reducing car traffic. In T. Gaërling, and L. Steg (Eds.), *Threats to the quality of urban life from car traffic: Problems, causes, and solutions* (pp. 313–324). Amsterdam: Elsevier.
- Gaërling, T., and Schuitema, G. (2007). Travel demand management targeting reduced private car use: effectiveness, public acceptability and political feasibility. *Journal of Social Issues*, 63, 139 - 153.
- Gadenne, D., Sharma, B., Kerr, D., and Smith, T. (2011). The influence of consumers' environmental beliefs and attitudes on energy saving behaviours. *Energy Policy*, 39, 7684 - 7694.

List of References

- Galbraith, J. K. (1984). *The anatomy of power*. London: Hamish Hamilton
- Gamtessa, F. S. (2013). An explanation of residential energy-efficiency retrofit behavior in Canada. *Energy and Buildings*, 57, 155 - 164.
- Gardner, G. T., and Stern, P. C. (1996). *Environmental problems and human behavior*. Needham Heights, MA: Allyn and Bacon.
- Gardner, G. T., and Stern, P. C. (2002). *Environmental problems and human behaviour* (2nded.). Boston, MA: Pearson Custom Publishing.
- Gärling, T., Fujii, S., Gärling, A., and Jakobsson, C. (2003). Moderating effects of social value orientation on determinants of proenvironmental behavior intention. *Journal of Environmental Psychology*, 23, 1 - 9.
- Gately, D. (1980). "Individual discount rates and the purchase and utilization of energy-using durables: Comment". *Bell Journal of Economics*, 11, 373 - 74.
- Gatersleben, B., Steg, L., and Vlek, C. (2002). Measurement and determinants of environmentally significant consumer behavior. *Environment and Behavior*, 34, 335 - 362.
- Geller, E. (1981). Evaluating energy conservation programs: Is verbal report enough? *Journal of Consumer Research*, 8, 331 - 335.
- Geller, E. S., Ericksson J.B., and Buttram B. A. (1983). Attempts to promote residential water conservation with educational, behavioral and engineering strategies. *Population and Environment Behavioral and Social Issues*, 6, 96 - 112.
- Gibbs, G. (2007). *Analyzing qualitative data: part six of the saga qualitative research kit*. London: Saga.
- Gilbertsona, J., Stevens M., Stiella B., and Thorogood, N. (2006). Home is where the hearth is: Grant recipients' views of England's home energy efficiency scheme (warm front). *Social Science and Medicine*, 63, 946 - 956.
- Gilchrist, K., and Craig T. (2014). *Home energy efficiency - Review of evidence on attitudes and behaviours*. UK: The James Hutton Institute on behalf of ClimateXChange.
- Gillingham, K., Harding, M., and Rapson D. (2012). Split incentives and household energy consumption. *Energy Journal*, 33, 37 - 62.

- Gintis, H. (2000). Beyond homo economicus: Evidence from experimental economics. *Ecological Economics*, 35, 311 - 322.
- Golove, W. H., and Eto, J. H. (1996). *Market barriers to energy efficiency: A Critical reappraisal of the rationale for public policies to promote energy efficiency*. Berkeley: Lawrence Berkeley National Laboratory.
- Golubchikov, O., and Deda, P. (2012). Governance, technology, and equity: An integrated policy framework for energy efficient housing. *Energy Policy*, 41, 733 – 741.
- Gomes, F. J. (2005). Portfolio choice and trading volume with loss-averse investors. *Journal of Business*, 78, 675 - 706.
- Gordon, R. L. (1975). *Interviewing: Strategy, techniques and tactics*. Illinois: Dorsey Press.
- Gowdy, J. M. (2008). Behavioral economics and climate change policy. *Journal of Economic Behavior and Organization*, 68, 632 - 644.
- Great British Refurb Campaign (2010). *Green deal: Public appetite market research*. London: GBRC
- Green Deal Panel for Hard to Reach Households (2014). *Green deal panel for hard to reach audiences report*. London: GDPHRH.
- Green L and Myerson J (1996). Exponential versus hyperbolic discounting of delayed outcomes: Risk and waiting time. *American Zoologist*, 36, 496 - 505.
- Green, J., Darby, S., Maby, C., and Boardman, B. (1998). *Advice into action: An evaluation of the effectiveness of energy advice to low income households*. Keswick: Eaga Charitable Trust.
- Greene, D. L. (2011). Uncertainty, loss aversion, and markets for energy efficiency. *Energy Economics*, 33, 608 - 616.
- Gregory, I (2003). *Continuum research methods: ethics in research*. London: MPG Books Ltd.
- Greifeneder, R., Scheibehenne, B., and Kleber N. (2010). Less may be more when choosing is difficult: choice complexity and too much choice. *Acta Psychologica*, 133, 45 - 50.
- Grinblatt, M., and M. Keloharju (2001). What makes investors trade. *Journal of Finance*, 56, 589 - 616.

List of References

- Grinblatt, M., and M. Keloharju. (2000). The investment behaviour and performance of various investor types. A study of Finland's unique data set. *Journal of Financial Economics*, 55, 43-68.
- Gronhoj, A., and Thøgersen, J. (2011). Feedback on household electricity consumption: Learning and social influence processes. *International Journal of Consumer Studies*, 35, 138 – 145.
- Grunert, S. C., and Juhl, H. J. (1995). Values, environmental attitudes, and buying of organic foods. *Journal of Economic Psychology*, 16, 39 - 62.
- Guagnano, G., Stern, P., and Dietz, T. (1995). Influences on attitude-behavior relationships: A natural experiment with curbside recycling, *Environment and Behavior*, 27, 699 - 718.
- Gubrium, J.F., and Holstein, J.A. (2002). *Handbook of interview research: context and method*. Thousand Oaks, CA: Sage Publications.
- Guertler, P. (2011). Can the green deal be fair too? Exploring new possibilities for alleviating fuel poverty. *Energy Policy*, 49, 91 - 97.
- Halevy, Y. (2008). Strotz meets allais: Diminishing impatience and the certainty effect. *The American Economic Review*, 98, 1145 - 1162.
- Hallin, P. (1995). Environmental concern and environmental behavior in Foley, a small town in Minnesota. *Environment and Behavior*, 27, 558 - 578.
- Hammersley, M. (1996). The relationship between qualitative and quantitative research: Paradigm loyalty versus methodological eclecticism, In J. T. E. Richardson, (Eds.), *Handbook of qualitative research methods for psychology and the social sciences* (pp. 159 – 174). Leicester: British Psychological Society.
- Handgraaf, M. J. J., Lidth de Jeude, M. van., and Appelt K. C. (2013). Public praise vs. private pay: effects of rewards on energy conservation in the workplace. *Ecological Economics* 86, 86 - 92.
- Hardisty, D. J., and Weber, E. U. (2009). Discounting future green: Money versus the environment. *Journal of Experimental Psychology: General*, 138, 329 – 340.

- Hargreaves, T., Nye, M., Burgess, J., (2010). Making energy visible: a qualitative field study of how householders interact with feedback from smart energy monitors. *Energy Policy* 38 (10), 6111–6119.
- Harland, P., Staats, H., and Wilke, A.M., (2007). Situational and personality factors as direct or personal norm mediated predictors of pro-environmental behavior: questions derived from norm-activation theory. *Basic and Applied Social Psychology* 29, 323 - 334.
- Harris Interactive (2009). *Private landlords research, energy efficiency partnership for homes*. London: Harris Interactive
- Harris, C., and Laibson, D. (2001). Dynamic choices of hyperbolic consumers. *Econometrica*, 69, 935 – 957.
- Harvey C. M. (1994). The reasonableness of non-constant discounting. *Journal of Public Economics*, 53, 31 - 51.
- Hausman, J.A. (1979). Individual discount rates and the purchase and utilization of energy – using durables. *The Bell Journal of Economics*, 10, 33 - 54.
- Held, M. (1983). Social impacts of energy conservation. *Journal of Economic Psychology*, 3, 379 - 394.
- Henryson, J., Hakansson, T., and Pyrko, J. (2000). Energy efficiency in buildings through information: Swedish perspective. *Energy Policy*, 28, 169 - 180.
- Hepburn, C., Duncan, S., and Papachristodoulou, A. (2010). Behavioural economics, hyperbolic discounting and environmental policy. *Environmental Resource Economics*, 46, 189 – 206.
- Higgs J., and Titchen A. (1995). Propositional, professional and personal knowledge in clinical reasoning. In J. Higgs and M. Jones (Ed.), *Clinical reasoning in the health professions*. 129-146. Oxford: Butterworth-Heinemann.
- Hill, M., and Hupe, P. (2002). *Implementing public policy: Governance in theory and practice*. London: Saga Publications.
- Hirst, E., Berry, L., and Soderstrom, J. (1981). Review of utility home energy audit programs. *Energy*, 6, 621 - 630.

List of References

- HM Government (2009). *Community energy saving programme (CESP) consultation document*. London: DECC.
- HM Treasury (2003). *Protecting the environment. 2003 budget press notice no.4, 9th April*. London: HM Treasury.
- HM Treasury (2007), “Extension of the landlord’s energy saving allowance”, in *budget 2007: Regulatory impact assessments*. London: HM Treasury.
- Hogwood, B., and Gunn, L. (1984). *Policy analysis for the real world*. Oxford: Oxford University Press
- Holbrook, A.L., Green, M.C., and Krosnick, J.A. (2003). Telephone versus face –to-face interviewing of national probability samples with long questionnaires: Comparisons of respondent satisficing and social desirability response bias. *Public Opinion Quarterly*, 67 (1), 79-125. 293.
- Holcomb, J., and Nelson, P. (1992). Another experimental look at individual time preference. *Rationality and Society* 4, 199 - 220.
- Homans, G. C. (1961). *Social behavior: Its elementary forms*. New York: Harcourt, Brace and World.
- Hong, S.H., Gilbertson, J., Oreszczyn, T., Green, G., and Ridley, I. (2009). A field study of thermal comfort in low-income dwellings in England before and after energy efficient refurbishment. *Building and Environment*, 44, 1228 - 1236.
- Hope, J.A., and Booth A. (2014). Attitudes and behaviours of private sector landlords towards the energy efficiency of tenanted homes. *Energy Policy*, 75, 369 – 378.
- House of Commons Energy and Climate Change Committee (2012). *Fuel poverty in the private rented and off-grid sectors: oral and written evidence*. House of Commons, London: The Stationery Office.
- House of Commons Energy and Climate Change Committee (2013a). *The Green deal: Watching brief, first report of session 2013–14 volume I: Report, together with formal minutes, oral and written evidence*. House of Commons, London: The Stationery Office.
- House of Commons Energy and Climate Change Committee (2013b). *The Green deal: Watching brief: Government response to the committee’s first report of session 2013–14*. House of Commons, London: The Stationery Office.

- House of Commons Energy and Climate Change Committee (2013c). *The Green deal: Watching brief: First report of session 2013–14 volume II, additional written evidence*. House of Commons, London: The Stationery Office
- House of Commons Energy and Climate Change Committee (2014a). *Oral evidence: Green deal watching brief (part 2), HC 1111 Tuesday 1 April 2014*. House of Commons, London: The Stationery Office.
- House of Commons Energy and Climate Change Committee (2014b). *Oral evidence: Green deal watching brief (part 2), HC 950 Tuesday 17 June 2014*. House of Commons, London: The Stationery Office.
- House of Commons Energy and Climate Change Committee (2014c). *The green deal watching brief (part 2), third report of session 2014–15 report, together with formal minutes relating to the report*. House of Commons, London: The Stationery Office
- House of Commons Energy and Climate Change Committee (2016). *Home energy efficiency and demand reduction, fourth report of session 2015–16, report, together with formal minutes relating to the report*. House of Commons, London: The Stationery Office
- House of Commons Library (2003). *Delivering the decent homes standard: Social landlords' options and progress*. London: House of Commons Library
- House of Commons library (2015). *Building the new private rented sector: Issues and prospects (England), briefing paper SN07094*. London: House of Commons Library
- House of Commons Select Committee (2004). *A decent home for all? fifth report*: House of commons select committee – office of the deputy prime minister: Housing, planning, local government and the regions. Retrieved 7, March, 2012, from www.publications.parliament.uk/pa/cm200304/cmselect/cmmodpm/46/4602.htmhouse hold energy consumption Energy J. 33 37 - 62
- Huddart Kennedy, E., Beckley, T. M., McFarlane, B. L., and Nadeau, S. (2009). Why we don't "walk the talk": understanding the environmental values/behaviour gap in Canada. *Human Ecology Review*, 16, 151 - 160.
- Hunecke, M., Bloßbaum, A., Matthies, E., and Höger, R. (2001). Responsibility and environment: ecological norm orientation and external factors in the domain of travel mode choice behavior. *Environment and Behavior*, 33, 830 - 852.

List of References

- Hunter, L. M., Hatch, A., and Johnson, A. (2004). Cross-national gender variation in environmental behaviors. *Social Science Quarterly*, 85, 677 - 694.
- Hussey, J., and Hussey R. (1997). *Business research: A practical guide for undergraduate and postgraduate students*. London: Macmillan Press Ltd.
- Ibtissem, M., H. (2010). Application of value beliefs norms theory to the energy conservation behaviour. *Journal of Sustainable Development*, 3, 129 – 139.
- Institute for Public Policy Research (2014). *Up against the solidwall: what changes to the eco mean for energy efficiency policy*. London: IPPR
- Intermediary Mortgage Lenders Association (2014). *Reshaping housing tenure in the UK: the role of buy-to-let*, UK: IMLA.
- International Energy Agency (2008). *Promoting energy efficient investment: case studies in the residential sector*. Paris: IEA.
- Israel, M., and Hay, I. (2006). *Research ethics for social scientists*. London: SAGE Publications.
- Iygnar S, Lepper M. (2000). When choice is demotivating: can one desire too much of a good thing? *Journal of Personality and Social Psychology*, 79, 995 - 1006.
- Jackson, T. (2005). *Motivating sustainable consumption: a review of evidence on consumer behaviour and behavioural change*: London: SDRN
- Jaffe A. B., and Stavins, R. N. (1994). The energy-efficiency gap: What does it mean? *Energy Policy*, 22: 804 - 810.
- Jakob M. (2006). Marginal costs and co-benefits of energy efficiency investments. The case of the Swiss residential sector. *Energy Policy*, 34, 172 - 187.
- James, P. A. B., Jentsch, M.F., and Watts, C. (2011). *Implications of energy performance certificates for the UK domestic building stock – feedback from a Southampton homeowner survey*. Retrieved 5, April, 2011, from <http://www.cibse.org/content/cibsesymposium2011/Paper108.pdf>
- Jenkins, D. P. (2010). The value of retrofitting carbon saving measures into fuel poor social housing. *Energy Policy*, 38, 832 - 839.

- Johnson, K., Willoughby, G., Shimoda, W., Volker, M. (2012). Lessons learned from the field: Key strategies for implementing successful on-the-bill financing programs. *Energy Efficiency*, 5, 109 -119.
- Joint Center for Housing Studies (2006), *Landlords at the margins: Exploring the dynamics of the one to four unit rental housing industry*. Joint Center for Housing Studies: Harvard University
- Joireman, J. A., Lasane, T. P., Bennett, J., Richards, D., and Solaimani, S. (2001). Integrating social value orientation and the consideration of future consequences within the extended norm activation model of proenvironmental behavior. *British Journal of Social Psychology*, 40, 133 - 155.
- Jones Lang LaSalle (2012). *Can landlords' business plans sustain stable, predictable tenancies?* London: Jones Lang LaSalle.
- Kahneman, D., and Tversky, A. (1979). Prospect theory: An analysis of decision under risk. *Econometrica*, 47, 263 - 291.
- Kahneman, D., Diener E., and Schwartz N. (1999). *Well-being: The foundations of hedonic psychology*. New York: Russell Sage.
- Kaiser F.G., Hubner G. and Bogner F.X. (2005). Contrasting the theory of planned behavior with the value-belief-norm model in explaining conservation behaviour. *Journal of applied social psychology*, 35, 2150 - 2170.
- Kapsis, R. E. (1989). Reputation building and the film art world: The case of Alfred Hitchcock, *Sociological Quarterly*, 30, 15 – 35.
- Karp, D. G. (1996). Values and their effect on pro-environmental behavior. *Environment and Behavior*, 28, 111 - 133.
- Kasulis, J., Huettener, D., and Dikeman, N. (1981). The feasibility of changing electricity consumption patterns. *Journal of Consumer Research* 8, 279 - 290.
- Katzev R. D., and Johnson T. R. (1984). Comparing the effects of monetary incentives and foot-in-the-door strategies in promoting residential electricity conservation. *Journal of Applied Social Psychology*, 14, 12 - 27.
- Keller, S. (1988). *Does the roof have to cave in? The landlord/tenant power relationship and the intentional infliction of emotional distress*. Cardozo Law. Review.

List of References

- Kempton, W., and Montgomery, L. (1982). Folk quantification of energy. *Energy*, 7, 817 - 827.
- Kenis, A., and Mathijs, E. (2012). Beyond individual behaviour change: The role of power, knowledge and strategy in tackling climate change. *Environmental Education Research*, 18, 45 - 65.
- Klijn, E. H., and Koppenjan, J. F. M. (2000). 'Public management and policy networks: Foundations of a network approach to governance'. *Public Management*, 2, 135 - 58.
- Koletsou, A., and Mancy, R. (2011). Which efficacy constructs for large-scale social dilemma problems? Individual and collective forms of efficacy and outcome expectancies in the context of climate change mitigation. *Risk Management*, 13, 184 - 208.
- Kollmuss, A., and Agyeman, J. (2002). Mind the gap: Why do people act environmentally and what are the barriers to pro-environmental behavior? *Environmental Education Research*, 8, 239 - 260.
- Labour Party (2015). *Labour's policy review: Private rented housing providing stability and affordability for renters and families*. UK: Labour Party.
- Laibson, D. (1997). Golden eggs and hyperbolic discounting. *Quarterly Journal of Economics*, 112, 443 - 477.
- Laibson, D. (2003). *Intertemporal decision making, encyclopedia of cognitive Science*. London: Nature Publishing Group.
- Laine', L. (2012). *Filling the Gaps: accuracy of Green Deal advice for cavity-walled Homes*. London: Consumer Focus
- Laine', L., Croft, D., Preston, I., Weatherall, D., Downy, F., and Carrington. (2011). *Access for all: Making the green deal a fair deal*. London: Consumer Focus.
- Laquatra, J. (1992). Rural landlords and rental housing energy efficiency. *Energy Policy*, 20, 815 - 824.
- Leech B., L. (2002). Asking questions: Techniques for semi structured interviews. *Political Science and Politics*, 35, 665 - 668.
- Lehman, P. K., and Geller, E. S. (2004). Behavioral analysis and environmental protection: Accomplishments and potential for more. *Behavior and Social Issues*, 13, 13 - 32

- Levinson, A., and Nieman, S. (2004). Energy use by apartment tenants when landlords pay for utilities. *Resource and Energy Economics*, 26, 51 - 75.
- Linden, A.-L., Carlsson-Kanyama, A., and Eriksson, B. (2006). Efficient and inefficient aspects of residential energy behaviour: What are the policy instruments for change? *Energy Policy*, 34, 1918 -1927.
- Lindenberg, S., and Steg, L. (2007). Normative, gain and hedonic goal frames guiding environmental behavior. *Journal of Social Issues*, 63, 117 -137.
- Loewenstein, G., and Prelec, D. (1992). Anomalies in intertemporal choice: Evidence and an interpretation. *Quarterly Journal of Economics*, 107, 573 - 597.
- Loewenstein, G., and Thaler, R. H. (1989). Anomalies: Intertemporal Choice. *The Journal of Economic Perspectives*, 3, 181-193.
- London: Defra.
- Long, E.J. (1993). An econometric analysis of residential expenditures on energy conservation renewable energy sources. *Energy Economics*, 15, 232 - 238.
- Longhurst, R. (2009). Interviews: In-depth, semi-structured. *Elsevier*, 580 - 584.
- Lorenzoni, I., Nicholson-Cole, S., and Whitmarsh, L., (2007). Barriers perceived to engaging with climate change among the UK public and their policy implications. *Global Environmental Change*, 17, 445 - 459.
- Lowe, R., and Oreszczyn, T. (2008). Regulatory standards and barriers to improved performance for housing. *Energy Policy*, 36, 4475 - 4481.
- Lowman, J., and Palys, T. (1999). *Going the distance: Lessons for researchers from jurisprudence on privilege, a third submission to the SFU research ethics policy revision task force*. Retrieved October 20, 2013, from <http://www.sfu.ca-plays/Distance.pdf>
- Lukes, S. (1974). *Power: A radical view*. London: Macmillan and Education.
- Lutzenhiser, L., (2002). Greening the economy from the bottom up: Lessons in consumption from the energy case. In: N. W. Biggart, (Ed.), *Readings in Economic Sociology* (pp. 345-356). Oxford: Blackwell.

List of References

- Lutzenhiser, L., (2008). Setting the stage: Why behaviour is important. Proceedings of the behaviour. Energy and Climate Change conference, 7-9 November 2007, California: Sacramento
- Mahapatra, K., and Gustavsson, L., (2010). Adoption of innovative heating systems- needs and attitudes of Swedish homeowners. *Energy Efficiency*, 3, 1–18.
- Mahapatra, K., Nair, G., and Gustavsson, L., (2009). *The role of energy advisers on adoption of energy measures in detached houses. International Scientific Conference on Energy systems with IT*, 1112. Sweden: Stockholm
- Mahapatra, K., Nair, G., Gustavsson, L., (2011). Energy advice service as perceived by Swedish homeowners. *International Journal of Consumer Studies*, 35, 104 -111.
- Markovsky, B., Willer, D., and Patton. T (1 988) "Power relations in ex-change networks." *American Sociological Review*, 5, 220 - 36.
- Marks, D., and Yardley, L. (2004) *Research methods for clinical and health psychology*. London: Sage.
- Mason, J. (2002). *Qualitative researching* (2nd ed.). London, Thousand Oaks, New Delhi: Sage Publications.
- McDougall, G. H. G., Claxton, J. D., and Ritchie, J. R. B. (1983). Residential home audits: An empirical analysis of the ENER\$AVE program. *Journal of Environmental Systems*, 12, 265 - 278.
- McKenzie-Mohr, D. L., Nemiroff, L. S., Beers L., and Desmaris S. (1995). Determinants of responsible environmental behaviour. *Journal of Social Issues*, 51, 4, 139 - 156.
- McKenzie-Mohr, D. (2000). Promoting sustainable behavior: An introduction to community-based social marketing. *Journal of Social Issues*, 56 (3), 543 - 554.
- Merelman, R. M. (1968). On the neo-elite critique of the community power. *American Political Science Review*, 62, 451-460
- Meth, P., and Malaza, K. (2003). 'Violent research: the ethics and emotions of doing research with women in South Africa.' *Ethics, Place and Environment*, 6, 143 - 159.
- Michelsen, C. C., and Madlener, R. (2013). Motivational factors influencing the homeowners' decisions between residential heating systems: An empirical analysis for Germany. *Energy Policy*, 57, 221 - 233.

- Mills B., and Schleich J. (2012). Residential energy-efficient technology adoption, energy conservation, knowledge, and attitudes: An analysis of european countries. *Energy Policy*, 49, 616 - 628.
- Mills B., and Schleich J. (2014). Household transitions to energy efficient lighting *Energy Economics*, 46, 151 - 160.
- Mills, B., and Schleich J. (2010). Why don't households see the light? Explaining the diffusion of compact fluorescent lamps. *Resource and Energy Economics*, 32, 363 – 378.
- Mirosa, M., Lawson, R., and Gnoth, D. (2011). Linking personal values to energy efficient behaviours in the home. *Environment and Behavior*, 45 (4), 455 - 475.
- Mogalakwe. M (2006). *The use of documentary research methods in social research. African Sociological Review*, 10, 221-230.
- Mohai, P. (1992). Men, women and the environment: An examination of the gender gap in environmental concern activism. *Society and Natural Resources*, 5, 1 - 19.
- Molm L. D., and Cook K. S. (1995). "Social exchange and exchange networks," *Sociological Perspectives on Social Psychology*, 2, 209 - 235.
- Molm, L. D. (1989). Punishment power: a balancing process in power-dependence relations. *American Journal of Sociology*, 94, 1392 - 1418.
- Molm. L. D. (1988). The structure and use of power: A comparison of reward and punishment Power. *Social Psychology Quarterly*, 51, 108 - 122.
- Monk, S., Morris, S., Tang, C., and Udagawa C. (2014) *Understanding private landlords' financial and regulatory incentives for property investment*. London: University of Cambridge.
- Moser. S. (2013). Poor energy poor: Energy saving obligations, distributional effects, and the malfunction of the priority group. *Energy Policy*, 61, 1003 -1010.
- Moses. J, W., and Knutsen, T. L. (2007). *Ways of knowing: competing methodologies in social and political research*. London: Palgrave Macmillan.
- Munley, V., Taylor, L., and Formby, J. (1990). Electricity demand in multi-family, renter-occupied residences. *Southern Economic Journal*, 57, 178 - 194.

List of References

- Nair, G., Gustavsson, L., and Mahapatra K. (2010). Factors influencing energy efficiency investments in existing Swedish residential buildings. *Energy Policy*, 38, 2956 - 2963.
- Nation Health and Medical Research Council, Australia (2001). *National statement on ethical conduct in research involving humans*. Retrieved October 20, 2013, from <http://www7.health.gov.au/nhmrc/publications/humans/preamble.htm>
- National Audit Office. (2009). *The Warm Front Scheme, report by the controller and auditing general, HC 126 session 2008–2009, marketing and communications team. The Stationary Office*, London: NAO.
- National Audit Office. (2010). *The Decent Homes Programme, Report by the Controller and Auditing General, HC 212 Session 2009–2010, Marketing and Communications Team, The Stationary Office*, London: NAO.
- National Landlords Association (2014a). *Written evidence submitted by the National Landlords Association (GRE0031)* London: NLA.
- National Landlords Association (2014b). *Landlord Panel Survey*. London: NLA.
- National Landlords Association (2016). *Tenants now have right to request energy improvements*. London: NLA.
- National Landlords Association, (2012) *Private rented sector investment review*. UK: NLA.
- National Private Tenants Organisation (2011). *Submission on retaliatory eviction to the department of energy and climate change green deal consent barriers and retaliatory eviction working group*. London: NLA.
- Niemeyer, S. (2010). Consumer voices: Adoption of residential energy efficient practices. *International Journal of Consumers Studies*, 34, 140 - 145.
- Nordlund, A. M., and Garvill, J. (2002). Value structures behind pro-environmental behavior. *Environment and Behavior*, 34, 740 – 756.
- Nordlund, A. M., and Garvill, J. (2003). Effects of values, problem awareness, and personal norm on willingness to reduce personal car use. *Journal of Environmental Psychology*, 23, 339 – 347.
- Nye, M., and Hargreaves, T. (2009). Exploring the social dynamics of proenvironmental behavior change. *Journal of Industrial Ecology*, 14, 137 – 149.

- O'Donoghue, T., and Rabin M. (1999). Do it now or later. *American Economic Review*, 89, 103 - 124.
- O'Neil, R.M. (1996). A researcher's privilege: does any hope remain?' *Law and Contemporary Problems*, 59, 3, 35 - 50.
- O'Toole, L. J., Jr (1988) 'Strategies for intergovernmental management: Implementing programs in interorganisational networks.' *International Journal of*
- Odean, T. (1998). Are investors reluctant to realize their losses? *Journal of Finance*, 53, 1775 - 1798.
- Office for National Statistics (2013). *2011 Census: Population and household estimates for the United Kingdom, March 2011*. London: ONS.
- Office of Gas and Electricity Market (2011). *Ofgem's report on the community energy saving programme (CESP) 2009 – 2012, to December 2010*. London: Ofgem.
- Office of Gas and Electricity Market (2013a). *The final report of the carbon emissions reduction target (CERT) 2008-2012*. London: Ofgem.
- Office of Gas and Electricity Market (2013b). *The final report of the community energy saving programme (CESP) 2009-2012*. London: Ofgem.
- Office of Gas and Electricity Markets (2005). *A review of the energy efficiency commitment 2002-2005*. London: Ofgem.
- Office of Gas and Electricity Markets (2008). *A review of the energy efficiency commitment 2005-2008*. London: Ofgem.
- Office of Gas and Electricity Markets (2015). *Energy companies obligation final report, January 13-March 15*. London: Ofgem.
- Oikonomou, V., and M. Patel. (2004). *White certificates, EU SAVE "white and green" project: comparison of market-based instruments to promote energy efficiency*. Retrieved June 15, 2013, from www.iiiee.lu.se/files/whiteandgreen/pdf/WG_WC.pdf
- Olsen, M. (1981). Consumers attitudes toward energy conservation. *Journal of Social Issues*, 37, 108 -131.
- Oppenheim, A. N. (1966). *Questionnaire design and attitude measurement*. London: Heinemann.

List of References

- Oppenheim, A. N. (1992). *Questionnaire design, interviewing and attitude measurement* (2nd ed.). London: Continuum
- O'Riordan, T. (1981). *Environmentalism* (2nd ed.). London: Pion.
- Owens, S., and Driffill, L. (2008). How to change attitudes and behaviours in the context of energy. *Energy Policy*, 36, 4412 - 4418.
- Oxera (2006). *Policies for energy efficiency measures in the UK household sector: report prepared for department for environment food and rural affairs* London: Defra.
- Patton, M. Q. (2002). *Qualitative research and evaluation methods* (3rd ed.). Thousand Oaks, CA: Sage Publications.
- Pelenur, M. J., and Cruickshank, H. J. (2012a). Closing the energy efficiency gap: A study linking demographics with barriers to adopting energy efficiency measures in the home. *Energy* 47, 348 - 357.
- Pelenur, M., and Cruickshank, H. (2012b). *The social barriers towards adopting energy efficiency measures and behaviours in the home: a Manchester and Cardiff case study*. Retrieved December 25, 2012, from http://www.salford.ac.uk/__data/assets/pdf_file/0018/142380/017-Pelenur.pdf
- Pérez-Cirera., V., and Lovett. J. C. (2006). Power distribution, the external environment and common property forest governance: A local user groups model. *Ecological Economics*, 59, 341 - 352.
- Persson, J., and Westermark, M. (2013). Low-energy buildings and seasonal thermal energy storages from a behavioral economics perspective. *Applied Energy*, 112 975 - 980.
- Peters, B. G. (1999). *Institutional theory in political science: The new institutionalism*. London: Pinter.
- Pettifor, H., Wilson C., and Chrysochoidis G. (2015). The appeal of the green deal: Empirical evidence for the influence of energy efficiency policy on renovating homeowners. *Energy Policy*, 79, 161 - 176.
- Phillips, Y. (2012). Landlords versus tenants: information asymmetry and mismatched preferences for home energy efficiency. *Energy Policy*, 45, 112 - 121.
- Pitts, R., and Wittenbach, J. (1981). Tax credits as a means of influencing consumer behavior. *Journal of Consumer Research*, 8, 335 - 338.

- Pollitt, M. G., and Shaorshadze, I. (2011). *The Role of Behavioural Economics in Energy and Climate Policy*. Retrieved 5, April, 2012, from <http://www.scribd.com/doc/77251443/Role-of-Behavioural-Economics-in-Energy-and-Climate-Policy>
- Polsby, N. W. (1963). *Community power and political theory*. New Haven and London: Yale University Press
- Poortinga, W., Steg, L., and Vlek, C. (2004). Values, environmental concern and environmental behavior: A study into household energy use. *Environment and Behavior*, 36, 70 - 93.
- Poortinga, W., Steg, L., Vleg, C., and Wiesma, G. (2003). Household preferences for energy-saving measures: A conjoint analysis. *Journal of Economic Psychology*, 24, 49 - 64.
- Popplestone, G. (1972). Collective action among private tenants. *British Journal of Social Work*, 2, 369 - 386.
- Power, A. (2008). Does demolition or refurbishment of old and inefficient homes help to increase our environmental, social and economic viability? *Energy Policy*, 36, 4487 - 4501.
- Pressman, J. and Wildavsky, A. (1973). *Implementation*. Berkeley, California: University of California Press.
- PricewaterhouseCoopers (2014). *UK housing market outlook: The continuing rise of generation rent*. London: PCW.
- Public Administration*, 4, 417 - 441.
- Quidos (2011). Investigation into EPBD enforcement. Bath: Quidos. Retrieved 15, October, 2013, from http://www.quidos.co.uk/documents/Quidos_EPBD_Enforcement_Investigaton.pdf
- Rabin, M. (2002). A perspective on psychology and economics. *European Economic Review*, 46, 657 - 685.
- Rainwater, L. And Pittman, D. J. (1967). 'Ethical problems in studying a politically sensitive and deviant community.' *Social Problems*, 14, 357 - 366.
- Ravetz, J. (2008). State of the stock - what do we know about existing buildings and their future prospects? *Energy Policy*, 36, 4462 - 4470.

List of References

- Residential Landlords Association (2014). *Written evidence submitted by residential landlords association (GRE0012)*. London: RLA.
- Residential Landlords Association (2015). *Election manifestos, 2015. First choice, not second best- a private rented sector for the 21st century*. UK: RLA.
- Rhodes, R. A. W. (1988). *Beyond Westminster and Whitehall: The sub-central governments of Britain*. London: Unwin Hyman.
- Rice, P., and Ezzy, D. (1999). *Qualitative research methods: A health focus*. Melbourne: Oxford University Press.
- Roberts, S. (2008a). Altering existing buildings in the UK. *Energy Policy*, 36, 4482 - 4486.
- Roberts, S. (2008b). Energy, equity and the future of fuel poor. *Energy Policy*, 36, 4471 - 4474.
- Rogers, E., (2003). *Diffusion of innovations* (5th ed.). New York: The Free Press.
- Rohdin, P., and Thollander, P. (2006). Barriers to and driving forces for energy efficiency in the non-energy intensive manufacturing industry in Sweden. *Energy*, 31, 1836 - 1844.
- Rokeach, M. (1973). *The nature of human values*. New York: The Free Press
- Rosenow, J. (2012). Energy savings obligations in the UK: A history of change. *Energy Policy*, 49, 373 - 382.
- Rothschild, M. L. (1999). Carrots, sticks and promises: a conceptual framework for the management of public health and social issue behaviors. *Journal of Marketing*, 63, 24 - 37.
- Royal Institute for Chartered Surveyors (2010). *Energy efficiency and value project* London: RICS
- Rugg, J. and Rhodes, D. (2008). *The private rented sector: its contribution and potential*. The University of York: Centre for Housing Policy
- Rugg, J., Rhodes, D and Jones, A. (2002). Studying a niche market: UK students and the Private rented sector. *Housing Studies*, 17, 289 - 303.
- Russell, L. (2012). *Energy best deal+ evaluation report*. Scotland: Citizens Advice.
- Ryan, G W., and Bernard, H.R. (2003). Techniques to identify themes. *Field Methods*, 15, 85 - 109.

- Sachdeva, S., Iliev, R., Medin, D. L. (2009). Sinning saints and saintly sinners: The paradox of moral self-regulation. *Psychological Science*, 20, 523 - 528.
- Salmela, S., Varho, V. (2006). Consumers in the green electricity market in Finland. *Energy Policy*, 24, 3669 – 3683.
- Sanstad, A. H., and Howarth, R. B. (1994). "Normal" markets, market imperfections and energy efficiency." *Energy Policy*, 22, 811- 818.
- Sardianou, E. (2007). Estimating energy conservation patterns of Greek households *Energy Policy*, 35, 3778 - 3791.
- Scanlon K., and Kochan, B. (2009). *Towards a sustainable private rented sector: The lessons from other countries*. London: LSE
- Schahn, J., and Holzer, E. (1990). Studies of individual environmental concern: The role of knowledge, gender and background variables. *Environment and Behavior*, 22, 767 - 786.
- Scharpf, F. W. (1978). 'Interorganizational policy studies: Issues, concepts and perspectives.' In K. I. Hanf and F. W. Scharpf (Ed.), *Interorganizational Policy Making: Limits to Coordination and Central Control* (pp. 345 - 370). London: Sage.
- Scheibehenne B., Greifeneder R., and Todd, P. M. (2010). Can there ever be too many options? A meta-analytic review of choice overload. *Journal of Consumer Research*, 37, 409 - 425.
- Schipper, L., Hawk, D. (1991). More efficient household electricity use. *Energy Policy*, 19, 244 - 265.
- Schleich, J., and Gruber, E. (2008). Beyond case studies: Barriers to energy efficiency in commerce and the services sector. *Energy Economics*, 30, 449 - 464.
- Schmid Mast, M. (2010) Interpersonal behaviour and social perception in a hierarchy: The interpersonal power and behaviour model. *European Review of Social Psychology*, 21, 1 - 33.
- Schmid Mast, M., Jonas K., and Hall, J. A. (2009). Give a person power and he or she will show interpersonal sensitivity: The phenomenon and its why and when. *Journal of Personality and Social Psychology*, 97, 835 - 850.
- Schultz P. W. (2013). Strategies for promoting proenvironmental behavior: lots of tools but few instructions. *European Psychologist*, 23, 1-11.

List of References

- Schultz, P. W. (2000). New environmental theories: Empathizing with nature: The effects of perspective taking on concern for environmental issues. *Journal of Social Issues*, 56, 391 - 406.
- Schultz, P. W. (2001). The structure of environmental concern: Concern for self, other people, and the biosphere. *Journal of Environmental Psychology*, 21, 327 - 339.
- Schultz, P. W., and Zelezny, L. C. (1998). Values and proenvironmental behaviour. A five-country study. *Journal of Cross-Cultural Psychology*, 29, 540 - 558.
- Schultz, P. W., and Zelezny, L. C. (1999). Values as predictors of environmental attitudes: Evidence for consistency across cultures. *Journal of Environmental Psychology*, 19, 255 - 265.
- Schultz, P. W., Nolan, J., Cialdini, R., Goldstein, N., and Griskevicius, V. (2007). The constructive, destructive, and reconstructive power of social norms. *Psychological Science*, 18, 429 - 434.
- Schultz, P.W. (2002). Knowledge, information, and household recycling: Examining the knowledge-deficit model of behavior change. In T. Dietz and P.C. Stern (Eds.), *New tools for environmental protection: Education, information, and voluntary measures* (pp. 67–82). Washington, DC: National Academy Press.
- Schultz, P.W., Gouveia, V.V., Cameron, L.D., Tankha, G., Schmuck, P., Franěk, M. (2005) Values and their Relationship to Environmental Concern and Conservation Behavior. *Journal of Cross-Cultural Psychology* 36, 457-475.
- Schwartz, S. H. (1977). Normative influences on altruism. *Advances in experimental Social Psychology*, 10, 221 - 279.
- Schwartz, S. H. (1992). Universals in the content and structure of values: Theoretical advances and empirical tests in 20 countries. *Advances in Experimental Social Psychology*, 25, 1 - 65.
- Schwartz, S. H. (1994). Are there universal aspects in the structure and contents of human values? *Journal of Social Issues*, 50, 19 - 46.
- Scott, J. (1990). *A matter of record*. Cambridge: Polity.
- Scott, S. (1997). Household energy efficiency in Ireland: a replication study of ownership of energy saving items. *Energy Economics* 19, 187- 208.

- Scottish Government (2009) *Scottish government review of the private rented sector volume 1*. Scotland: Scottish Government.
- Shefrin, H., and Statman, M. (1985). The disposition to sell winners too early and ride losers too long: Theory and evidence. *The Journal of Finance*, 40, 777 - 790.
- Shelter (2011). In Shelter, (2012). *Homes fit for families? The case for stable private renting*. Retrieved 7, July, 2015, from https://england.shelter.org.uk/__data/assets/pdf_file/0019/423451/Homes_fit_for_families_FINAL.pdf
- Shelter (2011). Shelter research reveals private tenants feel powerless against landlords. Retrieved October 15, 2013, from http://media.shelter.org.uk/home/press_releases/shelter_research_reveals_private_tenants_feel_powerless_against_landlords
- Shelter Scotland (2009). *Review of research on disadvantaged and potentially vulnerable households in the private rented sector*. Scotland: Shelter Scotland
- Shelter. (2009). *Landlord registration in Scotland: three years on*. Scotland: Shelter
- Shen, J., and Saijo, T. (2008). Reexamining the relations between socio-demographic characteristics and individual environmental concern: Evidence from Shanghai data. *Journal of Environmental Psychology*, 28, 42 - 50.
- Shorrocks, L., and Coward, S. (2008). *Energy performance certificates for homes – the consumer perspective*. BRE, UK: ECEEE
- Shorrocks, L., Henderson, J., Utley, J. (2005). *Reducing carbon emissions from the UK housing stock*. Watford, UK: BRE Press.
- Shove E., Pantzar M., and Watson M. (2012). *The dynamics of social practice: Everyday life and how it changes*. London: Sage
- Shove, E., (2010). Beyond the ABC: climate change policy and theories of social change. *Environment and Planning A*, 42, 1273 -1285.
- Silverman D., (2000). *Doing qualitative research: A practical handbook*. London: Sage.

List of References

- Simcock, N., MacGregor, S., Catney, P., Dobson, A., Ormerod, M., Robinson, Z., Ross, S., Royston, S., and Hall, S. M (2014). Factors influencing perceptions of domestic energy information: Content, source and process. *Energy Policy*, 65, 455 - 464.
- Simon, H. A. (1955). A behavioural model of rational choice. *Quarterly Journal of Economics*, 69, 99 - 118.
- Sioshansi, P. F. (1991). The myths and facts of energy efficiency: Survey of implementation issues. *Energy policy*, 1, 231 - 243.
- Smith H.W. (1975). *Strategies of social research: Methodological imagination*. London: Prentice Hall International.
- Soratana, K., and Marriott, J. (2010). Increasing innovation in home energy efficiency: Monte Carlo simulation of potential improvements. *Energy and Buildings*, 42, 828 - 833.
- Statistical release: National statistics. London: DECC.
- Steg, L., Dreijerink, L., and Abrahamse, W. (2005). Factors influencing the acceptability of energy policies: A test of VBN theory. *Journal of Environmental Psychology*, 25, 415 - 425.
- Steg, L., Vlek, C., (2009). Encouraging pro-environmental behaviour: An integrative review and research agenda. *Journal of Environmental Psychology*, 29, 309 – 317.
- Stern P. C. (1999). Information, incentives, and pro-environmental consumer behavior. *Journal of Consumer Policy*, 22, 461 - 478.
- Stern, P. C. (2000). Toward a coherent theory of environmentally significant behavior. *Journal of Social Issues*, 56, 407 - 424.
- Stern, P. C., and Dietz, T. (1994). The value basis of environmental concern. *Journal of Social Issues*, 50, 65 - 84.
- Stern, P. C., Dietz, T. and Kalof, L. (1993). Value orientations, gender, and environmental concern. *Environment and Behavior*, 25, 322 - 348.
- Stern, P. C., Dietz, T., Abel, T., Guagnano, G. A., and Kalof, L. (1999). A value-belief-norm theory of support for social movements: The case of environmental concern. *Human Ecology Review*, 6, 81 - 97.

- Stern, P. C., Dietz, T., and Guagnano, G. A. (1995). The new environmental paradigm in social psychological perspective. *Environment and Behavior*, 27, 723 - 745.
- Stern, P. C., Dietz, T., Kalof, L., and Guagnano, G. A. (1995). Values, beliefs and proenvironmental action: Attitude formation toward emergent attitude objects. *Journal of Applied Social Psychology*, 25, 1611 - 1636.
- Stern, P., 1992. What psychology knows about energy conservation. *American Psychologist*, 47, 1224 - 1232.
- Strauss, A. L., and Corbin, J. M. (1998). *Basics of qualitative research: Techniques and procedures for developing grounded theory*. Thousand Oaks: Sage Publications.
- Strengers, Y. (2009). *Bridging the divide between resource management and everyday life: Smart metering, comfort and cleanliness*. (PhD thesis). Melbourne, Australia: RMIT University.
- Strengers, Y. (2012). Peak electricity demand and social practice theories: Reframing the role of change agents in the energy sector. *Energy Policy*, 44, 226 - 234.
- Strotz, R. H. (1956). Myopia and inconsistency in dynamic utility maximization. *Review of Economic Studies*, 23, 165 - 180.
- Sweeney, J., C., Kresling, J., Webb, D., Soutar, G., N., Mazzarol T (2013). Energy saving behaviours: Development of a practice-based model. *Energy Policy*, 61, 371 -381.
- Taylor, S. J., and Bogdan, R. (1998). *Introduction to qualitative research methods: A guidebook and resource* (3rd ed.). New York: John Wiley & Sons, Inc.
- Thaler, R. (1981). Some empirical evidence of dynamic inconsistency. *Economics Letters*, 8, 201 - 207.
- The Economist (2009). *Home ownership: Shelter or Burden?* Retrieved 5, April, 2012, from <http://www.economist.com/node/13491933/print>
- The Guardian (2014). *The energy efficiency 'savings' that are just hot air*. Retrieved February 7, 2014, from <http://www.theguardian.com/money/2014/jan/18/energy-efficiency-savings-less-than-advertised-green-deal>
- The Property Owners and Managers Survey (1995). *What we have learned about properties, owners, and tenants from the 1995 property owners and managers survey by Howard Savage*. Retrieved 7, July, 2015, from <http://www.census.gov/housing/poms/publications/statrep4.html>

List of References

- Thøgersen, J. (2005). How may consumer policy empower consumers for sustainable lifestyles? *Journal of Consumer Policy*, 28, 143 - 178.
- Three Regions Climate Change Group (2008). *Your home in a changing climate: retrofitting existing homes for climate change impacts*. London: TRCCG.
- Timms, D. (2012). *The government needs to go beyond the green deal if it is genuinely committed to making households more energy efficient*. LSE: British Politics and Policy
- Tommerup, H. and Svendsen, S. (2006). Energy savings in Danish residential building stock. *Energy and Buildings*, 38, 618 - 626.
- Tonn, B., and Berry, L. (1986). Determinants of participation in home energy audit/loan programs: Discrete choice model results. *Energy*, 11, 785 - 795.
- Tovar, M. A., (2012). The structure of energy efficiency investment in the UK households and its average monetary and environmental savings. *Energy Policy*, 50, 723 - 735.
- Train, K. (1985). Discount rates in consumers' energy-related decisions: A review of the literature. *Energy* 10, 1243 - 1253.
- Treece E. W., and Treece J. W. (1986). *Elements of research in nursing* (4th ed.). St Louis: Mosby.
- Tuominena, P., Klobut, K., Tolmana, A., Adjei, A., and Waldhober - De Best, M. (2012). Energy savings potential in buildings and overcoming market barriers in member states of the European Union. *Energy and Buildings*, 51, 48 - 55.
- U.S. Department of Energy (2010). *Financing program pitfalls to avoid*. US, Washington DC: DOE.
- U.S. Department of Housing and Urban Development (2008). *American Housing Survey for the United States* Retrieved 5, April, 2012 from <http://www.census.gov/prod/2008pubs/h150-07.pdf>
- UK Green Building Council (2008). *Low carbon existing homes*. London: UK GBC.
- UK Green Building Council (2009). Pay as you save: *Financial low energy refurbishment in housing* London: UK GBC.
- UK Green Building Council (2014). *Green deal finance: Examining the green deal interest rate as a barrier to take up*. London: UK GBC.

- University of Ulster (2014). *Private rented sector. Living in the private rented sector: the experiences of tenants* Northern Ireland: University of Ulster.
- Urge-Vorsatz, D., Koeppel, S., and Mirasgedis, S. (2007). Appraisal of policy instruments for reducing CO2 emissions in buildings. *Building Research and Information*, 35, 458 - 477.
- Van Houwelingen, J. H., and Van Raaij, F. W. (1989). The effect of goal-setting and daily electronic feedback on in-home energy use. *Journal of Consumer Research*, 16, 98 -105.
- Van Maanen (1983). The moral fix: on the ethics of fieldwork. In R.M. Emerson (Ed.), *Contemporary field research: A collecting of reading* (pp. 269 - 287). Boston, MA: Little Brown.
- Van Raaij, W. F., Verhallen, T. M. M. (1983). A behavioral model of residential energy use. *Journal of Economic Psychology* 3, 39 - 63.
- Vaughan, A. (2013). *Four out of five people have not heard of green deal*. Retrieved 15, November, 2015, from <http://www.theguardian.com/environment/2013/jan/23/not-heard-green-deal-poll>
- Vaughan, T. (1968). The landlord-tenant relation in a low-income area. *Social Problems*, 16, 208 - 218.
- Veal, A.J. (2006). *Research methods for leisure and tourism: a practical guide*. London: Pitman.
- Venkatachalam L. (2008). Behavioral economics for environmental policy. *Ecological Economics*, 67, 640 - 645.
- Vining, J., and Ebreo, A. (1992). Predicting recycling behavior form global and specific environmental attitudes and changes in recycling opportunities. *Journal of Applied Social Psychology*, 22, 1580 - 1607.
- Wallace, A. A., and Fleming, P. D., Wright, A. J., and Irvine K. N. (2010). Home energy efficiency grants and advice: Findings from the English Midlands. *Local Environment*, 15, 403 - 417.
- Walsh, M. (1989). Energy tax credits and housing improvement. *Energy Economics*, 11, 275 - 284.
- Ward, I. (2008). What are the energy and power consumption patterns of different types of built environment? *Energy Policy*, 36, 4622 - 4629.

List of References

- Watson, J. (2004). Co-provision in sustainable energy systems: The case of micro-generation. *Energy Policy*, 32, 1981 - 1990.
- Weber, G. (1990). *Earnings-related borrowing restrictions: Empirical evidence from a pseudo-panel for the UK*. Department of economics discussion paper 17 - 90. London: University College.
- Whyley, C., Callender, C. (1997). *Fuel poverty in Europe: Evidence from the European household panel survey*. London: Policy Studies Institute.
- Widegren, Ö. (1998). The new environmental paradigm and personal norms. *Environment and Behavior*, 30, 75 - 100.
- Wilhite, H., and Ling, R. (1995). Measured energy savings from a more informative energy bill. *Energy and Buildings*, 22, 145 - 155.
- Wilkinson, S. J. and Goodacre C. (2002). Promoting energy efficiency in the private rented sector. *Property Management*, 20, 49 - 63.
- Wilkinson, T. (2008). *The UK market for green mortgages*. London: Energy Efficiency Partnership for Homes (EEPH).
- Williams, M., and Poyer, D. (1996). The effect of energy conservation tax credit on minority household housing improvement. *Review of Black Political Economy*, 24, 122 - 134.
- Wilson, C., and Dowlatabadi, H (2007). Models of decision making and residential energy use. *Annual Review of Environment and Resources*, 32, 169 - 203.
- Winett, R A., Kagel, J. H., Battalio, R. C., and Winkler, R. C. (1978). Effects of monetary rebates, feedback, and information on residential electricity conservation. *Journal of Applied Psychology*, 63, 73 - 80.
- Winett, R. A., Hatcher, J. A., Fort, T. R., Leckliter, I. N., Love, S. Q., Riley, A. W., and Fishback, J. F. (1982). The effects of videotape modeling and daily feedback on residential electricity conservation, home temperature and humidity, perceived comfort, and clothing worn: Winter and summer. *Journal of Applied Behavior Analysis*, 15, 155–181.
- Winett, R. A., Leckliter, I. N., Chinn, D., Stahl, B., and Love, S. (1985). Effects of television modeling on residential energy conservation. *Journal of Applied Behavior Analysis*, 18, 33 - 44.

- Wynne, B. (1982). *Rationality and ritual: The windscale enquiry and nuclear decisions in Britain*. Chalfont St Giles: British Society for the History of Science.
- Wynne, B. (1992). Misunderstood misunderstandings: Social identities and public uptake of science. *Public Understanding of Science*, 1, 281 - 304.
- Yates S. M., and Aronson E. (1983). A social psychological perspective on energy conservation in residential buildings. *American Psychologist*, 38, 435 - 444.
- Yin, R. K (2009). *Case study research: design and methods* (4th ed.). New York: Sage Publications.
- Young, W., Hwang, K., McDonald, S., and Oates, C. J. (2010). Sustainable consumption: green consumer behaviour when purchasing products. *Sustainable Development* 18 (2010)20-31
- Zavestoski, S. (2002). The social-psychological bases of Anticonsumption Attitudes. *Psychology and Marketing*, 19, 149 - 165.

