

**An Integrated Perspective of
Student Housing Supply and Demand:
Sustainability and Socio-Economic Differences**

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Abstract

This thesis explores the dynamic interface of supply and demand for student housing within the context of national sustainability policy and planning in the UK. These interconnections are increasingly important given the tripling of students' tuition fees, which can alter the residential expectations of students, as well as implementing policy schemes that aim to retrofit the most energy inefficient dwellings. Using the university town of Loughborough as a case study, findings are presented from a mixed-methods research comprised of an online survey, semi-structure interviews, and focus groups. The thesis makes several original contributions to academic knowledge of student geographies.

First, the discussion shows that the profile of student housing in the UK has dramatically changed which is underpinned by numerous drivers tied to changing policies, reforms, and reconfigurations of students' residential expectations. Second, the thesis stresses the importance of examining the sustainability challenges unfolding in the housing sector and the ways these dynamics impact upon students' residential experiences. Third, by establishing the first-ever student housing taxonomy, it is demonstrated that physical and sustainable discrepancies are evident in the types of accommodation that are supplied to students, allowing for a broader investigation of the student housing stock in the UK. Fourth, it is contended that the energy efficiency of a dwelling has a limited impact on students' energy expenditure, indicating that students manage their energy consumption in various ways. In addition, it is advocated that the fuel poverty (FP) calculation framework could usefully be revised and adapted to more effectively identify students in FP conditions. Fifth, it is ascertained that students' finances tend to have limited effects on their selection of housing. It is concluded that advancing the understanding of sustainability issues entangled in the student housing sector is crucial for progressing knowledge in student geographies.

Key words: students; student housing; sustainability; residential decision-making; student dwelling taxonomy; Loughborough.

Dedication

I dedicate this thesis to my sister, 'Crouly,' eternal source of inspiration and who is constantly on my mind.

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List of Abbreviations

This list of abbreviations only includes the most relevant and recurrent terms as expressed in the thesis.

B	Bungalow
BOS	Bristol Online Survey
BRE	Building Research Establishment
BREEAM	Building Research Establishment Environmental Assessment Methodology
CCA	Climate Change Act
CCC	Committee for Climate Change
CERT	Carbon Emissions Reduction Target
CESP	Community Energy Saving Programme
CO ₂	Carbon dioxide
D	Detached
DCLG	Department for Communities and Local Government
DECC	Department of Energy and Climate Change
ECO	Energy Company Obligation
EER	Energy Efficiency Rating
EHS	English Housing Survey
EPC	Energy Performance Certificate
E-T	End-Terrace
EU	European Union
FP	Fuel Poverty
GB	Great Britain
GD	Green Deal
GHG	Greenhouse Gas
HE	Higher Education
HEI	Higher Education Institution
HESA	Higher Education Statistics Agency
HMO	House in Multiple Occupation
KP	Kyoto Protocol
LIHC	Low Income and High Energy Costs
LSAS	Loughborough Students' Accommodation Survey
LSU	Loughborough Students' Union
LU	Loughborough University
M-T	Mid-Terrace
NUS	National Union of Students
ONS	Office for National Statistics
PBSA	Purpose-Built Student Accommodation
PGT	Postgraduate
PhD	Doctor of Philosophy
PRS	Private Rented Sector
S-D	Semi-Detached
SAP	Standard Assessment Procedure
SD	Sustainable Development
SDT	Student Dwelling Taxonomy
SIES	Student Income and Expenditure Survey
SPSS	Statistical Package for the Social Sciences
UG	Undergraduate
UGC	University Grants Committee

Chapter 1

Introduction

1.1 The Contemporary Sustainability Challenges of Student Accommodation

“As students move into private accommodation, their awareness of energy saving seems to be much more likely to manifest in behaviour change than among students in halls of residences, where research found little motivation to save energy and sometimes structural or social barriers to doing so.” (NUS, 2014: 9)

This thesis is pertinent in addressing the profound environmental changes unfolding in the student housing market. First, promulgated by the United Kingdom (UK) government, stringent major environmental policies currently operate in the housing sector, and particularly in the private rented sector (PRS), which includes a relatively high percentage of the student population (Rugg *et al.*, 2000; Rhodes, 2006). The retrofitting of the oldest dwellings can affect the provision of student accommodation, the strategies used by students for selecting their housing, and the individuals’ residential experiences (Hubbard, 2009). Second, the recent policies established in the Higher Education (HE) sphere, epitomised by the tripling of tuition fees charged by UK universities since 2012, have impacted on students’ finances (Wakeling and Jefferies, 2013; Crawford and Jin, 2014). Consequently, this has various repercussions on students’ accommodation decision-making processes, and the ways that students consume the ‘residential product’. Third, the lifting of the cap on student numbers enrolled in UK universities implies a substantial growth in demand for student accommodation, while institutions often find it difficult to provide bedspaces for all students. This connotes an enlarged reliance on the PRS which is affected by local neighbourhood transformations, linked to students’ already important presence in these locations. Fourth, it has become evident in recent years that environmental issues in the housing sector have increasingly captured the attention of international and national scholars (Bergman *et al.*, 2008; Rérat, 2012a) as well as media (The Guardian, 2013a). As noted in the above quote, students’ residential pathways produce the opportunity to initiate an environmental education through the acquisition of appropriate domestic energy behaviour. Lastly, student demand for accommodation is changing rapidly and housing providers must adapt accordingly, considering the magnitude of sustainability challenges encompassed in this market.

Overall, to date, the environmental linkages embedded in the dynamics between the supply and demand for student housing have been overlooked in the academic debate. Producing diverse and

complex student geographies, the study of these interrelationships is primordial to the advancement of understanding sustainability issues in the student housing sector. Therefore, this thesis is essential to the evaluation of the issues of sustainability in student residential geographies.

There has been a diversification of the types of accommodation that have been supplied to students over the last two decades, in part, tied to the increasing numbers of students in Higher Education Institutions (HEIs). The range of student accommodation includes: University halls of residence, Purpose-Built Student Accommodation (PBSA), and House in Multiple Occupation (HMO). In essence, students have the power to select a specific type of accommodation that will meet his/her personal requirements. In the UK, there has been a plethora of academic debates devoted to student accommodation (e.g. Chatterton, 1999; Rugg *et al.*, 2000, 2002; Smith, 2005; Allinson, 2006; Hubbard, 2008, 2009; Munro *et al.*, 2009). Within media discourses, the issue would appear to be gaining interest. For instance *The Guardian* (2013b) recently reported: ‘Student housing: is it time to move on?’ noting: “What does seem to be lacking, however, is a national consensus on the role that student accommodation plays in the overall student experience”.

Over the last two decades, student accommodation have been intensely developed in the UK to match the growing demand initiated by profound changes regarding the functioning of the HE system in order to widen its participation (Machin and Vignoles, 2006). This new orientation has been gradually set in order to cope with processes of worldwide globalization. It was instigated by the launch of the Bologna Process (1999) and the Lisbon European Council (2000), a series of ambitious reforms that have been set in motion aiming to make Europe: “the most competitive and dynamic knowledge-based economy in the world, capable of sustaining growth with more and better jobs and greater social cohesion” (European Council, 2000). HE and an educated workforce have a pivotal role to play in this transition. Consequently, since the 1980s, the number of students enrolled in HEIs has expanded (Universities UK, 2013a; HESA, 2014a). Between 2000 and 2012, the student population has increased approximately three times faster than the overall UK population (ONS, 2013a). Accordingly, there were 2,340,275 students enrolled in HE for the academic year 2012/13 (HESA, 2014a). In 2012, the student cohort accounted for 4% of the total UK population.

The student demand for housing has intensified, which has compelled accommodation providers to adjust their products to the circumstances. Throughout the UK, there have been considerable

constructions of new halls of residence on HEIs campuses as well as refurbishments of existing university properties. Considering the modern building regulations, newer university halls of residence are in compliance with the latest sustainable instructions (e.g. Carnegie Village in Leeds and the Green at Bradford University). Because of the development of high-quality university eco-residences and retrofitted properties, on-campus student accommodation has become a more powerful leverage to attract prospective students, and has enhanced the prestige of HEIs across the UK and internationally.

On-campus housing do not have the capacity to provide bedspaces to all students. With about one-third of the student population residing within university halls of residence or PBSA (King Sturge, 2010; GVA, 2012), the enlarging student demand is mainly oriented towards the ‘traditional’ PRS. Students have increasingly moved into terrace houses, physically and administratively converted into HMOs. The urban transformation of a neighborhood produced by the high presence of students, termed ‘studentification’ (Smith, 2002), has been at the heart of local community groups’ discontentment across the country (National HMO Lobby, 2008). The shortfall of university provided dwellings has generated the emergence of a crop of buy-to-let landlords, many of them failing to offer decent housing conditions to their tenants (Inman, 2014). The shift of students’ distribution into the PRS may indicate that institution maintained accommodation is no longer the first residential choice for the majority of students.

To counter the unfolding of studentification processes in various UK university towns and cities, municipalities have notably encouraged the development of PBSA by commercial providers from the mid-2000s (Munro and Livingston, 2011). Aiming to revitalise brownfield sites, the proliferation of PBSA provides a sizeable number of additional bedspaces for students. Their town-centered location and ‘all-inclusive’ packages constitute a solid commodification of the product. This type of accommodation has been targeted towards the most-affluent students by private providers, as is evident from the high rent costs and the luxurious amenities and comfort supplied to the residents.

The supply of high-quality standard housing occurs in a turbulent economic environment. One of the most prominent changes to UK HE has been the threefold rise of academic registration tuition fees. Thus, since 2012, new full-time university entrants may have to pay up to £9,000 per annum, accentuating the expanding difficulties for some students to pursue their studies. The individuals’ dependence on loans, grants, bursaries, and paid work has generated precarious situations amongst students. This consolidates economic inequalities. Widely displayed within

national media sources, this financial burden is not the exclusive source of concern (Eurostudent, 2011). The National Union of Students (NUS) has revealed that the average weekly rent for a bedroom in university-owned properties has doubled in the UK within the past ten years (NUS, 2012).

Alongside this, the growing diversity of student housing choices has produced spatial socio-economic tensions. For instance, students with limited resources have restricted options available; many might consider staying at a parental home or residing in cheap and over-crowded HMOs. Contrarily, the wealthiest students can choose from a vast array of possibilities. Beyond these socio-economic discrepancies, the variety of student housing supply has created environmental gaps. Hitherto unexplored in academic debates, the sustainability characteristics of student accommodation vary geographically. The PRS and its old terraces are seemingly less energy efficient than the newest university halls of residence or PBSA. The study of the social, economic, and environmental intersections between the student housing supply and demand is central in this research. These environmental disparities fall within the context of an international and national realisation that changes have to be operated within the housing sector.

In the course of the past few years, issues related to energy performances of the UK housing stock have been strikingly raised by the government. Stringent policies and regulations have been set up in order to improve the sustainability characteristics of existing dwellings as well as to ameliorate the requirements for the new developments. Influenced by the recommendations of the Stern Review (2006), the UK government has made the reduction of CO₂ emissions in the residential sector its 'war horse' (HM Government, 2009). Environmental performances of properties have been put under the microscope by the political authorities. Developed as a scheme for retrofitting dilapidated houses in the UK, the 'Green Deal' (GD) is viewed by the Minister of State for Energy and Climate Change, Gregory Barker, as: "the biggest home energy improvement programme of modern times, to tackle [our] draughty and expensive-to-heat housing stock" (The Guardian, 2012). The domestic sector is responsible for nearly 29% of total UK end-user consumption, and 66% of its total consumption is the result of space heating (DECC, 2013b). The UK housing stock is known to be one of the oldest in Europe, with "21% [of its] dwellings built before 1919 although three-quarters of these older dwellings have been subject to at least some major alterations since they were built" (DCLG, 2010). In addition, all properties in the PRS struggling to meet a minimum Standard Assessment Procedure (SAP) rating Band 'E' will be unlawful to be put on the rental market (Green Deal Union, 2012). This specific policy regulation may strongly affect the student housing market by limiting the offer of

available accommodation, as students are often a high percentage of the total population in the HMO sector.

In 2014, the NUS published a report which provided a holistic picture of the student housing stock in the UK. Emphasising student residential experiences, and with a specific focus on the PRS, the report points out an abundance of social and economic inequalities in students' accommodation. In addition, the document reveals that living conditions, especially in the rented market are concerning. The NUS' findings indicate that half of respondents have felt uncomfortably cold in their current accommodation, significantly affecting students' comfort, well-being, and (potentially) health conditions.

By contrast to political and national media depictions of the student lifestyle, which often cite 'binge drinking' and 'late-night parties,' students may also develop an acute sense and awareness of their residential strategies. The selection of an accommodation suggests that students have developed a list of attributes and have acquired sufficient knowledge of the local housing market. The student residential decision-making processes are made of tacit agreements and trade-offs (Holdsworth, 2006). Indeed, Rugg *et al.* (2004: 27) affirm: "students gained a 'social education' in renting". Student housing trajectories have been established as key components in the transition from youth to adult status:

"Students' housing careers provide both a reflection and a representation of the transitions involved in the pathway from school, through university to 'adult' independence." (Christie *et al.*, 2002: 230)

Thus, as students residential strategies and negotiations with local housing markets are transformed (Rugg *et al.*, 2002; Sage *et al.*, 2012a), new research questions are emerging within 'student geographies' (Smith, 2009). The urban impacts and socio-economic disruptions linked to the relatively high presence of students in towns/cities are, henceforth, conspicuous within an expansive body of literature (e.g. Chatterton, 1999; Rugg *et al.*, 2000, 2002; Silver, 2004; Smith, 2005, 2008; Universities UK, 2006; Hubbard, 2008, 2009; Kenna, 2011). The evolution of students' residential expectations has coincided with unfolding processes of studentification, observed in some areas of British university towns/cities such as Loughborough (see Kinton, 2013), Birmingham (cf. Allinson, 2006), Brighton (e.g. Smith and Holt, 2007) and Oxford.

At the juncture of a HE system recovering from its recent major evolutions and an ageing housing market expecting an intense 'facade lifting,' debates in student geographies are clearly deepened. Yet, the social, economic, and environmental interactions and mechanisms embedded

within student residential decision-making processes are, to date, generally unexplored by the academic literature. This thesis seeks to address this precise gap and, consequently, contribute to academic knowledge by expanding contemporary debates in student geographies.

1.2 Research Aim and Objectives

The overall aim is to:

Evaluate the dynamic interface of supply and demand for student housing within the context of national sustainability policy and planning, using Loughborough as a case study.

With this in mind, the key objectives are to:

Analyse the changing post-1945 profile of student housing in the UK and the key drivers underpinning these changes.

Define UK sustainable development policy with a focus on the residential sector, including energy, CO₂, and social sustainability.

Establish a residential taxonomy in order to analyse the demand and supply dynamics of student housing.

Evaluate energy consumption and costs within the context of the sustainability framework, and their impact(s) on students' residential experiences.

Examine the effects of the socio-economic differentials of students on housing outcomes.

1.3 Structure of the Thesis

In order to achieve the research aim, the thesis is structured in eight further chapters. Chapter 2 presents the key policies in HE that have shaped the provision of student accommodation from post-World War II and discusses the theories surrounding housing choice and studentification processes. From the financing of university halls of residence to the commodification of properties in the PRS, the chapter reviews the main changes that occurred in the student housing environment. Chapter 3 discusses the implementation of sustainability policies at the international and national level, with a focus on the housing sector. This chapter argues the limits of the government's GD and the introduction of energy efficient developments of UK campuses.

Chapter 4 outlines the methodology applied in the thesis. Adopting a mixed-methods approach, the data process relies on a quantitative survey conducted with Loughborough University (LU) students. It represents a robust database incorporating student social, economic, and environmental variables. Furthermore, it combines secondary data regarding housing characteristics obtained via the Energy Performance Certificate (EPC) of the investigated dwellings. This quantitative approach is consolidated with both semi-structured and focus group interviews with students as well as the executive members of the Loughborough Students' Union (LSU). The methodology used in the research accentuates the paucity of data in relation to the sustainable aspects of student dwellings.

Chapter 5 highlights the rationale of using Loughborough as the case study of this thesis. The geography and demography of the town as well the significant influence of Loughborough University at the local level are scrutinised.

Chapter 6, the first empirical portion of the thesis, provides a detailed analysis of the physical student housing stock in Loughborough in the form of a dwelling taxonomy. The chapter breaks down the types of accommodation and their characteristics by three main sectors: university halls of residence (Uni halls), PRS, and PBSA. By identifying the housing profiles through their main physical and geographical features, this section illustrates the complex diversity of the student housing market.

Chapter 7 examines the sustainability approach of the classified buildings of Chapter 6. It emphasises students' energy consumption and cost throughout this typology, and demonstrates how these variables affect students' residential decision-making processes. Additionally, the chapter exposes the complexity of evaluating energy costs due to the supply of all-inclusive properties.

Chapter 8 explores the relationships between social motivations, students' finances, and the housing selection in regards to sustainability components. The findings outline the various residential rationales, income, expenditure, and debt discrepancies existing within student populations, and the ways in which they produce heterogeneous student residential geographies.

Finally, Chapter 9 draws together the main contributions of the thesis in academic debates. The chapter concludes that the students' residential decision-making processes are complex and are caused by the extensive diversification of student accommodation. It also signifies that, in several cases, the housing supply struggles to meet students' versatile demands.

Chapter 2

The Supply of Student Accommodation in the Context of Changing Demands from Students

2.1 Introduction

Limited evidence, caused by a paucity of academic research, exists as to how the provision of student accommodation have adapted to the changing profiles of students in the UK since World War II. Studies carried out in the 1960s (Thoday, 1960; Marris, 1964; Hatch, 1968; Cameron, 1969) and 1970s (Brothers and Hatch, 1971; Morgan and McDowell, 1979) provide a glimpse of the changing supply of student residences through social and economic lenses. Yet, debates about student residential geographies emerged in the early 2000s with the identification of studentification processes by Smith (2002). Once the recognition of urban changes tied to student presence in local areas were acknowledged, research was undertaken throughout the UK (e.g. Rugg *et al.*, 2000; Smith, 2002, 2005; Allinson, 2006; Smith and Holt, 2007; Hubbard, 2009; Munro *et al.*, 2009; Munro and Livingston, 2011; Sage *et al.*, 2012a, 2012b).

Through an analysis of the literature, this chapter aims to provide a deep understanding of the changing profile of student housing in the UK, and the key drivers behind those changes. In order to do so, this chapter is divided into two parts.

The first part is chronologically organised and outlines the trajectory of the UK HE sector. It introduces the student residence context in the wake of World War II (Section 2.2). The influence exerted by the Robbins Report on the universities' mission is broadly investigated (Section 2.3). In the 1970s and 1980s, the permanent shaping of HE in the UK caused noteworthy urban transformations, associated with the provision of student accommodation (Sections 2.4 – 2.5). The 1990s was characterised by new directions within HE, the changing profile of students, and the restriction of state financial resources (Section 2.6). Finally, the financial fragility caused by the recent tripling of university tuition fees is considered (Section 2.7).

The second part of the chapter reviews the scholarship on studentification and the decision-making processes surrounding student housing choice. The literature gap related to student housing choice and triggers to move is highlighted (Section 2.8). The gradual shifting and encroachment from HEIs properties onto PRS are also addressed within the context of contemporary urban transformations, symbolised through the nascence of the concept of studentification (Section 2.9). The significance of housing cost within students' financial

triumvirate (i.e. income, expenditure, and debt) is also explored (Section 2.10). Additionally, a perspective is brought onto students' residential strategies and trade-offs, showcasing the absence of literature encompassing environmental aspects in the decision-making processes (Section 2.11). Finally, Section 2.12 summarises the key changes that unfolded in the student housing market.

2.2 Student Residence in the pre-Robbins Era

In the aftermath of the Second World War, there was a population of 50,000 students in the UK. Five years later, this total had doubled (Tight, 2009). This growth in participation arose from various factors such as the Education Act of 1944, encouraging the increase of qualified students for universities, the extended development of science and technology disciplines, the availability of young men after the war, and also the massive social and economic transformations operating in the UK (Lowe, 1988). Planning the post-war HE system started well before 1945. Questions related to ways of channelling the pressure tied to the HE expansion were recurrent such as the need of providing student residences. Hence, Silver and Silver (1997) raised pressing questions concerning the directions to give to student residence before and after the Second World War.

In the wake of the war, HE in the UK rested on a combination of 'ancient' and prestigious institutions (i.e. Oxford, Cambridge, St Andrews, Glasgow, Edinburgh, and Aberdeen), 19th century universities (e.g. Durham, University of London and University of Wales) and 'old English civic' universities. Tight (2009) compiled a comprehensive list of contemporary UK universities. The 'old civic' universities, or 'red brick' universities (e.g. Birmingham, Bristol, Leeds, Liverpool, Manchester, and Sheffield) (see Truscot, 1951), most founded in the later part of the 19th century, and becoming independent in the early 20th century, were established in large industrial English cities. They enrolled together about one-third of students in the English universities in 1950.

Up until the end of the Second World War, the recruitment strategy of universities and other institutions, with the exception of Oxbridge, was inclined essentially towards local participation. Nonetheless, university's accommodation was chiefly achieved through halls of residence. Student residence was traditionally characterised by a rigid discipline and a regulated supervision meant to mould academic, social, and moral actions. As Silver (2004: 125) comments: "The college mission was more than ever seen as influencing its students' immediate and lifelong conduct". Perceived exclusively for a 'social elite,' the 'traditional' or 'Niblett' hall of residence, as coined in the report of the same name, became the irrevocable emblem of the collegiate ideal.

Oxford and Cambridge epitomised its standard bearers, in which the confinement of an ebullient intellectual community made its far-reaching reputation (UGC, 1957; Marris, 1964). The Niblett hall symbolised much more than a simple and functional mission: its environment was conducive to civic, religious, and liberal education. The term ‘patriarchal,’ generally used to qualify the hall’s ethos, accurately depicted the institution’s role of *in loco parentis* to young men and women *in statu pupillaris*. The *in loco parentis* consisted of the university substituting students’ parents by providing them with high quality rooms, cares, education, and entertainment, all in their best interests (Blakey, 1994; Silver and Silver, 1997; Hughes and Davis, 2002). As a consequence, the transmission of values within the residence, whether they were academic or cultural, consisted of a forceful argument to turn students away from living at home, as noted by Morgan and McDowell (1979: 13):

“The significance attached to residence and its widely proclaimed educational benefits powerfully reinforce the increasingly common practice among students to study away from home.”

Nevertheless, in the first part of the 20th century, a distinct residential ethos emerged. The red brick institutions inspired changes in the HE system and consequently, in the residential function. Thereby, the traditional college residence, steadily running out of steam, collided with a more pragmatic aspect consisting of ‘somewhere to live’. The latter was fully realised with the adjustments of the HE system to social, economic and demographic changes in the 1960s. The HEIs became structurally more specialised and competitive by proposing wider choice and diversity in terms of study programmes and curricula. This led students to prospect for institutions in an extended radius (far) beyond the home-residential boundaries. Accordingly, these alterations have stimulated an increasing mobility amongst students. These migration processes were amplified in the post-war years with the creation of the ‘new civic’ universities in smaller provincial cities (e.g. Exeter, Hull, Leicester, Nottingham, Reading, and Southampton). As recognised in Scott (1995), the second wave of civic universities constituted the materialisation of the American campus environment in Britain. Thus, discussions associated with questions about student residences took a different turn after the publication of the Robbins Report, which has considerably moulded the vertebrae of the distribution of student accommodation known in the 21st century in the UK.

2.3 The Influence of the Robbins Report on the Higher Education System

This section brings a particular focus upon the document entitled *The Robbins Report*. Prior to 1963, the publication year of this document, several researches investigated various aspects of

HE: these are related to university expansion, methods of teaching and recruitment, HE financial resources, student life, and student residences. Despite the quality of these scientific contributions (see the influential work of Niblett in 1962), none were able to equal the aftermath associated with the works produced in the Robbins Report. The latter has been influencing the UK's educational system for several decades. Commissioned by the British government in 1961 and chaired by Lord Robbins, the Robbins Report aimed to give a new impetus to HE in the UK. The conclusions provided in the report were accepted by the government the same year of its publication.

Prior to the promulgation of the Robbins Report, various researches explored the roles of HEIs, and especially the universities. The University Grants Committee (UGC), institute from 1919 to 1988 (replaced thereafter by the Universities Funding Council (UFC)), was a dominant and influential body within the British HE. Salter and Tapper (1994) portrayed the UGC as an influential lobby and decision-maker. Initially established as an advisory committee, in a peripheral position of the state, the UGC's chief role was to decide the resource allocation to educational institutions in the UK. Whilst the UGC calculated an incremental doubling of student numbers within twelve years in 1956, a year later a response to this expansion was addressed in *The Niblett Report*. This was named after William Roy Niblett, an active member of the UGC. This investigation approved a prompt rise in the provision of halls of residence which were deemed to be conveyors of traditional and educative values (UGC, 1957). Post-war evolutions in HE were advised to be taken into account by the sub-committee with an eye to matching the changing needs of students. Thus, it is in a flourishing and favourable financial context for HE that the Robbins Committee, led by the economist Lionel Robbins, was appointed.

The Robbins Report embodies a prominent stage of the current functioning of the HE system. Amongst the extensive list of recommendations and principles formulated in this document, many of them constitute an integral part of the *modus operandi* of the HE system as known and experienced today. The long-term vision, as elaborated in the document, gave rise to the widening participation of individuals in HE studies. Indeed, the Robbins Report (1963: 272) recommended the immediate expansion of universities:

“We therefore recommend the immediate foundation of six new universities, of which at least one should be in Scotland [...] As we have indicated, much of the expansion contemplated will take place by the growth of existing institutions.”

Therefore, the creation of new universities was sturdily urged as well as the growth of the existing institutions. The consultation committee also uses the case of Glasgow for developing more than one university in large UK cities. Additionally, a recommendation stressed the need to make generous grants available for the creation of universities able to compete with Oxford and Cambridge. Furthermore, the report emphasised the democratisation of the system by ardently encouraging women and members of lower social background to participate in HE studies:

“...increased attention should be given to the problems of introducing young men and women from families with scanty educational background to the atmosphere of higher education.” (*ibid*: 273)

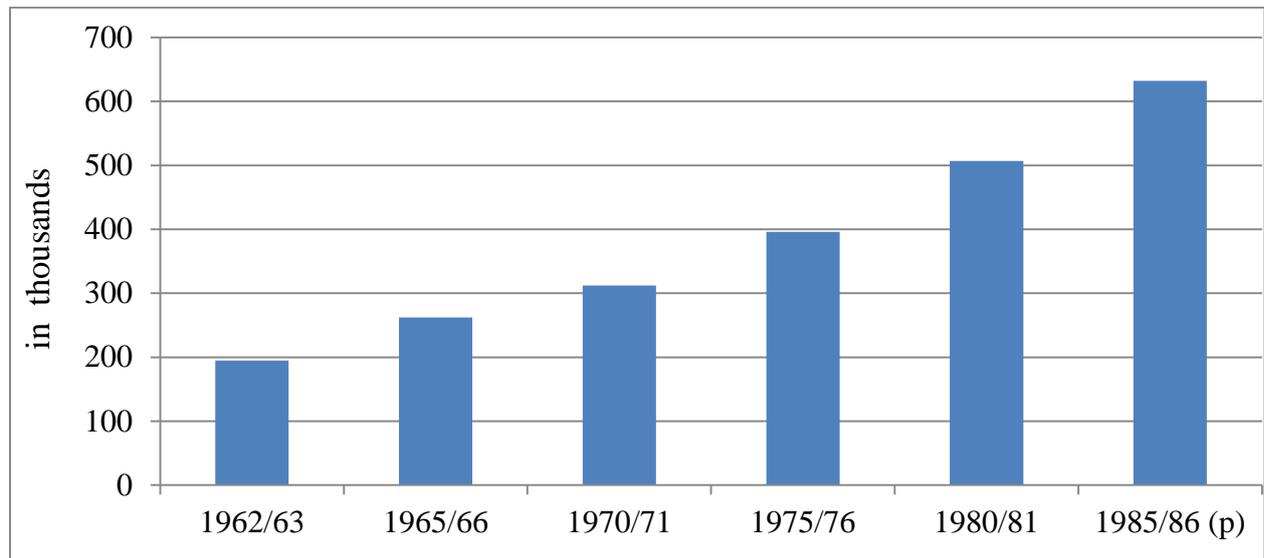
“...courses of higher education should be available for all those who are qualified by ability and attainment to pursue them and who wish to do so.” (*ibid*: 8)

This last quote was interpreted as a rudimentary principle that has underpinned and influenced, in a broad spectrum, the functioning of HE. Besides the aim to reduce social and gender imbalances in the educational system, the report accentuated the allocated role of the university as a vector of equality, fairness and citizenship. Indeed, the document asserted the power conveyed by the HEIs to individuals by employing the terms of ‘aspiration,’ ‘achievement,’ and ‘equality’ on many occasions. The Robbins Report injected life into an outmoded and unadapted educational system through a liberal vision by shaping the HE system as an apparatus of equality of opportunity for students from all classes and communities.

On top of that, the report called the involved authorities out “for an immediate commitment of effort and resources” (*ibid*: 70) with an eye to attract a greater number of students and to meet future demands. It provided estimates of the possible demand for HE studies. These projections of the ‘likely demand’ were based on numerous then-existing trends such as demographic data, the improvement of educational standards, and the burgeoning of national prosperity. For the academic year 1962/63, the number of home students (nowadays referred to as ‘domicile’ or ‘national’ students) established in full-time HE represented 195,000. This share amounted to 90% of all full-time students. Figure 2.1 displays the projection of full-time home students needed in HE. Thus, between 1962/63 and 1975/76, the cohort of home student was expected to double. In 1980/81, the number of domicile students was estimated to be 507,000, which would signify a growth of 160% since 1962/63. Overall, the figures of the full-time enrolments in HE, as produced in the Robbins Report, appeared to be bold. Some of the estimates advanced appeared to be impetuous, yet they struck a chord amongst many new entrants.

En effet, the projections of student numbers, produced sequentially in the 1957's Niblett Report and in the Robbins Report, rapidly had a positive impact on the number of enrolments in HE. In 1970/71, they were 446,000 full-time and sandwich students in the UK, whereas the report anticipated 344,000 (DES, 1986).

Figure 2.1 – Projections of Number of Domiciled Full-Time Students Needed in GB



Note: The figure for 1962/63 shows the actual number of students; (provisional data).

Source: Robbins report, 1963

The projections estimated that, by 1980/81, the number of full-time students in universities and other institution types such as Colleges of Education (CoE) and Colleges of Advanced Technology (CAT), but excluding Further Education Institutions (FEIs), would be 558,000 whilst the actual figures suggest 535,000 enrolments (ONS, 2011a). Furthermore, the report contended that, by 1984/85, the UK would need approximately 678,000 full-time students in HE. The Department of Education and Science (DES) had since merged into the Department for Business, Innovation and Skills (BIS), and had recorded 573,000 full-time and sandwich candidates in HE. Finally, an increase of 125,000 home full-time students between 1980 and 1985 was predicted (DES, 1986). Though having a lack of accurate predictions, the propositions expressed in the Robbins Report had the merit of enhancing, in a discernible manner, the number of enrolments of students for the successive decade. In this way, the document contributed to the upsurge of students with lower socio-economic background entering the HE system in the 1970s. This phenomenon was not exclusive to the UK as similar observations were carried out in other countries, such as France (Bourdieu and Passeron, 1964).

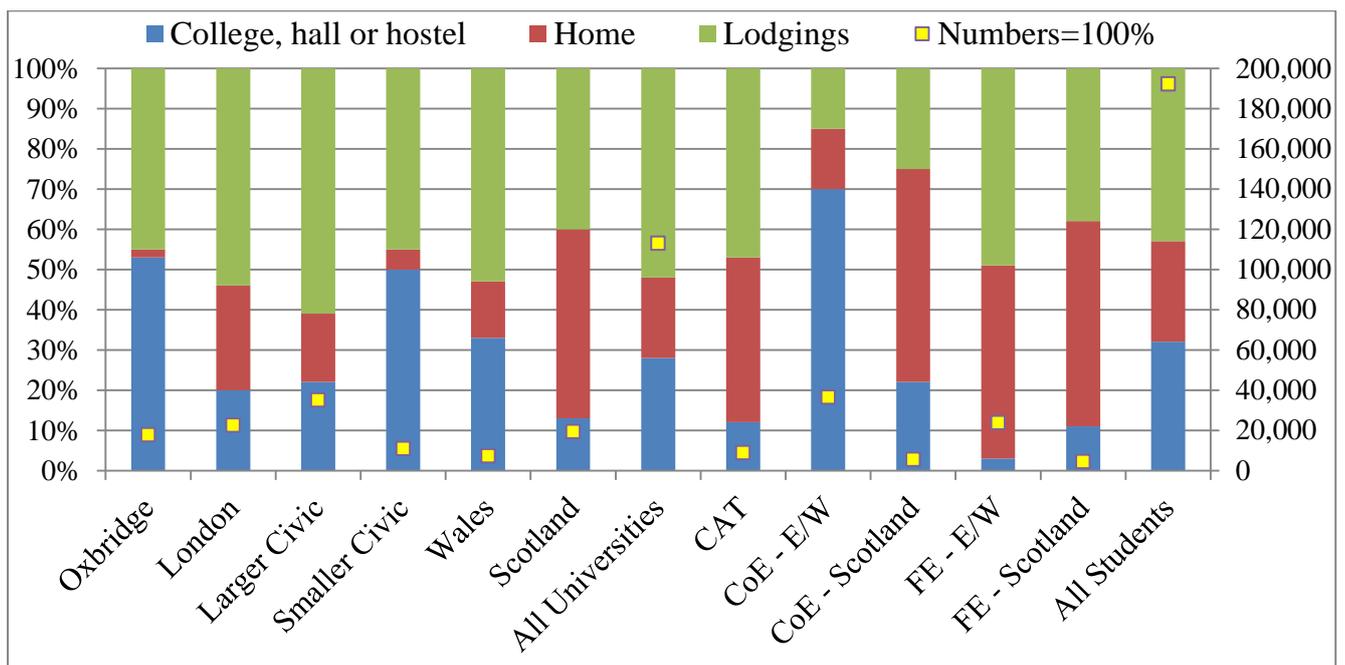
The recommendations expressed by the authors laid the foundations of a system of ‘mass higher education,’ vindicated by the principle of ‘social demand’ held dear to the consultation

committee, as well as creating a better equity and freedom of the HE functioning. The report was deemed responsible for the decline of the elitist ideology within the educational system (Salter and Tapper, 1994), which extensively intensified the inter-regional migration of students in Britain. The expansion of HE, as ardently urged in the report, has, however, impinged on the student accommodation sphere. The Robbins Report pointed out issues related to student housing as one of its many burning topics. The relationship between the HE system and the residence of students was discerned as mutually sound. In this way, Hatch (1968: 1) remarked within the first lines of his research on student residence:

“Apart perhaps from systems directly inspired by the British, there can be no country which spends proportionately as much money on residence or devotes so much consideration to this issue as we do here.”

In 1961/62, the proportion of students attending a local university and residing at home, whether parental or marital, dropped from 42% to 20% between 1939 and 1961 (Morgan and McDowell, 1979). Living at home was deemed to inhibit the full experience of social and intellectual aspects of residential community life. Besides, the creation of new HEIs throughout the country offered a greater variety of courses and specializations to students. As depicted in Figure 2.2, the Robbins Committee evaluated that for the academic year 1961/62, 28% of all full-time students in universities in Great Britain (GB) resided in colleges and halls. Students living at home and in lodgings accounted for, respectively, 20% and 52%.

Figure 2.2 – Residential Distribution of Full-time Students in GB in 1961/62



Note: E/W infers England and Wales combined. Source: Robbins report, 1963

Amongst all full-time students in HE, one-third lived in the institutions' properties and less than half resided in lodgings. The latter represented the conventional alternative to halls of residence on campus. The term implied a vast array of situations but mainly consists of a bedroom with or without meals. Lodgings, despite being considered a temporary option, were the type of residences providing the most places for students. They had the possibility of providing bedspaces under the heel of the universities through a licencing scheme (cf. Hughes and Davis, 2002; Silver, 2004). Interestingly, the UGC's annual reports made no distinction between flats and lodgings (also named 'digs').

As a result of sundry restructuring and readjustments of the HE system's purposes and goals, students were strongly encouraged to attend institutions away from home. The unequivocal instructions about expanding the university generated a massive influx of unanimous observations amongst the stakeholders: the urgent need to provide living facilities for an expected growing number of students. In order to go hand-in-hand with the expansion of enrolments in HE, the authors of the report stated formally that student housing was needed:

“If the expansion of higher education that we recommend is to be achieved, students must be found somewhere to live.” (Robbins Report, 1963: 197)

This quote reflected the profound desire of the committee to insure HEIs that supplying student residence should be on top of their agenda. In order to give weight to this statement, the Robbins Report provided residential projections. Still using 1980 as a year of reference, the supply of student residence was expected to rise from 32% in 1961/62 to 54% in 1980/81. In regards to students at universities, these figures are predicted to grow from 28% to 53% for these specific dates. In this way, the authors of the Robbins Report gauged 225,000 as the number of additional residential places needed by 1980. Furthermore, the universities and other institutions were required to match the increased number of new entrants within the development of student accommodation. Hence, they were charged with the responsibility for providing dwellings for two-thirds of the new entrants to HE, as expressed in the report:

“Provision should be made for a number equivalent to two thirds of the additional students who will come into the universities to live in accommodation of one kind or another provided by the university.” (*ibid*: 195)

Consequently, the development of additional 'bedspaces' in halls of residence was strongly encouraged in order to cope with the expansion of student numbers; yet, this also fell under specific aspects of social and cultural dimensions, properly addressed in the Robbins Report.

Silver (2004) stressed that halls of residence were expansively scrutinised at the time of the commissioning of the Robbins Report. Matters related to the provision of halls of residence in order to host the waves of new students were one of the major concerns. Propositions made in the Niblett Report (1957: 41) converged with the Robbins Report on this:

“The evidence we have heard on the value of halls of residence in supplying the necessary accommodation for students in the form best suited to their needs makes us certain that the number of halls of residence should be considerably increased.”

According to the Niblett Report, living in a property associated with the academic institution favoured social interactions amongst students and teachers/lecturers. Similarly, the Robbins Report suggested that opportunities of contact between students and teaching staff were facilitated by their residential proximity. Students and teachers living and dining together in halls of residence occurred frequently in the 1950s and 1960s. The feeling of community provided within the university’s walls instilled social and cultural values in students. The collegiate structure of halls was bound with the familiar presence of the warden. Usually assisted by a ‘sub-warden,’ he was held responsible for the general running of the property. The warden lived in the hall or in housing adjacent to it. His role (they were primarily male wardens) was to educate and instruct the residents both scholarly and morally. The warden was given the choice to select the candidates wishing to live in the property, as investigated by Brothers and Hatch (1971: 157):

“The number of first-years students wishing to live in hall is much in excess of the places available, so the wardens have a considerable freedom of choice; though the way they should distribute their places is defined by the university. Regulations in force in October 1967 stipulated that wardens should aim to allocate 50% of their places to students new to the university (whether undergraduate or postgraduate), and 20% to overseas students.”

Living in halls of residence continued to be synonymous with greater opportunities to take part in social, physical, and intellectual activities as well as to form friendships. The latter was important as the ‘corporate lifestyle’ and was a secure environment for students experiencing the transition into adulthood as well as the shaping of personal identity (Hatch, 1968). The *vivre ensemble* mode was the essence of the collegiate ideal. Brothers and Hatch (1971: 263) emphasised the federative component that is the on-campus living for new entrants:

“The value of hall of residence for the student in his first year is fundamental and can shape future social networks indelibly.”

Yet, life in student residence did not please everyone. By means of diversity in the residential supply, students had the possibility to opt for the housing that suited their preferences. Interestingly, the report alluded to residential pathways which will be thoroughly considered in the thesis:

“For many, a year in a hall of residence is the best introduction to adult social life; for others, the greater freedom of the bed-sitting room or flatlet may be more appropriate.” (Robbins Report, 1963: 195)

Nevertheless, the ethos that once built its reputation would abruptly decay as the new civic universities amplified their presence amidst the already entrenched institutions. Besides, the augmentation of the total number of universities in the country brought a halt to residential provision by the institutions. Because of cuts in government spending, caused by the outset of the economic recession in the early 1970s, investments towards building student halls of residence were consequently curtailed. Nevertheless, the unfavourable financial climate was not the sole reason of the decline in providing halls to students attending HE. Difficulties of hosting students aroused in the years following the Robbins Report. They resulted of a shift in students’ needs and preferences.

2.4 Students’ Growing Preference for the Private Rented Sector

The restructuring of the HE system, as advocated by the Robbins Committee, generated the emergence of a displacement of values. Scott (1995) claimed that the creation of new HEIs contributed to the appearance of flourishing terms, such as ‘lifestyle’ and ‘liberation’. The progressive erosion of an elitist education in favour of a mass participation in HE generated a new educational spirit, also impacting the perceptions of student residence. Therefore, the 1960s were an essential decade for the development of new patterns in student accommodation. Though the first half of the decade consisted of magnifying the development of halls of residence, the second part was marked by the inability of institutions and public authorities to maintain the pace of student residential provision. From then on, the loss of control and regulation exerted by the HEIs regarding the provision of somewhere to live furthered the proliferation of other options.

Subsequently, the rupture with traditional student residence supply as well as the expansion of residential alternatives led to alterations in the jargon used. As noted in Silver (2004), the word ‘residence’ was progressively being substituted by the term ‘accommodation’. ‘Residence’ was associated with tradition while ‘accommodation’ designated a product stemming from the ending

of the in loco parentis structure (cf. page 10). In that way, Tight (2009) argues that students were no longer seen as children over whom moral duties must be exercised. The abandonment of the in loco parentis features allowed students to voice their opinions related to accommodation more frequently. Also, the sexes were gradually reunited under the same roof, which was not permitted hitherto. In addition, this period also saw the development of American campus' physical environment in Britain's new universities (Scott, 1995). Ergo, the Robbins recommendations about preserving the 'family' relationship between staff and students within the new HEIs became rapidly incompatible:

“The Oxbridge college has retained its combined residential and teaching characteristics, but other college-based universities are closer to a model of clustered halls of residence, only sometimes and sketchily associated with tutorial support. The problem we have seen in relation to a concept of community is that of the ‘other institutions’ for which Robbins made recommendations. Where students live, what facilities are provided, the numbers of students for whom they have any teaching or tutorial responsibility, the opportunity for ‘entertainment,’ the ease of contact, all of these have in the great majority of cases ceased to be relevant features of mass higher education.” (Silver and Silver, 1997: 39)

This alteration of the lexical field epitomised the persistent transitions experienced at that time around the student accommodation scope. This illustrated the onset of what Silver and Silver (1997) referred to as the ‘kaleidoscope of student accommodation’.

When Robbins expounded the aspiration of hosting two-third of new entrants within universities, reluctances were numerous because the projections of student numbers were ambitious. Living at home, in halls of residence, and in lodgings were the most provided types of residences. However, with the cuts in government funding for building halls of residence, the increasing number of students in HE had to fall back on other alternatives. Morgan and McDowell (1979: 16) denounced the incapacity (potentially of the government) to provide ample student habitations as the trigger for new residential options:

“This pattern of student preferences, combined with the limited, largely static supply of lodgings and purpose-built campus residences, has resulted in increasing numbers of students seeking privately rented accommodation in the open market.”

As for Silver (2004: 128), he asserts that this turnaround had a multi-causal explanation:

“Restricted hall provision, the unpopularity of lodgings, increased numbers of mature students in many institutions and changed student assumptions about independence,

all contributed to an increase in the numbers seeking privately rented accommodation.”

In the space of few years, the popularity of on-campus housing, especially halls of residence, had firmly declined, though it generally provided a superior quality than other types of accommodation. Students, supported by the NUS which became more disapproving towards halls of residence, began to take distance from costly, regulated and restrictive accommodation. Cameron (1969) reported that the main disadvantages of living in halls were, according to halls students, the high basic living expenses (despite low travelling expenses), the noise, and the lack of privacy. Indeed, the cohesive nature embedded in living in halls as well as the permanent supervision of the warden had stimulated students to search for an accommodation in the PRS. Their demands resulted in the building of flats and bed-sitters, which also aimed to fill the void of housing produced by the outburst in student numbers entering HE. Brothers and Hatch (1971: 212) observed the evolution of students’ housing demand:

“There is an increasing demand among students for purpose-built flats, and flats consisting of groups of bedsitters with shared cooking facilities are more and more thought of as the most sensible way of providing for students’ accommodation needs.”

However, this recommendation implied that the UGC had hefty capital to invest in student accommodation, which was out of the question for the government. Financial solutions to developing residential alternatives were required. According to Hatch’s investigation (1968) on student residence, providing student accommodation through housing associations and co-operatives was considered at the time by the NUS and some student unions in the country. Other individual initiatives were undertaken, such as the one by the University of Lancaster, where purpose-built student flats were developed by means of a financial commitment from an insurance company. This ‘sponsorship’ allowed the university to provide a decent standard of accommodation for a building cost per student lower than the traditional method.

It was reported by Cameron (1969) that students in lodgings were dissatisfied with living conditions, particularly the bathrooms and study facilities, as well as the high costs of rent and heating charges. Paradoxically, lodgings, especially the self-catering ones, were positively gauged by students for several reasons such as independence, freedom, and proximity to campus.

The insufficient provision of student accommodation posed the question whether HE was broad-shouldered enough to cope with the expansion of student numbers. Halls and lodgings were, at

once, insufficient in numbers, expensive, of poor quality, and unpopular. Living away from the elitist atmosphere of the paternalistic discipline of halls of residence to gain self-reliance and freedom were enough reasons to convince students to move into off-campus private rented housing. Nevertheless, the assessment of students' housing preferences was perceived difficult to perform:

“Student preferences over time have been difficult to gauge, as have their images of what constitutes university or college life. Residence on campus has at times been seen as the academically related ideal, whereas lodgings could be seen as more embedded in the mass society. Hall meant access to its sub-cultures and those of the institution itself, lodgings (if without an over-intrusive landlady) greater independence within the wider society. [...] Freedom of access to shared flats and new types of university or college housing, as well as the private market, meant new perceptions.” (Silver and Silver, 1997: 40)

Concurrently, since the mid-1950s, the renting sector had experienced a critical collapse in favour of the sharp peak of home ownership. In 1971, the housing market was equally split between ownership and renting. The PRS was the most affected by this continuous downfall: from 76% in 1918, it reached 11% in 1981 (ONS, 2013b). Additionally, the Rent Act introduced in 1974, aiming to ameliorate the tenure rules in favour of tenants of furnished property, was an insufficient help. Thus, a large number of students started to occupy private letting properties, despite the high uncertainty that this declining market may not absorb the impulsive increase in student demand.

The study conducted by Morgan and McDowell (1979) about the seeking of student residential alternatives in the 1960s and 1970s proved to be decisive in the comprehension of the origins of student massive distribution in the PRS. The authors have identified that residential patterns were generally related to the year of study. The tendency was for younger students to live in institution-owned accommodation. Older students were more likely to live in the private sector. According to a residential distribution survey conducted in the polytechnic institutes of Brighton and Leicester in 1975, about half of first year candidates lived in university properties, though less than a third of postgraduate students resided there. For second year students up to postgraduates, about half of them resided in privately rented dwellings. Student occupations of private housing were the sequel of the evolution of the interrelationship of supply and demand in the housing market:

“This reflects both student preferences and the operation of rules of selection in the institutional sub-market that discriminate in favour of first-year students.” (*ibid*: 26)

In brief, first year students particularly appreciated the advantages of halls and houses supplied by their institutions, such as the physical comfort of the bedroom, the sense of community, opportunities to create friendship, the extra-curricular activities, and the provision of meals and cleaning tasks. Thereafter, the concept of living within a self-contained residential community, under the supervision of a warden, did not incite older students to stay in halls and opted instead for accommodation in the general housing market. To absorb the increasing number of students rerouting towards the private rented sector, different planning approaches were developed. In this way, Hatch (1968) reported that some universities such as Newcastle and Edinburgh converted old town houses into bed-sitters with common amenities, and were generally reserved for postgraduate students. Similar processes were observed in Hull, Leeds, and Leicester by Brothers and Hatch (1971). Pilot-schemes of properties conversion were established, such as the Student Houses at Edinburgh University:

“The potentiality of this type of converted accommodation was immediately appreciated, and by the end of 1966 there were twenty-four such Student Houses accommodating a total of 397 students, and purpose-built accommodation of this type within the Pollock Halls of Residence.” (*ibid*: 325)

In York, a housing association of local professionals specialising in the acquisition and conversion of existing properties used for students was set up in 1964, the same year of the introduction of the Housing Act, in which more powers were given to the Housing Corporation (Colquhoun, 2008). Although the conversion of old properties remained highly dependent to the local housing market’s situation, this mechanism permitted the reinforcement of the stock of accommodation available to students in HE. However, Brothers and Hatch (1971: 342) argued that the conversions at reasonable costs “can only be a small part of the answer for student housing needs”.

More ambitious schemes were adopted in some university cities. Manchester University erected the Owens Park ‘student village’ in 1966; it is strongly symbolised by its high tower and its overall provision of over a thousand bed spaces (cf. Figure 2.3). The cost of the operation had put off other universities to invest in purpose-built student flats. Until now, Owens Park still accommodates university students, despite several unsuccessful plans to demolish the buildings (Manchester Evening News, 2004). Some university flats built during the mid-1960s were recently refurbished; this was the case, for instance, with Towers at LU and Henry Price Residence in Leeds.

Figure 2.3 – Owen’s Park Tower in Manchester



Source: The Directorate of Estates, the University of Manchester (http://man-estates-fs5.ds.man.ac.uk/PSU/Building_Information/Building_Info.aspx?StrBL_ID=082AC&CampID=S06&NameID=Owens%20Park%20-%20Tower%20Block)

Thus, the development of university flats was considered a long-term solution to fill the student housing void. The outbreak of students in the PRS implied that the issue of accommodating students was generated by a more general and grave problem of the housing market and of the whole society (Morgan and McDowell, 1979). Effectively, this era was also marked by the rise of the number of young people leaving the parental nest in pursuit of independence and freedom. This social group, generally with limited income, was restricted to occupying rented properties by necessity, not always by choice.

Their preferences targeted areas with a high concentration, what Morgan and McDowell (*ibid*: 60) depicted as transitional areas:

“Typically characterized by large Victorian and Edwardian houses originally built for middle class families and their servants and now subdivided and multi-occupied by lower status groups and young people.”

This intense residential competition also resulted in pressures on the wider housing market which contributed to the scarcity of accommodation available to low-income households. Thus, groups of low-income households were facing the harsh competition of students in a rapidly declining private sector exacerbated by limited resources and equivalent accommodation options. The

impact of students' growth in the PRS has been considerable, not only for the students themselves but also for other households relying on private landlords. On the other hand, the principal asset of the student group is their ability to be 'flexible' housing consumers. In a similar fashion, they can easily form groups of various sizes in order to match the supply on the housing market is a determining advantage compared to other groups. Morgan and McDowell (1979) observed that in order to secure a place to live in the general housing market, many students are prepared to lower their criteria standard, keeping in mind that it is for a limited amount of time. Additionally, within the search for private rented dwellings, students structured their decision by putting significant factors into the equation, such as the levels of independence and sociability, the physical attributes of the accommodation, and the location and distance to lecture rooms. Yet the paramount criterion was the cost of rent and there again, students were favoured with this propensity of pooling financial resources to pay higher rent.

The change of student accommodation preferences operating in favour of the PRS in the mid-1960s marked the nascence of housing market tensions between the local residents and the students, perceived as 'intruders'. Indeed, it was argued that students' needs were exclusively seasonal and that their parental home constituted their 'real home'. Moreover, it appeared that following the application of the 1974 Rent Act, private landlords in Nottingham proposed to ban students from their properties (Morgan and McDowell, 1979). The bone of contention was that the new legislation targeted the reduction of excessive rent cost that students could claim to the rent officer. Some private landlords were reluctant to let their property to students, chiefly based on misconception regarding their *art de vivre*.

Lastly, student's residential presence in the PRS in the 1970s was not seen as widespread. In the towns investigated through the body of research, there existed a relatively visible presence; though no pockets of high student concentration were recounted (*ibid.*). Consequently, students formed a minority group in the housing market, suspected by the local authorities of being able to impact the open market via a fierce competition and rental bids higher than the actual market value. However, their specific demands were for a type of accommodation that was generally only eligible to the student population, as the poor physical quality of the property may put off other prospecting households. Silver and Silver (1997) gave a clear exposé of the social and cultural fragmentation of the student community, tied with the spatial separation between on and off-campus of students accommodation. The student community became increasingly more heterogeneous such that it would be fair to use the term 'communities'.

Thus, the PRS enabled the HE system to fill the housing voids on campus. Students persistently rejected places available in halls and lodgings in favour of similar cost properties in the private sector, allegedly the price of independence. The percentage of full-time students living in private rented flats, bedsitters or houses was between 40 to 50%. This trend of residing in private rented dwellings remains students' preferred housing choice today. Much more than a residential alternative amongst others, living in private rented housing causes the development of an 'off-campus lifestyle' amongst students and with the local residents, symbolising the 'town and gown' tensions (cf. Section 2.9).

2.5 Thatcher's Era and the Neoliberalism of Higher Education

This section addresses the radical changes that have affected the British HE system in the 1980s and early 1990s. This era was marked by the accession of neoliberalism as the dominant political force in the UK. The Conservative government, led by Margaret Thatcher, won the general elections in 1979. The UK was about to experience a profound social and economic restructuring. Policies carried out in the 1980s have dramatically impinged on directions given to HE.

The economic crisis of the 1970s having unfolded, the 1980s began with cuts under the heel of Thatcher, in public expenditure. This period is referred to as the 1981 cuts crisis. Therefore, state finances made available to HE were not spared. Thatcher was familiar with the HE system as, before becoming Prime Minister, she occupied the function of Education Secretary from 1970 to 1974. Gillard (2011) states that her twin aims were to turn HE from a public service into a market, and to transfer local authorities' power to central government.

After a rapid growth in participation in the post-Robbins' years, HE underwent a long pause in the 1970s and a large part of the 1980s. In the early 1980s, about 13% of young people under 21 entered HE straight from school (Dearing Report, 1997). Under great pressure, universities had to fully respond to the imperatives set by Thatcher's successive governments (Edwards, 1989). Subsequently, dramatic changes were encouraged by the government leader. A more *dirigiste* posture was assumed by the UGC, which became increasingly more selective in the process of allocating available funds (Salter and Tapper, 1994), and hoped that this vision would spread amongst universities (Tight, 2009). Throughout the education system, the new philosophy erected by the neo-liberal vision, was to enhance the efficient use of resources. In the space of few years, university budgets were truncated by 20%. This implied that universities' grants were severely curtailed, research funding reduced, and 6,000 university teachers 'released' (Edwards,

1989). This reshaping of the system brought about the introduction of higher fees to “students not having the requisite connection with the United Kingdom, the Channel Islands or the Isle of Man” (the Education (Fees and Awards) Act, 1983: 1). Consequently, HEIs were allowed to charge higher fees to overseas students.

The neoliberal style reforms were reinforced in 1985 with the *Jarratt Report*, commissioned by the Committee of Vice-Chancellors and Principals (CVCP), which advocated the growth of a more efficient, corporate style university (cf. McNay, 1995; Ward, 2014). The list of recommendations was extensive, and radical changes were urged. Efficiency savings by adopting business and industry management practices and methods were the order of the day. The government emphasised bringing HE closer to social and economic needs. HEIs were encouraged to become more entrepreneurial as well as to innovate and make profits both from academic and non-academic activities (see Clark, 1998; Gray, 1999). The term ‘management’ in HE first appeared in the late 1960s and 1970s (Scott, 1995). This managerial vision of authority is clearly defined as:

“Managerialism, that is, the shift in power from senior academics and their departments to the central institution and the dominance of systems over academic values, resulted in part from institutions’ need to meet new demands with fewer resources.” (Kogan, 2002: 57)

Step by step, the collegial spirit of institutions faded, replaced by a corporate ideology (McNay, 1995), and the management approach became broadly pervasive. The university’s mission changed fundamentally. Academic departments were perceived as budget centres (Tight, 2009). Scott (1995: 65) deplored that this posture eroded the autonomous nature and culture of universities:

“The movement towards more managerial forms of institutional government was a positive response to the success of university development during the 1960s and 1970s as much as it was an emergency strategy to cope with the depredations of Thatcherism.”

A symbol of the profound structural drift, the notion that students are university’s customers was first mooted in the Jarratt Report (CVCP, 1985). Subsequently, vice-chancellors shouldered the role of chief executives (Kogan, 2002); senior administrative officers’ task was to support the vice-chancellor, and strong corporate strategies were then established. This new configuration, associating HE as a market and students as customers, intensified the needs for new legislation frameworks, which occurred in the late 1980s and early 1990s.

The decade of restructuring saw a flurry of published reports and adopted acts. The 1988 Education Reform Act (ERA), also known as the 'Baker Act' (named after Kenneth Baker, the then secretary of state for education), was one of the most influential pieces of educative legislation in decades in the UK. Indeed, this act signified the end of the binary system as the local authorities were being stripped of ownership of polytechnics and most colleges (Williams, 1989; Tight, 2009). The ERA also abolished the UGC and replaced it by the UFC. The latter substituted academic members and turned into a 'harsher businessmen-dominated' statutory body (Palfreyman and Tapper, 2014). Alongside the installation of the UFC, the HE sphere experienced the emergence of many quangos, such as the Polytechnics and Colleges Funding Council (PCFC) and the Public Sector of Higher Education (PSHE). All these changes hinted that the sources exploited to fund HE will have to evolve as the deficits kept increasing for several universities in the UK. The ERA was designed with an eye to reinforce the State's central power against the universities and the funding bodies (Salter and Tapper, 1994).

In November 1988, the government presented its disputed White Paper, *Top-Up Loans for Students*, which laid out a policy for top-up student loans. This student loan scheme aimed to be effective, in the autumn of 1990, for all new HE full-time entrants, irrespective of their family income, and at a zero real rate interest. The White Paper was widely criticized by the pundits, such as Barr (1989). After a series of false starts in the mid-1980s (Pilkington, 1994), and despite the pessimism accompanying the policy, student loans were introduced through the 1990 Education (Student Loans) Act, which consisted of Thatcher's last education act before she passed the torch to John Major. Regarding HE, Gillard (2011) qualifies her legacy as 'miserable'. The student loan scheme was operated by the Conservative government and administered by the Student Loans Company (SLC) (Callender and Kempson, 1996).

The 1990 loan policy aimed to shift part of the cost of student support in HE from the state, and from parents to students. Also, the policy targeted the reduction of students' reliance on public funding, such as the maintenance grant, by suggesting loans as an additional income (see Payne and Callender, 1997; Callender, 2006). The elaboration of top-up loans illustrated the drastic transformations of the student financial support system. Indeed, within a few years, students were deprived of the eligibility for claiming social security benefits, income support, unemployment benefits (during vacations), and housing benefits (Pilkington, 1994). Additionally, student grants were frozen at nominal 1989/90 levels. The 1980s and early 1990s upheavals contributed widely to the aggravation of student's social and financial conditions.

The orientation given to HE in the early 1990s was a prolongation of the trends started in the 1980s. The Further and Higher Education Act 1992 irreparably removed the binary policy, instituted in the mid-1960s, by elevating the polytechnics to university status as well as combining the UFC and PCFC into a new funding body, the Higher Education Funding Council for England (HEFCE). The uniting into a single system of polytechnics and universities authoritatively dissipated the vision introduced by Robbins. Elite values continued to persist, although HE experienced a massification of its structure:

“In the space of just 7 years, between 1988 and 1994, the participation rate for young people doubled from 15 to around 30%, and the number of higher education students in the English system increased by more than half.” (Tight, 2009: 82)

An important element in this HE growth has been the expansion in participation of women. Indeed, prior to the Robbins Report, women made up only 26% of students. At the arrival of Thatcher as Prime Minister in 1979, they accounted for slightly more than one-third. In 1995/96, the gender balance in HE participation was established (Dearing Report, 1997). Whilst this boost in student numbers was interpreted as a great success by the government, the policies instituted in the 1980s had severe repercussions upon the provision of student bedspaces.

The university was changing, and so was the profile of student accommodation. Although few researches conducted on UK HE dealt with student accommodation over this period, accommodating students became less and less seen as the remit of the public sector. Rather, private developments impinged on British campuses, especially amongst the institutions that were the most harshly hit by the 1981 cuts crisis, such as the ‘plateglass’ new universities (e.g. Brighton, Coventry, Norwich, and York), and the former CAT. As recommended in the Jarratt Report, the emergence of commercial investors within universities caused the separation of a function of accommodation from the institution’s educational mission (Blakey, 1994). Hence, the trend was towards a privatised management of on-campus accommodation. Insisting on the lack of consultation and research carried out on the topic, Blakey ascribed this change to two main reasons: the rise of managerial practices within the institutions and the intensification of commodifying accommodation as an incentive in student recruitment. The latter made the provision of accommodation a significant asset for universities to distinguish themselves in a competitive HE system:

“What has dominated student accommodation policy since the mid-1980s has been the drive from institutions to respond to Government policy and expand their intake.

Coupled with increasing competition for students this imperative has led most HEI to conclude that in order to compete effectively in the market place, the institution must have a positive image in terms of being able to provide to potential students accommodation of its own. The HEIs have striven to avoid having a negative image caused by students having difficulty finding places to live.” (Blakey, 1994: 74)

However, the worsening of student’s conditions and finances contrasted with the universities’ needs “to satisfy the student’s desire to live with other students and to avoid social isolation” (*ibid*: 76). The inadaptability of accommodation supply and demand became obvious:

“The major variable here is the cost of residential accommodation. Institutions are now obliged to charge the ‘full cost’ of accommodation, because residences must be ‘self-financing,’ but there are differences in the commitment to the type of residences (full or part board, halls or houses in multiple occupation) and to quality (cleaning, choice of food, cheap build). There are also variations in the costing of residences, e.g. to include all-year maintenance debt charges, security, administration. There has been a real increase in residence fees (18% in 1992/93 for self-catered accommodation against 3% in the private market) but there are considerable variations in the levels of fees and in the types of contracts or licences, between a 40+ weeks’ contract (to cover short vacations) and a 31 weeks’ (academic year only) contract has a significant impact on debt levels. Even the terms within a contract or licence will vary; for example, those without the right to give notice during the year cannot benefit from economies of the private rented market. Advance payment of hall fees presents cash-flow problems, and partly explains the relatively high level of debt amongst first-year students as part-board accommodation is on average 85% and self-cater is 75% of a full grant.” (Pilkington, 1994: 63)

The increase in student numbers, coupled with the new orientation held by universities, strengthened the influx of a large number of students into a private rented sector under major transformations. The 1980s also marked a watershed in the residential sphere with the institution, by Thatcher’s governments, of major acts such as the 1980 Housing Act, also known as the ‘Right-to-Buy’ scheme, the 1988 Housing Act, and the Local Government and Housing Act 1989. The PRS was at its lowest level ever recorded (i.e. 11%) while in contrast, socially renting housing was at its highest peak (i.e. 31%) (ONS, 2013b). Yet, two compelling changes exemplified the evolution of the residential structure: the boom of home ownership, especially amongst young people (Ford, 1999), and rent deregulation through the provision of assured shorthold tenancies as proclaimed in the 1988 Housing Act (cf. Crook, 1992; Rhodes, 2006; Heath, 2013). It should be added that this legislation also repealed the ‘fair rents’ system set in the 1965 Rent Act. Consequently, the PRS recorded an expansion of residential mobility through rapid-turnover of tenants, especially in the under 30 age group (Hughes and Lowe, 2014). The

erosion of students' income, notably outlined by the suppression of housing benefits (also known as rent rebates), heightened the demand of this group in the private market.

To conclude, the surge of optimism generated by the prominent educational reforms in the 1960s gradually dimmed in the following decade. Far away from the UK's HE 'golden age' that represented the 1950s and 1960s, the 1980s' HE policies promulgated a managerial vision of authority. Thatcher's legacy to the universities consisted of an intense marketization of the sector. The first league tables of departments flourished within and between universities. The 1980s saw an increase of inequalities between institutions, staff and students. The latter experienced a flagrant deterioration of their conditions. Henceforth, regarded as consumers, students had to compete in the residential sphere. The second part of the 1990s also brought up drastic changes within the HE system, with the introduction of tuition fees, as well as in students' accommodation supply, through the introduction of 'buy to let' mortgage schemes.

2.6 The Dearing Report and Introduction of Tuition Fees

This section aims to illustrate the way in which HE major policies in the second half of the 1990s followed on from the 'Thatcher years,' in spite of the assumption of power by Tony Blair's (New) Labour government. This period was characterized by the introduction of tuition fees, and, to a lesser extent, the implementation of a new student loan scheme. Pressures over HE funding structure substantially affected students' finances, and played a fundamental role in their residential decision-making processes.

As examined in Section 2.4, the universities' mission radically changed, symbolised by the emergence of a mass system. In 1997, HE experienced a new milestone with the publication of the *Dearing Report*. Sir Ron Dearing was, at the time, the Chancellor of the University of Nottingham. Being part of a series of reports under The National Committee of Inquiry into Higher Education and commissioned by the Conservative government in 1996, the Dearing Report's influence in the 1990s can be comparable to the Robbins Report's in the 1960s. Although, unlike the former, the newer review did not, in over 400 pages, burden itself with questions related to student accommodation. Hence, the document was issued in the context of increasing participation and grave concerns about the funding state of HE:

“We express here our concern that the long term wellbeing of higher education should not be damaged by the needs of the short-term. We are particularly concerned about planned further reductions in the unit of funding for higher education.” (Dearing Report, 1997: 2)

The sharp expansion of student numbers, accounting for about 33% of the participation rate was, in part, blamed for the financial difficulties experienced in the British HE system (Barr, 1993; Barr and Crawford, 1998a, 1998b). In order to regulate the influx of new university entrants, a framework capping student numbers, known as the Maximum Aggregate Student Numbers (MASNs), was already set up. In 1997/98, institutions were allowed to recruit up to 2% above their MASNs before risking financial penalties (Times Higher Education, 1997). In the vein of the past trends implemented towards the increase of knowledge-based economy qualifications, the funding council also had the capability to allocate extra full-time undergraduate places in specific disciplines such as science, technology, and engineering.

Aiming to consolidate the HE system economically, and in a sustainable way, the Dearing Report drew up a list of 93 recommendations focusing on the funding, expansion, teaching, and the overall academic future of the UK. Amid the proposals that most relate to the purpose of this research, were those related to the monetary contribution of individuals and their families with regard to university costs. The subjects of Recommendations 78, 79, and 80, in the report, were the ones that aroused the most disputes. They alluded to the redevelopment of financial support and contribution of students. The key message recommended the introduction of tuition fees on a par with 25% of the average cost of HE tuition (Dearing Report, 1997). The means tested fee, payable upfront, equalled to a £1,000 annual contribution for each domestic and European Union (EU) full-time undergraduate student, with the exception of the poorest students (Payne and Callender, 1997). According to the 1997 report, the invoked reasons for requesting a contribution from students were:

- Higher expectations from students if they contributed to their education
- To make students academically responsible and committed
- Students received the benefits of what they spent on HE

Introducing tuition fees for the academic year 1998/1999 was the outcome, above all, of economic and political logics to reduce the so-called 'funding gap' (Greenaway and Haynes, 2003). This only concerned English universities (Wales and Northern Ireland establishing later on their own funding systems, whereas Scotland abolished tuition fees in favour of the graduate endowment). Yet, the Dearing Committee stated that the contribution of graduate students cannot solely solve funding issues. The introduction of a flat rate tuition was connected with the establishment of the student loan scheme in 1990. Institutionalized through the SLC, which

disbursed and collected payments, this scheme was one of the symbols of the funding crisis in HE. This fixed-term loan, or mortgage-style loan, aimed to support half of student maintenance costs, the other part being paid by grant and parental/spouses contribution (Barr and Crawford, 1998a). At the time, student economic conditions were deemed ‘unsatisfactory,’ given that relying on family contributions remained unstable (Barr and Crawford, 1998b; Barr, 2002). Woodhall (1970, 2004) pointed out the importance of adapting student aid schemes to changing student needs, especially those with stringent finance constraints. In a similar fashion, the Dearing Report identified notable differences of contributions in relation to families’ levels of income. This income cap was denoted in Greenaway and Haynes (2003), and Machin and Vignoles (2006), who argued that, between 1980 and 2001, the share of students from low-income backgrounds remained both unchanged and confined, and reinforced the dynamic of socio-economic exclusion.

At the time of issuing the Dearing Report, only one-third of students received a full maintenance grant. The available support mix between loan and grant was distributed evenly in 1996/97 (Dearing Report, 1997). In 1998, a new form of student loan was implemented. The major specificity of this new loan scheme was that the repayments were to be collected through an income contingent rather than a mortgage basis. This implied that loan repayments were carried out at a certain percentage, 9% according to Hubble (2014), of the graduate’s subsequent earnings. This method of loan reimbursement is still applied today. In addition, the Education (Student Loans) Act 1998 authorised the transfer of public sector student loans to the private sector. However, some commercial banks already operated loans through the Career Development Loans (Pilkington, 1994). A year after the introduction of the new loan scheme, maintenance grants were permanently abolished at the cost of an extension of maintenance loans to all students. This decision was taken against the Dearing Report’s guidance (Tight, 2009; Wyness, 2010). Wagner (1998) found regrettable that Blair’s government did not flaunt its political objectives before the publication of the document, which could have enriched the debate on the HE funding crisis. Albeit little attention was given to student accommodation in the Dearing Report, a few sections described the effects of the massification of the HE system within the student housing context:

“Growth in student numbers has increased competition for accommodation in the vicinity of higher education institutions, driving up rents. At the same time, institutions have been precluded from subsidising student accommodation from their Funding Body grants. Increases in student support have been linked to increases in

prices, while earnings have been increasing faster, so students have become poorer relative to the population in general.” (Dearing Report, 1997: 48)

Furthermore, the repercussions of the rent deregulation policy became even more apparent in the second half of the 1990s, subject to nearly 20 separate reforms to housing benefits. Indeed, the mean rent grew linearly in the PRS, and was, on average, over £80/week (Shelter, 2012). Concurrent to the rents soaring in the private market, local authority rents doubled between 1980 and 1997. Meanwhile, full-time students, designated ineligible for housing benefit since 1990, were unable to claim the single room rent, that housing assistance introduced in 1996 for single people aged under 25 (Gibbons and Manning, 2006).

The evolution of the HE marketplace in the UK has continued with profound changes through the endowment of capital policies that have impacted a student population more and more exposed to situations of hardship, debt, and poverty (e.g. Winn and Stevenson, 1997; Barr and Crawford, 1998b; Woodhall, 2004, 2007). In 1998/99, the same year as the implementation of the income contingent loan, 72% of full-time students took out a loan which was worth, on average, £1,891. This corresponded to nearly 60% of their total average income (Callender and Kemp, 2000). Thus, the financial constraints endured by students had prominent effects on students’ residential activities. Between 1988/89 when students were still eligible for housing benefits and received on average £78, and 1995/96, the net student housing costs rose by 23%, which was less than the inflation rate of 37% (Callender and Kempson, 1996). Interestingly, during this period, residing in institution maintained accommodation represented nearly the same cost as living in the PRS.

Callender and Kemp (2000) provided gripping findings of a longitudinal study on the nature of housing and living costs. It was demonstrated that between 1995/96 and 1998/99, the proportion of full-time candidates living in the private sector declined, to the benefit of university accommodation and parental homes. Yet a majority of students, with the exception of 1st year undergraduates, lived in the private market. Rhodes (1999) reported that in some universities, 1st year students, or ‘freshers,’ were guaranteed university accommodation. As aptly described by Rugg *et al.* (2000), this period saw the emergence of a student niche market, led by a growing reliance on the PRS, to accommodate students. Henceforth, the impact of student demand on housing markets has been exhaustively investigated, analysed, and commented on. The next section sheds light on the development of a student residential geography from the years 2000 onwards.

2.7 The Browne Review

Against a backdrop of a continuous HE funding crisis, the government released the *Higher Education Act 2004*. The most disruptive measures included the introduction of variable tuition fees and the reinstatement of maintenance grants allocated to students hailing from low-income households (HMSO, 2004). These ‘top-up fees’ for UK and EU students were set at a variable rate between £0 to £3,000 per annum, and rising annually in line with the inflation. Unlike the 1998 tuition fee scheme, the new ‘plan’ introduced in England and Wales in 2006 ordained that the cost can be deferred via public loans and repaid through an income contingent once the student’s earnings were above £15,000 per year. Concerning the maintenance grant available to students from low-income backgrounds, the amount was set up to £1,000 year, and excluded other financial resources such as fee support and student loans (Barr, 2004; Dearden *et al.*, 2011).

In this act, it was expected by the Labour government that an updated review of the HE system would be undertaken in 2009. This promise was kept, and the same year, the beginning of the review was announced, chaired by Lord Browne, the former chief executive of the energy company BP (Wyness, 2010). *The Browne Review*, also called the *Independent Review of Higher Education Funding and Student Finance*, was published in October 2010. Based on six key principles touching upon HEIs’ funding, student choice, improving teaching quality and widening the participation rate by facilitating access to low-income backgrounds’ students, the document recommended vast and major changes to HE in England (Browne Review, 2010). Amid the most controversial changes, some of which led to tremendous press coverage (and still do grab the headlines), the removal of the cap on tuition fees, with HEIs being able to charge significant tuition fees, had undeniably triggered the strongest reactions. There was, in the Browne Review, the specification of the need for increasing private contributions to support the HE system as previous reforms were deemed unsustainable. The limitation in public resources to invest in HE also constituted a rational reason to require students to pay more for their courses. Hence, the report aimed to put students at the heart of the system:

“In our proposals, there will be no single fixed price for higher education. Institutions are all different and they provide a wide range of different courses. We want this diversity to flourish. Different courses will cost different amounts. Institutions will have to persuade students that the charges they put on their courses represent value for money.” (Browne Review, 2010: 25)

The committee commissioned for this review did not fix a specific cost to enter HE. Yet, it was stipulated that a minimum levy at an annual charge of £6,000 would be required for all

institutions. Furthermore, the Browne Committee counselled to not charge student with upfront fees, instead the government would pay these costs. Students could benefit from a fee loan that covers the full tuition fees. The loan's repayment will continue to be based on an income-contingent basis as established in the previous reform. Nonetheless, graduates would pay back their loans in instalments set at 9% of future income above £21,000 per annum, instead of the previous £15,000 threshold (IFS, 2010). The loan repayment duration would increase from 25 to 30 years. After this period, the government will write off any outstanding balance.

Following the publication of the Browne Review on 12 October 2010, pundits were divided about the benefits of applying such drastic reforms (THE, 2010). Although being a keen and critical observer of the past funding reforms, Barr (2010) conceded that compared with the arrangements proposed in the review, all other alternatives were far worse. These reforms intervened whilst the participation rate in HE was nearly 50% for the 2011/2012 academic year, which was regarded as a crucial goal for the policymakers (BIS, 2013).

Meticulously considering all recommendations expressed in the Independent Review of Higher Education Funding and Student Finance, the UK government broadly accepted the thrust of the proposals and decided to implement the new reforms in September 2012 (Chowdry *et al.*, 2012). One of the most consequential reforms achieved by the government, which was not explicitly clear in the review, was setting up tuitions fees of up to £9,000 per annum for universities in England (BBC, 2010a). This decision was highly contested by students through a series of eventful student protests all over the country (BBC, 2010b; The Guardian, 2010). The reform was, somehow, put into force for the academic year 2012/2013, and brought up a vast array of consequences.

Deriving from the long-term vision shaped in the Robbins Report (1963), HE progressively widened its access to a larger proportion of the UK and international population. The number of students (full-time and part-time merged) expanded significantly despite the introduction of student's mandatory contributions in the late 1990s. In the academic year 1998/1999, at the introduction year of the £1,000 means tested fees, the number of students enrolled at a HEI in the UK accounted for approximately 1.8 million. For the establishment of tuition fees up to £3,000 per annum in 2006/2007, there were 2,304,700 students in UK universities. Although a high peak of about 2.5 million was recorded in 2010/2011, students' number has since plummeted. In 2012/2013, year of the introduction of the £9,000 annual tuition fee, HESA (2014b) recorded 2,340,275 students enrolled. The sturdy decline of overseas students at English universities,

nearly one-quarter between 2010/11 and 2012/13, had a notable impact in the overall decrease of enrolled students in the UK (HEFCE, 2014). The most provided arguments to explain this fall are that tuition fees and a strengthening of immigration rules have discouraged non-UK students, and more generally non-EU students, to study in the UK (BBC, 2014a).

To conclude on these recent and vital changes in the HE in the UK, new entrant students resigned themselves to deal with paying higher tuition fees at the risk of worsening their debt. The Browne Committee used the term ‘sustainability’ as a research leitmotiv in the review. It qualified the HE’s need to balance private and public investment to allow the sector to grow to meet qualified demand (Browne Review, 2010). However, the ‘fear of debt’ may lead the student population, and more specifically students with the lowest incomes, to elaborate new strategies to balance the dualistic relation of income versus expenditure.

2.8 Housing Choice and Triggers for Moving

A substantial number of publications have examined residential choices at the individual level (De Jong and Fawcett, 1981; Lindberg *et al.*, 1992; Floor and Van Kempen, 1997) as well as at the household level (Molin *et al.*, 1999; Coulter *et al.*, 2012; Rérat *et al.*, 2015). However, the decision-making processes of students have yet not been investigated. The examination of the socio-economic and sustainability mechanisms embedded in students’ housing choice could deepen the understanding of young people residential mobility over the HE time span. This would participate in the elaboration of new directions to the geographical scholarships, as encouraged by Coulter *et al.* (2015).

Prior finding an accommodation, a *sine qua non* for mobility, the intention to move has to be triggered. Deutschman (1972) considered six main reasons motivating a household or an individual to move:

- household type (e.g. stage in life)
- change in number of persons in household during time increment considered
- the type of present residence (e.g. own or rent)
- the matchup of environment with household type (e.g. place utility)
- employment opportunities
- changes in environment

Notwithstanding, all these motives do not necessarily apply to the HE residential context. The element the most appropriate to the student residential decision-making is related to the place

utility, a measure of the (un-)attractiveness of a residential area as perceived by the prospective individuals. Bible and Brown (1980) argued that the concept of place utility contributed significantly to understanding the migration decision. Using Likert scaling, the results of the importance of place attributes amongst the different student groups are presented in Section 8.2.

Additionally, student housing career is accentuated by the short time span in which students have to re-evaluate their housing satisfaction in order to trigger or not the move. Indeed, students' residential preferences are rapidly evolving, notably amongst undergraduate students. The student life course, comprised of 3 to 5 years, is somewhat comparable to a life course due to the frequency of opportunities to change residence:

“The temporal context of residential preference can be conceptualized in terms of age or life cycle. Values change over the life course, and these changes are presumably reflected in changes in residential preference.” (Lindberg *et al.*, 1992)

Student housing market also differentiates itself from the general housing market due to the popularity of the ‘first come, first serve’ basis. In the case of LU, the organisation of ‘Housing Bazaar’, generally in December, allows students to meet with landlords and letting agents to discuss housing opportunities. Albeit it is emphasised that students should wait before rushing and securing an accommodation for the following academic year, the positive effects of holding such event, only 2 months after the start of the term, are dubious.

Although it is considered that the change of residence is often associated with the hampering of individual's functioning in society (cf. Mulder, 1996), the residential shift from institution maintained accommodation to the PRS offers students with greater opportunities to acquire a new capital (e.g. housing search, housing negotiations, and more responsibilities within the household). On the one hand, students' desire to expand the buoyant pool of social relations developed in halls of residence into the PRS is unique. On the other hand, the high residential density in halls of residence could affect students' intention to move to a less crowded property/area. Defined as ‘crowding’, meaning a high number of persons per property, this concept is also associated with higher mobility (Mulder, 1993).

As Mulder (1996: 210) espoused: “decisions to move are rational decisions”. The pursuing of student lifestyles and the shaping of individual's identity (see Smith and Holt, 2007) are constant trigger to students' evaluation of their housing situation. The production of social relations through the housing setting is pivotal in the constitution of student residential pathway, accentuated by the development of studentification processes in local neighbourhoods.

2.9 Studentification and the Emergence of ‘Student Geographies’

This section reviews the growth of research on student accommodation from the year 2000. This era has observed the emergence of urban transformations tied to students’ presence in residential neighbourhoods. Alongside the provision of new student developments, the HE sector experienced further evolution of its funding system, with the tripling of tuition fees in 2004. Since the production of the Robbins Report, accommodation owned by universities have been modernised and adapted to suit students’ scalable needs (i.e. increase of self-catering options, technology devices and of course, the emergence of the internet). Nonetheless, and as discussed in Section 2.3, halls of residence are still perceived as the best introduction to adulthood and the ideal preparatory stage before immersing into the PRS:

“Halls of residence offer a context in which basic lessons about budgeting and the development of social skills can take place in an environment where mistakes are unlikely to carry long-term consequences.” (Rugg *et al.*, 2004: 31)

Furthermore, the creation of a social cohesion and the shaping of an individual lifestyle compose the prevailing apparatus in living on-campus, especially for the freshers (see Christie *et al.*, 2002). Hence, if it is strongly recognised in the literature that most entrants to university reside on campus, the PRS has the distinctive features of absorbing the expansion of student numbers as well as arousing strong residential interests.

Between 1991 and 2001, the PRS increased in size by 18% (Rugg, 2014). Introduced in 1996 through the Association of Residential Letting Agents (ARLA), buy-to-let was developed to enable the further expansion of the deregulated PRS market (Lowe, 2014). Since 2003, and because of attractive buy-to-let mortgage schemes, a considerable number of individuals have invested in properties and have acted (legitimately or not) as student housing landlords (Savills, 2013). The regulated and supervised conversions of private properties that took place in the mid-1960s have since been replaced by a massive and ferocious commodification of student neighbourhoods, illustrated by the rising supply of HMOs. Encouraged by fiscal advantages and the development of a classic rent gap (Munro and Livingston, 2011), and where student housing demand is met with difficulty by HEIs, many landlords have purposefully purchased property and sometimes converted them in order to rent to students in response to rising student numbers (Rugg *et al.*, 2000). Subsequently, student lets proliferate in the PRS.

Opportunities to move from campus to the PRS emerge essentially by the end of the first or second year (Rugg *et al.*, 2004). Students willing to escape the institutional control over the

‘living together’ rules move off-campus (Bromley, 2006). The PRS also welcomes students whose applications to live on-campus have been declined, mostly due to the provisional shortage in beds. This residential conundrum mirrors the absence of primary guidance to match the substantial growth of students with bedspaces. In effect, strategic policies directed towards student populations were eroded, as notified by Rugg (1999) and Tight (2011) in regards with the Dearing Report. This situation has caused a mismatch between ‘controlled housing’ (e.g. university/private halls) and ‘unregulated housing’ (e.g. HMOs), and created a buoyant niche market for the student housing sector:

“The withdrawal of funding for accommodation has meant that provision has largely rested on a combination of increasingly limited HEI stock and a growing demand for properties in the private rented sector.” (Rugg *et al.*, 2000: 8)

“With university halls of residence just about able to cope with the increasing numbers of first year students and private sector student accommodation operators racing to scale up, most students ended up in the private rented sector.” (Savills, 2013: 3)

Thus, with universities’ financial leeway to expand their bed capacity being limited, living in the private sector becomes the only option for many students. Among the type of properties involved in the absorption of students, HMOs, estimated to be about 450,000 in England (Lowe, 2014), have come to symbolise students’ presence in the PRS over the years. There are three main types of HMOs: bedsits, shared flats/houses, and households with lodgers. The shared housing market is, in terms of size, the largest part of the HMO market, according to Lowe.

Prior to 1969, the definition of an HMO included the terms ‘lodgings’ and ‘family’ (Ormandy and Davis, 2014). Characterising an HMO with consistency was not an easy task. The point of disagreement lied in the lack of clarity between ‘single’ and ‘multiple’ occupation. In 2004, the Housing Act provided a statutory definition of the concept, which defined the living accommodation of HMOs to be, “occupied by persons who do not form a single household” (HMSO, 2004: 211). Additional criteria were added, such as the building conversion into self-contained flats (sometimes referred as a Section 257 HMO), common use of basic amenities (i.e. a toilet, personal washing facilities, and cooking facilities) by at least 3 tenants residing in the property. A large HMO is at least 3 storeys high and occupied by at least 5 tenants. This differentiation in HMO size is relevant for the licensing scheme implementation, which is explained further in the section. *Nota bene* that halls of residence and other types of student accommodation owned by the institution are not categorised as HMOs.

The NUS (2014) reports that the most important residential criteria for prospective students in the PRS are: cost of rent, location and convenience, and property condition. However, taking into account that a significant part of the PRS stock was built before World War I, HMOs are usually in poor conditions (Lowe, 2014). The literature also notes that the possibility to live with friends, and the degrees of autonomy and freedom, are crucial factors in the decision-making processes (cf. Bromley, 2006; Munro and Livingston, 2011) and students living in the PRS gain experience and awareness for their next move(s) in the housing market (Christie *et al.*, 2002). Rugg *et al.* (2004: 27) espouse that “students gained a ‘social education’ in renting”.

The exponential popularity of this housing segment has produced the unfolding of local urban transformations, symbolised by the ‘studentification’ of residential neighbourhoods. Coined to define the “influx of students within privately-rented accommodation in particular neighbourhoods” (Smith, 2005: 73), studentification is now widely featured in academic and media discourses. Smith (*ibid*: 74) argues:

“Processes of studentification connote urban changes which are tied to the recommodification of ‘single-family’ or the repackaging of existing private rented housing, by small-scale institutional actors (e.g. property owners, investors and developers) to produce and supply houses in multiple occupation (HMO) for HE students.”

In essence, studentification, which is derived from the concept of gentrification, encompasses a multidimensional frame which includes:

“Social: the replacement and/or displacement of established residents with a transient, generally young and single, social grouping.

Cultural: the growth of concentrations of young people with shared cultures and lifestyles, and consumption practices, which in turn results in the increase of certain types of retail and service infrastructure

Physical: the downgrading or upgrading of the physical environment, depending on the local context.

Economic: the inflation of property prices and a change in the balance of the housing stock resulting in neighbourhoods becoming dominated by private rented accommodation and houses in multiple occupation, and decreasing levels of owner-occupation.” (Universities UK, 2006: 12)

The extensive production of student housing in the private market illustrates the ‘first wave’ of studentification. The popularisation of living in the PRS has intensified competition in the

market between students and other social groups wishing to find a rental accommodation. This competition goes hand in hand with the decline of property values and with the expansion of rent prices (cf. Rugg, 1999; Rugg *et al.*, 2002; Savills, 2013). Yet the impacts of the student influx in this housing sector can only be understood by studying the nature of the market itself. Underpinning the formation of ‘student ghettos,’ studentification processes are associated with the replacement of permanent residents (notably families) with the transient population that signify students. Processes of studentification have mostly been investigated in the UK (e.g. Chatterton, 1999; Rugg *et al.*, 2000; Christie *et al.*, 2002; Smith, 2002, 2009; Smith and Holt, 2007; Duke-Williams, 2009; Hubbard, 2009; Munro *et al.*, 2009; Sage *et al.*, 2012a, 2012b; Kinton, 2013; Smith and Hubbard, 2014).

At the national level, Loughborough differentiates itself from the UK HE context. For instance, the 2% decrease of student numbers at LU between 2009/10 and 2013/14 has been four times lower than the national level. Indeed, using 2001 Census data, Hubbard (2008) ranks the Storer ward of Loughborough as the 8th most studentified wards in England and Wales. This ranking indicates that significant studentification processes in the town have been unfolding in Loughborough for a relatively long period of time. Hubbard (2009) also emphasises on the ‘strong sporting culture’ at LU and the need for students to live near the sport facilities as a significant motive in students’ residential decision-making processes.

Processes of studentification have also been reported in Ireland (cf. Kenna, 2011), in Spain (see Garmendia *et al.*, 2012), in Australia (Fincher and Shaw, 2009), and in the USA (cf. Bromley, 2006). At a global scale, He (2014) has investigated patterns of studentification processes in two villages in the Chinese city context, in central Guangzhou. In a similar vein to what unfolded in UK studentified areas, the development of fast food stores, snack bars, and restaurants targeted towards the student population is reported. In addition, local residents have benefited of students’ massive presence to invest in buy-to-let properties. Likewise, Gu (2015) argues the existence of marked discrepancies in the residential distribution of international and Chinese students within Beijing. Fincher and Shaw (2009) also note unintended studentification processes of foreign students, using the case study of central Melbourne. This differs greatly from the Loughborough context, as suggested in the analysis in Section 8.3.2.

The most undesirable effects of studentification unfolding in local areas embody anti-social behaviour from students: overspill of refuse and littering, degradations and rise of burglary rates, parking issues, noise and other nuisances, and visual pollution (due to the mushrooming of

letting signs). Furthermore, the cohabitation between long-term residents and temporary tenants has triggered tensions (Allinson, 2006; Smith, 2008). On top of causing the outmigration of established households, studentification of (previously) peaceful streets revives the historical ‘town and gown’ tensions. HE students are blamed by the ‘resisting’ original residents for the erosion of the social and cultural local community (Smith, 2005; Hubbard, 2008; Holdsworth, 2009). Bromley (2006: 6) summarises with clarity the conflict:

“‘Early to bed, early to rise’ clashes with the late-night party culture, and many homeowners become irritated at the increased competition for on-street parking and at students’ ignorance of local regulations about parking and trash disposal.”

The description of studentification processes in the academic literature and in the media transmits a negative image of students. This reputation is maintained by the National HMO Lobby, which is actively opposed to the concentration of students in HMOs, and works towards a better coordination between student populations and local communities. The main barrier to such implementation is the high turnover of student tenants in these areas, which impinges on the development of a healthy base for a relationship. On the one hand, local campaigns to cease the encroachment of students in specific neighbourhoods illustrates the spreading of ‘NYMBYism’. On the other hand, HEIs and students’ unions promote various educative campaigns for students in the PRS to be responsible residents and neighbours. As an example, LSU has launched several initiatives encouraging meetings between students and the local residents (see Section 5.2).

The introduction of HMO’s licencing and planning regulations limiting the establishment of student households in town pockets halted the expansion of further HMOs clusters in the vicinity of the university campus (Smith, 2008; Munro and Livingston, 2011). Specific planning regulations have been applied in studentified areas in Loughborough, Oxford, Warwick, and Bath, notably (cf. Section 5.2). Also, it is relevant to specify that accreditation schemes, encouraging landlords to adopt ‘good’ management practices, have been put into place in the early 2000s (Hughes and Houghton, 2014). Thus, the breach in the student housing market stresses the incapacity of HEIs to provide and coordinate accommodation for most of their students, handing over this mission to private investors:

“The concerns of private capital and those of the educational institutions are not always the same and there will always be differences in the priorities given to student housing by private developers and by educational institutions.” (Macintyre, 2003: 115)

The emergence of PBSA from the mid-2000s espoused the local mechanisms implemented to scatter students away from studentified areas (Smith and Hubbard, 2014). These modern developments privately manage the participation in the revitalization of brownfield spaces, although the off-campus location of PBSA is a strategic commodification argument (as displayed in Figure 2.4). Grasped as the ‘second wave’ of studentification (Smith and Holt, 2007), PBSA respond to a strong and distinct demand from the one occupying HMOs (Sage *et al.*, 2012a). High specifications, such as swipe card access, CCTV, Wi-fi connection, vending machines, launderettes, and bike sheds, are some of the standard conditions provided in new student blocks (Hubbard, 2009).

Figure 2.4 – PBSA in Construction in the City Centre of Nottingham



Source: Author’s photograph

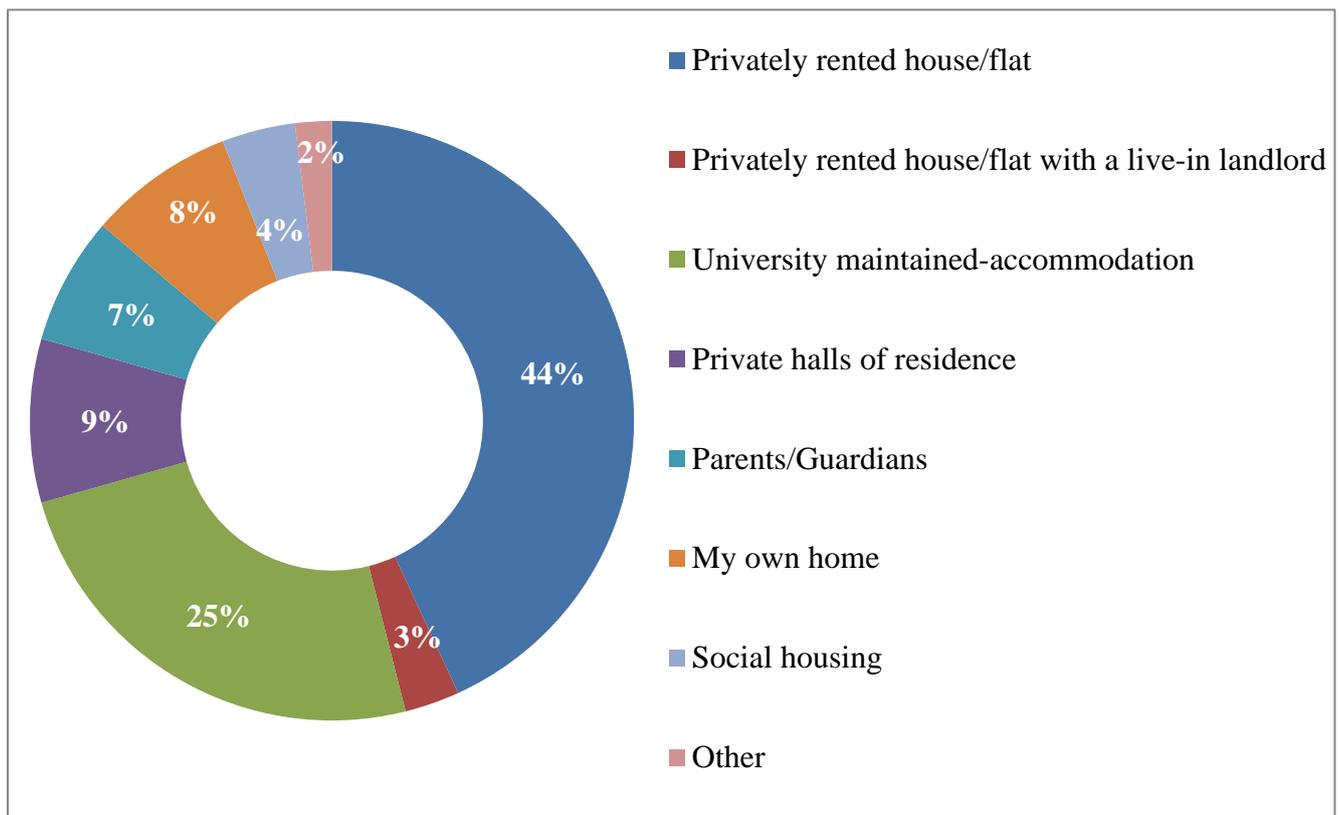
Private developers target a specific portion of the student population. They realise that deficient housing conditions constitute a hindrance for students’ choices. Some of these residential providers (e.g. Nido, Rocket Investments, UNITE, UPP, Generation Estates, Watkin Jones, Opal,

Unipol, and Derwent Living) emphasise the high-quality housing they provide by advertising the luxurious comfort of their properties.

In this type of *modus operandi*, selling arguments, such as accreditation, can sometimes be accentuated in order to attract more students, and to restrict the competition with other market providers. This is the case of Unipol, which formed in company of the Accreditation Network UK (ANUK), an influential consortium that provides specific codes of practice delivering accreditations and covering the pre-contractual, contractual and post-contractual components of the tenancy, to local authorities, HEIs, commercial providers and registered social landlords (RSLs) (Hughes and Houghton, 2014). These accreditation schemes allow raising standards within the PRS as well as students' awareness, especially when they decide to move off-campus. Nonetheless, student housing providers see in this 'labelling' a noteworthy market recognition from an external and official body. In a context of a competitive market of student accommodation, Smith (2008: 2559) emphasises that the development of PBSA should be observed carefully as a proliferation of such blocks could "give rise to the 'ghettoisation' of students in gated communities". According to Smith and Hubbard (2014), the production of 'student-only' spaces reinforces the exclusionary characteristic of student residential geographies. Thus, Hubbard (2009) points out the urban paradox of dispersing a population over-represented in some neighbourhoods in developing gated student blocks in areas to be regenerated, using the case study of Loughborough.

With over 2.3 million students in 2012/13, representing a momentous expansion of 17% since 2000 (HESA, 2014a), one of the main challenges produced by widening participation consists of accommodating students enrolled in HE. The most recent Higher Education Statistics Agency (HESA) statistics for 2012/13 give an indication of student housing distribution, although the figures only concern full-time and sandwich students. Thus, the student housing market is segmented in the following way: 30% in the PRS, 19% in parental/guardian home, 18% in institution-maintained accommodation, 15% owning their property, and another 6% in private-sector halls. These figures display a decline of 4% of students' proportion living in universities' properties compared to the figures established for 2007 by the estate property consultant King Sturge (was since purchased by the Jones Lang LaSalle group) (King Sturge, 2008).

Figure 2.5 – Residential Distribution of Full-Time Students in 2013/14



Source: NUS, 2014

The PRS still represents a substantial sector for student housing with 30% of full-time and sandwich students living there. Although the figures provided in one of the NUS’ reports (2014) bring out more details in the distribution of full-time candidates (cf. Figure 2.5). According to NUS, 47% of full-time students occupy an accommodation in the PRS (including 3% living with the landlord). Furthermore, students living in halls form one-quarter of the sample and another 8% own their dwelling, about twice less than the HESA’s statistics.

Thus, the transformations of the HE sector feed continuously the interests of academics by delivering new research avenues in the field of student geographies, and more specifically in the studentification debate. Incidentally, the sequential increases of tuition fees, in 2006 and in 2012, have undeniably refocused interests in students’ financial conditions and reshaped their priorities in regard to their student experience.

2.10 Housing Costs and Students’ Finances

With the introduction of the £9,000 annual tuition fees in October 2012, the question of HE affordability has been a prominent issue in national media discourses. *The Guardian’s* (2013c) article points out the importance of considering all funding possibilities available to students

before applying to a HEI. Additionally, the article stipulates that being enrolled in a university or a college generated substantial decisions in order to alleviate the level of debt. The debt is estimated to come close to £60,000 for new full-time entrants under the latest tuition fee regime. The rising costs experienced by most of the main expenditure sources, coupled with considerable levels of debt, worsen social and economic inequalities amongst students in HE. However, students are active agents in developing strategies that consider the extent of supports received in relation with possible, and sometimes necessary, trade-offs in order to make ends meet (Christie *et al.*, 2001). The housing sector accurately replicates these changes as students develop new residential strategies, and aspirations, according to their social, economic, and cultural capital. Therefore, the section focuses on the weight of accommodation within students' finances. All figures included in the rest of the section are extracted from various Student Income and Expenditure Survey (SIES) reports, which consist of SIES 2004/05 (DES, 2006), SIES 2007/08 (DIUS, 2009) and the latest version, SIES 2011/2012 (BIS, 2013).

Among the three main expenditure categories (i.e. living costs, housing costs, and participation costs), housing embodies the second largest source of students' spending, after living costs. This spending source has the specificity to vary with regard to the tenure type. For instance, students sharing a property in the PRS have, on average, 5% higher expenditure than those living in university accommodation. The average annual housing cost for students living in institutions' properties equals £3,697. Although they pay more in rent costs than any other groups, they make conspicuous savings on other general housing costs by not paying household bills. The mean expenditure on other housing costs for this particular group is identical to the group of students living with parents/guardians. In rational terms, full-time students living with parents have the lowest expenditure as their housing costs were slightly over £400, nearly ten times less than other tenure types. SIES 2011/12 denotes some variations in housing costs regarding whether or not students reside in the UK capital city. The rental costs for full-time students in London average £4,166, although for the same group not living in the capital the figure drops to £2,920. The disparity is mainly driven by much higher housing costs in London (Pilkington, 1994). Thus, variations in students' accommodation costs have long been linked to spatial features:

“By far the biggest variations in housing costs were related to students' tenure and the region of the country where they lived and studied.” (Callender and Kempson, 1996: 53)

Pilkington espoused that housing costs represent more than the weekly rent level as they encompass contractual commitments, such as deposits, length of tenancy agreements and

possible letting agencies' fees. In that way, the accommodation selection plays a dominant role in students' finances. Negotiating the expenses tied to accommodation could potentially unfold new residential decision-making strategies. The impacts on students' finances could be compelling, considering the current climate which sees continuous rising costs in nearly every single spending category.

Indeed, all full-time students in 2011/12 spent on average 26% and 12% more than they did in 2004/05 and in 2007/08, respectively. Besides, the share of the budget allocated to living costs and housing costs remains relatively stable over time. For instance, full-time students in 2011/12 contributed to housing costs with an average of £3,000. This is 24% and 18% more than in 2004/05 and 2007/08, respectively. Expenditure becomes heftier as students go along with their studies. This is notably the case for full-time students aged 25 and over with living costs accounting, on average, for about half of total expenses. Furthermore, family circumstances are an essential factor of individuals' expenses, and students who are parents have the highest spending. Although the level of housing expenditure is strongly related to the accommodation's features (e.g. location, physical attributes, and quality), the level of income ascertains *per se* the type of housing affordable to students.

Today's tumultuous global economy has exacerbated the sources and values of students' income. Three main income categories prevail: state support (i.e. student loan, maintenance grant/special support grant), family and friends (e.g. financial contributions from parents and other relatives), and paid work (i.e. earnings from a permanent/continuous job). SIES 2011/12 reports that student loans for fees and loans for maintenance are the two principal sources of student financial support. They summed up to half of their average total income. Students relied more on state-funded support than other sources of income, and nearly 80% of full-time students had taken out a tuition fee loan. Moreover, to ensure students from low-income backgrounds' participation in HE studies, UK universities have extensively increased the number of bursaries available. In 2011/12, around 442,000 students received a university bursary, up from 346,000 in 2008/09 (Universities UK, 2013b).

The reliance on money coming from loans was associated with the plummeting of family and paid work income. Christie *et al.* (2001) insisted on the fact that parental support was necessary to students for sustaining an appropriate lifestyle. SIES 2011/12 relayed that 14% of full-time candidates average income came from families/relatives, which equalled to £1,497. Yet this support is not necessarily converted into a monetary donation. For instance, the lowest average

income has been observed amongst full-time individuals living at the parental home during term time. Studying at a local HEI and residing at home allows the poorest students to have a stronger influence on their financial situations. Hence, financial pressures play a critical part in influencing students' residential decision-making process.

Students live more on 'credit-income' than in the past (Chatterton, 2010). As a result, this leads to a stronger reliance on debt. SIES 2011/12 estimates that the average net debt increases from the previous surveys. New university entrants are amongst the most vulnerable groups, with a 42% net debt increase. Two main reasons explain the debt prominence: a decrease in half of total savings and outstanding levels of student loan debt. On top of that, between 2007/08 and 2011/12, the mean income amongst first year full-time students recorded a 14% decrease, including inflation (BIS, 2013).

Thus, the main financial contributions have turned into debt, and have produced supplementary constraints to student hardship. The widespread rising costs of the primary expenditure sources added further doubts in students' minds regarding their finances. *The Lloyds TSB Student Finance Report* (2013) denotes that over 48% of students have difficulties making ends meet, and that about half of students have serious concerns in regards to the debt they take on. The relationship between income, expenditure, and debt is therefore crucial for students to consider while selecting their accommodation.

2.11 Towards a Geography of Sustainable Student Housing?

The academic explorations of student populations have contributed to the growing interest in student geographies as termed by Smith (2009). Nevertheless, the body of literature related to student housing has only burgeoned over the past decade. Blakey (1994: 76) provided an alarming observation to investigate students' housing needs within the planning process:

“Almost no work has been undertaken as part of the student accommodation development process to establish accurately what type of dwellings students actually want to live in.”

A few years later, Rugg *et al.* (2000), supported by the Joseph Rowntree Foundation, issued the first comprehensive overview of student accommodation in the tuition fees era. This paper highlighted the residential pressure caused by the large influx of students in the PRS. More importantly, this study identified a new research trend by putting the evolution of the student

accommodation focus in the midst of lay discourses. Nonetheless, Rugg *et al.* (2002: 291) deplored the scarcity of student housing issues in the academic literature:

“Despite the massive growth of this demand group [students], there has been a limited commitment to the issue of student housing in academic literature. For the most part, published studies on student housing fall into three categories. HEIs and the rationale underpinning the provision of accommodation have been subject to spasmodic review (...) Other studies of student housing have largely been driven by welfare issues. A number of housing reports have concentrated on findings relating to student debt and PRS rents and poor conditions (...) More central to the concerns of this paper has been a third stream of research that has related student housing demand to specific markets.”

Researches pertaining to student distribution in the housing market have since become many and various, symbolised by the coining of new expressions, such as studentification (see Section 2.9). The most debated topics resolve around students’ cultural impacts on local communities (e.g. Chatterton, 1999; Macintyre, 2003; Allinson, 2006; Hubbard, 2009; Sage *et al.*, 2012b), their social impacts (cf. Smith, 2005; Smith and Holt, 2007; Hubbard, 2008; Munro *et al.*, 2009) and economic impacts (see Rugg *et al.*, 2000, 2002; Christie *et al.*, 2001; Smith, 2008). To date, limited attention has focused on the environmental effects of the student presence in the city; notably relative to the recurrent in-migration of students in the PRS. Although students’ residential decision-making mainly encompasses social, cultural, and economic factors, issues related to sustainable development are about to become the new influential driver in UK student housing landscape. This field is often overlooked in the existing literature, and not fully pinned down, the extent in which students, who have developed a “collective student housing habitus” (Rugg *et al.*, 2004: 28), use sustainability leverages in their decision-making processes. Thus, the ways students negotiate socio-economic and environmental tensions in their accommodation choice need to be examined; the main concern of this thesis.

The UK context provides a dichotomous situation. On the one hand, campus-based ‘green’ developments have recently emerged, including BREEAM multi-residential projects in Lancaster and in Leeds (cf. Section 3.10). This accommodation type matches students’ demands by providing high quality and sustainable facilities. On the other hand, the strong popularity of properties in the general market is magnified by low rent costs, notably in HMOs. Nonetheless, and as it has been described in Section 2.6, the housing conditions are commonly poor. Ergo, students living in the PRS increasingly complain about the unsatisfactory living conditions they have to deal with, specifically the inadequate energy efficiency within their dwelling which is

exacerbated in colder days (NUS, 2014). With the scrapping of the overall cap on student numbers in 2014/2015 (Scott, 2014), the PRS might observe an exacerbation of student numbers within the next few years.

The current economic climate has already jeopardised the development of some new student residences, although ameliorations in levels of investment activity have recently been recorded (Savills, 2014). Furthermore, student accommodation is on the cusp of massive changes tied to environmental planning policies aiming to retrofit a large part of housing in the UK private sector. This may have negative implications on student housing supply, and as a consequence, students may reconsider the attributes involved in their residential decision-making processes. Consequently, taking into account the leverage of environmental aspects in student residential choices, could unveil new research avenues related to residential patterns.

2.12 Summary

In summary, the chapter has chronologically reviewed the transformations of the student housing sector since the Second World War. The discussion has highlighted the perpetual changes occurring within the HE functioning and the ways it has affected the students' residential provision. This has been illustrated through the impacts of major education reports such as the Robbins Report, the Dearing Report, and the Browne Review. Chapter 2 has also presented the key policies that have triggered the emergence of a mass-participation in HE. The chapter has captured the inextricable relationship between politics and HE; as the mission of the university evolved, the ethos of student residence was transformed. The elitist nature of halls of residence was gradually rejected by students to the detriment of the private sector in which the first properties conversions were observed half a century ago.

Alongside of the significant reforms undertaken in the HE system, such as the introduction and growth of tuition fees, the chapter has introduced the changing profile of student housing in the UK. The residential pathways are analysed in the light of the socio-economic drivers. This is exemplified with the progressive increase of the accommodation supply coming from PRS in the mid-1970s, or the suppression of social benefits (e.g. housing benefits) by Thatcher's governments in the 1980s. Nowadays, the transfer of students' residential preferences for the PRS has, partially, produced the growing phenomenon of studentification. The socio-economic, cultural, and demographic impacts caused by the unfolding of studentification processes in established neighbourhoods have been explored. Therefore, the various drivers responsible for the changing profile of student housing are multidimensional.

The chapter has underlined the paucity of research on student residential issues before the emergence of student geographies, characterised by the recognition of studentification processes in university towns and cities, mostly in the UK. In addition, it has stressed the scarcity of academic literature regarding student housing selection and the triggers to move as well as the sustainable characteristics of the student accommodation. The following chapter addresses the multiscale implementations of sustainable development policies, with a focus on the UK housing sector.

Chapter 3

Implementing Sustainable Development Policies in the UK Housing Sector

3.1 Introduction

The chapter aims to define the full scope of implementing sustainable development policies within the context of the UK housing sector. The focus is brought, more specifically, on the establishment of sustainability initiatives to reduce domestic energy consumption by improving the energy efficiency of the residential stock. In addition, the scarcity of research regarding energy consumption in student housing is emphasised.

Under these circumstances, the chapter introduces the nascence of the sustainable development (SD) concept along with the burgeoning of international and UK cardinal environmental policies and regulations (Section 3.2). The policies' effects on the UK's greenhouse gas (GHG) emissions are then discussed (Section 3.3). Furthermore, the negative impacts of the UK residential energy sector on the emissions of GHG are highlighted (Section 3.4). The link between the rise of energy costs and households' energy consumption is explored (Section 3.5) and the condition of the UK housing stock is discussed (Section 3.6). Consequently, the most recent environment policies and schemes, implemented in the domestic sector by the UK government, are examined (Section 3.7), with the GD scheme serving as defining moment (Section 3.8). The issues of defining a fuel poverty (FP) framework as an indicator of state support, as well as the main consequences of said framework, are considered (Section 3.9). In addition, the recent developments of eco-friendly student accommodation in UK campuses contrast with the lack of research touching on the many effects of dwellings' energy performances on students' energy consumption and lifestyles (Section 3.10). Lastly, Section 3.11 summarises the importance of policies to reduce CO₂ emissions, notably in the housing sector.

3.2 Nascence of Sustainable Development

In 1987, the World Commission on Environment and Development (also known as the Brundtland Commission, named after its Chairman) stirred people's consciences at a global scale about their, and the environment's, future. Issues related to global warming and sustainable development have been most ardently disputed amongst academics, scholars, politics and the general public. The common definition of SD as given by the Brundtland Commission's report, *Our Common Future*, is:

“Humanity has the ability to make development sustainable to ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs.” (UN, 1987: 15)

Following the definition of SD, perspectives embedding economic conditions as factors of ecological disasters and equity in terms of sharing resources were emphasised. In this way, sustainable development, approached as a holistic concept, was qualified as:

“...not a fixed state of harmony, but rather a process of change in which the exploitation of resources, the direction of investments, the orientation of technological development, and institutional change are made consistent with future as well as present needs.” (*ibid*: 15)

Thus, the Brundtland Commission’s report made waves within the international community so as to effectively address issues around global warming. Despite the lack of clarity in the universal definition of SD, key concepts such as democracy, equity, and tolerance have spawned a stunning enthusiasm amongst academics, politics, NGOs and societies (Cooper and Vargas, 2004).

Over the past four decades, starting with the United Nations Conference on the Human Environment held in Stockholm in 1972, numerous environmental policies and initiatives have been established at the international level (Chasek *et al.*, 2013). Amongst the most powerful and influential directives battling against climate change, the Kyoto Protocol (KP) of the United Nations Framework Convention on Climate Change (UNFCCC) is protuberant.

Known worldwide as the KP, it was adopted in December 1997 after two years of negotiations. In short, the KP is an international agreement legally binding emission reduction of high levels of GHG in the atmosphere. It commits industrialized nations to reduce their emissions to an average 5% compared to 1990 levels over the five year period 2008-12. The UK agreed on a reduction target of 13% whilst the EU committed to cut its GHG emissions by an average of 8%, equivalent to 456 MtCO_{2e} (EEA, 2010). Today, 83 signatories and 192 parties have ratified the Protocol (UNFCCC, 2014), which makes it a successful international strategy, although the USA denied the ratification. Yet effective cooperative efforts to take up global environmental challenges are expected from all, including the emerging nations: “If major developing countries do not take on GHG reduction commitments, there is little that developed countries alone can do to prevent significant climate change” (Chasek *et al.*, 2013: 338). The KP was officially put in motion in February 2005.

Most UK environmental policies originate from the European institutions in Brussels (see Haigh and Lanigan, 1995; UK Parliament, 2004). Consequently, numerous directives and regulations passed in the Member States consist of implementing legislation decided by the European Economic Community (EEC)/EU. This is the case, for instance, of the Environmental Protection Act 1990 (enforcing the EU's Waste Framework Directive), as well as the Water Act 2003 (a 'consolidation' of the Water Resources Act of 1991), and the Europe 2020 strategy, in which the UK is advised to heavily invest in the renewable energy sector (European Commission, 2013a). Albeit the considerable influence of EU policy-making upon countries' environmental orientations, the UK still has the opportunities to develop its own initiatives, adjustable to domestic socio-economic parameters. Therefore, in 1990, the UK government published its White Paper on Environment, entitled *This Common Inheritance*. Basing its main theme around the concepts embodied in the Brundtland Report, this White Paper set out a comprehensive environmental strategy. Describing the general principles and objectives to tackle green issues, it also amplified the meaning of sustainability by including economic jargon such as 'income,' 'capital,' and 'consumption'.

In 2006, the established perspectives about the battle against global warming took a different turn with the publication of the Stern Review on the Economics of Climate Change. This extensive document, commissioned by the UK government, brought up a vast list of information and recommendations regarding the detrimental effects of global warming on the world economy and vice-versa (Stern Review, 2006). Coming up with new scientific evidence to maintain its allegations, the long report (nearly 660 pages) is commented both positively and negatively. Some 'dire' predictions appear to have been removed before the document's printing (Gray, 2010). Regardless of the uncertainties it sparked off, the Stern Review is commonly deemed the watershed in the fight against climate change (see Dasgupta, 2007; Nordhaus, 2007a, 2007b). Amid the voluminous amount of recommendations produced in the document, three policy elements are particularly highlighted to undertake an imminent and effective response: carbon pricing, technology policy, and energy efficiency. This last component has a prominent place in this chapter. Lastly, Sir Nicholas Stern, the lead author of the report, shared his worries on climate change in an interview in *The Guardian* (Stewart and Elliott, 2013) by stating that things were far worse than predicted. Furthermore, two years prior to the enactment of Europe 2020 by the European Commission, the British Parliament validated a crucial long-term environmental strategy, the Climate Change Act 2008 (CCA). The latter represents a long-term binding guideline for the reduction of targeted GHG emissions in the UK only.

In the CCA, the following are considered greenhouse gases:

- carbon dioxide (CO₂)
- methane (CH₄)
- nitrous oxide (N₂O)
- hydrofluorocarbons (HFCs)
- perfluorocarbons (PFCs)
- sulphur hexafluoride (SF₆)

The commitment stated in the act is that the “net UK carbon account for the year 2050 is at least 80% lower than the 1990 baseline” (Climate Change Act, 2008: 1). Additionally, an interim target set the cut of GHG emissions by at least 34% by 2020. The act also institutes five-year ‘carbon budgets’ to 2050, “legally-binding limits on the total amount of GHG can emit for a given five-year period” (DECC, 2014a: 34). The CCA endowed a body corporate, known as the Committee on Climate Change (CCC) to advise and guide the UK government on progress performed to reduce GHG and prepare for climate change (Climate Change Act, 2008). According to the CCC (2013a), this legislation has produced a framework to develop an economically credible emissions reduction path.

Thus, the UK government has established its environmental priorities to cope with the EU’s directives and objectives and, consequently, to grapple with rising concerns of global warming. The CCA signifies a major institutionalisation of sustainable growth and the green agenda as wider policies and strategies stemmed from it, notably the emissions of GHG in the domestic housing sector.

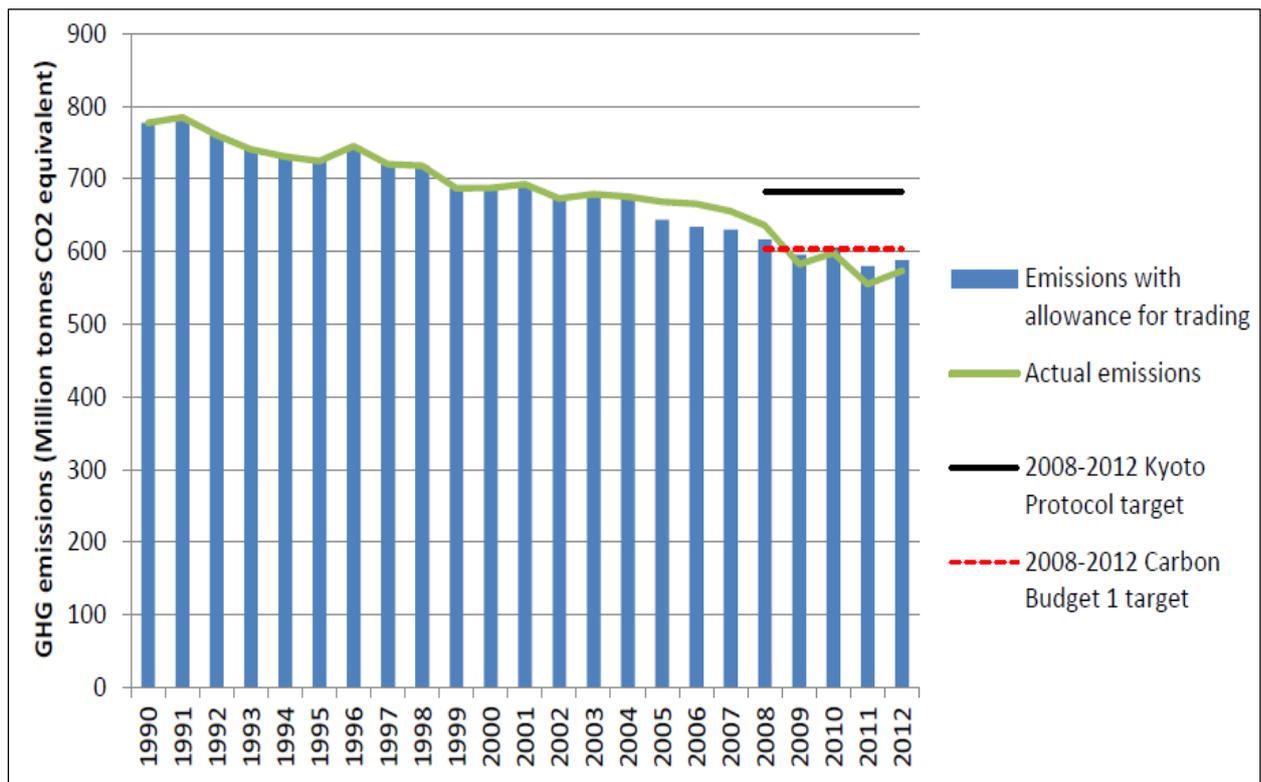
3.3 The Effects of UK Environmental Policies

The diverse environmental policies set by the UK government regarding the reduction of GHG emissions have seemed fruitful (European Commission, 2009; EEA, 2010). Since the early 1990s, the GHG emissions have endured a sturdy diminution despite that no ambitious environmental policies were applied at that time. Three areas, responsible to approximately 80% of UK’s total GHG emissions, captured the main targets of policies on emissions reduction. It is comprised of the electricity generation, heating for homes and businesses, and transport fuels. Figures given by the Department of Energy and Climate Change (DECC) illustrate a decrease of Kyoto GHG basket of 208 MtCO_{2e} (weighted by global warming potential in million tonnes carbon dioxide equivalent) between 1990 and 2013 (DECC, 2014b). This represents a decline by

around 27%, assuming that the provisional figures for 2013 are accurate. Additionally, CO₂ is the main source of GHG emissions in the UK. According to DECC, 82% of the nation's total GHG emissions were attributed to CO₂ in 2012. Due to its major contribution to GHG emissions, CO₂ reported in terms of 'net' emissions, is the only GHG investigated in this research. The evaluation of the roles of the other GHGs are referred to in studies published by DECC (*ibid.*).

Consequently, it is widely accepted by the institutions and actors involved in the establishment and operationalisation of environmental policies that the UK has hit the first commitment period of the KP. Set to operate between 2008 and 2012 and targeting the reduction of its emissions by an average 13% using 1990's fixed figures except for fluorinated compounds (1995), this equates on average, over the period, annual emissions of 682 MtCO₂e. Scientific observations handed down a favourable verdict. With an annual average of 604 MtCO₂e over the five-year period, the mitigation performs 23% lower than base year emissions.

Figure 3.1 – UK's Progress Towards Meeting Each of its Sustainable Targets



Source: DECC, 2014b

This is also the case about the aims of the 2008's CCA. Unlike the KP's emissions targets, which are based on a fixed figure, the CCA revises its baseline each year. In the course of the first carbon budget period, 2008-12, the limit of GHG set by the act was 3,018 MtCO₂e. DECC outlines that UK's GHG were 36.3 MtCO₂e lower than the carbon budget period cap. This

denotes a cut of GHG by 23% on average change from base year emissions. As characterised in Figure 3.1, the actual UK strategies of reducing GHG emissions demonstrate a satisfactory level of efficiency. Nonetheless, the results of these sustained reductions are sometimes contested (e.g. Anderson *et al.*, 2008; Baiocchi and Minx, 2010; Weidmann *et al.*, 2010). The UK Energy Research Centre (UKERC) expresses firmly that the method of measuring GHG is unadapted to the economic activities in the UK (Morgan, 2011).

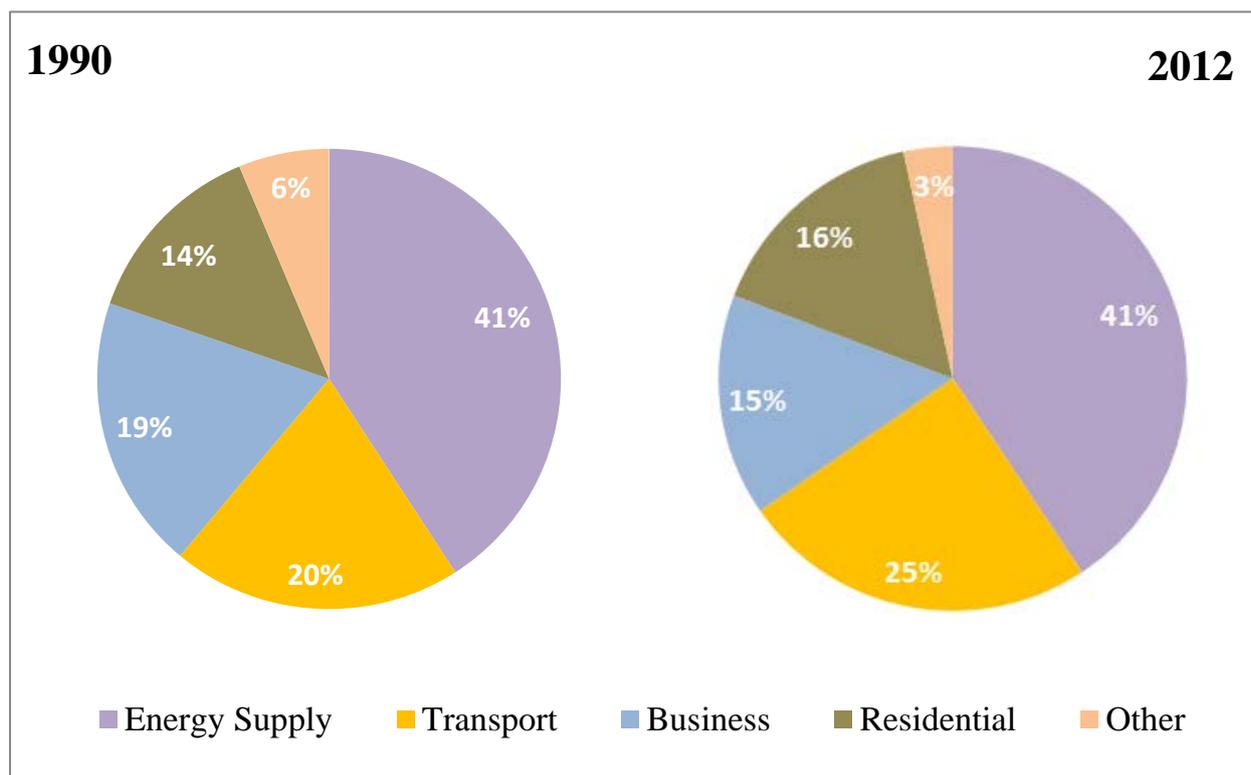
Based on the research by Barrett and his team (Minx *et al.*, 2009), the outsourcing of goods production has largely contributed to the mitigation of GHG. Yet, the authors espouse that the GHG emissions embedded in imported goods were excluded in the different accounting methods. Not hesitating to qualify the long-time efforts involved in the reduction of GHG emissions as a 'failure,' Barrett and his team hint that the imports of products have shifted the problem from one country to another. The calculation framework of the UNFCCC is established under the concept of 'territorial' emissions in which only emissions within the country's border are recorded. Additionally, it is stated that since 2004 the GHG emissions encapsulated in products imported into the UK have been higher than those resulting from domestic production (Morgan, 2011). A document published by DECC (2014c) unravels the various ways of reporting GHG emissions to the UK government.

To conclude, the completion of international and domestic targets does not signify that the UK is cleared all of troubles. Issues related to the implementation of the sustainable development policies persist in some key areas. A sector of particular interest for this research, the residential sector, appears to face difficulties in staying on course in mitigating GHG emissions.

3.4 The UK Residential Sector and CO₂ Emissions

This section focuses on the residential sector, also referred to as the housing sector. The latter was responsible for 13% of UK GHG emissions in 2012 (DECC, 2014b). It should be noted that CO₂ is responsible for approximately 97% of GHG emissions in the residential sector, whereas its weight averages 82% in the other sectors (i.e. business, transport, and energy supply). On top of that, in 2012, the domestic housing sector was responsible for around 25% of end-user emissions of GHG. Hence, this sector embodies a serious challenge for environmental policies.

Figure 3.2 – Sources of CO₂ Emissions in the UK in 1990 and 2012

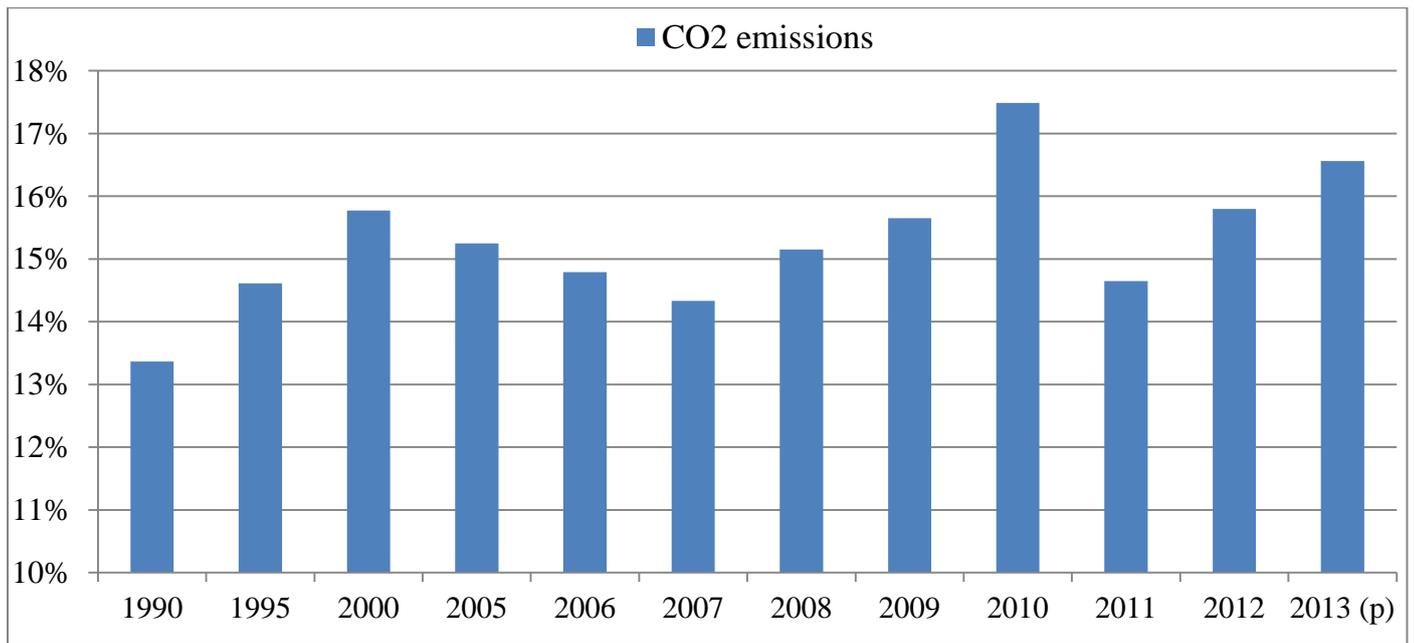


Source: DECC, 2014b

Figure 3.2 exposes the breakdown categories of CO₂ emissions for the year 1990 and 2012. During this period, the UK has experienced a decrease of around 21% of its CO₂ emissions, but the share of CO₂ emissions originating from the residential sector has increased by 2%. Transport is the other sector that has encountered a critical rise in its CO₂ emissions.

In similar fashion, the share of CO₂ emissions originating from the residential sector in regards to the overall UK emissions displays some disparities. In this respect, levels of carbon dioxide emitted in the housing area were particularly moderate in 2007 and 2011 (see Figure 3.3). In contrast, this sector reached its climax of CO₂ emissions in 2010, where it was responsible for 18% of UK's CO₂ emissions. Lastly, in 2012 the housing stock was responsible for 66% of overall buildings' CO₂ emissions (i.e. 134 MtCO₂e) with half originating from direct emissions (principally gas) (CCC, 2013a).

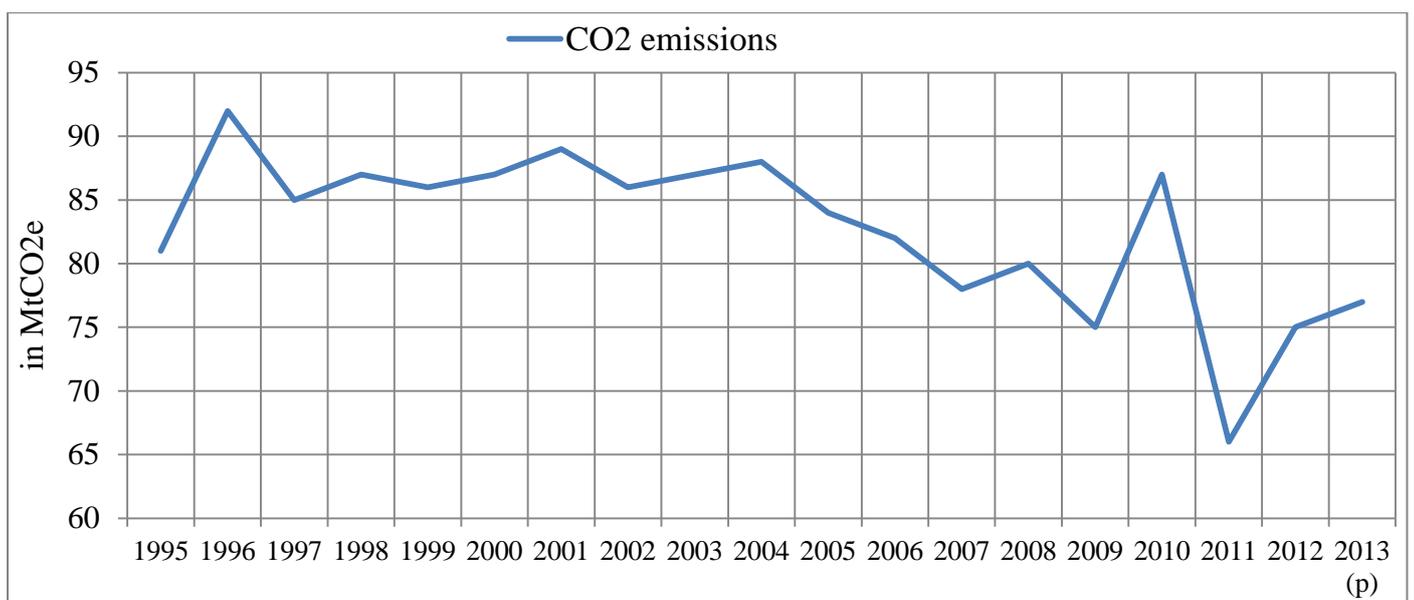
Figure 3.3 – Share of Total CO₂ Emissions Attributed to the Residential Sector in the UK (in %)



Note: (p) 2013 estimates are provisional.
Source: DECC, 2014b

The fluctuations of MtCO₂e emissions are shown in Figure 3.4. They are relatively substantial, especially post-2006. The impacts of average temperature over the energy consumption in the housing stock have a significant share of responsibility, according to DECC. It is reported that the average air temperature over the year 2012 was one degree Celsius lower than in 2011 (DECC, 2014b).

Figure 3.4 – CO₂ Emissions in Residential Sector Between 1995 and 2013



Note: (p) 2013 estimates are provisional.
Source: DECC, 2014b

Consequently, the variation between 2011/2012 equated to 8 MtCO_{2e}, or 13%. It should also be noted that the CO₂ emissions in 2011, in comparison to 2010, diminished by around one-quarter, as 2010 was a particularly colder year.

3.5 Energy Supply and the Residential Sector

In 2009, the Secretary of State for Energy and Climate Change, Ed Miliband, introduced the UK Low Carbon Transition Plan. This White Paper set out a five point plan to abate “emission cuts of 18% on 2008 levels by 2020” (HM Government, 2009: 4). Amongst the key steps advocated by the government is the plan to transform the UK’s power sector. In that respect, the UK is supported by the EU Emissions Trading System (EU ETS), a vital pillar of the EU climate policy, which limits GHG emissions from high-emitting industry sectors, and works via a ‘cap and trade’ principle (European Commission, 2013b). Thus, the aim is that by 2020, 40% of UK electricity will be produced from low carbon sources in place of fossil fuels, which implies a reduction of the use of coal, responsible for 43% of the global CO₂ emissions. For all that, some countries, notably China, rely intensively on the consumption of coal for generating electricity (CCC, 2013b).

In effect, in 1970 coal was responsible for 39% of energy consumption in the UK domestic sector. Three decades later, its consumption has been reduced to nearly nothing. Several UK coal plants have either closed complying with the regulations of the Large Combustion Plant Directive (LCPD), or are expected to do so before the end of 2015. Since 1970, the fuel mix for domestic consumption has significantly changed, and particularly the natural gas and electricity (including renewable electricity), which accounted for 24% and 18% in 1970 respectively, and 68% and 23% in 2012 (DECC, 2013b). A major energy source worldwide, and labelled as the least carbon-intensive fossil fuel (amid oil and coal), natural gas remains intensely needed, especially in buildings’ space heating.

The diversification in the energy supply mix is strengthened by national and international authorities urging countries to quickly invest in low and zero carbon technologies to the detriment of investment in any conventional fossil fuel. Therefore, the UK government equips itself with the means to meet the challenges of climate change to maintain energy security, which infers the provision of safe and secure access of energy to consumers. The same year the government published its Low Carbon White Paper, the EU established the Directive 2009/28/EC, commonly known as the Renewable Energy Directive. This document, elaborated by the European Parliament, the Council, and the Commission, set a conventional framework to

encourage the increase of energy use from renewable sources with the stated goal to limit greenhouse gas emissions:

“It is appropriate to establish mandatory national targets consistent with a 20% share of energy from renewable sources and a 10% share of energy from renewable sources in transport in Community energy consumption by 2020.” (European Union, 2009a: 17)

Hence, the commitment of each member state to produce more primary energy from renewable sources falls within the EU’s ambitious climate and energy targets for 2020, also known as the “20-20-20” targets. Formed of three pivotal objectives, the ‘2020 climate and energy package’ encompasses in this way:

- Increasing the share of EU energy consumption produced from renewables to 20%
- Reducing EU’s GHG emissions by 20% from 1990 levels
- Improving EU’s energy efficiency by 20% (European Commission, 2014a)

Accordingly, the UK has introduced a 15% target of energy consumption coming from renewable sources. In 2012, the share of renewables represented 4% of total energy consumption. In the 2009 White Paper, the government intended to expand renewable electricity to around 30% by 2020 (HM Government, 2009). The renewables’ share of electricity generation account for a 16% record high in the second quarter of 2013 (DECC, 2013a).

Nonetheless, the high energy costs for importation and unstable financial markets do not seem to affect the UK’s energy security resilience. Resorting to renewable sources appears to be fundamental in the UK low-carbon and secure energy mix. The European Commission (2014b) includes renewable sources such as wind, solar, hydro-electric and tidal power as well as geothermal energy and biomass. DECC (2013a) affirmed that the UK was the world’s biggest offshore wind market. Notwithstanding, between July 2012 and June 2013, the onshore wind source contributed the most to renewable electricity generation, followed by offshore wind and bioenergy, such as biomass electricity. Besides participating in the attainment of the national decarbonisation targets, renewable energies embody some attractive new markets, a factor for technological innovation and economic growth through green jobs and investment. New nuclear power stations are soon to see the light of day in the country. Besides, the government is highly interested in the growing development of the carbon capture and storage (CCS) process. The UK government sees in the CCS a unique method to mitigate CO₂ emissions while ensuring a secure

energy supply through the use of coal and gas in the electricity supply mix. In another 2009 Directive, the EU (2009b: 114) designates the CCS process as:

“the capture of carbon dioxide (CO₂) from industrial installations, its transport to a storage site, and its injection into a suitable underground geological formation for the purposes of permanent storage.”

This bridging technology could eventually remove and permanently store CO₂ emissions from coal and gas power stations. Deemed a ‘viable option,’ the government is investing enormous amounts of money to enable the commercial deployment of CCS in the UK by 2020 (DECC, 2012a). Nonetheless, it is imperative that efforts to support energy saving policies should continue, and that sustainable development can be achieved through other safe low and zero-carbon technologies.

Lastly, this energy transition pathway is challenged by colliding ‘logics’ emanating from the competing actors such as the government, the civil society and the energy suppliers (Foxon, 2013). As an example, Waterfield (2014) reveals that the European Commission considers forsaking the 2009’s Renewable Energy Directive once it ends in 2020. The rationale is that energy prices have expanded considerably to a point where they are much higher than their competitors (the United States, Russia, and India). The argument used is hardly defensible, as energy prices have strongly increased in the UK.

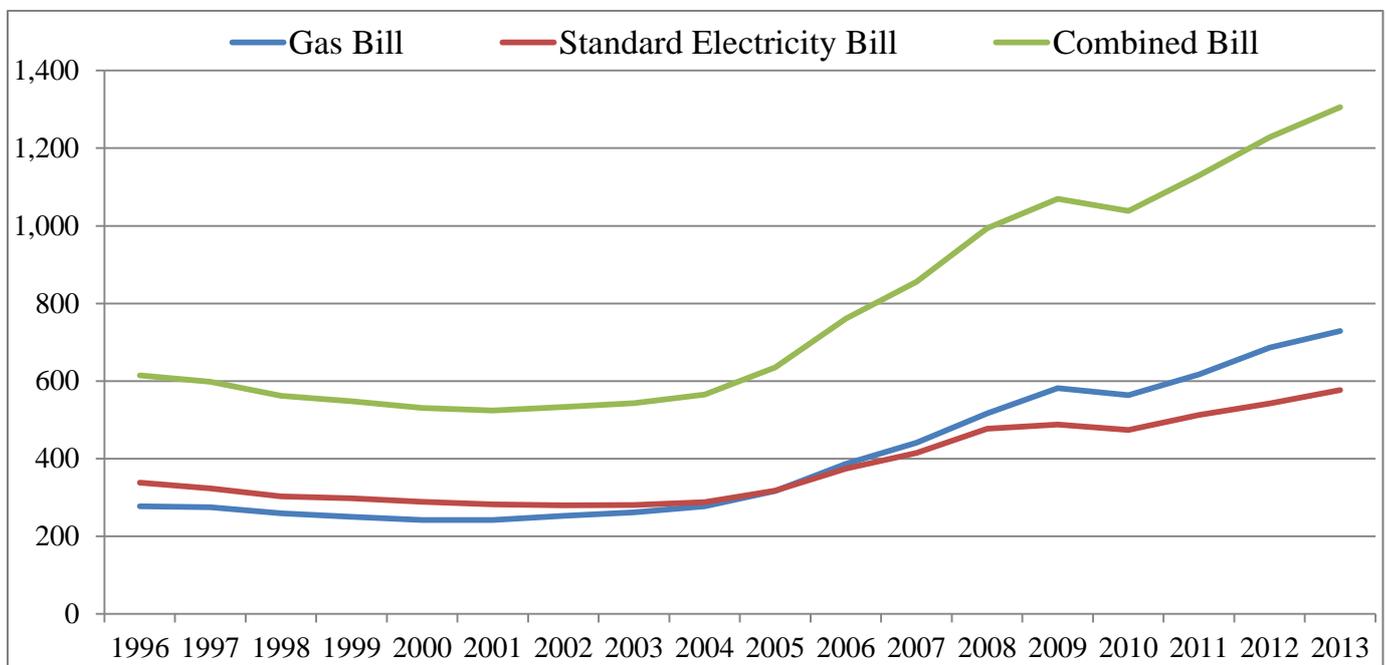
Over the past ten years, energy prices grew fiercely in the UK domestic sector (DECC, 2014e). The CCC emphasises that the total annual energy bill for an average dual-fuel household has increased by 85% between 2004-2012 accounting for a rise of £520 (CCC, 2013c). Largely used in the housing sector with around 68% of total energy use, the average UK annual gas bill peaked to £729 in 2013, despite being estimated at £262 ten years earlier. This is also the case for electricity. Accounting for 23% of total residential energy consumption, the standard electricity bill doubled in the space of ten years as described in Figure 3.5. Consequently, the average energy bill combining gas and electricity has more than doubled since 1996.

In an ONS report (2014) on household energy spending, it is reported that the increase in the average energy cost of households is explained solely by rises in both gas and electricity bills. Indeed, between 2002 and 2012, a decline of 17% in the average amount of energy used per household was observed. Simultaneously to this fall, average household energy monthly spending augmented from £69 in 2002 (in 2012 prices) to an average of £106 ten years later. This is a 55% rise, including inflation, within a decade (*ibid.*). Still in this report, it is implied

that 5% of household's average disposable income is spent on energy in 2012 and up from 3% in 2002. The expansion of energy prices affects particularly vulnerable households and especially those in fuel poverty (cf. Section 3.9).

Ofgem (2013a) reports that the wholesale energy costs, which gathers gas and electricity at about 67% and 58% respectively, is a major component of energy price fluctuations (Ofgem, 2011). The oil price is also an influential driver of UK energy costs. According to the CCC (2013c), low-carbon policies constitute a small portion of energy bill increase to date. Yet residential energy bills are expected to increase over the next two decades via the impacting investment in low-carbon power generation on electricity bills.

Figure 3.5 – Combined Domestic Energy Bills Between 1996 and 2013 (in £)



Note: Information based on bills in cash terms.

Source: DECC, 2014e

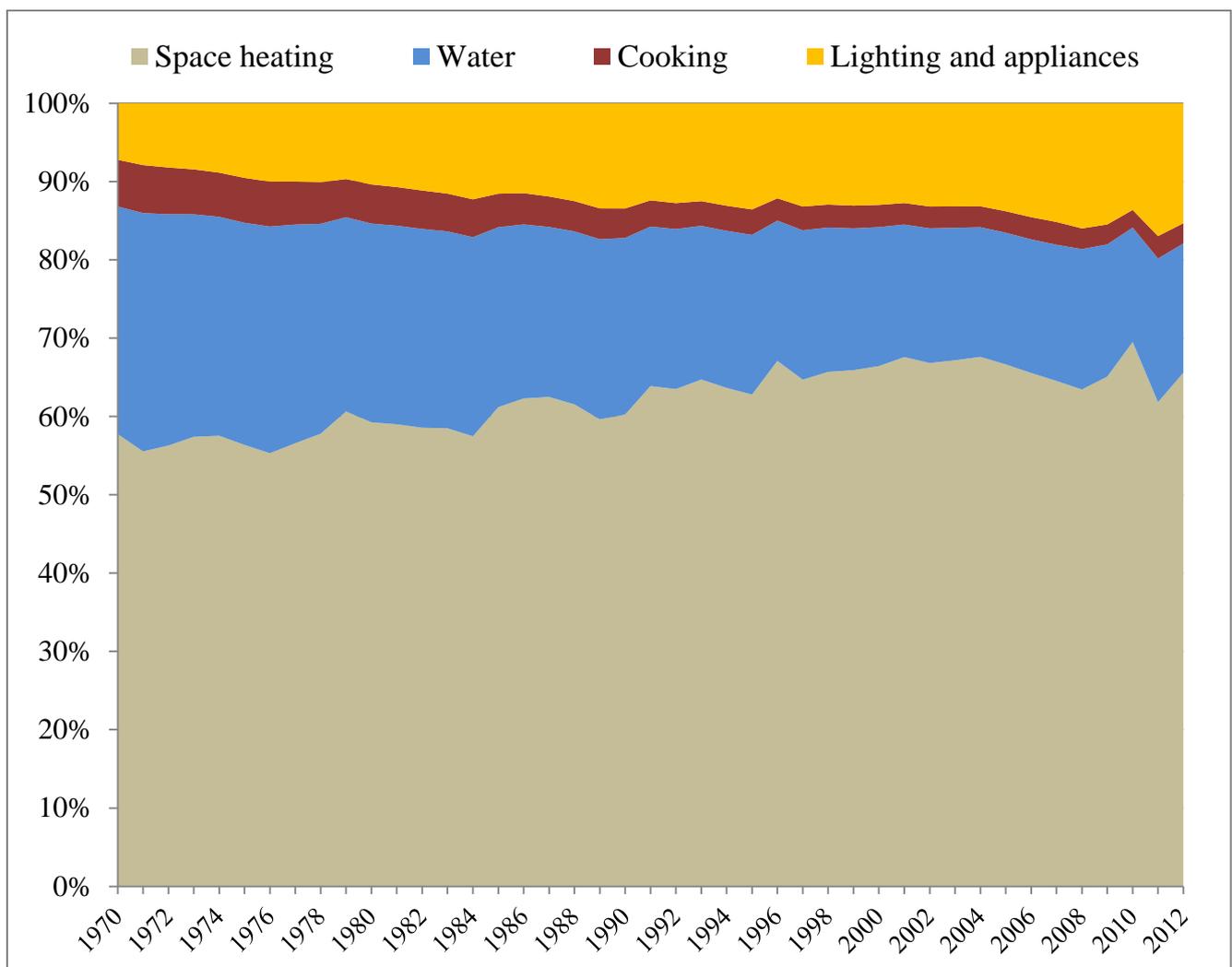
At the end of 2013, the energy companies British Gas, EDF Energy, E.ON, npower, Scottish Power and SSE, known as the 'Big Six,' publicly stated their intentions to increase energy prices. Depending on the supplier, the rise can reach up to 10% (BBC, 2014). The enforcement of these claims has produced an enormous outcry amid the general public and is forcefully reported in the various media. Consequently, issues related to energy price rises have turned into a sort of holy bread for the media, who hasten to share the latest tips on how to reduce household energy bills in their headlines. Nonetheless, international comparisons show that the UK household dual-fuel

bill (taxes included) is on average lower than in other European countries. The domestic price is one of the cheapest in the EU (DECC, 2014e).

It would be unhelpful to bring up the rising energy prices' context without analysing trends in domestic energy consumption, which currently accounts for about 29% of UK final energy consumption, while the average in the EU was 27% in 2009 (BPIE, 2011). The following part explores this point by illustrating the evolution of UK final consumption by end use. Its level observed a 7% decrease since 2000, whereas the UK population increased by 11% on the same period. In addition, energy consumption at the household level dropped by 9% (DECC, 2014d).

As outlined in Figure 3.6, space heating is responsible for two-thirds of overall domestic consumption in 2012. Lighting and appliances, water heating, and cooking account for a further 16%, 17%, and 3%, respectively.

Figure 3.6 – UK Domestic Final Energy Consumption by End Use from 1970 to 2012 (in %)



Source: DECC, 2013b

One can remark the inconsistent growth of the proportion of space heating consumption in the total domestic consumption. In over three decades, space heating consumption has risen by only 8% with a high peak in 2010. Low winter temperatures coupled with insulation quality in the dwellings highly influence domestic consumption: “temperatures play a bigger part on domestic gas consumptions” (DECC, 2013b: 4). Moreover, changes can be reflected through the level of comfort and lifestyle requirements desired by the household (see Milne and Boardman, 2000; Critchley *et al.*, 2007).

The consumption in water heating and cooking activities has been halved since 1970. The replacement of obsolete boilers by more efficient ones has allowed a fall in water heating energy consumption. Lastly, the consumption linked to lighting and appliances has doubled. The expansion in the number of electronic equipment powered at home (e.g. computers, TVs, power supply units, fridge-freezer, and tumble dryers) has outweighed the abatement of energy demand per appliance (National Grid, 2013). Hence, consumer electronics are the largest category of domestic appliance followed by wet appliances (e.g. dishwasher and washing machines). The potential to produce more efficient appliances and lighting is important. As an example, DECC (2013b) stresses that most chest freezers consumed, in 2012, 66% less electricity than recorded in 1990. The energy performance of appliances and electronic goods are now easily identifiable through the use of the EU energy label scale (A+++ to D). Above all, the physical quality of the building impacts the domestic energy usage (Lomas, 2010). Energy efficiency in housing is the topic of the next section.

3.6 Ageing of Housing Stock and Legacy of Poor Performances

Released by the CCC (2013d), the Fourth Carbon Budget Review delivers sound evidence of the contribution of both residential and business buildings to UK GHG emissions. Therefore, in 2012, 37% of the GHG emissions originated mainly from the use of gas for heating buildings; the housing sector accounting for two-thirds of the overall buildings’ CO₂ emissions. Additionally, buildings are held responsible for 67% of electricity consumption and associated emissions (*ibid.*). In the housing sector, CO₂ emissions whether direct (e.g. gas heating, cooking, and hot water) or indirect (e.g. consumption of goods and services produced elsewhere), are influenced by residential energy demand. The latter is strongly linked with the mean air temperature and the energy efficiency of the building (Natarajan and Levermore, 2007; Kelly, 2011).

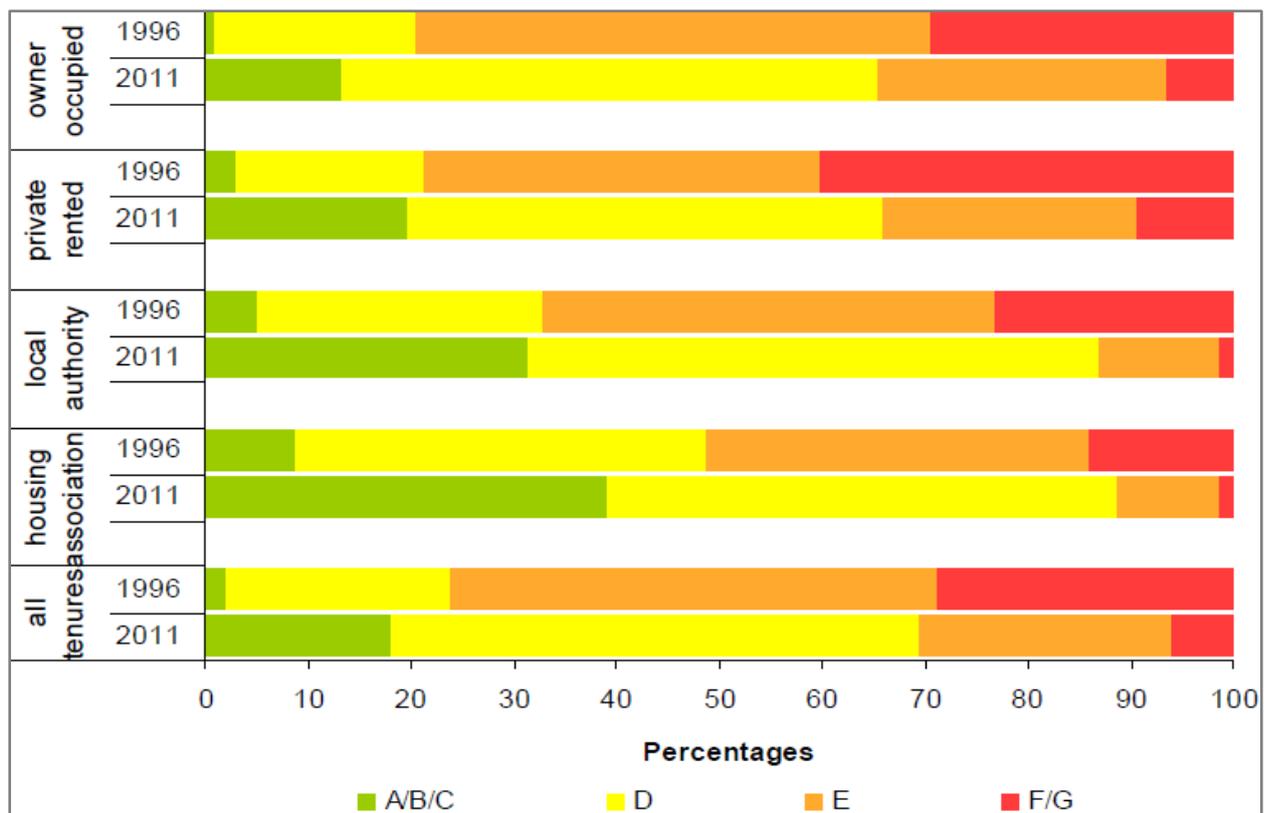
If the building environment raises concerns, this is mainly due to the physical characteristics of accommodation. Indeed, the housing stock in England, and more generally in the UK, is known for being old. The recent figures published in the *English Housing Survey* (EHS) (DCLG, 2014a) report that the age of housing stock varies significantly by tenure. Hence, 22% of dwellings in the PRS were built prior to 1919, and 58% before 1965. Regarding properties in the social rented sector, nearly 60% of them were built between 1945 and 1980. Finally, 20% of English housing were pre-1919 dwellings and 37% were built by the end of World War II. Less than one-quarter (23%) of accommodation was constructed after 1981. There has been a continuous growth in the share of owner occupiers from 1980 to 2005, accounting for 57% and 71%, respectively. Since then, a slight decline has been noted (*ibid.*).

The ageing of properties in the UK, notably in England, raises the question of the energy performances of buildings (e.g. Bell and Lowe, 2000; Clarke *et al.*, 2008; Kelly, 2010). The International Energy Agency (IEA) defines energy efficiency as ‘a way of managing and restraining the growth in energy consumption’ (IEA, 2014). In 2005, the UK government instituted its own methodology for assessing and calculating the energy performance of dwellings. Entitled the SAP, this calculation method takes into account a wide range of factors and indicators contributing to energy efficiency, such as construction materials, the thermal insulation of the building fabric, the energy costs associated with space heating, water heating, ventilation and lighting, as well as the access to and usage of renewable energy technologies (BRE, 2011).

Revised in 2009, the SAP rating (or index) is graduated on a scale of 1 to 100: the higher the score, the better the standard. Moreover, a score of 100 signifies zero energy cost and a score above 100 means that the dwelling is a net exporter. Also, the numbers are embedded in a system of bands, known as the energy efficiency rating (EER), on a scale from A to G, where A is the most efficient and G the least efficient. All monitored dwellings are given an EPC, in which features relevant information regarding the energy performance of the property, the level of CO₂ emitted, the running energy costs, and recommendations to improve the energy efficiency of the dwelling. An EPC is needed whenever the housing is built, rented or sold. The SAP 2005, simplifying the methodology used in the BRE Domestic Energy Model (BREDEM), replaces previous versions of the SAP applied in the mid-1990s, and deemed ‘complex and opaque’ (Lowe and Bell, 1998).

The Department for Communities and Local Government (DCLG) (2014a) published data related to the monitoring of the energy efficiency of English homes. The data displays a sound improvement in the average SAP index from 45 points (equivalent to a Band E) in 1996 up to a score of 59 (Band D) in 2012. In addition, since 2003, the evolution of the mean SAP index of the owner occupied sector and the PRS have converged, reaching 57 and 58 points respectively by 2012. Figure 3.7 exemplifies the energy improvements observed in English dwellings since 1996.

Figure 3.7 – Energy Efficiency Rating Bands in 1996 and 2011, and by Tenure



Source: DCLG, 2014a

If this evolution seems encouraging, one should not lose sight of the fact that there are still around 22% of dwellings failing to meet the ‘decent homes standard’. This standard is assessed via four criteria: the need to meet the minimum standard for housing, the reasonable state of repair, the reasonable modern facilities and services, and a reasonable degree of thermal comfort (DCLG, 2006). This programme puts responsibility chiefly on local authorities and registered social landlords to undertake accumulated repairs throughout their stock (Dowson *et al.*, 2012). Dwellings failing to meet the ‘decent homes standard’ are the most likely to exacerbate the carbon footprint of the residential sector.

Thus, the UK government has been determined to enact environmental schemes in this sector with an eye to ameliorating the energy performance of housing and to eradicate houses leaking energy. These policies have been met with variable successes, as explored in the next section.

Yet, the ageing of housing stock is not exclusive to the UK. For instance, 80% of the housing stock in the USA is 15 years old or older (BPIE, 2013). Similar issues are noticed within the EU, in which the residential floor space accounts for 75% of the building stock (BPIE, 2011). The countries with the largest components of residential buildings built before 1960, and excluding the UK, are Denmark (48%), Czech Republic (45%), Sweden (44%), Bulgaria (43%), and France (42%) (*ibid.*). Hence, retrofitting regulations have been mushrooming all over European countries in order to improve buildings energy performance and consequently, to reduce overall energy demand.

In 2012, the Energy Efficiency Directive (EED) was adopted with the aim of supporting EU countries to achieve their 2020 energy efficiency goal (The Economist Intelligence Unit, 2013). Comparable to the UK, France has a historic residential stock. Consecutive to the ‘Grenelle Environnement,’ a national debate surrounding environmental issues that took place in 2007, the French government has targeted the renovation of 400,000 housing units per year starting in 2013 (BPIE, 2013). Moreover, France has introduced various financial measures supporting dwellings retrofitting such as interest-free loans, special loans for social housing as well as a measure mandating the distribution of energy savings between owner/landlord and tenant. Regarding the last measure, adopted in 2009, property owners will be able to require from the tenant to contribute by half of the estimated costs saved and pay it through the rental fee, once the retrofitting work has been completed (*ibid.*).

3.7 The UK’s Sustainable Housing Policies Prior to the Green Deal

The emergence of specific and targeted policies ensues from the establishment of emblematic and federative environmental guidelines and strategies. Various UK regulations, initiatives and schemes came to the surface following the publications of cornerstone policies. The following section gives a concise introduction to these strategies.

3.7.1 The Zero Carbon Homes

The Zero Carbon Homes (ZCH) consists of a policy set up within the strategies implemented through the CCA 2008. DCLG (2011: 1) defines the ZCH objectives as:

“To ensure that from 2016 new homes do not add additional carbon to the atmosphere but contribute to the UK meeting its climate change targets. This will be achieved by improving the fabric energy efficiency of new homes and through driving increased use of low and zero carbon technologies. Requiring developers to reduce the carbon emitted by homes when they are built avoids the need for them to be retrofitted with low carbon technologies at a later date.”

As this quote illustrates, recommendations are patently steered towards building developers who have to comply scrupulously with Part L1A of the Building Regulations (i.e. conservation of fuel and power in new dwellings). It is important to distinguish between the Zero Carbon policy, which is a set of regulations, the SAP, and the Code for Sustainable Homes (CSH), which refers to a UK environmental assessment method similar to BREEAM (see Section 3.10). Launched by the government in 2006 and implemented by BRE Global, the CSH assesses the sustainability of a dwelling using nine categories (e.g. energy and CO₂ emissions, water, pollution, materials, and ecology). Moreover, as mark of quality, a 1 to 6 star grading system allows the assessment of the overall sustainability performance of the new home (DCLG, 2014c).

In order to qualify as a zero carbon home, three core requirements have to be met:

- The Fabric Energy Efficiency Standard (FEES) is the proposed maximum space heating and cooling energy demand for ZCH.
- The Carbon Compliance is the maximum permitted amount of CO₂ arising from heating, cooling, water use, lighting and ventilation.
- And the remaining carbon emissions (after the first two requirements are met) must be reduced to zero (Zero Carbon Hub, 2014).

This policy reaffirms both the government’s course of action in meeting the CAC’s targets and its determination to design the housing domestic sector in more sustainable ways (cf. Osmani and O’Reilly, 2009; McManus *et al.*, 2010). Additionally, the ZCH programme echoes back to a previous noteworthy policy which used to be effective from 2006 to 2011, the Low Carbon Buildings Programme (LCBP). The latter aimed to provide funds to householders, businesses, schools, and others, with the chief intention to reduce CO₂ emissions by demonstrating combinations of energy efficiency and microgeneration technologies on a wider scale (DECC, 2011a).

In addition to targeting the annihilation of CO₂ emissions produced on-site, the ZCH also facilitates tackling other imposing issues such as FP and energy security (Zero Carbon Hub, 2014). In line with these targets, the Warm Front Scheme used to be cast in the same mould.

3.7.2 The Warm Front Scheme

The Warm Front Scheme was a government-funded scheme aimed at making English homes warmer, healthier and more energy efficient. Known as the Warm Homes in Northern Ireland, the Energy Assistance Package in Scotland, and NEST in Wales, the English Warm Front, which ended in January 2013, was then managed by Carillon Energy Services, a company committed in sustainable energy. A grant of up to £3,500 was made available for home improvements such as loft insulation, cavity wall insulation, replacing obsolete heating systems, amid others (The Warm Front Team, 2013). This scheme, launched in June 2000 and funded by DECC, was tailored for home owners or renters in the private sector receiving certain benefits such as pension credit, income support, housing benefit, council tax benefit, etc.

Hence, vulnerable householders, particularly those affected by FP conditions were the principal target of the Warm Front Scheme. As reported in this Parliamentary note (Bolton and Watson, 2013a), a total of 2.3 million English households received assistance during the operating period of the Warm Front Scheme, which was replaced in favour of the GD.

3.7.3 Carbon Emissions Reduction Target (CERT)

Operational between 2008 and 2012, the CERT was deemed a central legislative driver for improving energy efficiency in British homes (Ofgem, 2013b). Its contribution to the UK's legally binding GHG commitments to emissions reduction was carried out through obligations of gas and electricity suppliers to reduce CO₂ emissions in the residential sector. Subsequently, the 'Big Six' energy suppliers had to take measures to meet the overall target of carbon saving obligations of 293 MtCO₂e (BBC, 2014b). In order to achieve the targets, the CERT delivered a range of measures encompassed in categories like insulation, heating, lighting, and sustainable behaviour (DECC, 2011b). The CERT targeted notably low-income consumers by distinguishing two groups: the 'Priority Group' and in the final year of CERT, the 'Super Priority Group'.

The first group was designated by the CERT Order as a group of domestic energy users where households were subject to income benefits similar to these in the Warm Front Scheme (i.e. council tax benefit, housing benefit, income support, an income-based jobseeker's allowance, and disability living allowance), or were in receipt of child tax credit/working tax credit and under an income threshold or were at least 70 years old (Ofgem, 2013b). The second group was a subset gathering the most vulnerable households of the 'Priority Group'.

In the final report of the CERT conducted by its administrator, Ofgem (*ibid.*), it is reported that the objectives set have been achieved. Indeed, the obligations have contributed to 297 MtCO_{2e} of carbon savings. This amounts to 101% of the overall CERT target. Furthermore, the total carbon savings of the ‘Priority Group’ households was initially a minimum of 40%. Eventually, 41% of CO₂ savings were produced within this group, which also met the conditions. It is also the case for the ‘Super Priority Group’ in which energy suppliers fulfilled their obligations.

In the end, the main types of measures contributing to carbon savings were: insulation (41%), insulation obligation (25%), lighting (17%), and heating (8%). Hence, nearly 4 million households received professionally-installed loft insulation: 2.6 million households received professionally-installed cavity insulation, and another 2.8 million households benefited of ‘DIY’ (do-it-yourself) loft insulation materials (Bolton and Watson, 2013b). In December 2012, the CERT terminated and paved the way for the GD in which the Energy Company Obligation (ECO) focuses specifically on reducing residential CO₂ emissions of vulnerable households, including those in FP and those living in hard-to-treat houses.

3.7.4 The Community Energy Saving Programme (CESP)

The CESP ran between autumn 2009 to late December 2012. It was created as part of the government’s Home Energy Saving Programme (Ofgem, 2014). Running parallel to the CERT, the CESP was an intense community based energy saving programme funded by an obligation on major energy suppliers and generators to improve energy efficiency standards and to permanently reduce fuel bills in each individual household (Bolton and Watson, 2013c; Ofgem, 2013c). This strategy was ruled as the ‘whole-house’ principle and aimed to benefit some 90,000 households (DECC, 2009).

Unlike the CERT, the specificity of this policy solely targeted households living in the most income-deprived areas in GB. Consequently, the CESP particularly addressed measures to those living in FP and/or in ‘hard-to-treat’ properties. Such are qualified as dwellings having solid walls, no main gas heating system, no loft space to insulate, and high-rise flats (cf. BRE, 2008; Centre for Sustainable Energy, 2011). To define what areas were eligible, DECC used the 10% most deprived Lower Super Output Areas (LSOAs). This street-by-street approach was led by the main energy suppliers/generators in collaboration with the local authorities. 4,500 LSOAs were eligible under the CESP. In a DECC publication (2009), it is also stated that the cost of installing measures will be met by the suppliers/generators and the possibility of combining with

other effective schemes such as Warm Front. DECC was responsible for setting the overall CESP target and aimed for a reduction target of carbon emissions of 19 MtCO_{2e} (Ofgem, 2013c).

According to the final report published by Ofgem (*ibid.*), energy companies have achieved 16MtCO_{2e} (85%) against the general target. This infers that the comprehensive CESP target has failed to be met. Globally, over 293,000 measures were installed in about 155,000 dwellings. Ergo, the CESP policy was assigned to more homes than initially planned. Amid the most prevalent measures adopted were external solid wall insulation, new heating controls, and the replacement of boilers (Bolton and Watson, 2013c). Nearly all CESP measures were achieved through partnerships with social housing providers or by direct promotion to private households.

To conclude, the success of the CESP policy was mitigated. Although the overall CESP target was not met, the results were higher than the previous predictions. This is the aftermath of energy companies being able to speed up their installations' progress in the final six months. Furthermore, the majority of dwellings that received CESP measures were qualified as hard-to-treat, which could be deemed a success (Ofgem, 2013c). Finally, if the CESP is no longer operational, its design and the lessons learned from the policy have influenced its successor programme, the ECO (see below).

3.8 Green Deal, the 'Blockbuster' of Sustainable Schemes

3.8.1 The GD in Details

The GD has become the government's flagship environmental programme replacing energy savings schemes such as the CERT from 2008-2012, "the main legislative driver for improving energy efficiency in homes within Great Britain" (Ofgem, 2013b: 2). Originally planned to be inaugurated in October 2012, the policy was officially put into force in January 2013 for properties in England and Wales, and at the end of February 2013 in Scotland. Raising substantial ambitions and hopes, this scheme was regarded highly by the government. For instance, the Minister of State for Energy and Climate Change did not refrain from praising the environmental programme as a 'revolution' and as 'the biggest home energy programme of modern times,' a year before its establishment (The Guardian, 2012). As well, he claimed that 14 million homes in the UK could benefit from the flagship initiative. The GD is designated by the UK Green Building Council (UK-GBC) (2014) as a "market-based policy framework designed to drive energy efficiency improvements in millions of UK homes". The GD aims to help the government achieve its CO₂ reduction targets and to lighten consumers' energy bills by

facilitating energy-saving improvements in residential properties (DECC, 2013c). Overall, 45 measures were approved to receive funding under the GD, such as:

- Insulation
 - Cavity wall/Solid wall insulation
 - Draught proofing
 - Loft or roof/under-floor insulation, etc.
- Heating
 - Condensing boiler (gas or oil)
 - Warm-air unit
 - Fan-assisted storage heater, etc.
- Hot Water
 - Hot water cylinder jacket/Cylinder thermostat
 - Waste water heat recovery for showers
- Windows and doors
 - Replacement glazing/Secondary glazing
 - High performance external doors
- Micro-generation and renewables
 - Air source heat pumps/Ground source heat pumps/Water source heat pumps
 - Biomass boilers and heaters
 - Micro wind generation/Micro CHP
 - Solar Photovoltaics (PVs), etc.

The GD is developed in four steps which are basically (DECC, 2014f):

- the energy efficiency assessment performed by an accredited assessor
- the recommendations of improvements made by the adviser/assessor
- the quotes and the Green Deal Plan available between the owner/occupier and providers
- the installation made through an accredited installer

The particularity of the GD mechanism is the innovative financial aspect in regards to the consumer/customer. The capital is privately financed through banks, local authorities, and business groups in order to meet the up-front costs of GD's eligible energy efficiency measures (up to £150). Indeed, in order to know if a property owner is eligible for the scheme, he/she must obtain an assessment report, valid for 10 years, carried out by an accredited assessor. For good measure, the Green Deal Cashback Scheme was introduced on a 'first come, first serve' basis as an incentive for people to undertake home improvements. Once the installation is completed, eligible customers will receive their cashback payments (Energy Saving Trust, 2014).

The GD mechanism benefits also from the support of the ECO. Instituted on 1 January 2013, running until March 2015, the aforesaid was scheduled to replace the two previous schemes reported earlier, the CERT and the CESP, to provide additional subsidies to support vulnerable and low income consumers and residents in hard-to-treat properties (DECC, 2013d). Therefore, its implication in downsizing the number of households in FP is primordial. ECO, which is worth around £1.3 billion every year, is constituted of three components addressing various measures of energy efficiency improvements for the targeted dwellings and qualified households: the Carbon Emissions Reduction Obligation (CERO), the Carbon Saving Community Obligation (CSCO), and the Affordable Warmth Obligation (HHCRO).

Another key matter is that the responsibility for the loan repayments remain attached to the property rather than the householder or business (Dowson *et al.*, 2012). This infers that in the case of moving house, the next occupant will have to deal with paying off the energy efficiency improvements undertaken. Furthermore, the programme is designed in a way that customer's savings must exceed the repayments. This 'Golden Rule' is embedded in the original aspect of the policy:

“The overarching ‘Golden Rule’ principle is that the estimated savings on energy bills must be equal to, or greater than, the costs attached to the energy bill.” (*ibid*: 300)

To conclude, the GD's characteristics and innovative aspects bear comparison to a 'Green Marshall Plan,' providing financial resources and extended support to persuade owners and occupants to apply energy efficiency improvement measures. Benefiting from the involvement and collaboration of consortium of institutions, organisations, and companies, (e.g. DECC, British Property Federation, UK-GBC, the big six energy suppliers, HSBC, Goldman Sachs, and plenty others), GD was designed as a 'blockbuster' of environmental measures. This goes without saying that the ambitions were unashamedly flaunted, as when Prime Minister David Cameron affirmed vigorously in *The Guardian* that energy efficiency, hinting of the GD, was the motor of green growth (Vaughan, 2013a). Instead, the government should have lowered its ambitions not only before the introduction of the GD, but also afterwards.

3.8.2 A Stormy Set Up...

Before its official launch in January 2013, the GD sparked a controversy, as espoused by Mourant (2012: 8):

“The Green Deal will rely on ‘energy assessors’ giving impartial advice, but many are being squeezed out of business because they can't earn a living.”

One of the apparent reasons is that a considerable number of ‘intermediaries’ performs the assessment of homes to provide the EPCs. These intermediaries who have invested a weighty amount of money, charge lower fares than the experienced energy inspectors. Consequently, Mourant relates the discontentment of energy assessors to the possibility of an exodus of licenced assessors. The training, preparation, and availability of plumbers are additional sources of prominent complaints. In a 2012 report, the Royal Academy of Engineering (RAE) (2012: 49) informs of a “skills shortage” and the need to recruit “a new type of energy use professional” to support the GD.

Accordingly, it is quite reasonable to assert that the GD was, prior to its inauguration, under fire from critics. In the front row, the media discourse pointed at the malfunctions of the scheme, especially related to its lack of publicity and information. Consequently, the policy received bad press, as suggests the selection of newspaper headlines published before the establishment of the GD:

- “Green deal suffers setback as loft insulations set to plummet.” (Carrington, 2012a)
- “Four out of five people have not heard of green deal, poll finds.” (Vaughan, 2013b)
- “The green deal still has big gaps to plug.” (Carrington, 2012b)
- “Green Deal software delay hits applicants.” (Moors, 2012)

Thus, a lack of communication from the government about its flagship green programme also emerged as one of the main faux pas of the GD’s establishment. As reported by Vaughan (2013b), a week before the launch of the scheme, a large share of the population seemed to be ignorant of what the GD was about, according to a YouGov poll. The limited attention received by the environmental programme characterised the GD as “one of the government’s least-known flagship policies” (Lean, 2012).

This issue may raise questions regarding the scope of the campaign to promote the scheme. Media and professionals have stated since mid-2012 that the government was preparing to invest about £2m of national publicity campaign to promote the GD scheme (Murray, 2012). These statements were reinforced when the energy minister himself, Gregory Barker, expressed, in March 2013, that the government “still got a large chunk of [our] communications budget left to spend” (Builders’ Merchants News, 2013). In mid-2014, no signs of a significant advertising campaign resurfaced.

To summarise this section, prior to the entrenchment of what was designated ‘the biggest home energy programme of modern times,’ the GD faced an eventful campaign in which the media and press coverage alertly indexed mistakes and stated the dysfunctions of the scheme’s progress. Moreover, several reports realised by pundits and watchdogs warned the government to intensify their efforts, notably in terms of their communication and advertisement on the product. Finally, the postponement of the GD’s launch from October 2012 to January 2013 and the absence of communication on the putative ‘Day One’ were additional predications of a green policy doomed to struggle rather than to succeed.

3.8.3 ...And So Far a Bitter Failure

In May 2013, a report by the Parliament pointed out the absence of a precise and unequivocal set of expected outcomes regarding the GD and ECO. For instance, the number of households targeted was not explicitly stated. Several press articles cited that the Coalition announced an objective of insulating 14 million homes in the UK by 2020 (Murray, 2013; Wright, 2013). Suggestions made consider the potential carbon savings, the number of low income household benefited by the policy, and the number of cavity walls needed to be insulated by 2020. The figures equal 6 to 7 million homes. In addition, previous forecasts about job creation have been revised downwards as the creation of up to 250,000 was announced in 2010 by the Energy Secretary. Instead, the current estimate is set between 39,000 and 60,000 jobs supported in the insulation sector by 2015. DECC produces a monthly and quarterly report, following the development of the GD and ECO. The data provided is crucial as it informs about the specific measures undertaken and the financial conditions used.

The GD has been somewhat slow off the mark with only 133 measures installed through the Green Deal’s finance at the end of July 2013, six months after its release (DECC, 2014g). In the meantime, measures installed through ECO have met a resounding success with 603,050 installations by January 2014. This constitutes around 98% of all measures installed. The most popular obligation remains the HHCRO, which accounted for almost half of the ECO measures installed. Additionally, cavity wall insulations (33%), boiler upgrades (32%) and loft insulation (23%) comprise of the most applied measures. At the end of February 2014, there were 163,096 GD assessments accomplished according to DECC (*ibid.*). The number of assessments lodged has considerably fluctuated since the GD launch in January 2013. However, a meagre number of assessments led to a complete deal. Hence, a total of 2,124 GD measures had gone ‘live’ by

February 2014. These figures were called ‘disappointing’ by the Energy Secretary, Ed Davey. He also conceded that the GD started off ‘too clunky and too complex’ (Vaughan, 2014).

Albeit the GD’s kick-off did not occur under the best auspices, the government, through DECC, kept monitoring public awareness about the scheme. In March 2014, DECC published a report, in which three waves of a tracking survey are conducted. The first wave took place prior to the official launch of the GD. It attested that amongst the survey respondents (n=3,562), only 10% had heard of the government’s policy. The second wave, conducted two months after the launching, observed an increase to 19% (n=3,409). In November 2013, the third and last wave ameliorated the previous score with 23% (n=3,424) of respondents being aware of the GD (DECC, 2014h). These mediocre scores validate the lack of the general public’s interest in the green scheme.

To conclude on the GD, most pundits agree that the results are globally disappointing and that the plans have ‘reduced to a trickle’ (Carrington, 2014). Although an innovative and ambitious scheme such as the GD might take time to captivate massive attention, the lack of public support and the current economic difficulties that so many households and businesses face in their daily lives are enough to restrain its success. Lastly, the limited confidence and hint of irritation demonstrated by the UK government (see Mason, 2013) does not facilitate the transformation of a ‘green disaster’ to a ‘clear triumph’.

3.9 The Challenges of Fuel Poverty

Over the past few years in the UK, energy saving schemes have been implemented in response to low-energy efficiency in dwellings, increased energy costs, and the legislations binding the reduction of CO₂ emissions. A symptom epitomising the socio-economic and environmental concerns striking within poor quality housing is represented by FP. The section explores the diverse challenges related to FP: the difficulties of adjusting an adequate definition, the recurrent socio-economic and health impacts on the most vulnerable groups, and the lack of concerns related to students’ situations in the PRS.

Identified in the early 1990s (Boardman, 1991), FP has been at the forefront of the UK government’s agenda. Since then, various actors have been engaged in this field, such as executive organisations (e.g. DECC), charitable organisations (e.g. National Energy Action, Centre for Sustainable Energy, and Fuel Poverty Action), and academic researches (e.g. Centre for Low Carbon Futures, Environmental Change Institute, and the EU Fuel Poverty Network).

Altogether, they have produced a myriad of data, reports, schemes, and commentaries which make FP a well-known issue. Yet the definition of FP has undergone massive evolutions (Liddell *et al.*, 2012; Moore, 2012) since Boardman brought the term up.

FP connotes a multi-dimensional indicator that embraces issues ranging from economic, social justice, environmental, health, and wellbeing (Boardman, 2010). Three drivers are regarded as circumscribing the definition of FP: household income, energy prices, and energy efficiency of the dwelling. Hence, the most accepted definition of FP is:

“A household is said to be in fuel poverty if it needs to spend more than 10% of its income on fuel to maintain an adequate level of warmth, usually defined as 21 degrees for the main living area, and 18 degrees for other occupied rooms.” (DECC, 2010: 6)

Nonetheless, the components of this definition became out of date, and were modified as they did not necessarily tally with the targeted groups. As Boardman (2010: 21) contends:

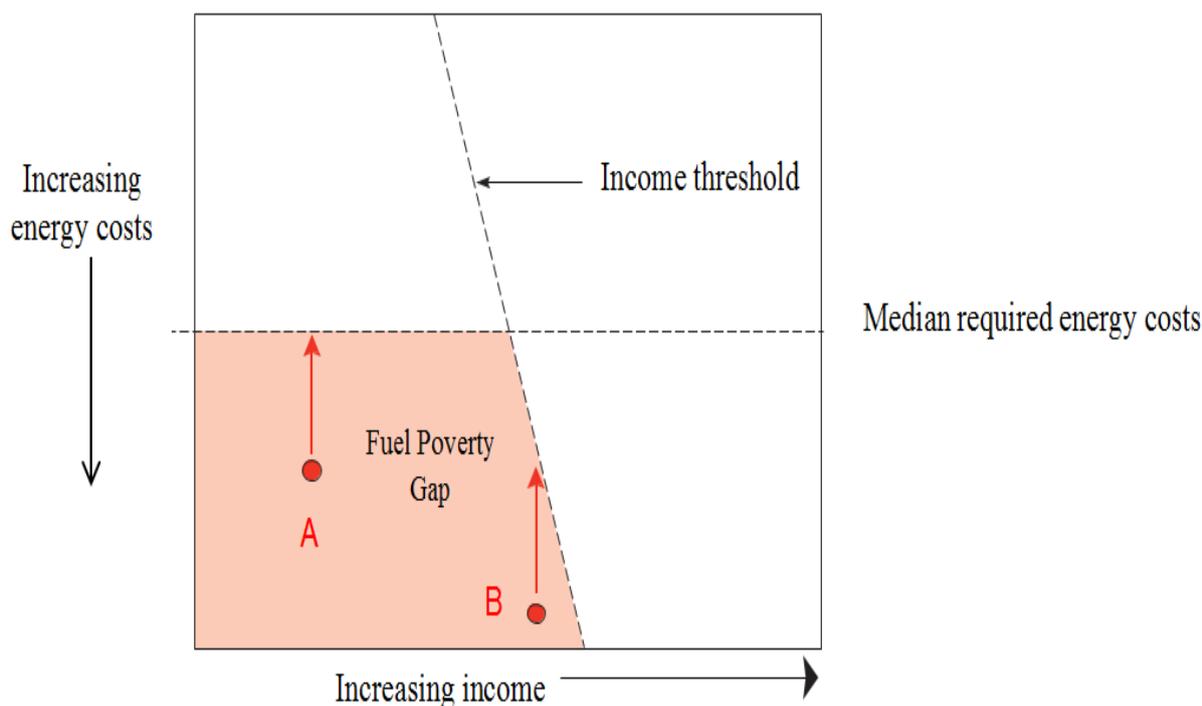
“Who is fuel poor depends on the definition; but the definition depends on who you want to focus on and this involves political judgement.”

Consequently, an independent report entrusted to Professor John Hills of the London School of Economics, was published in March 2012. The document, known as the *Hills Fuel Poverty Review*, set out new recommendations and considerations on improving ways to identify FP. Hills (2012: 4) suggests that the government should adopt a different approach in order to reshape the definition of FP:

“It is of course a major step to recommend changing the indicator used to monitor such an important problem [...] given the problems with the current indicator, we recommend that it ceases to represent the official indicator of fuel poverty [...] it would be desirable to continue to publish the results in the current form for information purposes for some years at least.”

In this way, Hills introduces two new indicators: the income threshold and the FP gap. This proposition aims to directly measure the overlap between low income and high energy costs, shortened as LIHC (cf. Figure 3.8).

Figure 3.8 – Recommended Indicators of the Extent and Depth of FP



Source: Hills Fuel Poverty Review, 2012

Prior to setting the LIHC indicator as strategic framework, the 10% income indicator, used as the referential to quantify FP, became gradually unadapted to the actual socio-economic contexts. The new LIHC indicator aims to increase the efficiency of targeting fuel poor households:

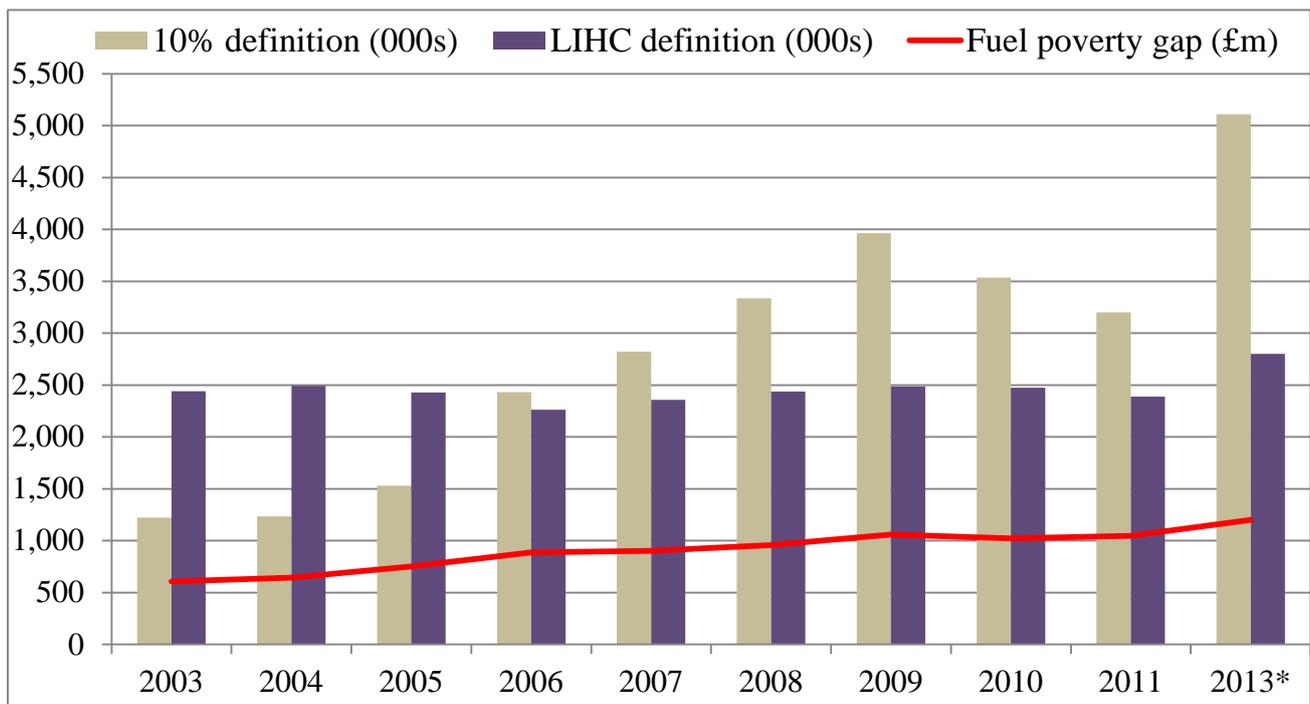
“To be very responsive to changes in prices, such that these usually dominate the indicator, outweighing other factors such as income and energy efficiency. Under the LIHC indicator, the fuel poverty gap is the element that is more responsive to prices.” (DECC, 2013e: 10)

The implementation of the new methodology has rapidly impacted the FP data process (DECC, 2013e). Therefore, the levels recorded of FP have steadily decreased under the LIHC indicator, as portrayed in Figure 3.9.

Overall, the Hills Fuel Poverty Review has been endorsed across the main agents involved in eradicating FP (Mason, 2012; Moore, 2012). The creation of the LIHC measurement framework has introduced more pertinence in grappling with this issue. Moreover, the new definition allows the investigation of the depth of FP amongst households, and the quantification of the extent of support needed by the affected households (NEA, 2014). Nonetheless, several disapprovals emerged, as stated by the Fuel Poverty Advisory Group (DECC, 2012b: 2):

“We see little value in an indicator that barely changes over time and does not help track progress on policy [...] we were disappointed to find that the final consultation document published by the Department of Energy and Climate Change (DECC) proposed adoption of the Hills recommendations with minimal recognition of the cogent arguments put forward by stakeholders.”

Figure 3.9 – Fuel Poverty in England from 2003 to 2013 under Both Definitions



Note: Figures for 2012 were not available. Figures for 2013 are not official fuel poverty figures and are based on the assumptions from other parties.

Source: NEA-EAS, 2014

Therefore, some components of the former 10% indicator have been neglected in the LIHC definition of FP. This is the case for improvements in the energy efficiency of the dwelling, which, according to Moore (2012), are not reflected by the new indicator. In addition, one of the main remaining challenges is to target the most vulnerable groups in situations of FP. Nonetheless, Boardman (2010) points out that the energy efficiency of the dwelling constitutes the main component of fuel poverty, as ‘raising incomes can lift a household out of poverty, but rarely out of fuel poverty’.

Despite this, the LIHC framework incorporates a large number of vulnerable groups (e.g. unemployed households, families with children, and elderly people), though it appears to be unadapted to specific groups, such as students. Indeed, the issue of students slipping through the LIHC’s net has not yet been explored. Students’ specificities on the housing market dissociate them from other social groups:

“Students are not typically associated with fuel poverty on the grounds that their situation is considered only temporary. Of course, many students live in poor quality housing that would benefit from energy efficiency investment.” (Baker *et al.*, 2003)

Under the LIHC indicator, students renting in the private sector fall under the category ‘other multi-person households,’ which is not more explicit. Yet it has been attested in Section 2.7 that nearly half of HE students reside in the PRS, often in decaying HMOs. Potential situations of students in FP are serious. According to the NUS (2014), 52% of students have reported feeling uncomfortably cold in their accommodation, whereas 48% deemed their home to be inadequately insulated. The preliminary findings of Bouzarovski *et al.* (2012) suggest that many students in the PRS live in conditions that can be characterized as FP. Additionally, the study makes evident that not turning the heating on revolves around financial motives.

As examined in Section 2.10, students’ finances are commonly restricted and mainly state-dependent. This is the reason why rent pooling allows them to occupy higher rent housing (cf. Section 2.4). Unlike other social groups, students possess these particular flexibilities and adaptabilities which allow them to adjust their lifestyles according to their socio-economic realities. This infers that students sharing a property do not necessarily have the same levels of income. The complexity of measuring student income makes the current FP indicator even more inapplicable (cf. Section 8.4.1). Students’ personal finances may vary on a monthly basis. In the particular case of students in the PRS, it could be more relevant to target the FP indicator at the individual scope rather than at the entire household. Adopting an integrated approach to identify the most vulnerable households has proven to be conclusive because it allows the collection of detailed data (Walker *et al.*, 2014). Furthermore, some students in HMOs may face more difficulties than others to meet the energy cost, as well as to heat their living spaces, the bedroom, notably, at adequate temperatures. An original approach to detect fuel poor students by using their share of energy cost, in their overall monthly expenditure, is applied in Section 8.5.4

Another challenge of finding cases of FP in student households derives from the buoyant competition existing in this niche market (Rugg *et al.*, 2000). This compels landlords to adapt their offers in relation to prospective residents. As detailed in Section 2.9, students living in the PRS, either HMOs or PBSA, can benefit from advantageous offers. Amidst the most popular packages available (along with free Internet access) is the energy bills inclusive package. This implies that the energy costs are already embedded in the total monthly rent price. Also, students are ‘immunized’ against potential rises in energy prices, as the energy package is circumscribed

by a *prix fixe* or by a total of energy consumption. Hence, detecting students in FP proves to be extremely complicated.

Beyond the unadapted measurement of fuel poverty within student populations, the paucity of data about the energy efficiency of students' housing constitutes a chief hindrance in considering this problem. One of the thesis' objectives is to create a quantitative taxonomy of student housing in Loughborough, which includes various components such as the building age, the housing type, the occupancy type, and the SAP index (see Chapter 7). Performing this objective will both represent a serious progress in addressing FP amongst students and highlight the adjustments necessary to ensure that specific populations, such as students, are not left behind. Consequently, it is crucial to grapple with the issue of students' housing conditions, because repercussions could be dramatic.

The reality of living in an inefficiently insulated home affects households at economic, social, and health levels. Although the first two factors have been previously approached, the health impacts of living in FP are concerning. Indeed, housing conditions are a causal factor of health complications (see Thomson *et al.*, 2001; Krieger and Higgins, 2002). Wilkinson (1999) asserted that the highest risks to health occur in housing associated with cold, damp and mouldy conditions. Additional causes of hazards noted in the literature review encompass lack of natural light, lack of safe drinking-water, dust, improper disposal of sewage, poor indoor air quality, the absence of overcrowding, lead, radon, and household pests (e.g. mice, rats, and cockroaches) (cf. Matte and Jacobs, 2000; Jacobs, 2006; Keall *et al.*, 2010). In a concomitant way, health risks reported from deficient housing environment are cardiovascular diseases, respiratory (e.g. asthma and other chronic respiratory symptoms), rheumatoid arthritis, hypothermia, fever, allergic symptoms, and mental well-being (e.g. depression and anxiety) (e.g. Wilkinson, 1999; Krieger and Higgins, 2002). On top of causing yearly excess winter deaths, inadequate housing quality costs at least £600 million to the National Health Service (NHS) annually (UK Parliament, 2011).

Albeit the elderly population and children are more likely to be affected by the symptoms caused by such conditions (NCB, 2012), students living in draughty HMOs are not likely to be spared. The NUS (2014) states that nearly half of the students reported the presence of dampness, condensation, and mould in their current accommodation. Accordingly, the study reveals that the top three impacts of cold homes are physical illness (e.g. respiratory illness and colds), inability to study (e.g. concentration levels), and mental health (e.g. depression, stress, and anxiety).

Moreover, 40% of surveyed students explained that in order to stay warm they avoid their homes by staying longer in their institution buildings (e.g. libraries, coffee shops, and classrooms). Although situations of cold homes do not affect every student living in the PRS, the proportion of respondents complaining about their draughty and mouldy accommodation remains alarming.

Thus, the decayed student housing conditions in the PRS should be recognised. The illustration of students studying at home with gloves and scarves deeply contrast with the high quality services supposedly supplied by HEIs for £9,000 a year. However, as contended in Section 2.5, commodifying accommodation has been widely used by the institutions as an incentive to recruit students. At the polar opposite to students struggling to enjoy comfort in HMOs, eco-residences have recently mushroomed on UK campuses.

3.10 The Recent Developments of Sustainable Student Housing

In recent years, UK campuses have observed an upsurge of sustainable student accommodation. A focus on BREEAM, the Building Research Establishment Environmental Assessment Method, is essential to understand institutionalised incentives to integrate energy efficiency and low carbon technologies within buildings' plans.

BREEAM is characterised by the Building Research Establishment (BRE Group) as the foremost international environmental assessment method and rating system for buildings. This sustainability classification of buildings was launched in the UK in 1990 and became a paragon in the sector of addressing green building practices. 250,000 buildings are BREEAM certified in many countries (BREEAM, 2014). Components used in the measurements of performance include aspects such as energy, water use, pollution, transport, materials, waste, etc. Similar criteria are also applied in the CSH, the UK national standard evaluation of sustainability for new homes. Developed by the US Green Building Council (USGBC), the Leadership in Energy and Environmental Design (LEED) is the North-American equivalent to BREEAM. Both LEED and BREEAM are acclaimed as 'environmental trademarks' worldwide. Followed by the huge success of both BREEAM and LEED, the sector of building accreditation and certification has experienced a proliferation of building sustainable assessment tools (e.g. CASBEE, CBDD, Green Star, and GreenMark) (Haapio and Viitaniemi, 2008; Cole and Valdebenito, 2013).

Within the past few years, some UK universities constructed eco-friendly residences on-campus. This is the case for:

- Carnegie Village, Leeds: built up in 2009 and rated BREEAM Excellent (Figure 3.10).



Source: <http://www.leedsbeckett.ac.uk/conferencing/carnegie-village.htm>

- Lancaster University: awarded BREEAM Excellent (Figure 3.11).



Source : <http://www.upp-ltd.com/lancaster-university.php>

- Mountain Halls, University of Glamorgan: awarded BREEAM Winner 2012 Wales (Figure 3.12).



Source : <http://www.mccannp.com/index.php?page=2&id=66>

- The Green, Bradford University: opened in 2011 and won BREEAM 2012 (Figure 3.13).



Source:

http://www.thetelegraphandargus.co.uk/news/9244606.Bradford_students_flats_the_greenest_building_on_the_planet

As described, some universities capitalise on the refurbishment or development of residential accommodation, turning them into certified eco-residences. Though extremely costly, the recognition of the sustainable nature of these developments is a powerful and winsome asset to increase the reputation and visibility of HEIs against others. Therefore, since 2010 Lancaster University's on-campus accommodation has been domestically swamped with awards and recognition through the National Student Housing Survey (NSHS). Consequently, they have been awarded, amongst other accolades, 'Best University Halls' for five consecutive years and 'Best Individual Accommodation' in 2011, 2012 and 2013 (NSHS, 2014). It can be assumed that such recognitions signify an added value to the university as a conspicuous leverage to remain attractive towards students in regards to the repercussions on the student housing market. The first two eco-residences in the list above have sealed a partnership with UPP which demonstrates the competitiveness of HEIs' willingness to offer a green environment to its students.

For lack of having sufficient financial resources to build up student eco-residences, some UK universities are involved in environmental friendly initiatives within the PRS. Supported by the HEFCE and the NUS, the Students' Green Fund allocates funding to English student unions to develop student-led sustainability projects (Students' Green Fund, 2014a). This is notably the case for GreenPad, Energize Worcester, and the Green Impact Student Homes (GISH).

The first initiative occurs at Staffordshire University. It targets the education of students in ways to lower energy consumption in the PRS, and therefore their energy bills, by providing good quality housing and monitoring tenants' energy usage. It should be added that the GreenPad project has partially been established in response to the inefficiency of all-inclusive packages (as noted in Sections 2.9 and 3.9) to raise awareness on controlling energy consumption among students in the PRS.

The second initiative, Energize Worcester, prompts the installation of smart meters in student properties for the purpose of encouraging students at the University of Worcester to change their energy consumption behaviour. Providing real-time energy consumption data contributed to cutting down some participants' energy usages by over half and consequently, generating noteworthy savings (Students' Green Fund, 2014b).

Lastly, the GISH scheme participates in the creation of a guidebook on various ways to adopt a 'greener' lifestyle, such as replacing inefficient light bulbs, recycling, giving away things to charity, and using sustainable transport on campus. University of Sheffield students living in the highest scoring homes can benefit from a month of free rent, while their landlords can receive,

among other benefits, funding for property improvement (e.g. installation of solar panels and double glazing windows) as well as the Green Impact Accreditation (GISH, 2014).

Thus, sustainable living projects related to energy consumption in student housing are undertaken throughout the country. Although these initiatives are widely insufficient, they emphasise the environmental efforts that both tenants and landlords can make within their housing. Micro-level interventions to change residents' energy consumption habits have proved to be effective through simple measures (see Darby, 2006; Martiskainen, 2007, 2008; Maréchal, 2009, 2010). However, the risk of causing a rebound effect (including a 'backfire' effect), defined as the antithetical effect of similar or higher levels consumption levels due to the introduction of greater energy efficiency equipment, is real (Brännlund *et al.*, 2007; Druckman *et al.*, 2011). Finally, it seems legitimate to wonder if engaging in such environmental demagoguery would be the same without financial incentives.

Similar to students occupying decaying properties in the PRS, there is a massive research gap relating to the energy efficiency of student accommodation on campus. This is particularly the case in the UK. In the USA, the topic of green student housing has been, to some extent, broached (Torres-Antonini and Dunkel, 2009; Trinklein, 2009). The relationship between sustainable halls on-campus and the collaborative benefits on the living-learning communities is expressed. Therefore, the construction of environmental friendly student accommodation is perceived as a catalyst of the transition to a sustainable society (Torres-Antonini and Dunkel, 2009). In a different perspective, the Netherlands have opted for the installation of temporary container housing to accommodate students. This solution presents the solid advantages of reducing the shortage of student housing by rapidly providing cheap, sustainable, and modular apartments (Uittenbroek and Macht, 2009).

3.11 Summary

In summary, this chapter has highlighted the rise of global awareness related to sustainable development. The numerous international regulations put into practice over the past three decades indicate that authorities, at various echelons, have faced finding solutions to reduce global warming. The UK has also dedicated numerous policies to decrease GHG emissions. In focus, the housing sector accounts for a significant portion of CO₂ emissions. The various policies put into place showed signs of improvement in terms of energy efficiency, environmental behaviour, etc.

Yet, the ageing housing stock can be perceived as the Achilles' heel of UK sustainable policies. The energy efficiency of pre-1919 buildings is critical. Low-temperature in winter and the continuous rises of energy prices are other factors affecting vulnerable households and those in FP. As demonstrated through the problems of establishing the GD, massive efforts need to be achieved in order to successfully meet the international environmental objectives.

Finally, the chapter showcases the paucity of research related to the energy performances of student accommodation and the multiple effects on its occupants. This thesis, using the university town of Loughborough as case study (cf. Chapter 5), aims to explore the relationships between the dynamics of student housing supply and demand within the context of sustainability policy and planning regulations.

Chapter 4

Methodology

4.1 Introduction

Constituted of six sections, this chapter addresses the description and justification of the methodological approaches employed in this thesis. Section 4.2 includes the argumentation of applying a mixed-methods approach in the research. The two following sections are sequentially structured in order to reflect the main phases of the research process. Section 4.3 discusses the development of the online survey as the dominant source of data collection. Building on the results obtained through the prior method, Section 4.4 considers the benefits and limitations of employing semi-structured interviews and focus groups as a triangulation technique. Section 4.5 explores the challenges encountered by the researcher at the various stages of the research process, as well as the consideration of ethical and positionality issues applying to a non-English native researcher. The last section, Section 4.6, summarises the key aspects acquainted in this chapter.

4.2 Adopting a Mixed-Methods Approach

This section is comprised of the rationales associated with the application of a mixed-methods approach. This signifies a type of research design that combines the use of quantitative and qualitative approaches in the methods, data collection and analysis. It is often described as the third methodological movement, successive to the quantitative and qualitative traditions (Teddlie and Tashakkori, 2009).

Adopting a mixed-methods research goes beyond the reductionist opposition of words with numbers (Mostyn, 1985; Brannen, 2005). Brannen (1995) portrayed the analogy of qualitative approaches as observing the world through a wide lens, with quantitative methods as using a narrow lens. Moreover, implementing such a research method necessitates a defined framework:

“In understanding the practice and value of working qualitatively and quantitatively it is necessarily to distinguish between the context in which researchers design research for particular purposes and frame particular questions, from the context in which they make sense of their data and recontextualize them in relation to ontological, epistemological and theoretical assumptions.” (Brannen, 2005: 182)

Intense considerations regarding the selection of a mixed-methods approach were established in this research. Aggregating the strengths of both quantitative and qualitative techniques, as

contended in Johnson and Onwuegbuzie (2004), represented the most suitable direction to address the research question. This decision was also motivated by the implementation of a methodological triangulation:

“When two or more methods that have offsetting biases are used to assess a given phenomenon, and the results of these methods converge or corroborate one another, then the validity of inquiry findings is enhanced.” (Greene *et al.*, 1989: 256)

Similar to this quote, Mathison (1988) espoused that the use of a methodological triangulation allows the researcher to reduce the uncertainties tied to the data and its interpretation, as well as to reinforce the validity of the research findings. Sustaining the rationale of this strategy, a mixed-methods design with a triangulation purpose was selected in this research in order to uncover and to evaluate the effects of housing environmental quality on students’ residential geographies.

4.3 Designing the Online Survey

4.3.1 The Benefits of Using Online Survey

This section encapsulates the different phases structuring the application of an online survey, from its construction to its data collection and analysis. First and foremost, the rationale of using such a quantitative method is elaborated. As noted in Sue and Ritter (2012), questionnaires and surveys are often used interchangeably. A survey is a data collection technique that can use both quantitative and qualitative methods. Questionnaires constitute one component of a process that starts with defining objectives and terminates with data analysis and reporting results (Dillman, 2007).

In *Conducting Online Surveys* (Sue and Ritter, 2012), the entire survey process is explored and detailed. This book has been used assiduously at the different stages of the survey’s conception. Table 4.1 sheds the light on the advantages and disadvantages of opting for an online survey technique. The table shows that the strengths of applying an online survey method are numerous. The abilities to cover a large population (e.g. university students) and to obtain data at a high-speed were decisive motives in the researcher’s reflection. The advantage of collecting direct data entry in the computer was also a key factor as the analysis of the data was to be established through statistical methods, using the computer software ‘Statistical Package for the Social Sciences’ (SPSS). Although such modus operandi entail shortcomings, their scopes were to be confined via some applied strategies (cf. Sections 4.3.3 and 4.3.4).

Table 4.1 – Advantages and Disadvantages of Online Survey Method

<i>Survey Type</i>	<i>Advantages</i>	<i>Disadvantages</i>
Online	<ul style="list-style-type: none"> • Can be low cost • Fast • Efficient • Contingency questions effective • Direct data entry • Wide geographic reach 	<ul style="list-style-type: none"> • Coverage bias • Reliance on software • Too many digital surveys, causing overload

Source: Sue and Ritter, 2012

Employing an online survey as a main quantitative data collection method goes hand in hand with the assumption that the targeted population has a sufficient computer and Internet knowledge so the completion of the survey is faultless (Dillman and Bowker, 2001). In this particular case, the student population was deemed to be familiarised with online polls and other type of questionnaires. This suggests that the likelihood of students prematurely terminating the survey due to an absence of computer skills was restricted.

Lastly, prior to selecting the online survey technique, a more traditional approach was initiated. Hence, a hard copy of self-administrated questionnaires was distributed to 37 students in July 2012. This pilot survey typified an efficient way of testing questions, revisiting hypotheses and reconsidering the research and data collection approaches. The questionnaire was given, adopting a snowball sampling method, to a network of the researcher’s peers and students. The hard copy survey showcased major imperfections, such as a low coverage of the targeted population resulting in a small and non-representative sample, bias (e.g. the respondents could easily identify the researcher), and time consumption for computerising and analysing the results. Albeit the data obtained was relatively encouraging and informing, the sample size was incompatible with a robust statistical analysis process. Therefore, the various methodological elements specified above have reinforced the researcher’s choice of adopting an online survey.

4.3.2 Selecting the Survey Programme

After being convinced of designing online survey method, the selection of the survey programme (also referred to as software or tool) employed was subject to intense reflexion. Indeed, several

criteria were required by the researcher. First of all, the cost of using the software had to be minimal, if not gratuitous. Secondly, the survey tool was expected to support over a few thousands responses. At the time of the survey conception (ca. December 2012), many free online survey programmes restricted the number of responses to a few hundred, which was deemed incompatible with the research's objectives. Lastly, the software needed to be easy to use for the respondents.

The list of survey programmes fulfilling the researcher's conditions was narrowed down to a select few. The ultimate choice fell on a survey tool entitled Bristol Online Survey (BOS). In addition to matching the expressed criteria, LU had the software licence available and the presence of a programme administrator. Further to a meeting with the BOS' administrator at LU, he provided the researcher with some sound advice and enlightenments about the functioning of this online survey tool. Having the advantages of being free of charge, offering a satisfactory technical and practical support, of importing easily data into SPSS, and being simple to use, it was decided that BOS would be employed in this quantitative research.

4.3.3 Survey Structure and Format

Once the online programme was selected, the structure of the survey was designed according to the research rationale of evaluating LU student accommodation supply and demand dynamics. The role of the survey was to create a large database considering students' residential preferences, the state of students' finances and their relation(s) with the housing selection, and the environmental characteristics of the accommodation. Gathering this empirical data was seen as an opportune contribution to the already vigorous information collected by academics (e.g. Hubbard, 2008, 2009; Kinton, 2013; Balsdon, 2015), and relative to the student geographies unfolding in Loughborough.

Therefore, the survey entitled the 'Loughborough Students Accommodation Survey 2013' (LSAS) was constructed of 5 sections totalling 7 pages (cf. Appendix 2). Each section was accompanied with information regarding what was expected from the participants. As an example, instructions were given if some non-applicable questions were asked (e.g. go to next question). For some questions, a button 'More information' was set up in order to provide more precision, such as what was included in the energy/utility bills category. Lastly, it was stated that once the 'Continue' button was clicked, the answers on the page were submitted, and, consequently, the respondents would not be able to review or amend that page. This clarification,

as straightforward it may be, was pivotal. It allowed the researcher to make sure that the data provided was saved as well as clearing potential ambiguities from the respondents.

The first page of the survey welcomed the respondents who agreed to participate in the LSAS, and emphasised the terms 'student accommodation needs' and 'environmental aspirations'. Additionally, a statement was made by the LSU's President, urging students to complete the survey, as LSU fully endorsed the LSAS (see Section 4.3.4). The second page specified to participants that all data collected would be treated in strictest confidence, anonymised, and held in a secure environment. It was imperative that the statement appear on a separate page as the data collected, notably in regards to students dealing with financial matters, could have been deemed sensitive and confidential by the respondents.

The third page marked the beginning of the questions. The section dealt with the students' residential situation (e.g. accommodation type and features, name of housing providers, level of satisfaction with both dwelling, and landlord/organisation), the motives of living in the current accommodation (e.g. proximity to campus, cost of housing, living with friends, and the housing quality) using a Likert scale (i.e. from 'not at all important' to 'very important'), and specifications of the buildings' physical attributes (e.g. type of primary heating system, type of window glazing, and construction date of the dwelling). It was deemed meaningful to place the most crucial questions early on in the LSAS so that if respondents decided to quit the survey, capital data would have already been submitted.

The fourth page introduced questions tied to students' finances. First, the source(s) and amount(s) of monthly income were asked in the section. The income sources (e.g. student loan, maintenance loan, and paid work) were based on the various SIES reports (cf. Section 2.9). The second section addressed questions in regards to students' expenditure. Here again, the SIES were consulted to adopt the most appropriate breakdown of expenditure. Hence, 7 categories were distinguished: the rent cost per week (for the student renters), the food (domestic and eating out), the communication bills (i.e. internet and mobile phone), the energy/utility bills (i.e. electricity, gas, and water) and if not already included in the rent cost, the transport (e.g. bus cards, train tickets, and petrol for car), the leisure activities (i.e. pubs/nightclubs, gym memberships, and other activities' cost), and other expenditure (e.g. parking permit, TV licence, car insurance, and loan repayment). All costs were expressed on a monthly basis except for the rent cost, which was termed weekly.

In the fourth section, respondents were required to answer questions about their environmental perceptions/actions (e.g. action of recycling, environmental impacts in everyday life, and belief that global warming is human induced) and the sustainability of their accommodation. For the latter, students were asked if they knew what an EPC was (see Section 3.6) and if yes, whether they could indicate the EPC ranking of their housing. The researcher was well aware that this question would exclude students residing in halls of residence. The last section concerned personal details about the participant (e.g. age, gender, residential status, level of study, and nationality). Respondents' postcode and addresses were also asked with the aim of mapping the data and thus ameliorate the understandings of students' residential geographies in Loughborough. Prior to continuing to the end of the survey, respondents had the possibility to enter a prize draw of a total value of £200 (i.e. 10 Amazon gift certificates for a value of £20 each). Such material incentives have been recognised as motivating individuals to start a web survey (cf. Bourque and Fielder, 2003; Sue and Ritter, 2012). Finally, participants were thanked for completing the survey in the last page.

In total, the survey consisted of 49 questions. They were organised in various ways so that the respondent would maintain close attention and not feel uninterested. In that way, close-ended questions such as dichotomous questions, multiple-choice questions, multiple-answer questions and the Likert response scale were combined with open-ended questions, in which a comment box was made available to respondents, whether to specify an answer, or to type in a response (e.g. age, town, and postcode). The mix between open and close ended questions allowed the researcher to avoid manipulating and influencing the responses.

Before being launched, the LSAS had to be piloted in order to make sure that the wording of questions was coherent, the layout of the survey was appropriate, the time of completion was realistic (i.e. between 10 and 15 minutes), and to familiarise the researcher with online survey data collection and treatment (Fan and Yan, 2010). Ergo, a survey link was created and shared amongst the researcher's peers. The feedback received was precious as it allowed the improvement of the survey's structure and length as well as to diminish the likelihood of a high measurement error through improving the wording (Dillman and Bowker, 2001).

4.3.4 Support from the LSU

Another fundamental aspect of the questionnaire was to define the population sample frame. In the case of this research, all students enrolled at LU for the year 2012/2013 were targeted. Students not residing in Loughborough at the time of the survey (e.g. distance learning or

exchange students abroad) were welcomed to participate in the research. Sue and Ritter (2012) use the term of ‘saturation sampling’ as an attempt to eliminate coverage error by inviting every member of the targeted population to take part in the survey. It is clear for the researcher that the higher the number of LU’s students participating in the research, the more valid, credible, and above all informative, the collected information would be.

However, reaching out to nearly 16,000 students would have been excessively complicated, if not impossible. The solution adopted was to require some support from the LSU. This students’ union benefits from an excellent reputation and a considerable (virtual) visibility within the student community, with over 5,600 ‘followers’ on Twitter and 12,400 ‘likes’ on Facebook (in December 2012). Having the LSU endorsing the LSAS would generate an incommensurable boost of responses and legitimacy to the survey. After a few meetings with the LSU’s Director, Deputy Director, and President, they agreed to send the survey’s invitation email to all students. By way of compensation, the LSAS had to include several questions that would help the LSU to update their data previously collected of benchmarking students in various categories. Hence, the LSU was in charge of disseminating the survey link to all LU students via email invitations.

As illustrated in Table 4.1, the abundance of digital surveys can cause an overload and increase non-participation. Students are not an exception. Subsequently, in order to attract respondents’ attention, the distribution of the survey’s invitation email was structured according to students’ year of study. This means that first, second and final year undergraduate students would receive the email indicating their year of study. As well, through LSU’s email distribution system, students’ names would appear at the beginning of the text. This personalization aimed to distinguish the LSAS from other surveys as well as to increase the desirability of participation by the respondents. The effects of personalized salutations in surveys’ response rates have been proved (cf. Dillman, 2007; Joinson and Reips, 2007; Sue and Ritter, 2012). Additionally, in order to maximize response rate, it was asked to the LSU’s President to urge students to complete the survey by posting messages on their social networks (Facebook, Twitter, and the LSU’s website). However, the survey link was not displayed on the social networks; it was only used as a reminder to students. A timeline of the survey progress on a day-to-day basis is available in Appendix 3. It also exemplifies the powerful impacts of social networks in the completion rate of the online survey.

4.3.5 The LSAS Goes ‘Live’

As most students had spent a few months residing in the same property, and were familiar enough with it, the LSAS was officially launched on 28 January 2013. Besides, the cold winter external temperatures are more likely to impact students’ energy. The researcher assumed that the response rate would be improved while students were revising for their term examinations, as checking their university email inbox is potentially more frequent during this period of the academic year.

Before the release of the LSAS, it was decided in concordance with the LSU that the first wave of email invitations would be sent to all PhD students, as advocated in Sue and Ritter (2012) under the term ‘soft launch’. This precaution was taken in order to rectify any issues, if necessary. It also enabled the researcher and the LSU to monitor the efficiency of email invitations. The unique problem detected during the first sending phase was that the personalised salutations in the email invitation were inoperative. Indeed, instead of including students’ first and last names in the first line of the email, it was stipulated: ‘Dear <First Name> <Last Name>’. This issue was then resolved during the second sending phase, which occurred on 1 February 2013.

Therefore, a few days after PhD students received the email invitation in their inboxes, the rest of LU students (i.e. undergraduates and Masters students) were invited to complete the LSAS. Sustained with calls for action on the LSU’s Facebook page and website, the first days following the ‘full launch’ saw a strong influx of responses. Approximately 60% of the total questionnaires were completed within the first few days that the survey went live for every student (cf. Appendix 3). Rérat (2013) has noted that the influx of responses is intense during the first two days of the launch, and after that, the survey loses its visibility in participants’ email boxes. Constantly monitoring the survey and keeping contact with the LSU’s President, several reminders were sent to students at various points in time; mainly when the survey response rate was struggling. In addition, messages on LSU’s Facebook and Twitter pages were posted to encourage students that had not yet filled out the survey, to do so.

One of the major hindrances of delegating the sending of email invitations to an actor other than the researcher was to rely on the information given by this actor. The LSU executive member in charge of diffusing the survey invitation email argued that the reminder emails were subject to a sampling in order to restrict the overload of survey emails in students’ inboxes. Therefore, it is highly probable that a large proportion of the targeted population only received the email

invitation once. Despite all the efforts produced by the researcher to ensure that non-respondent students were given a reminder email and other follow-up procedures, this aspect of the survey was unverifiable. This being said, the input provided through the LSU’s help and support largely offset this characteristic. The LSAS was terminated on 6 April 2013, subsequently due to the patent inefficiency of sending reminders on the survey’s response rate.

4.3.6 The LSAS’ Stratification and Results

Assuming that the email invitations were sent to all LU students enrolled in January 2013, 15,460 according to HESA (2014d), the survey’s response rates are as follows:

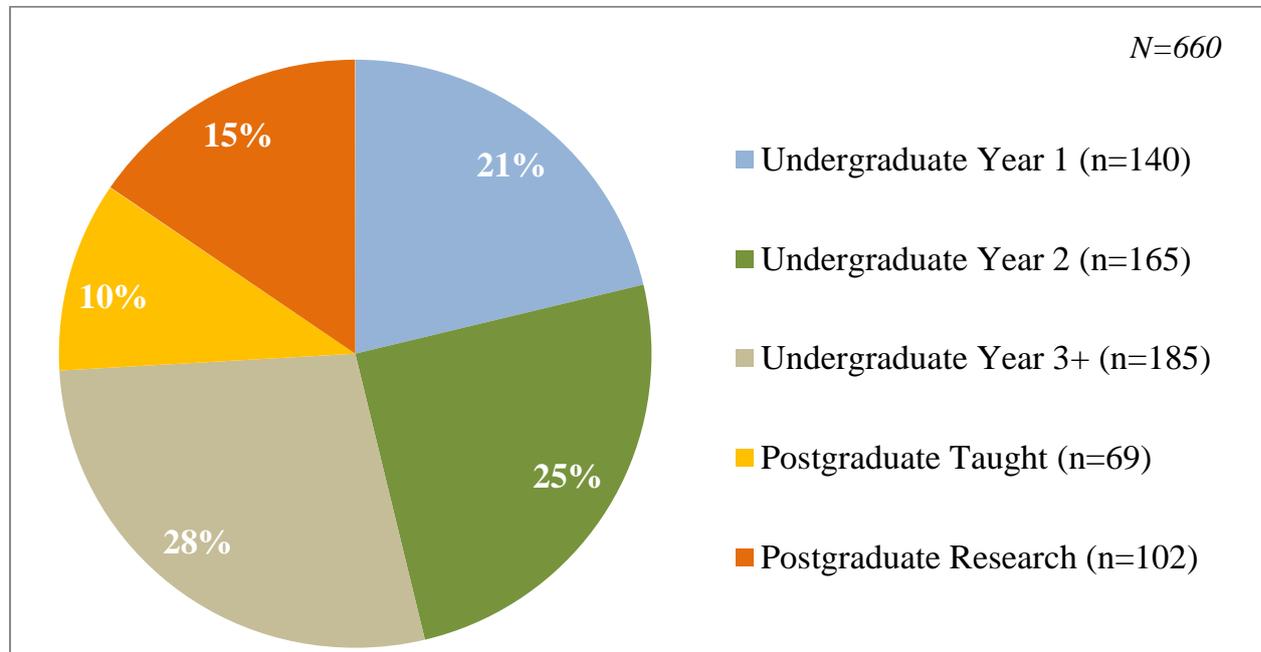
Table 4.2 – Breakdown of the LSAS

<i>Stratification</i>	<i>Sample Size</i>	<i>% of LU students</i>
Number of Questionnaires Received	1,140	7
Number of Validated Questionnaires, After Verifications (e.g. duplicates)	1,125	7
Total Completed Questionnaires	851	6
Identified Year of Study	660	4

Table 4.2 displays the stratification of the survey’s response rate results and delivers several types of information. For instance, about one-quarter of respondents (24%) did not complete the LSAS in its entirety. Most participants dropped out after the first page although the amount of data entered is significant. The number of duplicates was limited to 15. Hence, the 1,125 questionnaires are designated as ‘Sample 1’. Accordingly, the 851 fully completed questionnaires are appointed as ‘Sample 2’. This represents the sample that is the most frequently utilised in the following chapters, as the depth of data is higher than for Sample 1. The response rates equal 7% for Sample 1 and 6% for Sample 2. According to studies on that matter (e.g. Crawford *et al.*, 2001; Bourque and Fielder, 2003; Van Selm and Jankowski, 2006), such levels of response rates are deemed low. For surveys with similar length (i.e. under 20 minutes), a 30% response rate is considered as standard. Lastly, ‘Sample 3’ (n=660) includes all students with their exact year of

study identified (e.g. 1st year undergraduate students). This information, not administrated in the survey, was gained through the support provided by the LSU.

Figure 4.1 – Respondents by Year of Study (Sample 3)



All data collected through the LSAS was subject to descriptive statistical analyses (e.g. frequency distributions), multivariate data analyses (e.g. cross-tabulation and chi-square test) and tests such as Pearson correlation and linear regression models, using SPSS. Analyses and findings are presented in the next chapters. Furthermore, the collection of students' addresses allowed the obtaining, or the verification in some cases, of the EPC score of students' dwellings. The data was retrieved from the Domestic Energy performance Certificate Register's website (<https://www.epcregister.com/>) and originated from the DCLG. These findings produced crucial information, such as the type of windows glazing, the type of dwelling, and the type of primary heating system as well as the total floor area of the property (see Appendix 1). In case of incomplete addresses (e.g. only the postcode or the street name), EPCs for the whole street or postcode were downloaded and the SAP's average score was designated as the approved rating of the student's accommodation.

This approach improved the database credibility as many information entered in the survey were enabled to be verified through governmental sources or on the ground. For instance, the researcher was able to verify and amend, if necessary, respondents' answers related to the age of their accommodation by cross-checking with their addresses. To do so, the researcher went directly on site or used Google Street View to validate the answers given. As well, in numerous

terrace houses, the construction date is carved in the front facade of the house. In total, 407 EPCs were downloaded from the website. They participated widely in the creation of the taxonomy of student housing in Loughborough (see Chapters 6 and 7).

Despite preventing dropouts by thoroughly following indications and strategies developed in the literature related to online surveys (cf. Crawford *et al.*, 2001; Bourque and Fielder, 2003; Dillman, 2007; Joinson and Reips, 2007; Fan and Yan, 2010; Sue and Ritter, 2012), the response rate remains weak. A few assumptions can be made. The first, and the most plausible, is that the survey had not been distributed to the entirety of students enrolled at LU (i.e. 15,460 candidates), and it is also probable that some students' email addresses were invalid. The second is that students not residing in Loughborough, at the time the LSAS went live, did not complete the survey, as they may not have felt involved. The timing of the survey, during the examinations period, may also have generated less patience and interest from the respondents. There is a plausibility that students did not check their email inbox, or if they did so, the email invitation was ignored.

On the other hand, the sample size, comparable to the one used for an election survey (Dillman and Bowker, 2001) remains extensive and the robustness of the database constructed can allow the researcher to perform various statistical analyses. With sample sizes similar to response rates, the survey can be viewed as a success from the moment the method contributes to filling the research aims and objectives. Finally, leading a mixed-methods research has permitted the convergence and corroboration of the findings obtained, which are reported in the following chapters.

4.4 Qualitative Methods

4.4.1 Conceptualising Qualitative Methods

The data derived from the online survey undeniably constitutes the main empirical findings in this thesis, yet the strengths encompassed in qualitative research methods have the ability to enrich findings through an increased degree of credibility. This is perceived as relevant criteria to undertake in qualitative research (cf. Lincoln and Guba, 1985; Bryman *et al.*, 2008). The principal technique of making credibility apparent in a research is via the recording, transcribing, and quoting of the interviewees' words:

“Quotations are not only the proof used in the analysis, but they also preserve the language of the respondents.” (Mostyn, 1985: 141)

The data gained in the quantitative method process has unveiled new issues and research avenues. In order to explore these, a purposive sampling strategy was adopted. Purposive sampling stresses the greater depth of information as it carefully selects respondents that converse easily and freely (see Baxter and Eyles, 1996; Teddlie and Tashakkori, 2009). However, this strategy of recruiting respondents would be in vain if the researcher had no identified expectations:

“It is the investigator who starts the game and sets up its rules, and is usually the one who, unilaterally and without any preliminary negotiations, assigns the interview its objectives and uses.” (Bourdieu, 1999: 609)

Nonetheless, the enquirer’s goal of collecting information from respondents was at risk, chiefly through interview bias. Neuman (2006) has formulated interview bias in six categories. According to the sociologist, the researcher/enquirer is frequently the main agent responsible for the emergence of bias. These biases are as various as a defective reading of the questions, the reformulation of the questions that could embarrass the interviewee, the impertinent modification of the questions’ order, as well as comments made out of context. In the frame of this thesis, qualitative data were collected through semi-structured interviews, also referred to as in-depth interviews, and focus groups. Semi-structured interviews enable the researcher to combine relative strictness of the interview guide (or structure) with an acute sense of adaptability and spontaneity. One of the real strengths of semi-structured interviews is the flexibility in its structure, which provides enough leeway for both enquirer and respondent to discuss other relevant matters (Bryman, 2012). Moreover, it puts the researcher in front of unexpected contingencies during the interview. Nonetheless, it is meaningful to re-accentuate that being thorough while interviewing was one of the researcher’s priorities. The concept and design of focus group, the main source of qualitative data in this research, is approached in the next part.

4.4.2 Focus Groups Interviews

A vast array of the literature on qualitative research methods concedes that confusion exists regarding what constitutes a focus group. If an ‘official’ definition has not been pinned down, Morgan (1996) aptly points out the three main components of a focus group interview, which are:

- A research method devoted to data collection.
- The interaction in a group discussion as the source of data.

- The active role of the researcher in creating, encouraging and directing the group discussion for data collection purposes.

Albeit studies on the use of focus groups in social research are relatively recent (i.e. around the mid-1980s), the stream of unabated publications praising the strengths and weaknesses of focus groups is considerable (cf. Vaughn *et al.*, 1996; Cameron, 2005; Barbour, 2008; Bryman, 2012). Amidst the strengths of focus groups, the most recurrent in the literature are as follows: its usefulness for exploring ideas and concepts, the creation of a group dynamic/synergy, the gaining of in-depth information, the interactive observation of participants' agreement and disagreement, and the possibility for the enquirer to ask interviewees to compare their experiences and views. Bringing individuals face to face that may, or may not, relate, connect, identify, or feel indifferent to another's views and experiences on the researched topic(s) generates intense interactions and produces unexpected results and deeper findings (Kidd and Parshall, 2000; Chiu, 2003). Additionally, it is highly recommended not to use focus groups as the sole data collection method (Cameron, 2005) but, rather, to combine it with others: semi-structured interviews and an online survey in the case of this thesis. Skop (2006: 114) espouses the various advantages of adopting such a data collection method:

“Focus groups are an ideal method for both exploratory and confirmatory purposes; in other words, focus groups are useful for gaining background information, clarifying ideas, developing questions, and understanding group reactions to particular problems, processes and patterns.”

Nonetheless, focus groups present some weaknesses that are dependant on both the researcher and the participants. Indeed, endorsing the pivotal role of ‘moderator’ (the researcher himself, in this thesis) requires particular skills such as being active, open-minded, bold, spontaneous, thorough and guiding. Puchta and Potter (2004) assert that the moderator is the one enabling individuals to speak or to be quiet. An insufficient use of the moderator's abilities can notably affect the proceeding of the focus group, considering that the enquirer triggers the synergy of the debates between participants in order to maximise the quality of the collected data:

“Part of the art of effective group moderation is to generate a situation that is relaxed and informal while still being able to closely manage the interaction.” (Puchta and Potter, 2004: 45)

Equally, individuals' strong involvement in the conversation reduces interruption from the moderator (see Kitzinger, 1994; Skop, 2006). On the interviewees' perspective, unlike a one-on-one interview, what is said during the discussion is no longer private:

“What participants tell the researcher is inherently shared with other group participants as well.” (Morgan, 1997: 3)

According to the topic(s) debated, this aspect can be a serious obstacle to the successful performance of data collection. Furthermore, the risk of having one or two participants dominating the conversation is real (Morgan, 1996). Logistical issues can also hamper conducting a focus group. They mostly concern recruiting participants with similar time schedules, agreeing on a venue to run the interview, and travelling to the specified venue. In regards to this thesis, the limited spatial size of Loughborough was deemed as an advantage for the proceedings of the interview. Finally, a focus group interview can be time-consuming: both to organise and conduct, and to transcribe. This condition is narrowly tied to the group size and composition (Barbour, 2008).

Indeed, the number of participants in the focus group is inherent to its success. Academics have been contending on defining the acceptable number of individuals in a focus group (e.g. Cameron, 2005; Bedford and Burgess, 2011). Nonetheless, one should keep in mind that acting as a moderator (cf. Kitzinger, 1994; Morgan, 1996; Kidd and Parshall, 2000), the researcher is the only one able to set up the number of participants, according to his degree of confidence of maintaining the control over the group (Puchta and Potter, 2004; Barbour, 2008). Not being a native English speaker, the researcher assumed that a large number of individuals could lead to a loss of supervision over the group of participants, thereby, impairing the discussion. For this reason, the researcher has defined the maximum number of participants to six individuals.

4.4.3 Preparation and Implementation of Interviews and Focus Groups

This section explains the operationalisation of the focus groups and semi-structured interviews. In total, the qualitative methods have involved 2 semi-structured interviews and 3 focus groups of respectively 5, 4, and 4 individuals. The former consists of a group interview with 5 members of the LSU executive team, including its President and the Deputy Director, as a follow-up of a presentation of preliminary findings given by the researcher in May 2013. Discussing the first results of the survey was part of the agreement finalised between the researcher and the LSU. For

this occasion, the researcher's supervisor, Prof. Darren Smith, attended the presentation and was also solicited to take part in the focus group, as an enquirer.

The focus group with the LSU executive members, which lasted for 34 minutes, was meaningful for two reasons: first, the presentation of preliminary results increased both the research's legitimacy, as the outcome of the survey would have been different without LSU's support, and visibility among the students' representatives. Second, various crucial issues addressed in the presentation were commented on, interpreted, and discussed during the focus group interviews. By using this approach, the researcher intentionally increased respondents' freedom of speech as they were asked to comment on the most notable findings presented, according to them. The extended knowledge of LSU executive members has enriched the preliminary findings with complementary information. Moreover, it encouraged the researcher in validating the direction given to the study, exploring particular aspects of the data collected, and becoming accustomed with using a mixed-methods approach. Thus, the information collected during the focus group with the LSU executive members was decisive for the remaining of the qualitative data collection process.

The location, timing and context of a focus group interview are regularly designated as meaningful parameters (see Morgan, 1997; Hopkins, 2007; Barbour, 2008). The two focus groups and the two semi-structured interviews took place in June 2014, at the end of the academic year. They lasted respectively 60 and 33 minutes, and 20 and 33 minutes. This timing decision, stemming from a miscommunication between the researcher and his supervisors, proved to be inadequate as most students had already gone away for the summer vacation. It should be stressed that individuals recruited for the focus groups and one-on-one interviews were all 2nd and 3rd year undergraduate students. First, they characterised a substantial proportion of the LSAS, respectively 25% and 28% of Sample 3. Second, it was assumed that their housing pattern led them to both reside on and off campus, or at least to eventually do so.

Consequently, the recruitment of participants was more intricate than expected, although 23% of respondents (Sample 2, n=196) were willing to take part in follow-up research. Emails inviting students to participate in focus groups were sent to these individuals. Many students responded negatively as they were already out of Loughborough. Nevertheless, a few students agreed to take part in focus group interviews. One of the LSAS' respondents was recruited to participate in the interview. She then suggested that her 'flatmates' could participate in the research, which led to an opportune focus group. Hopkins (2007) explains that discussions are often more

interactive, and possibly more confrontational, when focus group participants already know one another. Serendipitously, one focus group and one semi-structured interview took place at the participants' house. This particularity may have complemented the informality of the debates with a less inhibited freedom of speech and thus, produced unconsidered findings. The other focus group was constituted solely of female students. Lastly, the 2 individual interviews resulted from other participants unexpectedly cancelling at the last minute. The researcher was still determined to interview the available students, and, consequently, to collect additional data.

Overall, data was collected from 10 students, with a gender ratio of male: female being 4:6. One Chinese student took part in one of the semi-structured interviews, as the researcher estimated that an international student might have different views and perceptions on student housing related issues. Moreover, 3 respondents (1 male and 2 females) that lived in university provided halls of residence prepared their off-campus move for the start of the year 2014/15. Highly desired by the researcher, the reality of students already living in the PRS and students about to move from halls to the PRS has enriched the quality of the data as respondents felt particularly involved. It also enticed students already living in houses to share their experiences and views about the residential transition from on to off-campus, the realities of feeling 'more independent,' and the habits of living in the PRS, with students that were about to reside in it. The expectations, doubts, stories and disillusion expressed by the participants during the interviews have contributed to the effective performance of the triangulation approach.

All interviews were recorded with two voice recorder devices so as to capture a satisfactory sound quality from participants' words, and in case one device malfunctioned. Interviewees expressed no objections to be recorded and offered full cooperation. In the case of focus groups, each voice recorder was positioned at both of the table's extremities where the respondents seated. Barbour (2008) claims that the position of the voice recorder, in order to maximize the recording quality, can vary in regards to the interviewed group's characteristics (e.g. disabled people and children). It also has an importance when several participants speak at once (Hopkins, 2007). Prior to starting the semi-structured interviews and focus groups, the researcher apprised participants that their names would be changed as a matter of anonymity and confidentiality. To thank the participants for being part of the research, and also to create a relaxed atmosphere, refreshments were provided during the focus group interviews. Interestingly, participants in the focus group that occurred in the university building (within the Department of Geography) seemed more reluctant to help themselves and hardly enjoyed the refreshments. On the other hand, participants of the focus group interview that took place in their residence showed no signs

of timidity and fully enjoyed the refreshments provided, which created a relaxed and intimate atmosphere.

The data collected were entirely transcribed and coded according to the qualitative data collection procedures (cf. Bryman, 2012). Afterwards, the interview transcripts were divided and coded according to the most recurrent themes. In that way, comparisons were made between interviewees. Correspondingly, comparisons were performed between the emerging themes in the qualitative methods and the quantitative findings. The most divulging words expressed by the interviewees are used in the triangulation analysis as “quotations are important for revealing how meanings are expressed in the respondents’ own words rather than the words of the researcher” (Baxter and Eyles, 1996: 508).

To conclude, qualitative methods constitute a minor, but precious, source of data in this research. Relying on a methodological triangulation approach, information provided during the semi-structured and focus group interviews have helped to corroborate and refute research findings, and to validate some hypotheses. Various components were highlighted through the online survey. Qualitative methods allowed the comparison, clarification and illustration of them. The data collection processes were constantly carried out in consideration of ethical rules and issues of positionality.

4.5 Ethical Negotiations and Positionality

4.5.1 Ethics Matter and Matters of Ethics

This section illustrates the conduct of codes of ethics implemented in the research process. Unless strongly prevented, ethical issues can arise unexpectedly at a variety of stages within the research process. This applies even more for scientific works adopting several research methods (Bryman, 2012). Although as Neuman (2006) notes, notions of ethical standards begin and end with the researcher. Thus, the researcher’s complete involvement in his work made him face several practical conflicts, often built around respecting the integrity of the interviewees and the scientific ethos:

“Many ethical issues involve a balance between two values: the pursuit of scientific knowledge and the right of those being studied or of others in society.” (Neuman, 2006: 129)

Ethics procedures decisively act as gate-keepers and pointers to extensive ethical and moral dilemmas (Winchester, 1996). Throughout the processes of collecting and analysing data, the

researcher permanently thought critically of realities and mechanisms entangled in the data collection processes. Consequently, many precautions were taken in this research. For instance, having the LSU endorsing and distributing the LSAS has certainly contributed to a greater legitimacy of the research among students. They, presumably, felt more secured to complete a survey diffused by their students' union rather than by an external unknown source.

Neuman (2006) indexes five ethical issues in field research: deception, confidentiality, involvement with deviants, the powerful, and publishing reports. Among these issues, confidentiality was the one that required the most attention from the researcher. Some of the quantitative data collected concerns private and sensitive issues (e.g. level of satisfactions with the university, the landlord, and the accommodation, sources and degrees of expenditure, sources and amounts of income, and such), whereas qualitative information are mainly protected by instituting anonymity and confidentiality in the data processing. Therefore, interviewees' actual names have been replaced by fictitious ones, in order to protect their integrity and reputation. With respect to the LSU executive members, no names (real or imaginary) are attributed. Instead, each individual is referred to as 'Executive Member 1,' 'Executive Member 2,' etc. In that way, respondents' identities and positions in the organisational chart is preserved.

Ethical negotiations were righteously accomplished, especially during the empirical qualitative data collection. Interview participants were recruited on the basis of voluntary consent, and were in no way forced or coerced into participating. Interviewees were guaranteed anonymity, and that the information provided would be treated in the strictest of confidence. Before starting to record the interviews, an informed consent statement was read to participants. Often taking the form of a written agreement sheet, information in the informed consent can also be given verbally (Ali and Kelly, 2012). This consisted of a brief description of the purpose and procedure of the research, including: the recording of the interviewees, the assurance of anonymity, and the confidentiality of information and details provided as well as audio records and transcripts, the guarantee of a total freedom of speech, the right to refuse answering a question, the right to withdraw, an offer to provide a summary of findings, and finally, a verbal agreement from each individual to participate in the research. Once the latter was obtained, the voice recorders were activated. The researcher decided not to record the reading of the informed consent statements so that participants could not be identified in case they refused to take part in the study. The ethical standards documented by the American Sociological Association Code of Ethics, as reported in Neuman (2006), were explored and have influenced the ethical guideline in this thesis. Albeit

ethical procedures were put in practice in order to avoid dilemmas and conflicts, the researcher's positionality caused several challenges.

4.5.2 Positionality of a Non-English Native Doctoral Research Student

Based on the observation that the researcher is a positioned subject (Rosaldo, 1993), issues of positionality were sources of various concerns for the researcher. His position can widely influence his observations, interpretations, and conclusions. Unlike ethical issues, there are no guidelines and standards to alter the researcher's positionality. Yet, acknowledging potential positionality conflicts is the first step in altering them. This section considers the paramount challenges encountered along the entire research process by the researcher.

The primary dilemma that the researcher had to confront is connected to what is identified as 'conventions'. Batifoulier (2001), a French sociologist and economist, defines conventions as mental representations, immovable beliefs, and established rules that subdue the mind and the imagination. These conventions are adopted as a result of an assumption that other individuals will adopt like behaviours. Hailing from France and a distinct culture, it was therefore imperative for the researcher to reconsider and reflect on conventions tied to quintessential issues related to the study, such as the housing sector and students' conditions in the UK. Fortified by previous research experiences in foreign countries (i.e. the Netherlands and Sweden), the researcher became accustomed to revisit and critique his personal prejudices. However, the acquisition of original and extended research knowledge comes with other obstacles:

“Researchers have some chance of being truly equal to their task only if they possess an extensive knowledge of the subject, sometimes acquired over a whole lifetime of research, and also, more directly, through earlier interviews with the same respondent or with informants.” (Bourdieu, 1999: 613)

A second positionality challenge arose whilst designing the online survey, and more specifically when negotiating with the LSU for their collaboration and support. In order to obtain the assistance of the LSU to distribute and promote the LSAS, it was necessary to 'give something back'. In this case, it consisted of the inclusion of 5 questions and a presentation of the survey's findings. The researcher agreed to the terms amicably. Nonetheless, handing over the success of a data collection process to a third party made the researcher question himself about his relation of power and influence on his research. Another perspective is tied to the findings' presentation organised with the LSU executive members. Indeed, several interviewees were aware and/or

involved in the diffusion of the survey, which makes the researcher wonder about the participants' interpretations of the results showed.

Representing LU and, more specifically, the Department of Geography, reflectivity and objectivity were a constant leitmotiv for the researcher. This principle was roped in with the qualitative research methods. The researcher not being an English native speaker, the conduction of one-on-one interviews and focus groups is a permanent challenge. Although the researcher had previous experiences of interviewing students in English, the wide variety of British accents heard during the collection of qualitative data gave the impression that every interview could potentially be distinct from one another. This has also generated a perpetual questioning of the strategy to adopt in front of the interlocutor(s), and whether or not asking them to repeat, or to speak slower, would be seen as irritating and/or hurtful. Certainly, incomprehension can easily lead to misunderstandings and confusion. Luckily, respondents' accents were clear and the researcher understood and transcribed every single word pronounced during the interviews. It should be noted that the atmosphere during the interviews was relaxed and informal, notably in the focus groups where:

“Participants feel most comfortable talking about an issue with fellow participants who have the same power relationship relevant to that issue.” (Skop, 2006: 119)

The last main concern was tied to the role of the researcher and referred to as the ‘dichotomous insider’ and ‘outsider researcher’ (Bryman, 2012). Despite having repeatedly reflected on the self, and the influence in the research process, the insider/outsider context remained dubious to this researcher. He is both an insider, because of the researcher's student status within the same university, and an outsider, because of a different cultural background illustrated by a distinct nationality and unusual English accent. The work of Goffman in *The Presentation of Self in Everyday Life* (1990) was scrutinised because it emphasises the idea that an individual (i.e. the researcher) before an audience (i.e. the interviewees) possesses the power to communicate, perform, engage, represent, deceive, and confuse. Establishing the comparison between a *performer* (in the theatrical sense portrayed by Goffman) and a social researcher is not that exaggerated and unrepresentative:

“The very obligation and profitability of appearing always in a steady moral light, of being a socialized character, forces one to be the sort of person who is practised in the ways of the stage.” (Goffman, 1990: 244)

Thus, the feeling of being simultaneously in an insider/outsider position was seen as propitious by the researcher. *En effet*, interviewees and enquirer belonging to the same HEI, the former were able to explain and describe in details situations that only someone familiar with the environment would be aware of (e.g. streets' names, pubs and nightclubs' names, and the impact of LSU's events for the 'party-animals'). All these evidences of familiarity with the presence of students in town led participants to speak freely and in-depth, without wondering if the interviewer was confused with the information provided. Similarly, respondents may have felt more empathy and more tolerance for a foreign researcher, especially regarding grammatical mistakes. Additionally, students were curious and asked questions to the researcher about his origins and the motives behind conducting such research. These informal and pleasant introductions generally helped participants to unwind. Such introduction also represented a gateway to the pronouncement of the informed consent as being thorough while interviewing was one of the researcher's priorities.

4.6 Summary

This chapter has discussed the key rationale for adopting a mixed-methods approach in the frame of this research. The benefits of corroborating results coming from various methods have been outlined. This strategy used to collect empirical data was identified as the most appropriate in this research. Therefore, the methodological triangulation, as discerned in this chapter, sustains the scientific contribution and originality of this interdisciplinary research.

Consequently, the conduct of the online survey produced 1,125 responses (Sample 1) and 851 responses (Sample 2). The data generated contributed to the creation of a unique and sound database associating student housing and environmental aspects. This process is illustrated in Chapter 6 with the creation of a comprehensive taxonomy of sustainability attributes in Loughborough's HMOs. The quantitative data collected are tested with the 3 focus groups and 2 semi-structured interviews. The input of qualitative data has incited the enquirer to reconsider some hypotheses and, meanwhile, it has developed new avenues of interest that could hopefully be pursued in the future. Finally, throughout the data collection processes, the researcher has reflected on his own experience and position, reconsidered his conventions, and has adjusted his approach in that matter.

The following chapter exposes the rationale behind the selection of Loughborough as the case study for this thesis.

Chapter 5

Loughborough, the Student Town *par excellence*

5.1 The Case Study of Loughborough

“Over recent years those demands and pressures [for student accommodation] have been manifest in the degree to which increasing numbers of students have fuelled the buy for rent housing market, primarily in locations conveniently located in relation to the two main institutions [Loughborough University and Loughborough College]. Local communities increasingly have become frustrated by the impact of those trends upon the quality of life enjoyed by the residual resident population.” (Charnwood Borough Council, 2005: 5)

Loughborough is a small market town located within the Charnwood borough of Leicestershire with a total population of 62,233 (in 2011). The local authority of Charnwood includes 166,100 residents and its population density is twice that of the East Midlands region. Loughborough, constituted of ten wards, amounts to 37% of the Charnwood borough’s population and 10% of the county of Leicestershire (despite being the second largest settlement after the city of Leicester). The town is characterized by an average of 6,223 inhabitants per ward. The most populated of them is Shelthorpe, having 7,416 inhabitants (ONS, 2013c). In terms of ethnicity in the town wards, the White ethnic group encompasses the vast majority: 82% (in 2011). The second most important ethnic group, the Asian/Asian British, account for 13% with high peaks in the wards of Lemyngton and Hastings with, respectively, 27% and 24% of the overall population (*ibid.*).

Loughborough has a reputation for its large student population and is viewed as a ‘university town,’ with approximately 25% of the total population comprised of students: 15,460 students for the academic year of 2012/13 (HESA, 2014c). LU was founded in 1966, and has the largest single-site campus of all the UK, with 438 acres of land (LU website, 2014a). Formerly known as Loughborough University of Technology until 1996, LU was the country’s first technological university. In addition, Loughborough College (LC), established since 1909, provides modern teaching and training qualifications oriented towards the industry sector. Nonetheless, this thesis focalizes exclusively on students at LU as their residential impacts in town and on-campus are more visible and significant than the ones produced by students at the LC. In addition, the links between the town and the HEI are consolidated as the university is the largest employer within the local authority.

Figure 5.1 – Location of Loughborough within GB



Source: Loughborough University, 2013

Hubbard (2008) reflects on the noteworthy economic benefits at the local level caused by the presence of the institution. Notably, student basic expenditure (i.e. housing, food, drink, and services) are estimated to support several hundreds of jobs around town.

Balsdon (2015) has also emphasised the uniqueness of students in Loughborough by creating a typology based on data such as social class, ethnicity, and distance from parental home. Balsdon argues that LU has: the highest percentages of students from NS-SEC1 backgrounds, an above average percentage of white students, and an above average percentage of students living away from parental home. This typology ranks LU in company of other institutions such as the University of Oxford, the University of Cambridge, the University of Durham, the University of Warwick, the University of York, the University of Exeter, the University of Bath, the University of Bristol, the University of Sheffield, the University of Southampton, the University of Nottingham, the University of Newcastle-upon-Tyne, the University of Leeds, the University of Liverpool, and the University of Manchester.

LU has recorded a sustained growth of student numbers for the past 15 years, with a record high for the academic year of 2006/07 with 17,015 students (HESA, 2014c). This enrollment record was followed by a diminution of about 1,000 students in town between 2006/2007 and 2010/11.

Hubbard (2009) suggests that the difference in terms of student numbers may generate an unbalanced ratio supply/demand, creating voids in the student housing market. In 2012/13, UK students accounted for 79% of all students at LU. Amongst the non-UK students, half of them were represented by Asian students whom amounted to 7% of the whole LU's population. Out of the total LU's student population, 74% are undergraduate students and amongst them, 89% are domestic candidates (i.e. native of the UK). Concerning postgraduate students (taught and research combined), the ratio UK/non-UK was more balanced, with 52% being national students (HESA, 2014d).

Environmental issues have been taken seriously at LU with the implementation of the 'Better OFF' sustainability awareness campaign since 2008. This campaign promotes positive behaviour change across the campus by raising awareness of sustainability best practice (e.g. turning off computers and switching off lights during week-ends and holidays). However, unlike the three student-led sustainability projects discussed in Section 3.10, the 'Better OFF' project does not help students in the PRS monitoring their residential energy use.

Equipped with first-class sport infrastructures, LU regularly appears on top of the leagues for the 'Sport' degrees (The Times Good University Guide for 2014, 2013). Additionally, LU constantly tops the Times Higher Education (THE) Student Experience Survey finishing at the 2nd position in 2011 and at the 5th place in 2012 (THE, 2013). The slogan of the LSU, 'Better Student Life,' clarifies the ambition to offer the best 'student experience' to its students. As noted earlier, this elusive and vague term has become a tool of attraction, if not persuasion for the perspective student and well-often, his/her parents. Therefore, accommodation for students is undeniably one of the premium assets included in the 'student experience package':

“Finding the ideal place to live at University can be daunting, but at Loughborough we do all we can to make it as easy as possible. The Student Accommodation Centre makes an important contribution to the Loughborough Experience. Our friendly and experienced team are here for you, offering advice and support for all your accommodation needs.” (LU Website, 2014b)

Students are offered the choice of 16 halls of residence, of which 7 are catered and 9 are self-catered. Amongst the self-catered halls, 3 are managed by service providers that have a partnership with the university. Overall, about 5,000 students live on-campus. The main differences between the types of catering options contribute extensively to the well-being and residential satisfaction of halls' residents:

“Loughborough University has traditionally always had catered halls. We have been voted the top English University for student experience for six years running and our dining halls play a large part in contributing to the ‘Loughborough Experience’. The Student Union is very committed to the catered Hall experience, encouraging the University to continue with this tradition and culture.” (LU Website, 2014c)

LU guarantees to all 1st year students an accommodation in university halls of residence if they apply for it prior to 1 September. This residential pattern, assessed in the body of literature as a rite of passage for students in the UK (cf. Rugg, 2000; Christie *et al.*, 2002), is also encouraged by the university body. Some halls of residence built in the 1950s (e.g. William Morris) and in the 1960s (e.g. Towers) have undergone marked refurbishment processes of both their bedrooms and bathrooms. Moreover, some halls of residence were recently developed through a partnership between the University and the University Partnerships Programme (UPP) such as Elvyn Richards (in 2009) whereas some were under refurbishment works in 2013-2014 (e.g. Falkner Eggington) and reopened for the 2014-2015 academic year. As with numerous UK towns and cities with HEIs (e.g. Nottingham, Bristol, Oxford, Liverpool, and Warwick), Loughborough is permeated by the proliferation of student accommodation in the PRS. With over 5,000 beds available on-campus, the shortage of student bedspaces is associated with an intensification of student housing supply in the private market.

The monikered ‘Golden Triangle’ in Loughborough, covering the Storer and Burleigh areas, has become popular for dwelling a substantial number of student households. Hubbard (2009) outlines these areas as experiencing one of the highest rates of studentification at a national scale. The Golden Triangle naming was first introduced by landlords and the numerous letting agencies in town specialised in the conversion of ‘family’ properties to student HMOs. Since then, this label has become a marketing tool, a token of attraction (for want of quality) for, primarily, second and final year undergraduate students. This approval rating remains high amongst the student population even though Kinton (2013) notes a student depopulation of the area, with 28% of HMOs bedspaces being empty. Symbol of the high student density in some parts of the town, Table 5.1 describes the age structure of local wards reputed for being studentified: Ashby, Southfields, and Storer.

Firstly, the low median age in these three wards is noteworthy. For instance, half of the population in the Ashby ward is 20 years old or less. It becomes more understandable why, in this specific ward, a third of the area’s population is between 20 and 24 years old. Third, in the Southfields and Storer wards, the population aged 18-29 equals approximately half of the ward

population. Lastly, between 2001 and 2011, Southfields and Storer wards gained residents, respectively 22% (n=1,448) and 8% (n=498). As for Ashby, the ward lost 6% (n=417) of its population since 2001 (ONS, 2013c). Parallel to this, the cohort aged 20-24 has significantly increased in the Southfields wards, with a doubling of headcount. Despite not assuming that the entire cohorts aged 18-29 are students, the recognition of these areas as studentified reinforces the hypothesis of very high student densities.

Table 5.1 – Age Structure 18-29 of Individuals in Studentified Wards of Loughborough in 2011

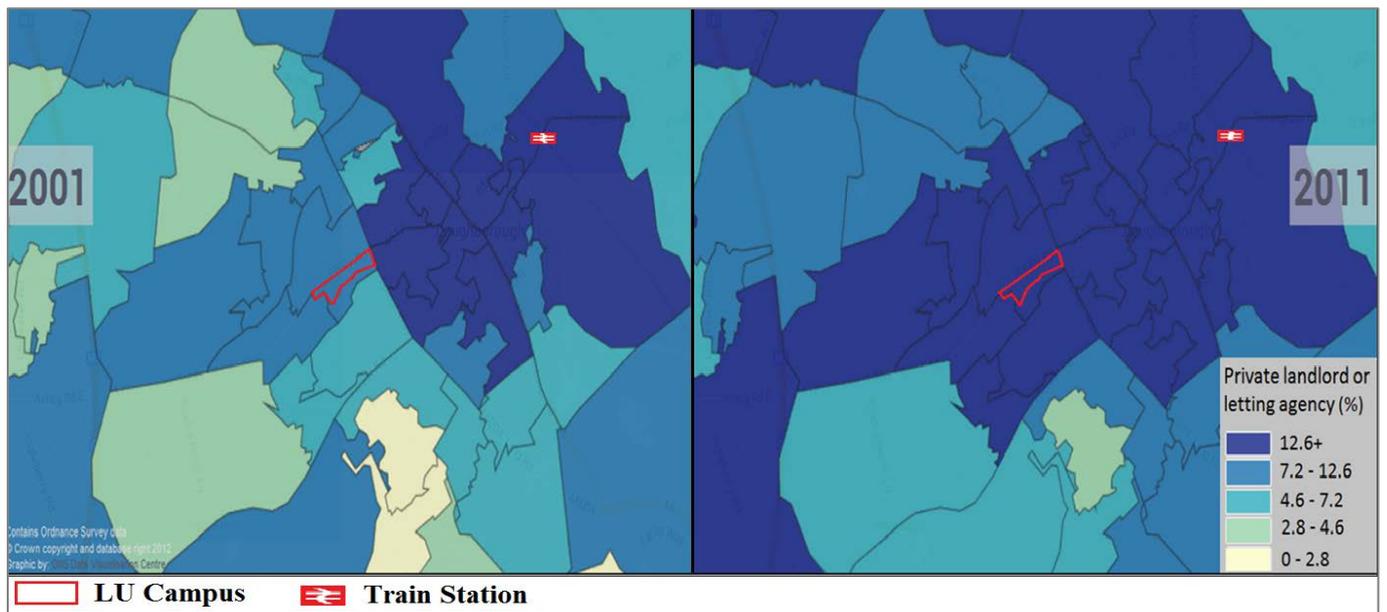
Loughborough Wards	Median Age	Age 18 to 19 (%)	Age 20 to 24 (%)	Age 25 to 29 (%)	Age 18 to 29 (%)	Age 18 to 29 (number)
Ashby	20	25	33	5	64	4,126
Southfields	23	6	36	6	49	3,267
Storer	23	7	33	8	48	2,894

Source: ONS, 2013d

Bearing in mind that the Office for National Statistics (ONS) reported that amongst the population aged 16-74 the socio-economic classification for full-time students was as following: Ashby: 65%; Storer: 41%; and Southfields: 34%. With the expansion of population aged 20-24, there is limited doubt that the student population has risen in these wards. Figure 5.2 exposes the spread of the PRS in most of the central residential areas of Loughborough. In 2001, the PRS was permeated in the eastern parts of town. A decade later, the encroachment of the PRS was reinforced in the western parts of town where the LU campus lies. Therefore, it can be argued that this sprawl of the private sector is linked with the growth of student demand.

One of the distinct features of Loughborough is the remarkable physical size of its campus site which equals 1,7 km². This specificity causes a sub-segmentation of the housing supply within the PRS. Most of the letting agencies established in town advertise vacant properties specifying the side of campus in which the property is located. For example, the ‘Engineering side’ of campus is often specified in accommodation advertisements. It infers that this dwelling will be a suitable location for students enrolled within an engineering course due to its proximity to lecture rooms and departmental buildings rather than for humanities students where facilities are based on the opposite end of campus. Hence, the association between the study programme and the facilities’ locations are thought to have a weighty influence on the student residential decision-making processes.

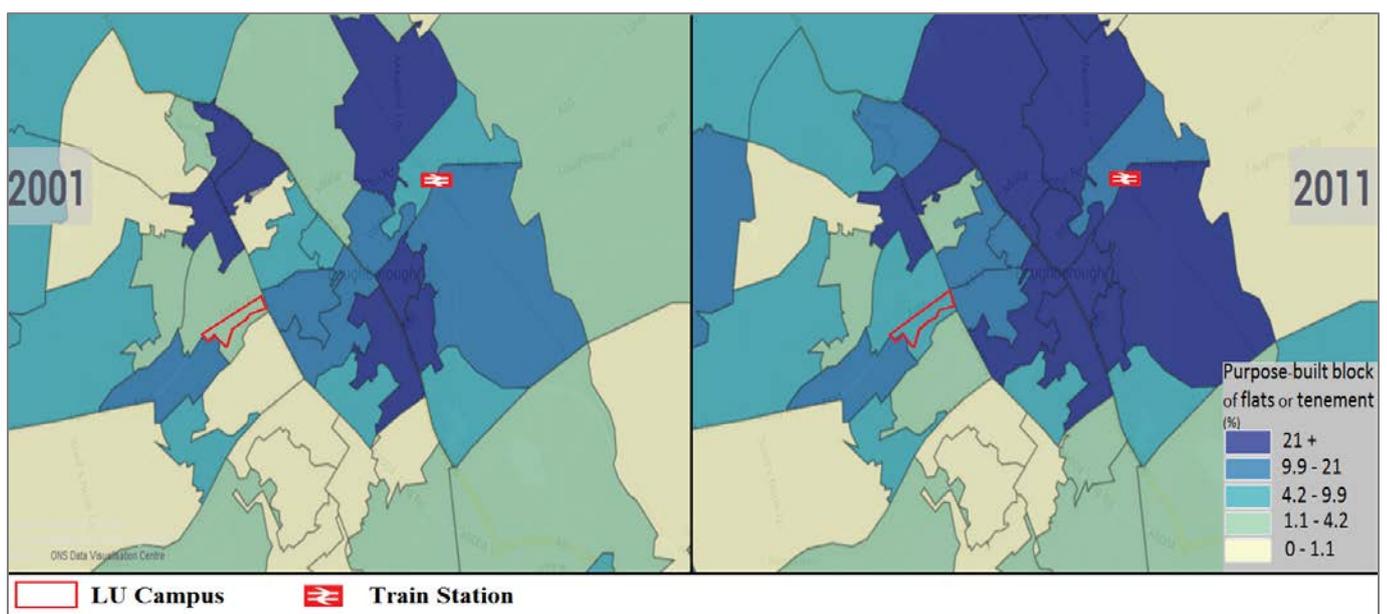
Figure 5.2 – 2001 vs. 2011 Census – PRS: Private Landlord or Letting Agency (in %) in Loughborough Wards



Source: ONS, 2012

Comparable to Figure 5.2, Figure 5.3 presents the decennial evolution of the stock of purpose-built block of flats (or tenements) in the university town. The growth of this dwelling type, which includes PBSA, is striking. The progression is conspicuous in the town centre (in centre of the map) and coincides with the development of ‘high quality’ PBSA, such as the Print House (2005), the Asha House (2007), and the Foundry (2008) (Hubbard, 2009).

Figure 5.3 – 2001 vs. 2011 Census – Purpose-Built Block of Flats or Tenement (in %) in Loughborough Wards



Source: ONS, 2012

5.2 Dealing with the Unfolding of Studentification Processes

For many years, students at LU have drawn the local residents' attention, not for their recurrent sporting successes (LU has won the British Universities and Colleges Sport (BUCS) consecutively over the past 33 years, in 2013) but for the negative impacts they are viewed to generate in some residential neighborhoods.

Some students' (mis)-behaviour, disrespect and contribution to the deterioration of the neighbourhoods' atmosphere have been condemned by some local residents, noting irreconcilable lifestyle differences occurring between them and the students living off-campus. A local resident, who has been living for many years in a street highly populated by students, deplored the situation in the local newspaper:

“You have never watched as families leave the area to be replaced by absentee landlords who flood the environs with excessive student numbers, destroy the family neighbourhood then run off to their own family homes, unaware or uncaring about the misery they are causing. The area is flooded with students' cars during term time, gardens become neglected and rubbish accumulates.” (Loughborough Echo, 2013)

Similar comments are numerous amongst Loughborough's permanent residents who have mobilised to voice their displeasure in collective ways. Consequently, in several areas of town where students' presence is imposing, resident groups have been formed. These community groups include: Storer and Ashby Residents Group (SARG), Kingfisher Area Residents Group (KARG), Forest Road North and Holywell Drive Area Residents Group (FRHARG), which intend to denounce anti-social behaviour and to rise up against the spread of student HMOs in the specified neighbourhoods. To date, the entrenchment of HMOs in Loughborough must not exceed 20% of houses in a radius of 100 meters (Charnwood Borough Council, 2005). Similar planning permission restrictions are imposed in other university towns such as Oxford (Oxford City Council, 2013), Warwick (Warwick District Council, 2013) or Bath (Bath and North East Somerset Council, 2013).

The ratio HMO/non-HMO properties and the radius distance are adaptable in accordance with the local planning policies. However, discussions at the Charnwood Borough Council (2014a) considered halving the share of student housing in the area. If this suggestion is conclusive, this will restrain housing options available for students and, hence, reappraise their priorities encompassed in the residential decision-making processes.

By way of response, LU and LSU work in close relationship with these groups, the local council and the police. Notably, LU has formed liaison groups, has organised security patrols, and has provided off-campus students with advice and information regarding residential behaviour and discipline. Meanwhile, LSU has promoted campaigns such as ‘SSHH!’ (Silent Students Happy Homes), ‘Better Decisions,’ and ‘Know Your Neighbour’ in order to educate and raise awareness to students about how to be a responsible neighbour. To give evidence of these initiatives, the Know Your Neighbour’s campaign allows students and residents alike to meet informally so that the foundations of a wholesome relationship can be established. Nonetheless, setting up relationships between local residents and students remain complicated due to considerable annual turnover in several parts of town.

To conclude, Loughborough has apparently become a potential research laboratory for social scientists and human geographers interested in residential mobility, urban transformation, and HE perspectives, as numerous researches focusing on this particular East Midlands town can attest. The segmentation of Loughborough’s student housing and the social transformations associated to it have been intensely researched through investigations about processes of (de)studentification (see Hubbard, 2008; Smith, 2008; Kinton, 2013), as well as the continued growth of PBSA off-campus (Hubbard, 2009). Such scientific attention has made Loughborough a very unique case study for gaining better insights of the urban changes tide to students’ presence in town. However, examining with precision the diverse residential attributes involved in the student residential decision-making processes are crucial in order to re-adjust the supply and demand in the market. As well, policy making could certainly benefit from the understanding of student residential preferences on the market. Finally, the introduction of the £9,000 tuition fees has arguably set up a new deal for the way in which students negotiate their housing priorities.

Chapter 6

The Physical Profiles of Student Dwellings

6.1 Introduction

This chapter has the objective of introducing the premier quantitative taxonomy of student housing, entitled the Student Dwelling Taxonomy (SDT). The SDT consists of a comprehensive classification which incorporates specific details on dwellings occupied by students. This focuses on the physical assessment of the building. The characteristics encompassed in the taxonomy are the type of dwelling, the accommodation age, the household size and occupancy, the floor space per resident, the location, and the distance to campus. The creation of this classification intends to demonstrate that discrepancies exist between students' dwellings categories but also within them. The outcomes of this chapter are tied to Chapter 7, in which the relations between the energy performance of students' dwellings and their energy consumption and costs are investigated. For more clarity and to avoid redundancy, the terms 'taxonomy,' 'typology,' and 'classification' are used interchangeably.

To present the findings from the LSAS, underpinned when applicable with data stemming from individual and focus group interviews as well as the retrieval of EPCs, this chapter is structured in four parts. Section 6.2 describes the main steps of the taxonomy construction. It exposes the various alterations that have been made in order to strengthen the robustness of the housing typology. Section 6.3 explores the profiles of the overall student housing types in Loughborough through the analysis of the physical attributes. Section 6.4 scrutinises each dwelling type separately, which allows the performance of in-depth statistical analyses. Finally, Section 6.5 summarises the key findings of the chapter and how the taxonomy can facilitate the study of student housing through a different approach, such as the one related to energy consumption, in the following chapter.

6.2 Designing the Student Dwelling Taxonomy (SDT)

Chapter 3 highlighted the establishment of housing typologies by national authorities such as the EHS, DECC, and BRE. The data provided contribute to the build-up of an extensive knowledge of the UK housing stock whereas Chapter 2 stressed the variety of supplied housing available to students. Limited evidence is brought in concerning the profile of these types of dwellings. This section considers the pivotal steps in the creation of the building taxonomy. It underlines the foundation of a classification model of student dwellings that can be replicated in further

research. Besides, it provides definitions of the prominent terms that would often be employed as well as comparing elements existing in building typologies.

One of the salient steps of designing such classification is to examine the literature on building typologies. Research conducted by BRE (2013), the EU through the Intelligent Energy Europe (IEE) and the project TABULA (EU, 2014a), the Buildings Performance Institute Europe (BPIE, 2011), and Schwehr and Fischer (2010) have, to some extent, inspired the design of the student housing taxonomy. Notwithstanding, the approaches and criteria used in the data collection of the EHS are salient in regard to the construction of the SDT. EHS' data has already been referred to in building typologies, for example the EPISCOPE project (EU, 2014b), a follow-up of the TABULA project.

Most of the residential buildings in the SDT were selected according to their definition specified in the EHS (DCLG, 2014b):

- End-terrace (E-T) house is a house attached to one other house only in a block where at least one house is attached to two or more other houses.
- Mid-terrace (M-T) house is a house attached to two other houses in a block.
- Semi-detached (S-D) house consists of a house that is attached to just one other in a block of two.
- Detached (D) house is a house where none of the habitable structure is joined to another building (other than garages, outhouses etc.).
- Bungalow (B) consists of a house with all of the habitable accommodation on one floor. This excludes chalet bungalows and bungalows with habitable loft conversions, which are treated as houses.

Some alterations in the building classification were carried out in order to constitute a more detailed taxonomy. Accordingly, 'maisonettes' were, despite their restraint amount (n=6), associated with the bungalow housing category. A purpose built flat, defined as a flat in a purpose built block, including "cases where there is only one flat with independent access in a building which is also used for non-domestic purposes" (DCLG, 2014b: 81), was amended to PBSA as it is inherent in this specific research. Converted flats, ensuing the conversion of a house or former non-residential building, was appended to PBSA so they could form the 'PBSA/C-F' building class. In order to facilitate the identification of the dwelling categories, Figure 6.1 presents photographs of each building type. All photographs were taken in Loughborough by the author.

In this specific research, the housing parameters had to be harmonised as to depict the most accurate dwelling stock profile in the local context. For instance, the EHS characterises a high rise as a building of at least 6 storeys high. Yet a different approach was applied in the particular context of the market-town of Loughborough. Hence, it was recognised that high rise buildings would have to be at least five storeys high. This was done as a matter of practicality, as most buildings in Loughborough hardly exceed 6 storeys high. Although, this is not the case of the on-campus university hall, Towers, the tallest building in town with two towers of 22 and 18 storeys (Charnwood Borough Council, 2014b).

The taxonomy is subdivided into two approaches. On the one hand, the SDT displays a profile focusing primarily on the physical characteristics, and, to a lesser extent, on the conditions of the dwelling. It breaks down building type by age and splits into 6 bands:

- Pre-1919
- 1919 – 1944
- 1945 – 1964
- 1965 – 1980
- 1981 – 1994
- Post-1995

Although being less developed than the construction age's splitting of English dwellings into 8 bands in the EPISCOPE project (EU, 2014b) or in the Irish construction age's 10 bands presented in the TABULA project (EU, 2014c), the SDT building age classification is more detailed than the one established in the EHS, with the last band being 'Post 1990'.

Besides the dwelling age and its built form, additional indicators were selected in the building profile taxonomy such as the floor area per resident (in m²), the position of the flat (if applicable), the household size, and the walking time (in minutes) to lecture classrooms.

Figure 6.1 – Illustrations of Buildings Included in the SDT



a) University Halls of Residence (Uni Halls)



b) PBSA/Converted Flat (PBSA/C-F)



c) Mid-Terrace (M-T)



d) End Terrace (E-T)



e) Detached (D)



f) Semi-Detached (S-D)



g) Bungalow (B)

On the other hand, the second approach of the classification concentrates on building elements in relation to energy characteristics such as primary heating systems, which were itemized according to typologies produced in BRE (2009a, 2009b, 2013) and DECC (2013f), window glazing, and the SAP energy rating (both band and score) obtained from the EPCs.

Both approaches are interrelated and contribute to the main output of this chapter. Concurrently, the housing attributes implemented in the SDT are harmonized with the building typologies addressed earlier, and are unambiguous. Further, the collection of the appropriate data is relatively manageable. As stressed in Section 4.3.6, the empirical findings are the outcome of combining data collected through the LSAS, the retrieval of EPCs, as well as observations realised on field, notably regarding the dwelling's age of construction.

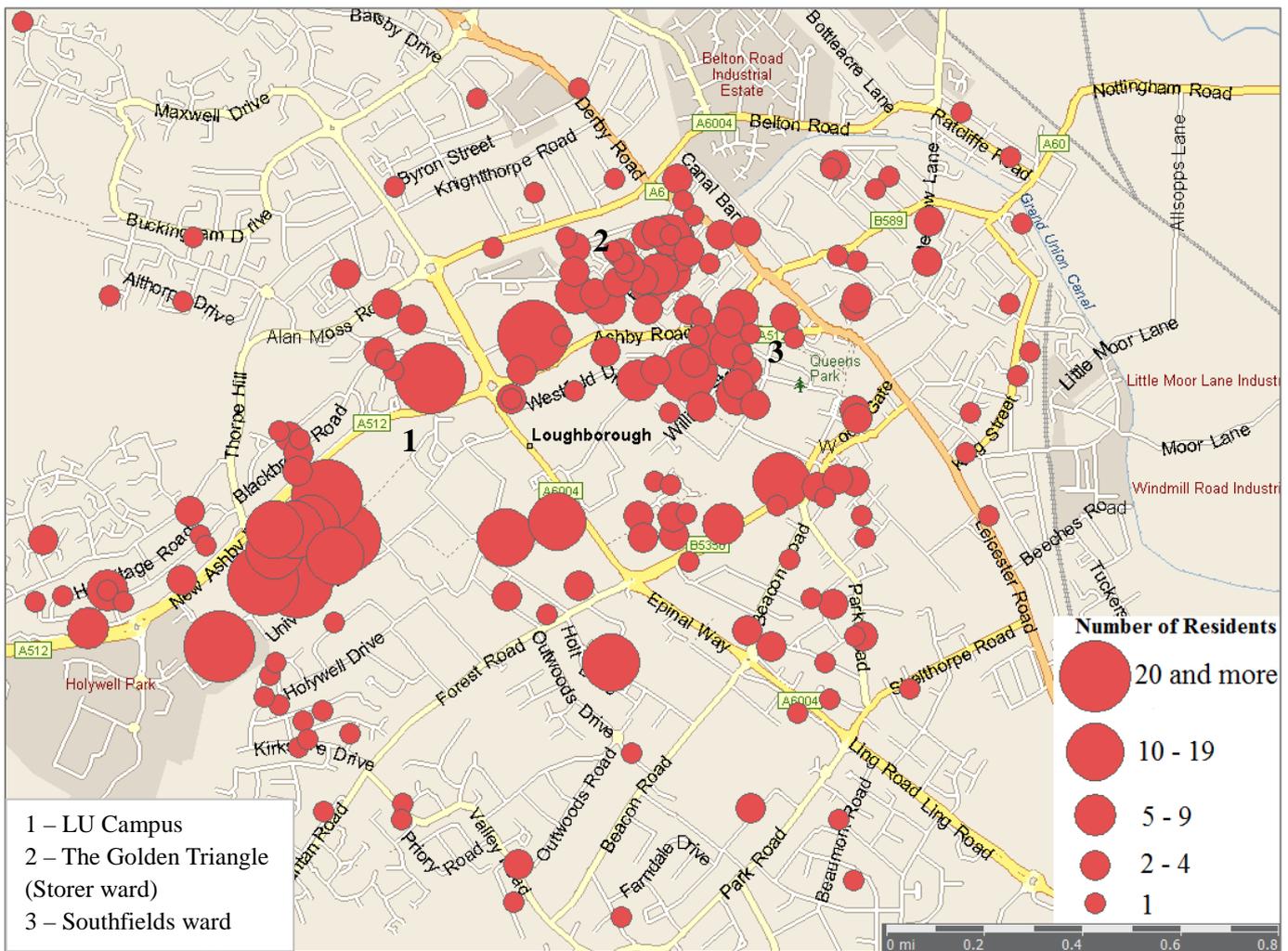
6.3 The SDT: Physical Profiles of Student Accommodation

Using data in Sample 3 of the LSAS (cf. Section 4.3.6), the number of students embedded in the SDT amounts to 701. This represents respectively 62% and 82% of Sample 1 and Sample 2. Table 6.1 describes the frequencies and averages of the dwelling attributes under the physical approach according to their respective built form. Subsequently, a general statistical analysis is performed. In Section 6.4, dwellings are analysed separately.

Prior to exploring the SDT data, Figure 6.2 displays the number of students by their residential postcode within Loughborough (i.e. LE11). It is self-evident that university halls of residence, both on (1) and off-campus, concentrate the highest density of students by postcode. In the PRS, the popular Golden Triangle (see Hubbard, 2008; Kinton, 2013) inserted into the Storer ward (2), is the token of studentification processes unfolding locally. Its proximity to the campus and the town centre explains its reputation.

A high proportion of at least 9 students per postcode can be observed in this enclave. Southfields ward (3), also due to its location, is a strongly valued residential area by students. Overall, several pockets of students' residential distribution are perceptible across town. For instance, many students are spread out in what is called the 'Engineer side' (due to its close proximity with Engineering departments) in the Ashby ward, north of campus. The origins of the formation of these many student residential geographies are found in the historical developments of the college and later the university, which possessed several buildings, Arts and Engineering notably, in the town centre. Consequently, boarding houses were available to students at Burleigh Fields, off Radmoor Road, and in Victoria Street.

Figure 6.2 – Students’ Residential Distribution by Postcode in Loughborough



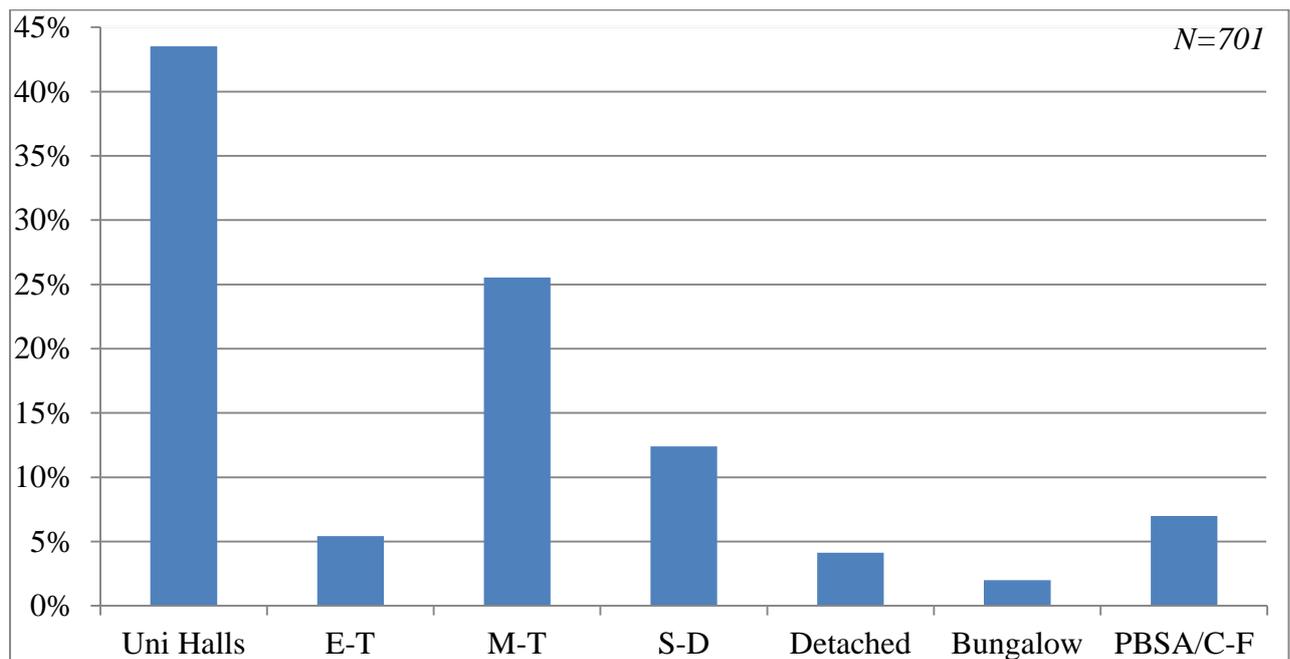
Harvey (1976) portrayed with accuracy how Dr Herbert Schofield, charismatic Principal of Loughborough College from 1915 to 1950, secured and purchased properties in the private market. Schofield planned to acquire dwellings off of the Ashby Road and Forest Road Area by designing a database that would tell him at a glance “whether some houses likely to be put on the market would be a useful addition to the college” (*ibid*: 73). If Schofield’s plan were not pursued, this reveals, nonetheless, how strategic the geographical breakdown of student housing has been for the university and the town council.

Table 6.1 – The SDT Physical Approach

	University Accommodation		PRS				
	Uni Halls	E-T	M-T	S-D	D	B	PBSA/C-F
Construction Period							
Pre-1919		53%	83%	22%	10%	14%	12%
1919-1944		11%	4%	21%	7%	14%	8%
1945-64	27%	3%	2%	25%	14%	22%	0%
1965-1980	30%	18%	4%	17%	14%	14%	8%
1981-1994	9%	5%	1%	5%	31%	7%	6%
Post-1995	34%	10%	6%	10%	24%	29%	65%
Floor Area per resident (in m²)							
	10	25	26	28	30	28	30
Average Number of Occupants							
	6 and more	4.7	4.4	4.6	4.7	3.9	2.7
Average Walking Time to Lecture Venue (in minutes)							
	10	19	14	14	18	22	18
Flat Position							
Ground Floor							33%
Mid Floor							28%
Top Floor							38%
Total Number of Students (% students)							
	305 (100%)	38 (10%)	179 (45%)	87 (22%)	29 (7%)	14 (4%)	49 (12%)

The student residential distribution is split between occupants in one of the 16 university halls of residence, covering 43% of the sample population. The remaining share lives in the PRS. The term PRS is used here albeit a tiny portion of students owns their accommodation (n=12). Figure 6.3 measures the proportions of students occupying the selected dwelling types. In the PRS, terrace properties represent the majority of dwellings (30%). This reflects the national average of this housing type, which is 28% (DCLG, 2014b).

Figure 6.3 – Profile of Student Housing in Loughborough



Loughborough is known for hosting several wards with noteworthy rates of studentification processes (Hubbard, 2008, 2009; Kinton, 2013), symbolised by Victorian terrace houses converted into HMOs. In average, terrace dwellings concentrate one-quarter of all dwellings in the town, and 69% reside in studentified areas such as the Oxford Street area (ONS, 2011b).

In the SDT, S-D dwellings accommodate 12% of the students. This figure is three times lower than the number of households living in similar buildings in Loughborough. Similarly, the number of students residing in PBSA/C-F and detached houses is respectively two and six times under-represented, compared to the figures at the town scale (*ibid.*). That said, approximately 35% of privately rented housing in England are terrace houses (DCLG, 2014b). At the Loughborough level, terrace properties concentrate the largest supply of student housing in the PRS, which is mainly constituted of the oldest dwellings in the UK. This is demonstrated in Figure 6.5, which describes the most frequent student housing types according to their Loughborough postcode.

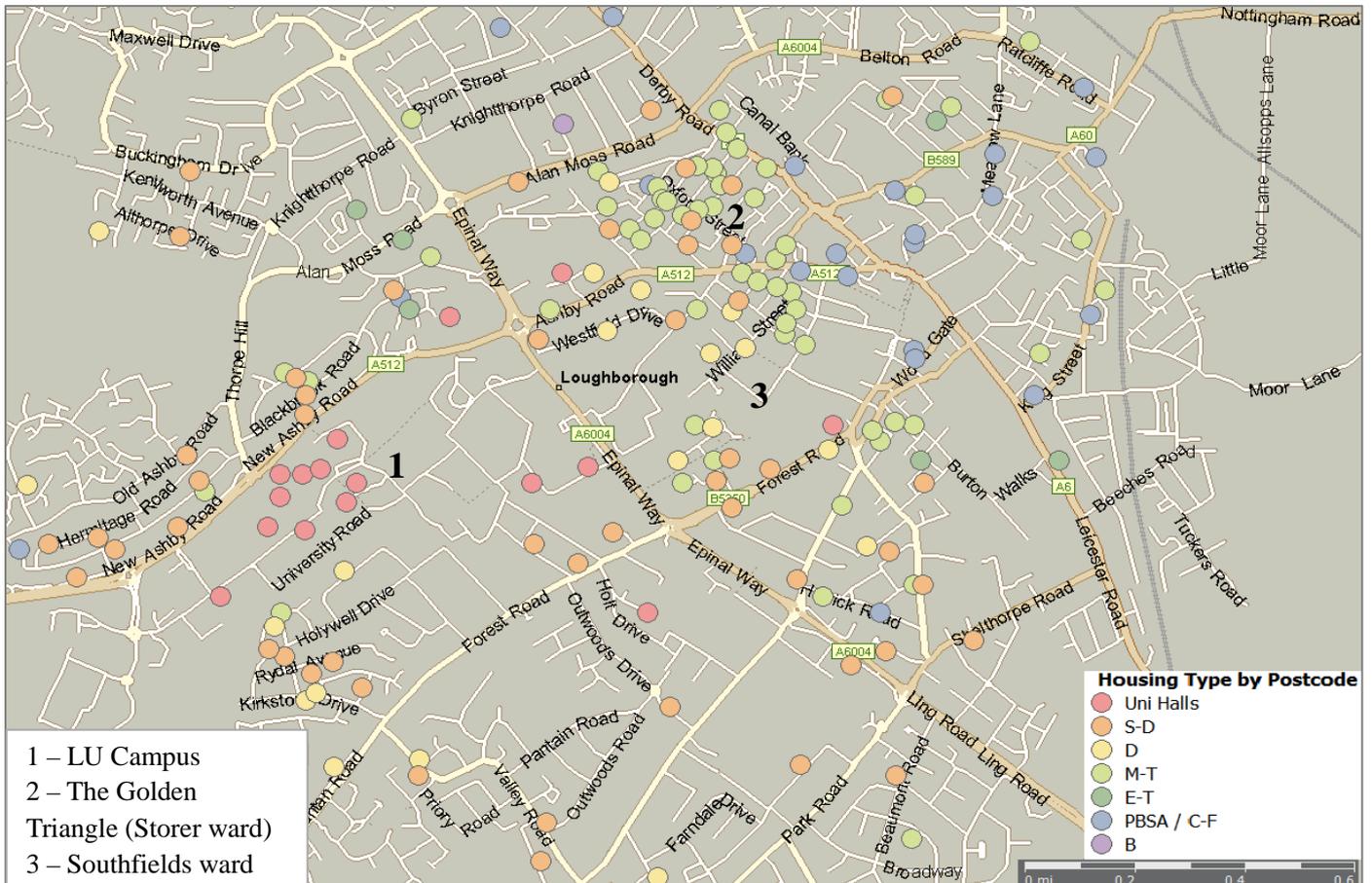
Figure 6.4 – Terrace Houses in Paget Street: Stronghold of Studentification in Loughborough



Source: Author's photograph

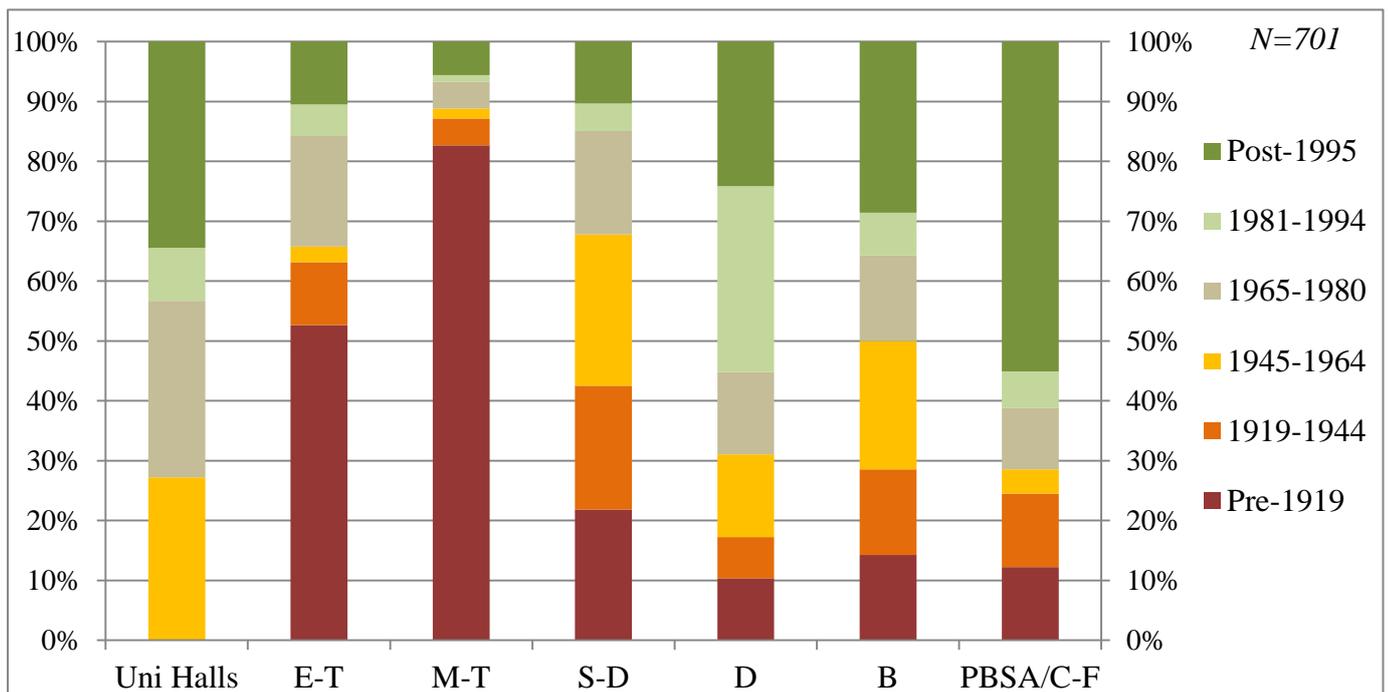
Students living in terrace houses are principally located within the Storer (2) and Southfields (3) wards. Students residing in S-D and D dwellings are scattered throughout Loughborough. On the contrary PBSA/C-F buildings are found prevailing in areas adjacent to the town centre and in the eastern parts of town.

Figure 6.5 – The Most Dominant Student Housing Types by Postcode in Loughborough



According to the EHS, 33% of homes in the PRS were built before 1919. The link between type of dwelling and its construction age is even more conspicuous. Indeed, with 35% and 50% of its share built respectively before 1919 and 1944, terrace houses are indisputably the most aged housing category in the country. Figure 6.6 exemplifies this relationship: 83% of M-T houses, accounting for almost half of building in the PRS (see Table 6.1), were built pre-1919. Likewise, E-T properties were also predominantly built in this era.

Figure 6.6 – Age Profile of Student Housing in Loughborough



S-D and D houses are homogeneous in the housing age distribution. The former is distributed almost equally up to 1965, with a greater proportion being built from 1945 to 1964 (25%). This distribution is significantly representative of the national figures for S-D dwellings. Concerning D houses, the age distribution is similar to English ones, with a majority built after 1964.

As outlined by Hubbard (2009), the production of PBSA/C-F in Loughborough is very recent. Most of the PBSA were developed after 1995, often in the second half of the 2000s. Converted flats embody the oldest accommodation in this building class. Lastly, the construction of Uni halls is extensively related to the expansion phases of the HE sector, as noted in Chapter 2. Although a negligible fraction of buildings in some halls of residence were built before 1944, the intensive refurbishment operations they have experienced explain the rationale of excluding them in Figure 6.6.

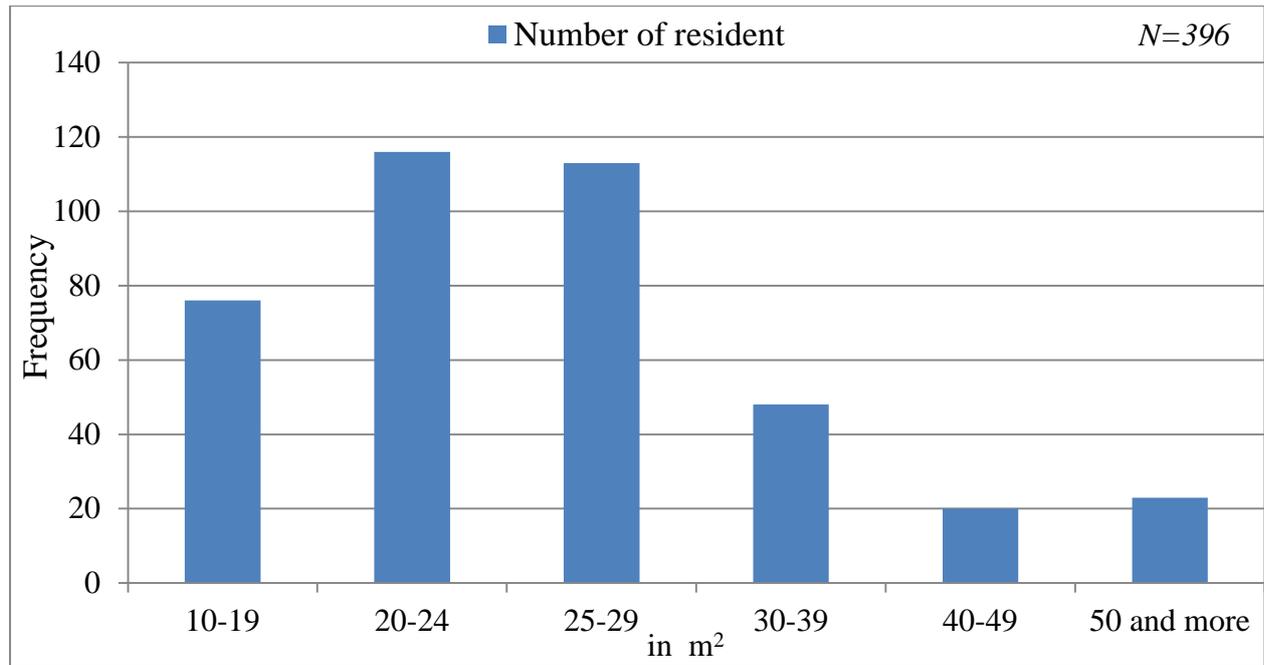
Overall, the residential distribution of students by dwelling age is relatively constant: less than a third of students reside in pre-1919 buildings, nearly 35% live in 1945 to 1980 dwellings, and finally 24% occupy in post-1995 properties. In solely including accommodation in the PRS, half of students reside in housing built before 1919, while only 15% reside in post-1995.

To conclude, the dwelling age proves to be a salient characteristic of energy efficiency as the newest housing is built to scrupulously respect the established building regulations. Conversely, older buildings have inferior insulation, resulting in poorer thermal performance than newer constructions. Moreover, retrofitting old houses does not imply that the dwelling's energy efficiency would equal the thermal performances of more recent building (DECC, 2013f). Section 7.2 reflects on the relationship between the type of housing, its age, and its energy efficiency performance.

The SDT also considers another critical feature within the physical approach: the floor area per housing type. DECC (*ibid.*) argues that a housing's floor area, as well as the number of people living in it, are influential components of its energy use. Consequently, SDT's data on the floor area can be broken down regarding the number of occupants per accommodation along with the dwelling age. Nevertheless, some biases have to be recognised in the measurement method of the floor area per resident, for example: relying entirely on the information provided in the EPC. To illustrate this assertion, the measure of a dwelling's floor area per individual results solely on the division of the total floor surface by the number of residents in the given accommodation. This method assumes that all dwellings are fully occupied. Yet, Kinton (2013) has pointed out that destudentification processes were unfolding in parts of Loughborough, which caused HMOs to be partially occupied, up to 43% in Storer and 46% in Burleigh areas, or empty, 19% in Storer and 7% in Burleigh areas. The range of household size is capped at 7 and more occupants, which implies that whether a household comprises 7 or 12 individuals, it will only be classified as 7 and more people. Lastly, data concerning the floor area in university halls of residence was unavailable. The large variety of bedspaces supplied by LU and its partners (e.g. single or double bedrooms with ensuite bathroom, single bedrooms without wash hand basins, standard bedrooms, studio flats, and double bedroom self-contained flats) makes it very complicated to distinguish the floor area of bedspaces in Uni halls. Unlike the other dwelling types, the estimation of the floor area per resident in halls excludes the communal spaces such as bathrooms (when shared), kitchens, living rooms, and corridors. Therefore, after several viewings of student bedrooms, the researcher agreed to appraise the size of a bedroom in a hall of residence to average 10 m², which roughly equals a standard bedspace.

Figure 6.7 displays the diverse frequencies of students in the local housing market according to the floor area per resident. The majority of students benefits from an individual floor area comprised between 20 and 29 m². About a fifth of residents in the PRS occupy individual spaces inferior to 20m². Additionally, approximately 10% of students enjoy a personal space of 40 m² or higher. This indicates that PRS occupants have, for most of them, an adequate individual space.

Figure 6.7 – Frequency of Residents by Individual Floor Area Classes



As an element of comparison, in 2011 the Royal Institute of British Architects (RIBA) published the results of a study about the size of new homes in England. Findings show that the average size of a 3 bedroom home in the East Midlands is 87 m², which is equivalent to the national average. Although it can be postulated that the dwellings' sizes in the PRS would be inferior to the most recent homes, students' individual floor area is seemingly lower than the figures provided by RIBA (2011). This comparison is highly debatable, however, it emphasises the paucity of data regarding the physical attributes of students' housing in the UK and internationally.

Similar to the research produced by RIBA, the EHS also considers the association between floor area and building age by employing the simplistic dichotomy of new build/older homes. It is specified that the average total floor area in new build dwellings is 96 m², 4 m² greater than the average surface in older properties, whilst half of older homes consist of an average total surface area between 50 to 89 m² (DCLG, 2014b). The analysis of the SDT indicates that the average floor area is greater in dwellings built before 1919 (106 m²) than in the ones built between 1981

and 1994 and post-1995, (respectively 99 m²). Housing built within the 1945-64 age band have the highest average floor area (112 m²) of all buildings, which is one-fifth larger than the smallest average space of properties built between 1965 and 1980. Nonetheless, the total floor area of an accommodation is relevant only if the number of occupants is known. Figure 6.8 and 6.9 illustrate this statement by appending respectively the average floor area per resident with the building age group, and the average household size by the dwelling profile.

Figure 6.8 – Floor Area per Resident (in m²) and Dwelling Age

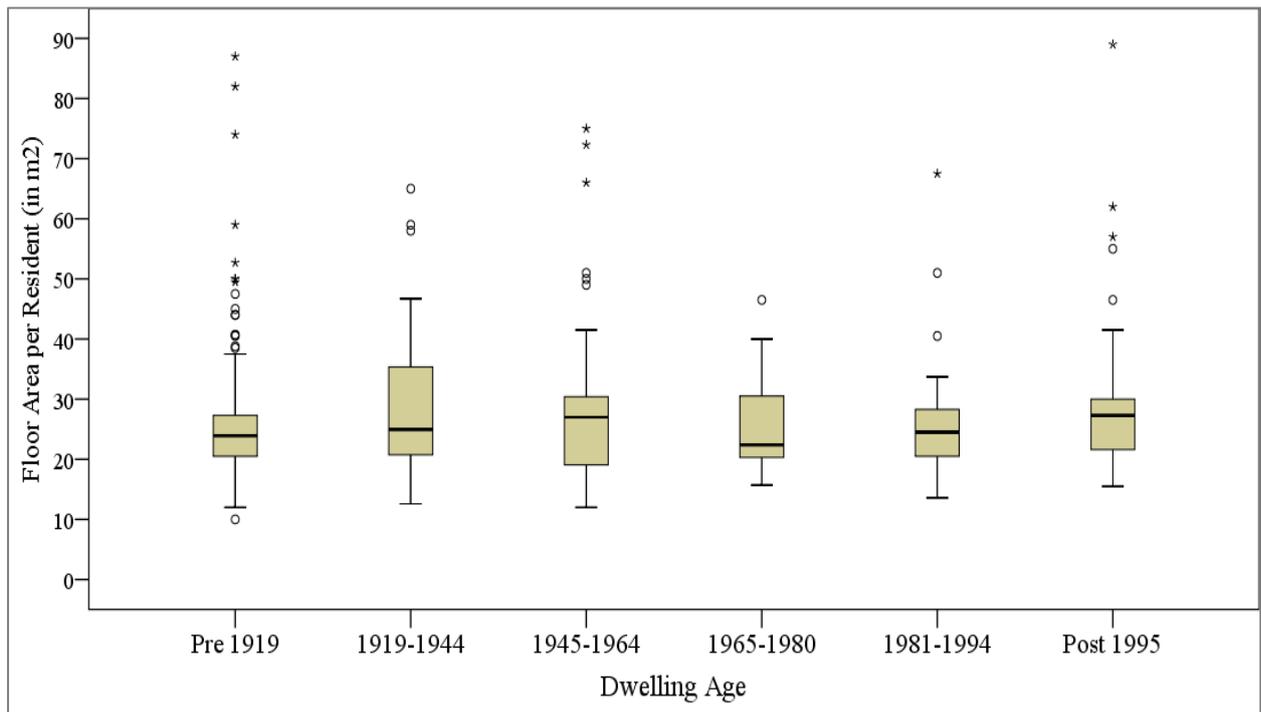
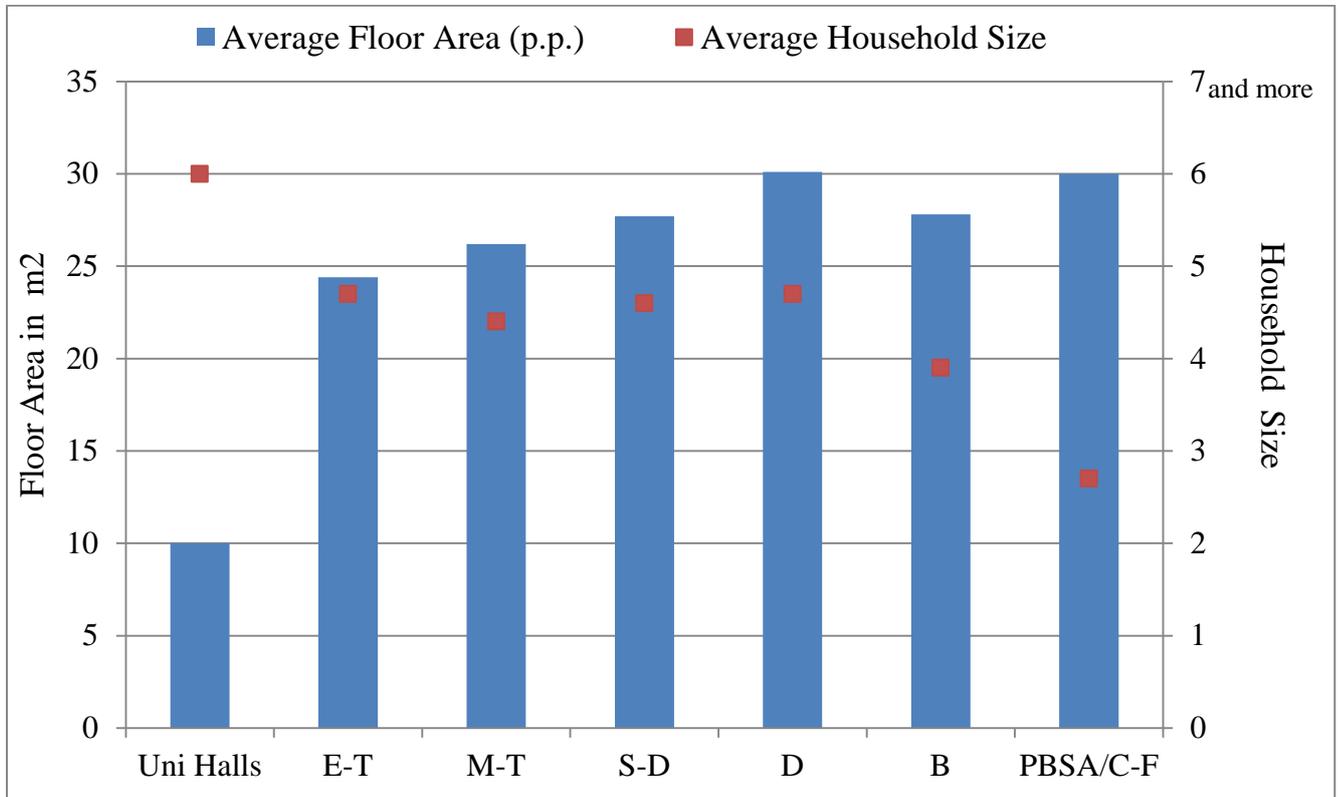


Figure 6.8 shows that the distribution with the largest individual floor area range is to be found in dwellings built before 1919, although it should be remarked that, in this boxplot chart, the maximum floor area was limited to 90 m²/resident. Overall, students' individual floor area, across the building age bands, is mostly confined within 12 and 50 m². The median individual surface area for each building age group is situated between 25 m² in 1965-1980 dwellings, to 30 m² in 1945-1964 and post-1995 properties. In addition, numerous outliers and extremes can be observed in all age categories. This is highly discernible for pre-1919 buildings; this signifies that in some outstanding cases, large properties are occupied by a limited number of tenants such as students/owners or students living in properties with partial occupancy.

A Pearson product-moment correlation coefficient was computed in order to evaluate the relationship between the size of the household and the floor area per resident in the PRS. There was a significant negative correlation of $r = -.547$, which implies that in general, the greater the

number of tenants in a housing, the less individual space a student is going to enjoy. Figure 6.9 indicates that the average individual space and household size is notably dependent on the housing type.

Figure 6.9 – Average Floor Area per Resident (in m²) and Household Size by Housing Type



Unsurprisingly, occupants in Uni halls have the highest number of co-residents (6) unlike the residents of PBSA/C-F, who have less than 3 individuals per household. It is also shown that students living in these types of accommodation, as well as those in detached properties, benefit in an average of 30 m² per person. This tallies approximately 20% more space than the average individual floor area of E-T residents. On the other hand, B residents enjoy an average 28 m² floor area per resident and also count for less than 4 members per accommodation. Overall, there is an average of 4.2 individuals per household in the PRS.

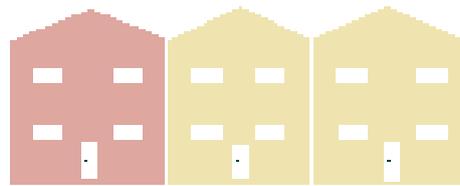
While in the process of selecting an accommodation, students may or may not consider the size of the bedroom or the overall dwelling as a basic attribute in their decision-making. However, identifying the individual floor area per resident is pivotal for prospective tenants as it is strongly correlated to the type of primary space heating system installed in the dwelling, the heating energy consumption, as well as its cost (BRE, 2009a).

The next section provides a more in-depth analysis of each student dwellings in the PRS.

6.4 Physical Approach: Student Dwellings *a la loupe*

This section focuses on a detailed analysis of each type of student housing indexed in the SDT (Table 6.1). Due to the absence of official data (e.g. EPCs) related to university halls of residence, this housing class has been excluded in this section. In addition, the very limited sample of students living in bungalow houses (n=14) has critically reduced the scope of the analysis.

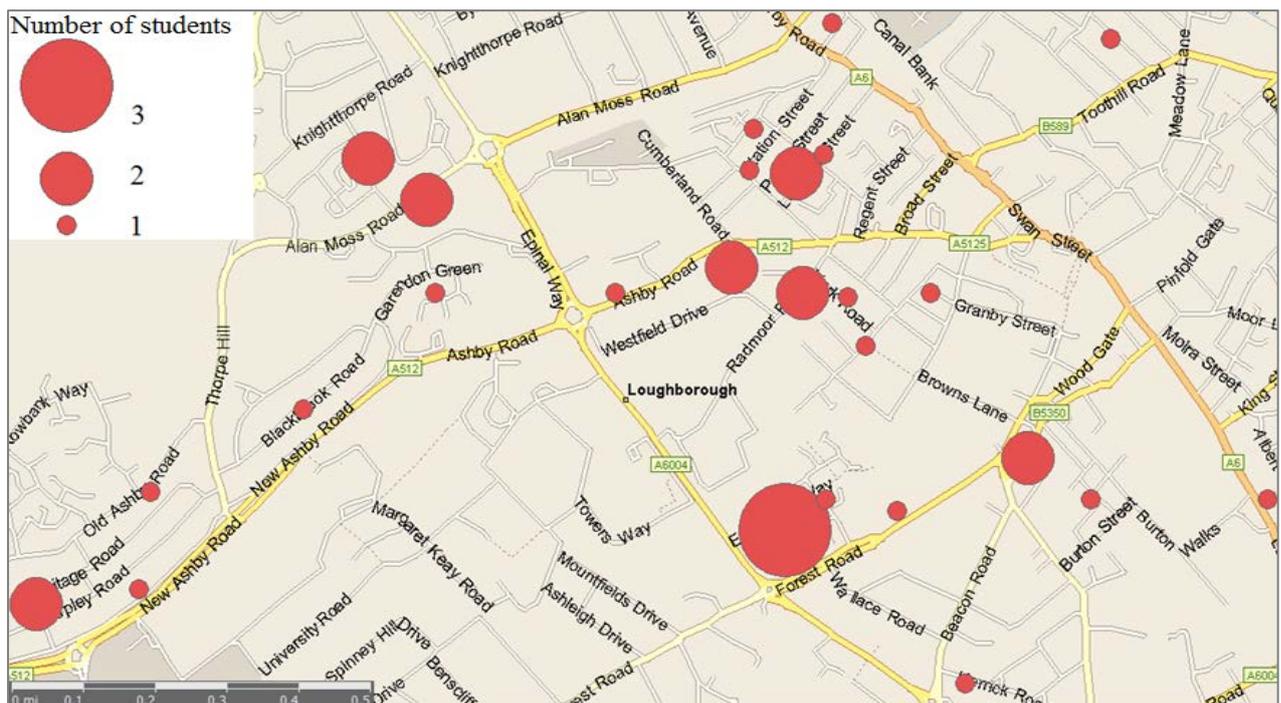
6.4.1 End-Terrace (E-T) Houses



E-T (N=38)

E-T properties cover 5% of all dwellings and 17% of all terrace houses in the SDT. As a Victorian terrace house type, E-T houses are predominantly old: 63% were built before 1945, with only 16% after 1981. They are located in various parts of Loughborough, such as Storer and Soutfields wards but also in the Ashby ward (Figure 6.10). This is discernible through the average walking distance to campus, 19 minutes, which is the second highest amongst all dwellings in the SDT.

Figure 6.10 – Density of Students in E-T Houses by Postcode



Despite its limited sample size, Figure 6.11 indicates that students living in the oldest end-terrace houses occupy on average 25 m² per person. It should be specified that in order to preserve the statistical normality of the distribution, one extreme outlier distinguishing a mature student owning and living alone has been removed. Students residing in housing built between 1965 and 1980 have on average a smaller surface floor area, 22 m² (SD= 6.7), but a greater range. The most restrain individual floor area is found in a house built between 1919 and 1944.

Figure 6.11 – Floor Area per Resident (in m²) and Dwelling Age of E-T Houses

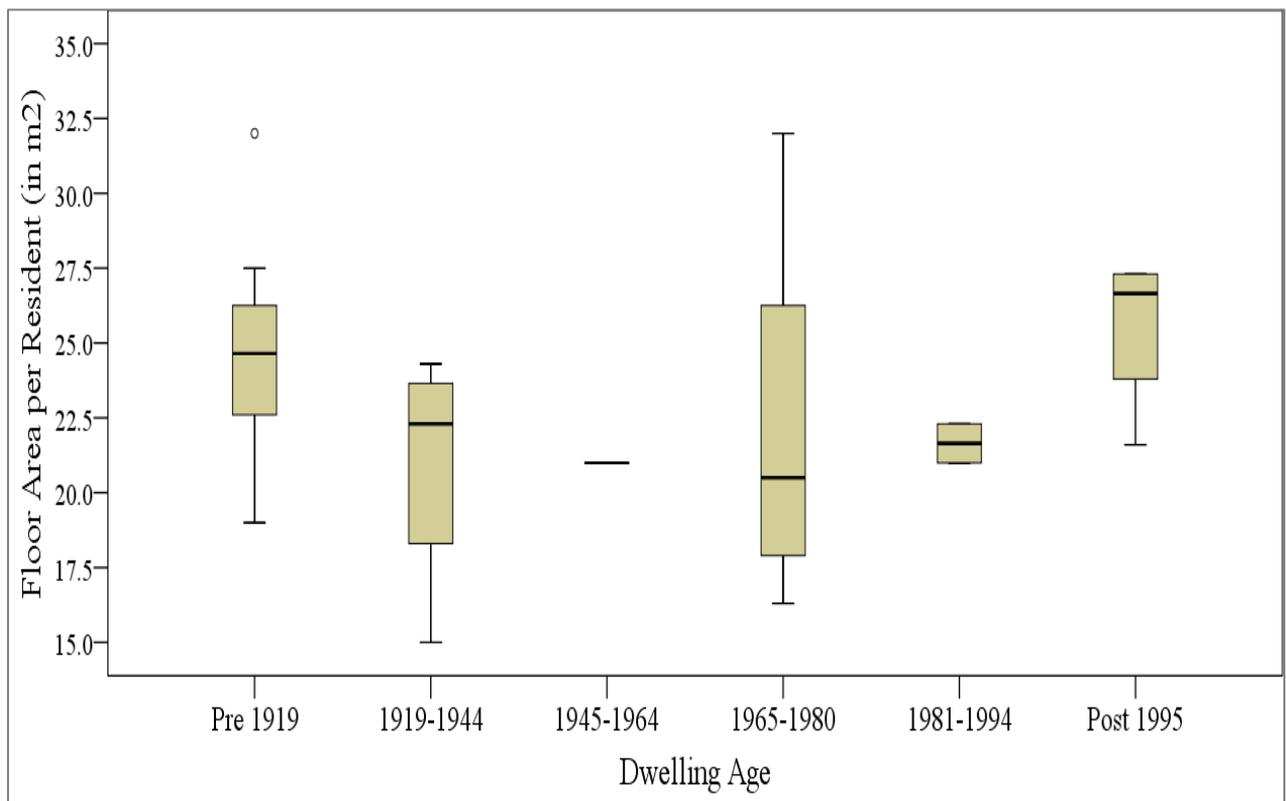
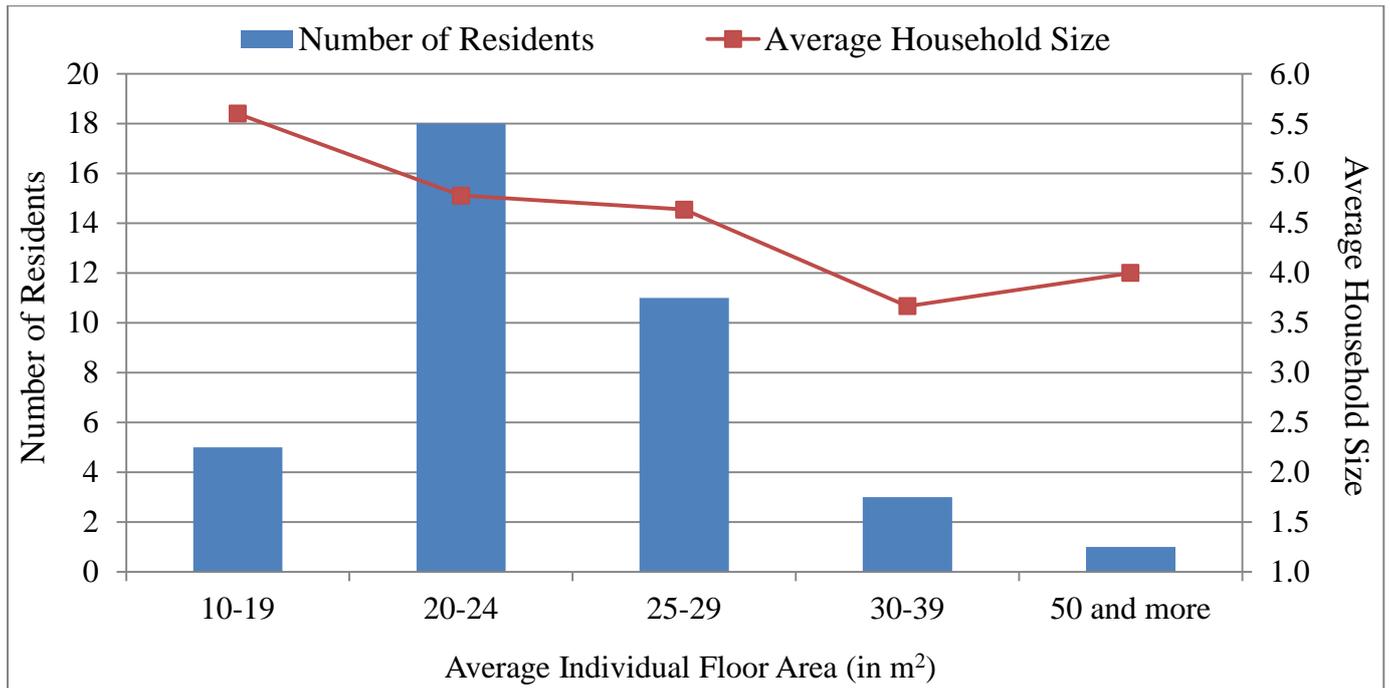


Figure 6.12 sustains that the household size tends to diminish as the individual floor area increases. For instance, there is, on average, two residents less in properties with a floor area per person between 30 to 39 m² than in houses with an individual surface of between 10 and 19 m². Lastly, the mean of floor area per resident in E-T is 24m² (SD= 7), which is less than the mean for all PRS dwellings (27 m²).

Figure 6.12 – Frequency Floor Area per Resident (in m²) and Average Household Size in E-T Houses

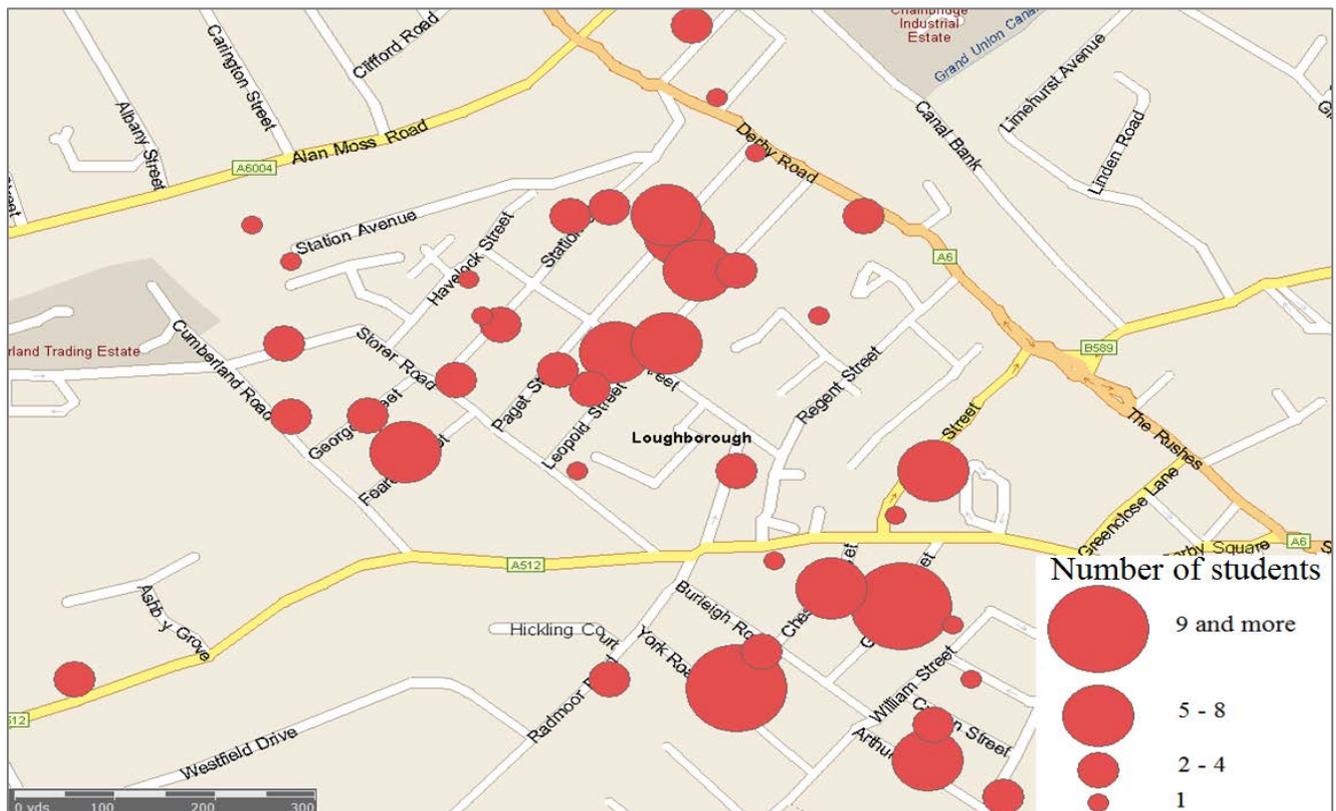


6.4.2 Mid-Terrace (M-T) Houses



M-T houses, also designated as HMOs, account for 44% of private rented housing in the SDT and one-quarter of all dwellings included in the taxonomy. As displayed in Figure 6.5, this type of dwelling is mostly confined in the Storer and Burleigh (within the Southfields ward) areas, also referred to as the Golden Triangle. The wards of Storer and Southfields encompass respectively 46% and 32% of M-T houses in the SDT. Bearing this in mind, Figure 6.13 summarises the high density of students living in HMOs in the Golden Triangle and, more particularly, in some well-known studentified streets, such as Paget Street (Figure 6.4), Leopold Street, and Oxford Street for the Storer area, and York Road, Burleigh Road, and Granville Street for the Burleigh area.

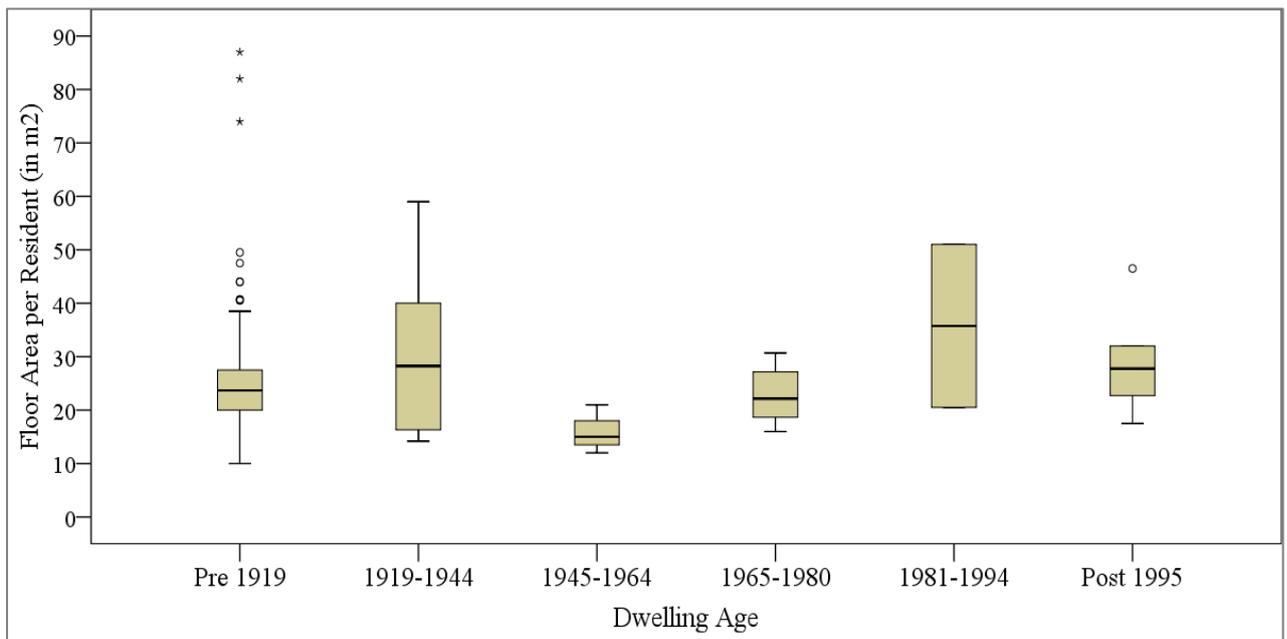
Figure 6.13 – Density of Students in M-T Houses by Postcode (Storer and Burleigh Areas Only)



It has already been ascertained in Figure 6.6 that 83% of M-T houses were built before 1919. Hence, the following boxplot (Figure 6.14) is chiefly meaningful for dwelling in the age band pre-1919. For this housing class, students hold an average individual floor area of 25.5 m² (SD= 10.5), which is slightly less than for end-terrace properties. The core of the distribution, the middle 50%, is confined within 21 to 28 m² per person. This signifies that M-T dwellings provide its occupants with a homogenous individual floor area, which could be the result of a comparable total floor size in the housing. However, a few outliers can be distinguished for pre-1919 M-T houses; the most relevant hypothesis is due to an under-occupation of the accommodation which gives tenants a higher individual surface floor. Cases of under-occupied HMOs due to destudentification processes were clearly detected in the Storer and Burleigh areas by Kinton (2013).

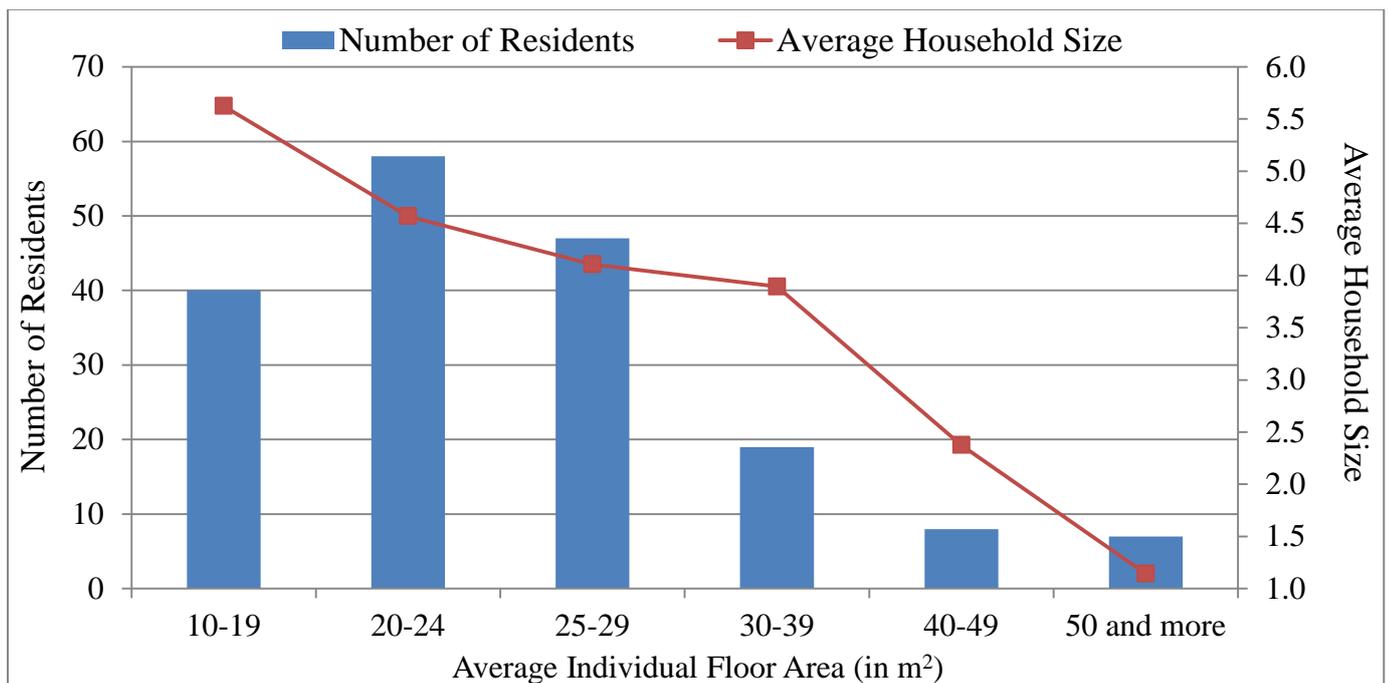
The relationship between the average individual floor area and the average household size was tested. The output shows that the average floor area per resident is negatively related to the average number of people in a household in a mid-terrace house, with a Pearson correlation coefficient of $r = -.552$, significant at $p < .01$.

Figure 6.14 – Floor Area per Resident (in m²) and Dwelling Age of M-T Houses

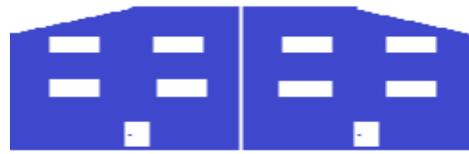


The calculation of the coefficient of determination, R^2 , demonstrates that the average household size explains 30% of the variations in individual floor area. This tendency is reinforced with Figure 6.15, which depicts a strong diminution of the average size of household when the average floor area per resident increases. Students benefiting from an individual floor area comprised from 10 to 19 m² have, on average, over twice more co-residents than for students occupying an average individual floor area between 40 to 49 m².

Figure 6.15 – Frequency Floor Area per Resident (in m²) and Average Household Size in M-T Houses



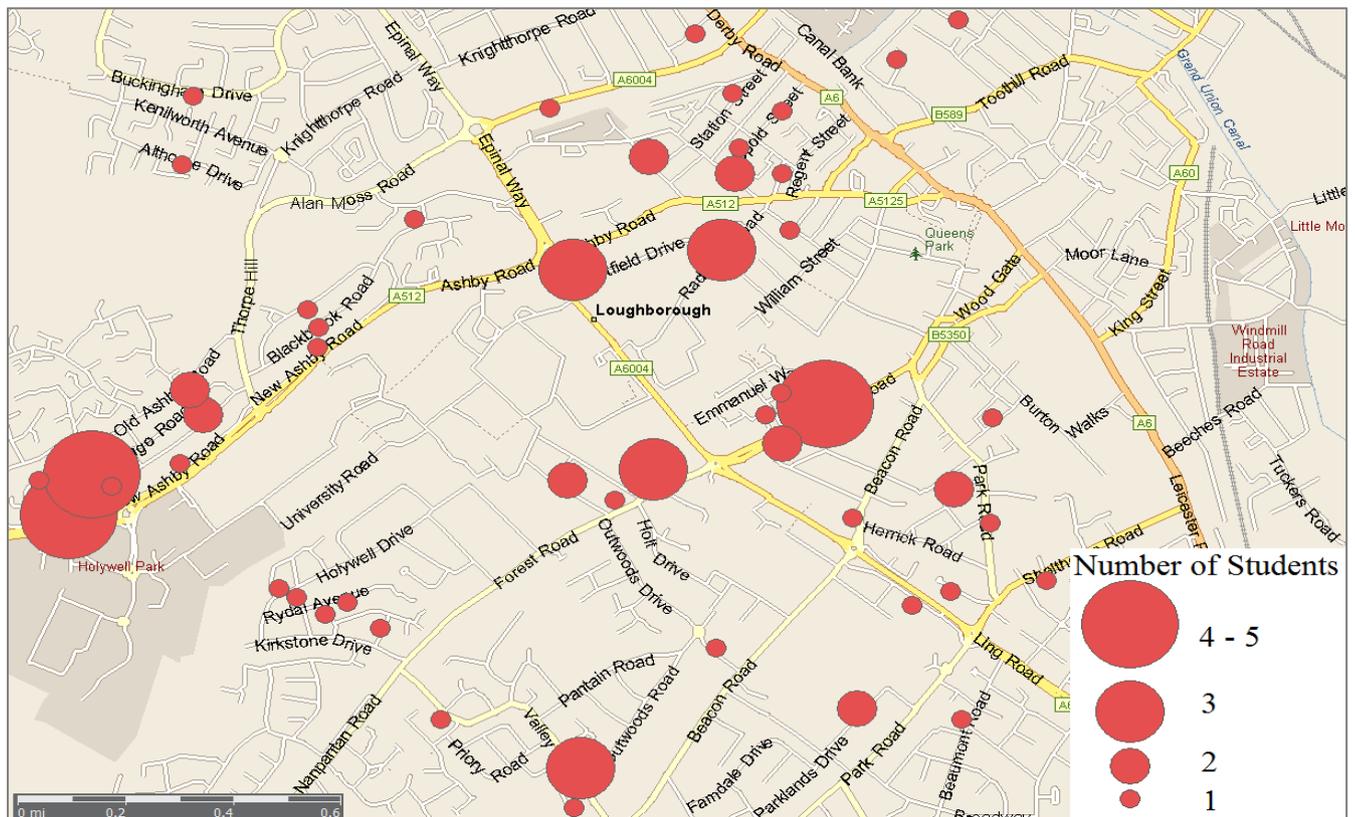
6.4.3 Semi-Detached (S-D) Houses



S-D (N=87)

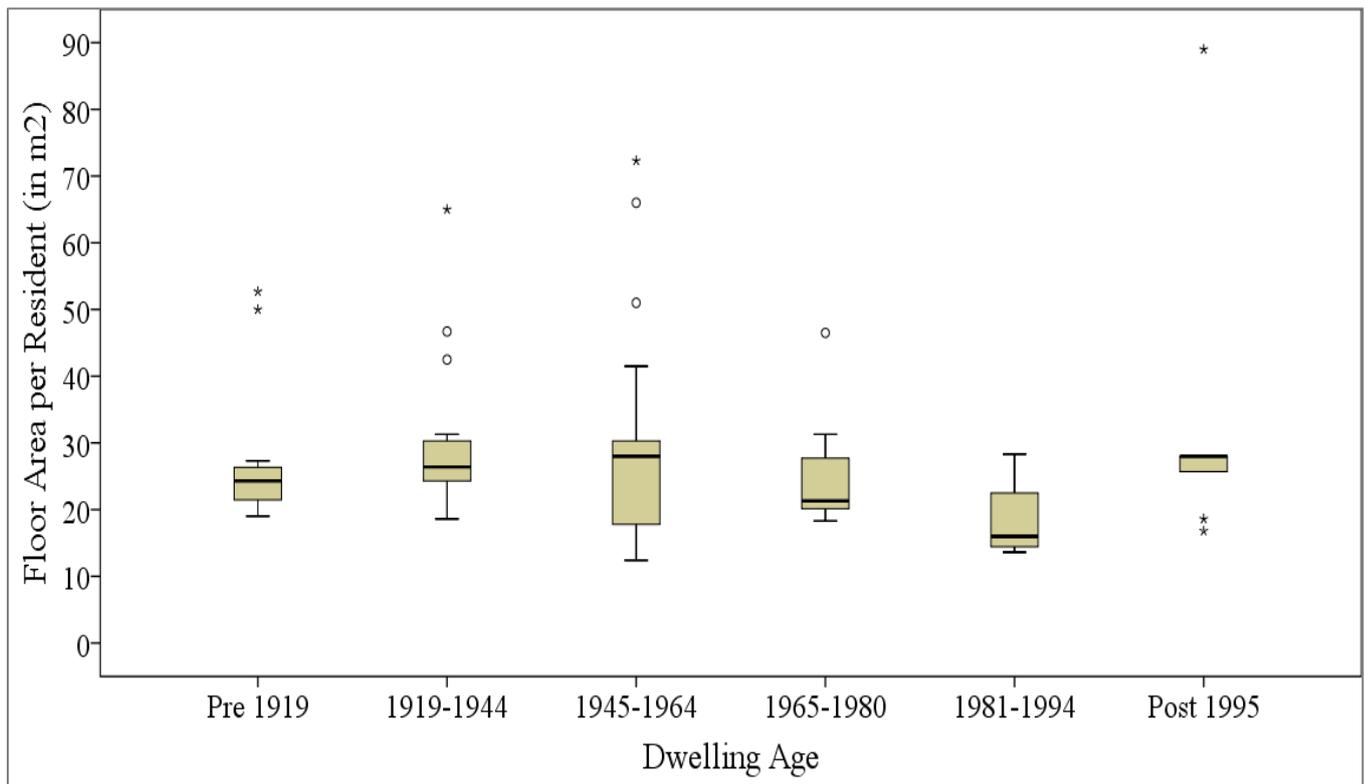
S-D houses, encompassing 21% of PRS properties in the SDT, also fall under the HMO designation. Unlike M-T properties, they are dispersed in several parts of town as portrayed in Figure 6.16. Various pockets can be located near the campus, notably on the Engineer Side, the Forest Road North and Holywell Drive area, in the Storer and Burleigh areas, as well as in the Kingfisher area. Due to a sound density of S-D houses in proximity to campus, the average walking time to lecture venues for its residents is 14 minutes. This is one of the lowest average walking time identified for off-campus properties in the SDT, tied with occupants of M-T houses.

Figure 6.16 – Density of Students in S-D Houses by Postcode



As commented earlier, the construction periods of S-D dwellings are homogenous; they vary from 17% to 25% within the four age bands between pre-1919 dwellings and 1965-1980 properties. On the other hand, their level of construction after 1981 is limited to the same level than for E-T houses.

Figure 6.17 – Floor Area per Resident (in m²) and Dwelling Age of S-D Houses



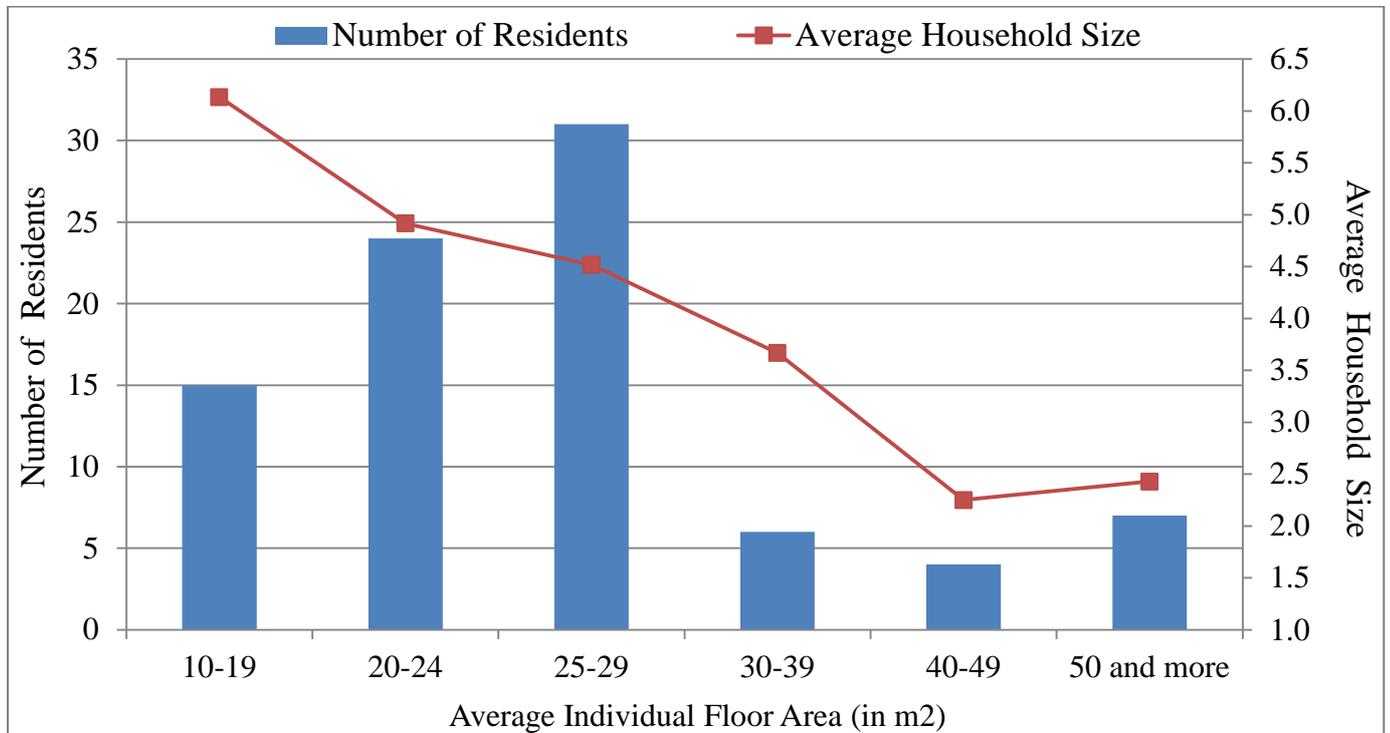
Regarding individual floor area and dwelling age, the means are situated between 25 and 32 m², except for houses built between 1981 and 1994, although this number is very restricted. Buildings developed between 1945 and 1964 are characterised with a high average and a prominent top quartile. Outliers are present for most age group; the rationale advanced to explain such differences in terms of floor surface per resident is the same to the one argued for the M-T properties (i.e. under-occupation of accommodation giving a larger floor area per resident).

Once again, the relationship between the average individual floor area and the average household size was examined. Similar to what was found for M-T houses, the output of S-D dwelling shows that the average floor area per resident is negatively related to the average household size with $r = -.593$, significant at $p < .01$. Consequently, the value of R^2 being .352, this indicates that household size can explain 35% of the variations in individual floor area. This implies an increase of 5% in the correlation for S-D houses compared to M-T houses.

During an interview with a S-D house resident, the student narrated that every tenants had their own individual bathroom. This equalled a total of 4 bathrooms within the property. Figure 6.18 shows that the average household size strongly decreases as the average floor area per resident increases. The difference is noticeable between the household size of students living in 10 to 19 m² housing and those living in 30 to 39 m². Furthermore, the average household size for students

with an individual floor area from 10 to 19 m² is larger than the ones for occupants in terrace properties.

Figure 6.18 – Frequency Floor Area per Resident (in m²) and Average Household Size in S-D Houses



6.4.4 Detached (D) Houses



D (N=29)

Students living in D houses in Loughborough only represent 7% of dwellings in the private sector. This type of housing is generally not supplied within the student housing market. The sole presence of students living in D houses can partly be explained by a few students owning their accommodation or living at a parental/guardian home. Another rationale of students occupying D houses relies on the properties’ purchase by parents of LU students, which can also be let out to other students. Except under these circumstances, ‘non-parental’ landlords of D accommodation do not seem to ardently target the student population. This explanation was validated in one of the focus groups, which took place with four students residing in a detached house:

“Researcher: How many people live here?”

Kevin: That’s five of us.

Michael: It is a 6 bedroom house but that 6th bedroom was for the landlord who lived here up until Christmas.

K: The landlord is my friend from my 1st year, from halls of residence.

M: So that's how we have this house.

K: Yeah. That's the entire reason.

R: So the landlord is kind of a friend?

M: Exactly. He's a student.

R: So he bought this house?

K: Yeah...his dad bought the house.

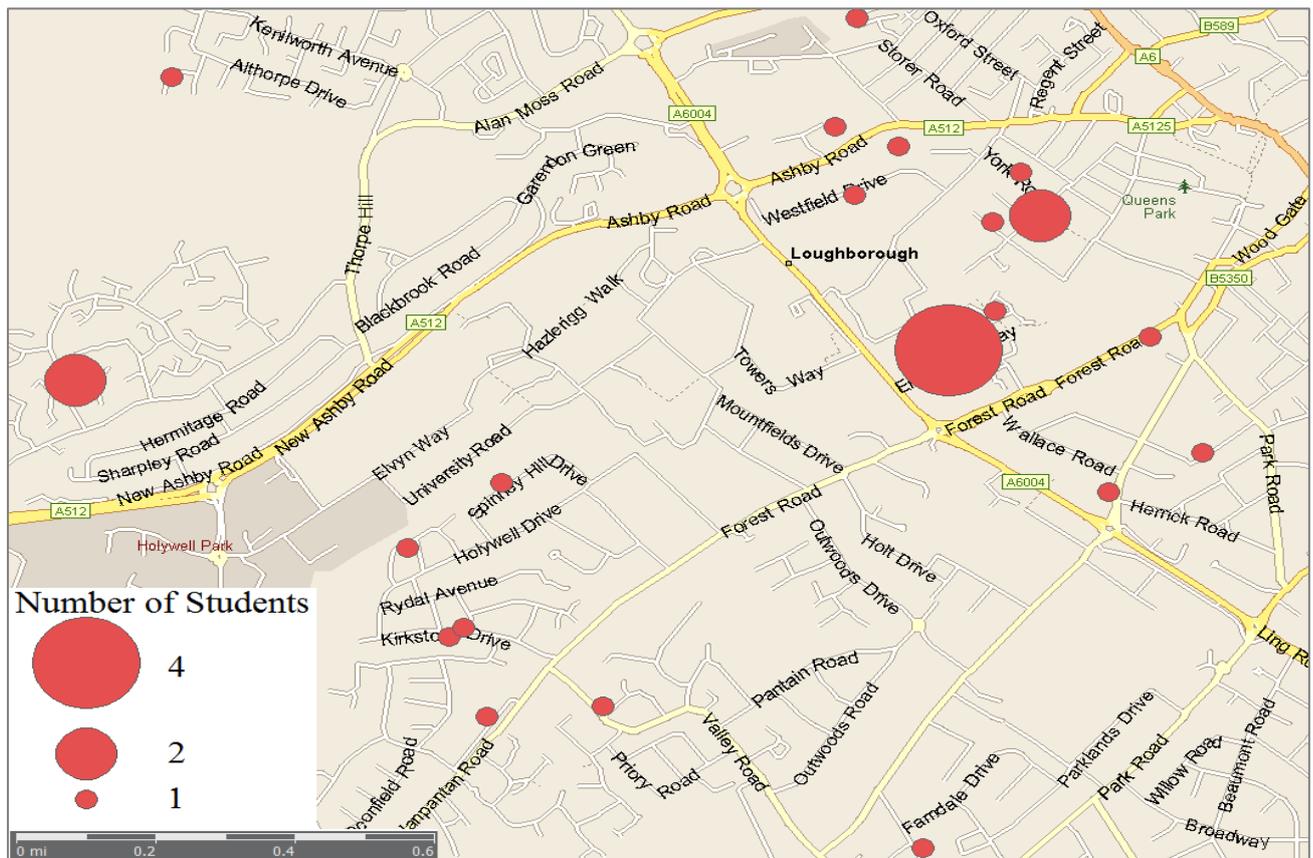
M: (*laughing*) not that a lot of students could afford that house...but yeah." (Final year residents in D house)

In the case of these students, the house was bought by the parent of a student, who now wears the landlord's hat. Although it is complicated to quantify how many students are in this particular housing position, Christie *et al.* (2002) espoused that there is a rising propensity for parents to buy accommodation for their student children and to, often, let some rooms to other students in order to cover the cost of the investment. This strategy was confirmed during the same focus group interview. For the residents sharing a property with a student owner, the dwelling's standards are unusual:

"This is a family home that just happens to have 6 bedrooms which can be converted into a student property and this is what it kinda becomes. Because it's so different from the average student property is, that would make it incredibly attractive. Plus, it's very good value for money... It just got everything a student could use really, plus everything extra. We have a room just for utility like washing machine, tumble dryer. Some houses don't even have tumble dryer or washing machine." (Michael, resident in D house)

The students interviewed admitted that they felt privileged to live in such accommodation. They recognised that they did not experience the same types of problems that other student houses, and particularly the terrace houses, have. The relatively new detached housing stock can explain a better housing condition and quality. Indeed, 55% of the D dwellings in the SDT were built after 1981. Figure 6.19 shows the dispersion of students living in D houses. There is, however, a lack of coherence in the spatial pattern of such dwellings. Their highest densities can be found in the Burleigh area, the Forest Road North and Holywell Drive area, and the Kingfisher neighborhood. The latter is strongly representative of the studentification of recently developed areas. In the Kingfisher area, most D houses have been converted into HMOs, which can explain the highest density of students in this part of Loughborough.

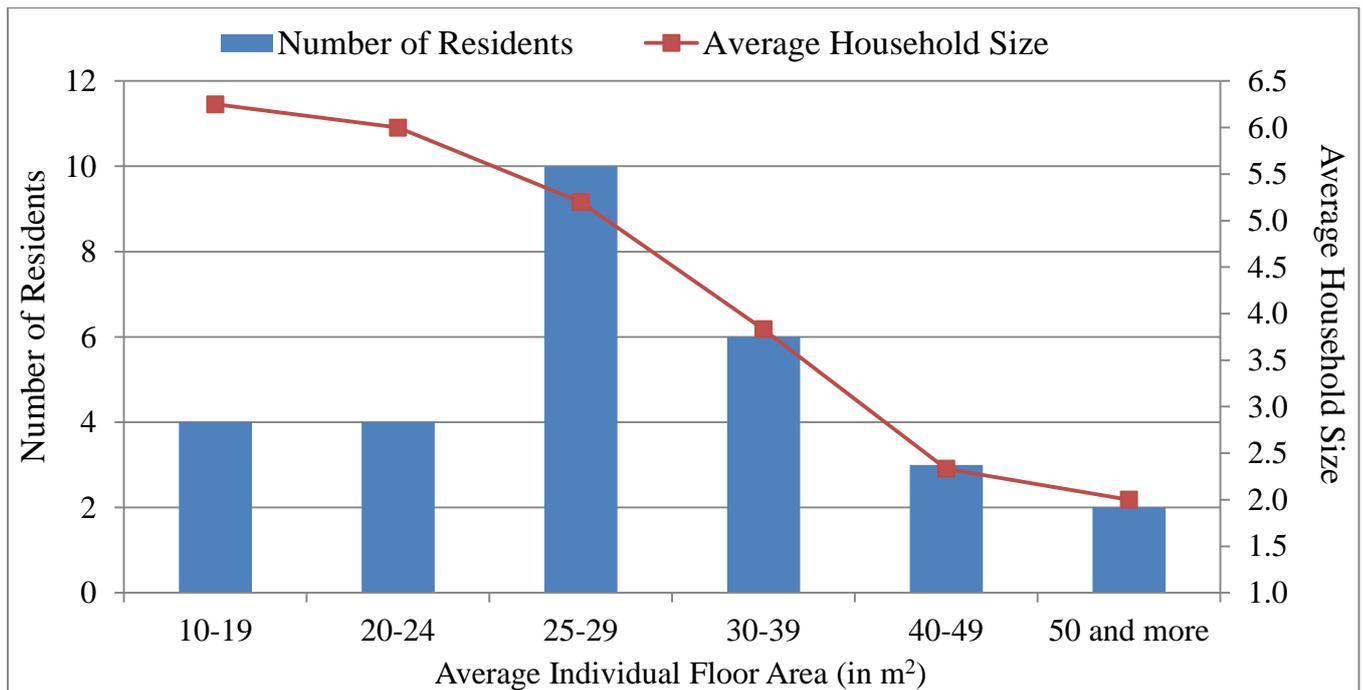
Figure 6.19 – Density of Students in D Houses by Postcode



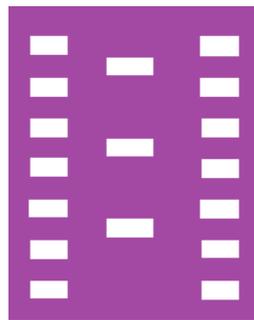
Due to the limited size of the sample and that 55% of D houses were built after 1981, examining the relationship between floor area per resident and dwelling age was deemed irrelevant. Nonetheless, it should be asserted that the average individual surface floor is particularly high for 1981-1994's houses (32 m^2) as well as for D houses built after 1995 (39 m^2) whereas the overall mean is 30 m^2 . Regarding the relationship between the average floor area per resident and the average number of people constituting one household, there is a strong negative correlations between these two variables as $r = -.793$, significant at $p < .01$. Thus, the value of R^2 being 0.629, the size of a household can explain 63% of the variations of the individual floor area for D houses. This stands for the strongest relationship observed in the SDT between the household size and the floor space per resident.

Finally, and comparatively to the observations performed for the previous dwelling types, Figure 6.20 reveals that the household size in D houses declines as the average individual space rises. There are 4 occupants lesser in this type of housing with an average floor area per person of 40 to 49 m^2 than in one with a personal space floor of 10 to 19 m^2 . In addition, D houses have a statistical mean of 5.2 residents for the individual floor area of 25- 29 m^2 . This is the highest average household size detected amongst all SDT's housing for the identical floor area.

Figure 6.20 – Frequency Floor Area per Resident (in m²) and Average Household Size in D Houses



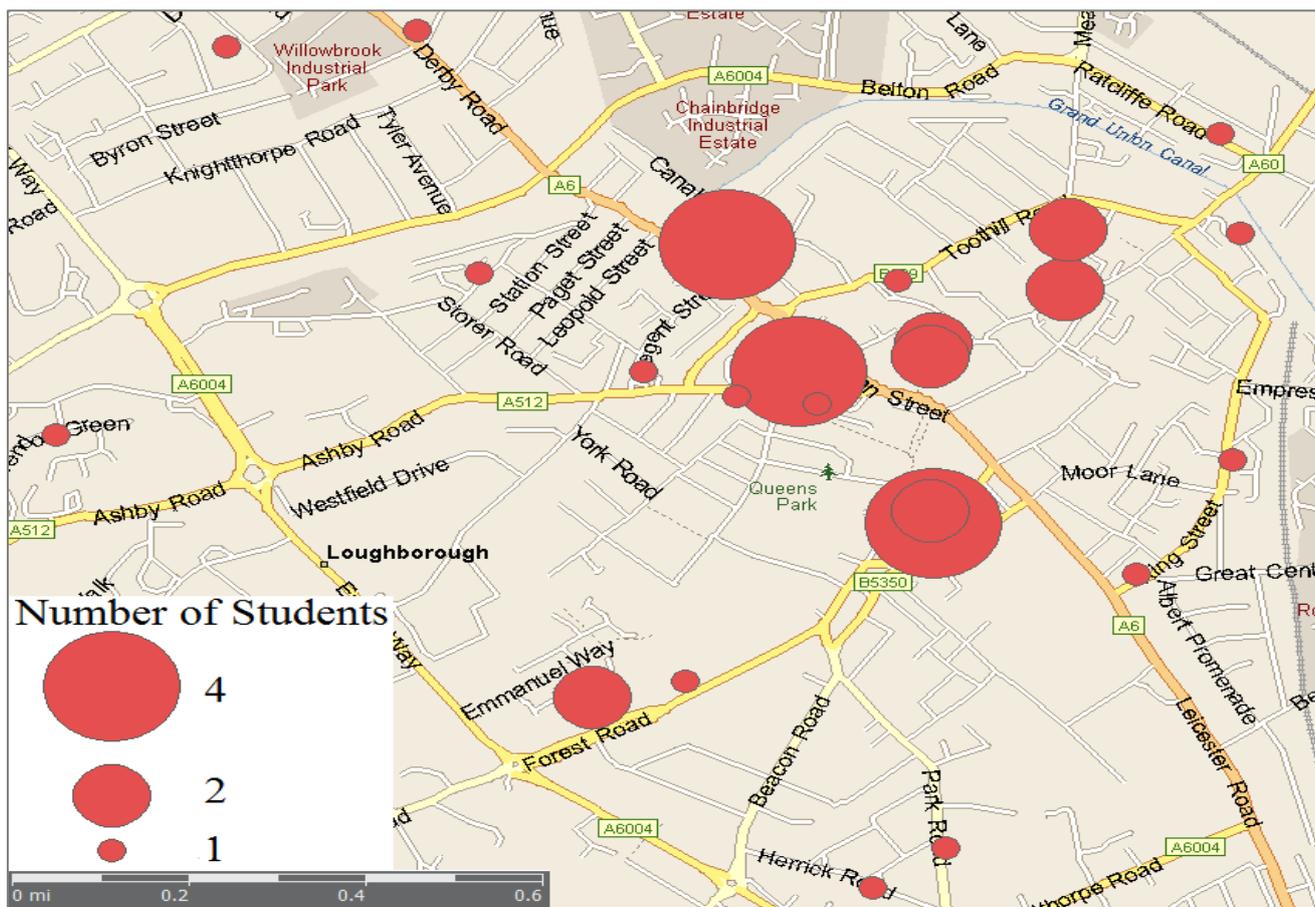
6.4.5 PBSA/Converted Flat (C-F)



PBSA/C-F (N=49)

Students residing in a PBSA/C-F account for 12% of all students in the PRS. It was identified that 88% of students live in low-rise PBSA/C-F, meaning below 5 storeys high. Additionally, 38%, 28%, and 33% of students lived respectively in top-floor, middle, and ground floor flats. Originally aimed to counter the sprawl of studentified streets in Loughborough (Hubbard, 2009), the development of student blocks has created pockets of self-segregated students in the center of town. Figure 6.21 supports this assertion as PBSA are centrally located in town. On the other hand, converted flats are distinguishable by their peripheral location.

Figure 6.21 – Density of Students in PBSA/C-F by Postcode



Kinton (2013) found that PBSA are more popular amongst international and postgraduate students than national students. Two interviewed UK students had previously lived in one of the PBSA in the town centre. Their experience appeared to be negative, due to a low level of maintenance and efforts to fix problems from the PBSA’s site managers:

“From the moment we moved in [a PBSA flat], we kept noticing like water on the floor of the kitchen, and you have to fill a maintenance form that you give to the office. We probably complained about 5 or 6 times, and nobody ever came to do anything. Then it got to the point where, we actually started to have sewage in our floor and our kitchen. Then they obviously paid attention to it. They kept blaming us for it like ‘You’re spilling the water when you’re washing up’. It’s like, ‘How can that get behind the door?’” (Pamela, ex-PBSA resident)

Furthermore, Kinton (2013) describes a destudentification of town centre PBSA, which struggles to fill even half of the bedspaces they supply. It was reported that approximately 160 students lived in PBSA in 2010/11 but only 70 individuals in 2011/12. These numbers are astonishing as Hubbard (2009) listed 900 privately managed bedspaces in this market segment. This would imply that, relying on Kinton’s figures, the number of surveyed students residing in PBSA would

account for 70% of all students in PBSA in 2011/12. This finding is remarkable for this research as it is more likely to misrepresent data such as the floor area per resident, considering that several accommodations might not be fully occupied.

This dwelling category reunites the converted flats, an old accommodation, with the newly developed PBSA. Consequently, the age groups are very disparate. Indeed, 20% of the buildings in this category were built before 1945 and 65% after 1995. It should be noted that no bedspaces were built from 1945 to 1964 as it was, a transition period in the development of student accommodation, as outlined in Chapter 2.

Figure 6.22 – Floor Area per Resident (in m²) and Dwelling Age of PBSA/C-F

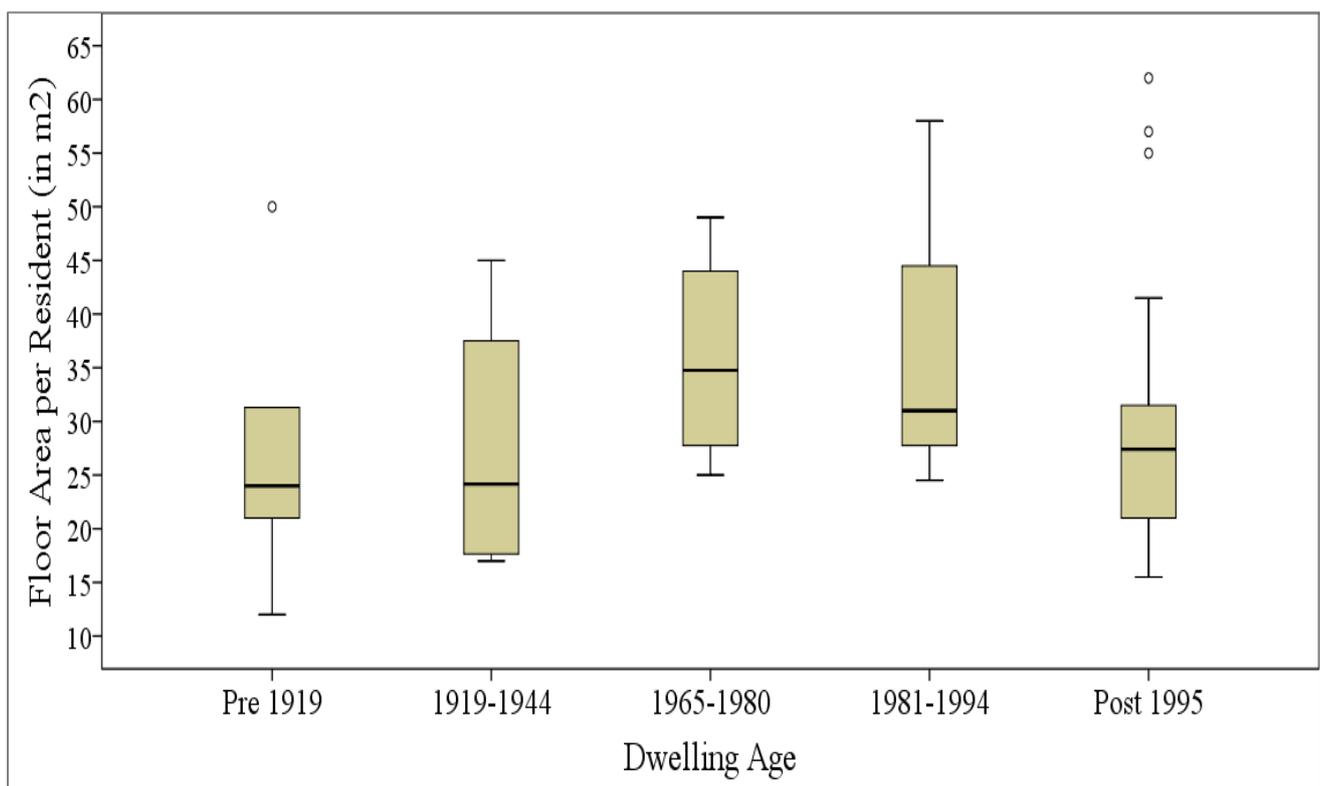
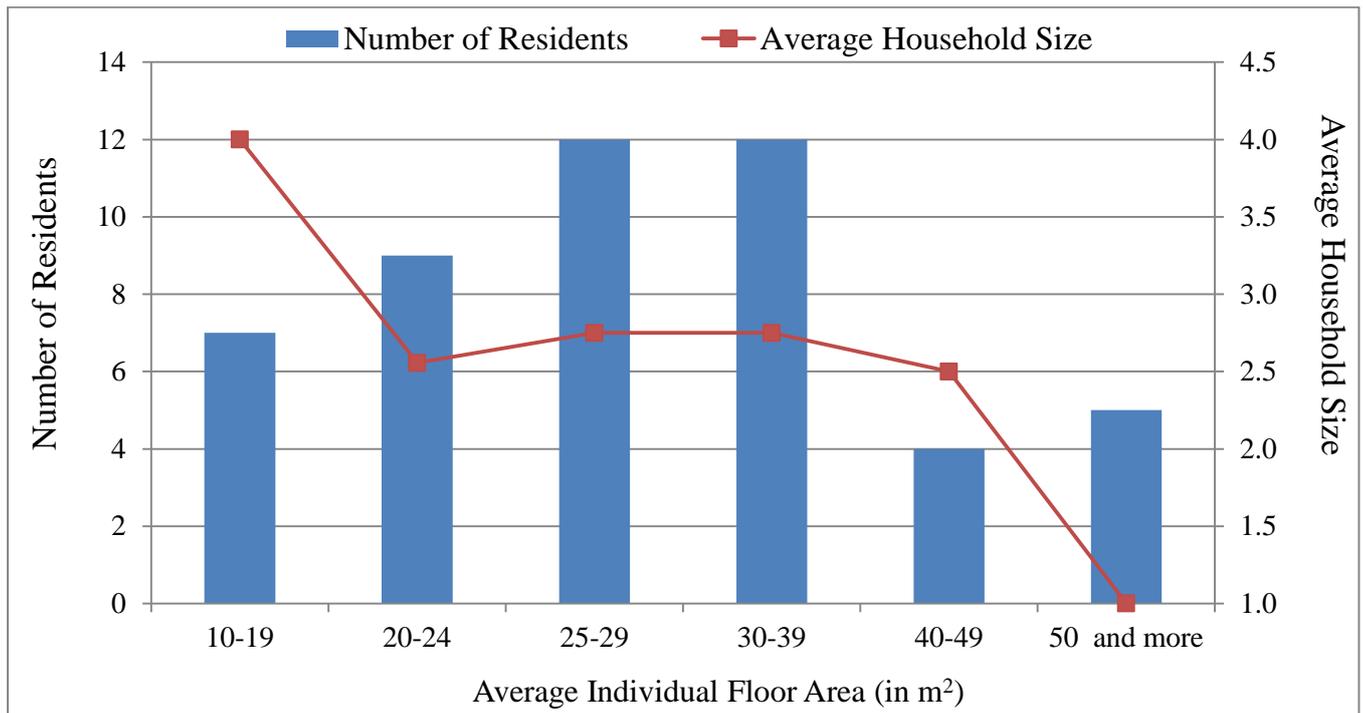


Figure 6.22 purports the average floor area per resident as pointedly differing according to the construction age bands. Pre-1919 and 1919-1944 dwellings present an average individual space of 27 m², whereas in the age band with the highest density, post-1995 housing, the mean reaches 29 m², despite the presence of few outliers. More independence and more spacious bedrooms are well-established selling arguments from the private providers. *De novo*, data provided by Kinton (2013) prompts the analysis of students in PBSA to be interpreted with caution.

Unlike the previous dwellings, the relationship between the average floor area per resident and the average household size designates the absence of a significant correlation. Figure 6.23

indicates that approximately half of the PBSA/C-F residents have an individual floor area of 25 to 39 m². Moreover, it is interesting to note that the average household size is almost similar for students living in a 20 to 24 m² accommodation to residents having a personal space of 40 to 49 m². This can be explained by the more independent living style promoted in PBSA developments as well as the limited rate of full occupancy in such accommodation.

Figure 6.23 – Frequency Floor Area per Resident (in m²) and Average Household Size in PBSA/C-F



6.4.6 Bungalow (B) Houses



B (N=14)

Due to its limited sample size, covering solely 4% of housing in the PRS, B houses have not been analysed in-depth. Indeed, including detached and semi-detached bungalows, mid-terrace bungalows, and maisonettes, bungalows occupied by students are mainly located in the Storer and Burleigh areas of Loughborough. Disclosed in Figure 6.6, the age composition of B houses is relatively homogeneous: 28% were built before 1945, 43% between 1945 and 1994, and 29% after 1995. The average floor area per resident is similar to the one for S-D properties, although bungalows are physically defined for being on a ground floor. All in all, B houses do not constitute an essential housing option for students.

6.5 Summary

This chapter has initiated the construction of a student dwelling taxonomy, using the case study of Loughborough. The housing classification has broken down students' privately rented accommodation through a physical approach, including attributes such as building age, household size, floor area per resident, location, and walking distance to campus. Thomsen and Eikemo (2010) concede that the physical structure of a dwelling can affect students' level of comfort and well-being. Therefore, this taxonomy has been developed with the aim of investigating and comparing the discrepancies of the student housing's physical attributes.

The first section of the chapter has dwelt on the main steps involved in the design of the SDT. It considered the review of similar building classifications at the national and international scales. Adapted definitions of the various residential buildings within the student housing context are implemented in order to facilitate the understanding of the SDT. This amplifies the need to assess where students reside and in what building type, considering that social effects in neighbourhoods may vary depending on the physical characteristics of the accommodation (cf. Garmendia *et al.*, 2011). As well, describing the process of creating a student housing taxonomy may instigate further explorations on this aspect.

The second section presents an examination of the profile of student housing in Loughborough and their physical attributes. The main findings attest that students' dwellings hold inherent physical characteristics often tied to their spatial distribution, periods of construction, and floor area of the accommodation. The Golden Triangle and the Southfields wards can be perceived as 'student friendly' residential areas, which is consistent with the literature (e.g. Hubbard, 2008; Kinton, 2013). Epitomising studentification processes, terrace HMOs are principally clustered in these two neighbourhoods. They are characterised by their period of construction, mostly pre-1919. In contrast, over half of PBSA were developed post-1995, and chiefly in the mid-2000s. This modernity is promoted by private developers as a strong commodification asset to sell the 'inner city lifestyle' to prospective tenants (see Hubbard, 2009; Chatterton, 2010; Smith and Hubbard, 2014). Inequalities in individual floor area are also manifest in this segment: occupants in Uni halls are more likely to have a high number of co-residents and a restricted individual space area than PBSA/C-F residents who have a substantial floor area and a limited household size.

The third phase of the chapter examines each type of dwelling individually. This analysis *a la loupe* shows the unfolding of different residential geographies, the diverse components

encapsulated within the same type of building, as well as the various expectations of students regarding their accommodation in the Loughborough context. It notably makes evident that the size of a bedroom affects the number of co-residents: bigger is the bedspace, smaller is the number of flatmates. Nonetheless, E-T houses are an exception with an average of 4 individuals in a floor area per resident greater than 50 m² and more. It should be re-emphasised that processes of destudentification have been remarked by Kinton (2013) in the Golden Triangle. In consequence, the measurement of average floor area per resident can be skewed in HMOs.

On a broader scale, the SDT has proceeded to the scrutinising of the accommodation stock supplied to students. This detailed inventory can, and should, be extended to the national student housing market. The chapter's findings have attested that the PRS encompasses a wide diversification of dwelling type, each holding various physical attributes. Furthermore, this analysis has revised Rugg *et al.*'s observations (2002) about students' adaptability to any type of property by exposing the complex and disparate demands of students in this housing segment. Discussion surrounding the consistency of converting family homes into student let properties is also apt. Sage *et al.* (2012a) depict the 'overbuilding' and properties extension, via conservatories and dormers, as a new infringement tied to students' rising presence in residential areas. As well, dissecting the planning regulations applied to confine studentification processes in Loughborough, Hubbard (2008) observes that the recommodification of terrace HMOs in studentified areas benefited, indirectly, to a tiny portion of local residents with a growth of their properties' values. This implies that the acknowledgement of the diversity of housing types supplied to student is a robust contribution to debates in student geographies.

To conclude, the creation of the SDT is pivotal in evaluating students' energy consumption with regards to the energy performance of their accommodation. Variables in the SDT physical approach, such as the dwelling age, the floor area per resident, and the household size, inherently affect the energy demand as well as the energy efficiency of the building. Thus, Chapter 7 presents empirical findings of quantifying the energy consumption and cost in the distinct student dwellings.

Chapter 7

Sustainability of Student Housing and Energy Cost

7.1 Introduction

Building upon the analysis of the SDT's physical approach, this chapter aims to evaluate the energy consumption and costs for each dwelling type, modelled by the parameters embedded in the SDT, notably the SAP data, and their impacts on students' residential experiences. The housing taxonomy is now broken down according to sustainability elements related with energy consumption. It has been espoused in Chapter 3 that the built environment has a significant share of responsibilities in the total UK energy consumption. In order to quantify and analyse students' energy costs in their accommodation, this chapter is divided into five parts.

Section 7.2 elaborates the sustainability approach of the SDT. It carries out statistical distributions of several sustainability features for each building class occupied by students. Additionally, the analyses of dwellings' energy performances are executed. Section 7.3, puts forward the complexity of evaluating the energy consumption within students' housing due to the popularity of all-inclusive packages. Sustained by the analysis of qualitative data, this part discusses whether having rent inclusive utility bills affects students' residential decision-making as well as the ways it modifies their behaviour in relation to sustainability issues. Section 7.4 is devoted to the evaluation of students' energy costs and the examination of the various ways they are influenced by SDT's physical and sustainability components. Furthermore, this section measures the extent to which energy costs intersect with residents' thermal comfort and housing satisfaction. Section 7.5 compares the discrepancies of living comfort amongst the residents that spend the most on energy bills to those that spend the least. Finally, Section 7.6 summarises the key findings identified in the chapter.

7.2 The SDT: Sustainable Profiles of Student Accommodation

Similar to Table 6.1, Table 7.1 introduces students' types of dwelling through a sustainability approach. Three main indicators are present in this table: the primary heating system, the type of window glazing, and the EER translated via the SAP. Double glazing is defined as windows made up of two panes of glass and separated by a narrow air gap, rather than windows with secondary glazing (EU, 2014b). Obtained through data triangulation including the LSAS and the collection of EPCs, this data is comparable to national benchmarks, including SAP.

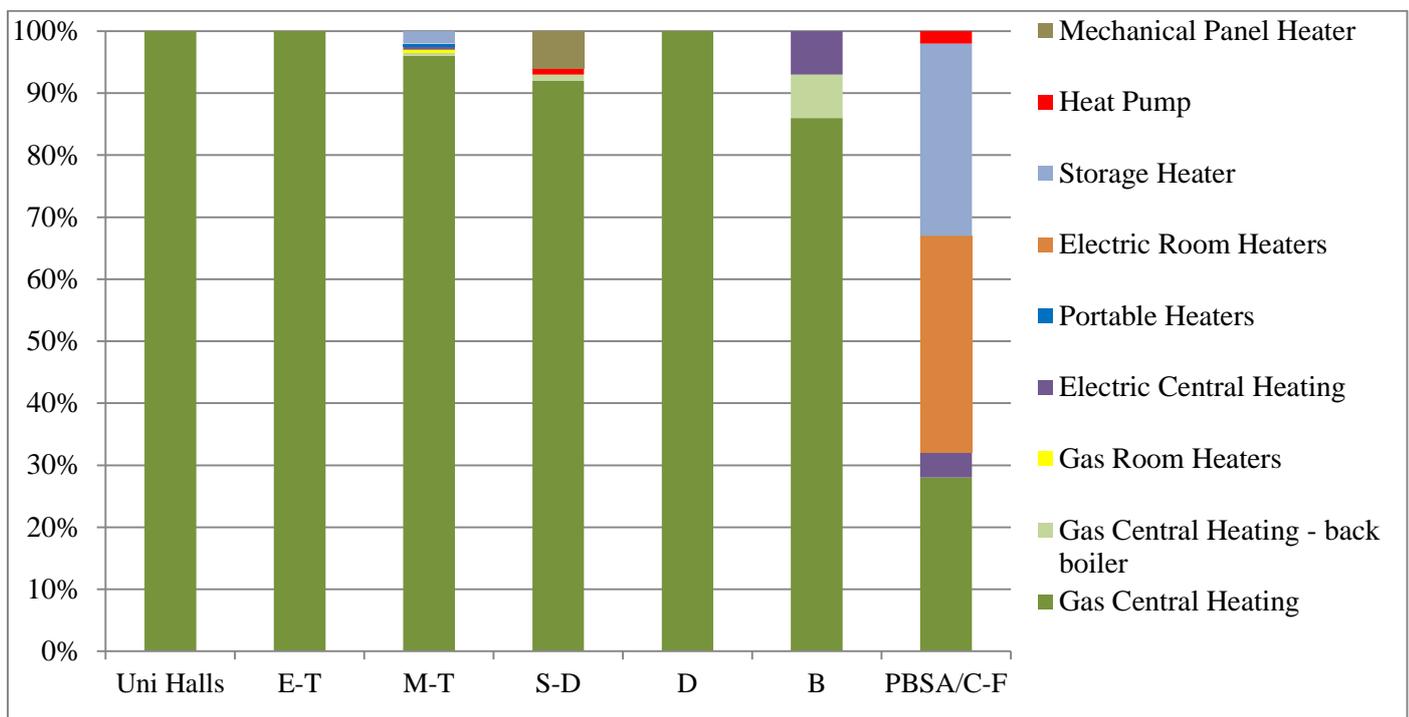
Table 7.1 – The SDT Sustainability Approach

	University Accommodation			PRS			
	Uni Halls	E-T	M-T	S-D	D	B	PBSA/C-F
Primary Heating System							
Gas Central Heating	100%	100%	96%	92%	100%	86%	28%
Gas Central Heating - back boiler			0.5%	1%		7%	
Gas Room Heaters			0.5%				
Electric Central Heating			0.5%			7%	4%
Portable Heaters			0.5%				
Electric Room Heaters							35%
Storage Heater			2%				31%
Heat Pump				1%			2%
Mechanical Panel Heater				6%			
Window Glazing							
Single glazed windows		8%	6%				4%
Partially double glazed windows		26%	12%	17%	7%	7%	4%
Fully double glazed windows		66%	81%	83%	93%	93%	90%
Triple glazed windows			1%				2%
SAP Band							
Band A							2%
Band B			1%		3%	7%	8%
Band C		26%	10%	16%	42%	21%	47%
Band D		24%	31%	45%	24%	43%	31%
Band E		36%	46%	35%	28%	21%	6%
Band F		13%	10%	3%	3%	7%	6%
Band G			2%	1%			
SAP Current Score		54	53	57	62	61	68
SAP Potential Score		65	63	68	72	69	74

This data characterises the existing building stock occupied by student households and is a focal point for the evaluation of their energy consumption and costs, whether economic or social. Therefore, each sustainability variable is going to be analysed and compared to the benchmarks.

First of all, it should be recalled that space heating has the largest impact on UK household energy use (DECC, 2013f). Figure 7.1 displays the primary heating system used in students' dwelling types. The main observation is that gas central heating is ubiquitous in all housing classes. Whether in terrace houses or (semi-) detached dwellings, this heating system is indispensable. It accounts for 86% of all heating systems in the SDT, which is 5% more than the average for dwellings in the English PRS (DCLG, 2013). However, gas central heating represents only 28% of all heating systems in PBSA/C-F, which also incorporates storage heater (31%) and electric room heaters (35%). Low rise purpose-built flats usually have gas central heating (60%), and storage heaters (25%) as primary heating sources (BRE, 2009a). The amalgamation of PBSA and C-F explains the heterogeneity in heating systems as the former is more recent than the latter.

Figure 7.1 – Primary Heating Systems by Dwelling Type



The EHS ascertains that central heating is a system with a boiler that feeds radiators, but excludes electric storage heaters (although they are sometimes counted as ‘centrally heated’) (DECC, 2013f). Boilers can consist of standard boilers, back boilers, combined heat and power (CHP), and combination boilers. Gas, which is the main fuel for space central heating, is used by

91% of UK households (*ibid.*). This percentage falls to 75% for those in the PRS. Whether using gas or electricity, a central heating system is assumed to be the most efficient and cost effective type of heating. This is chiefly the result of changes in the Building Regulations in 2005, which enhanced the replacement of obsolete standard boilers with more efficient condensing ones. Consequently, the installation of condensing boilers and condensing-combination boilers has rocketed up to 36% between 2001 and 2011 (DCLG, 2013). Albeit the proportion of central heating system, in the PRS, has increased between 2001 and 2011 to the detriment of individual room heaters, considered to be the least cost effective and least efficient space heating system, the PRS has the lowest share of central heating systems within all tenures (*ibid.*).

Zooming in on the local level energy characteristics, 85% of households in Loughborough heat their accommodation through gas central heating and 8% use an electric central heating system. Households residing in the Golden Triangle (LSOAs of Loughborough Oxford and Loughborough Rosebery), amounting to 5% of all households in the town, present the same heating systems distribution: 85% gas central heating, 7% electric central heating (including storage heaters), and 5% a combination of two or more types of central heating (ONS, 2011c). The SDT data shows that for all students living in the Golden Triangle (n=115), 89% use gas central heating as a primary source; electric central heating (including storage heaters) and electric room heaters represent 5% each.

Figure 7.2 – Primary Heating Systems by Dwelling Construction Period

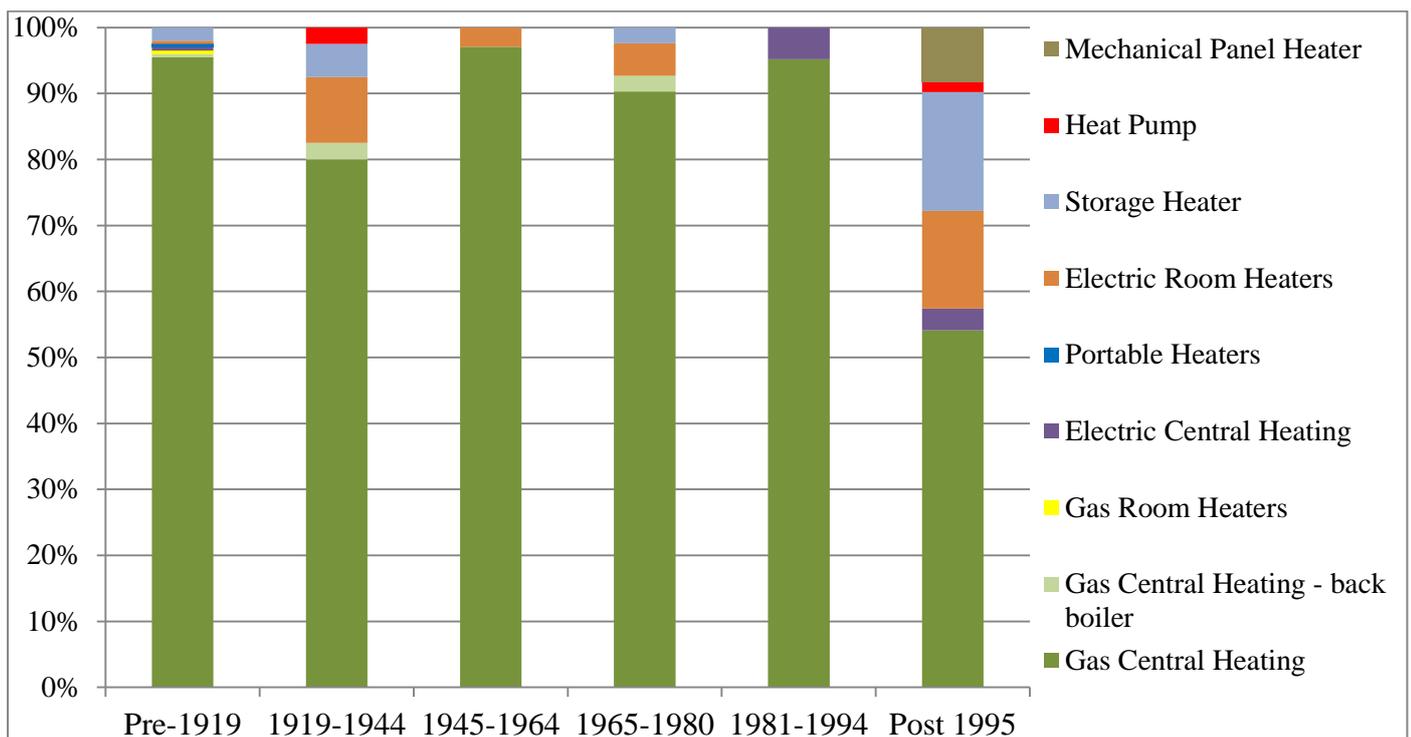


Figure 7.2 categorises the primary heating systems according to the dwelling period of construction. Similar to Figure 7.1, gas central heating is extensively used in most housing's age bands, with the exception of the newest dwellings. Electric room heaters and storage heaters are respectively the second and third most used heating systems in the SDT. The former is frugally used in housing built from 1919 to 1980, and more dominantly in post-1995 accommodation. According to BRE (2009), the presence of electric room heaters is supposedly scarce in buildings built post-1995. Regarding storage heater systems, they are sparingly installed in dwellings built before 1945, and represent 18% of heating systems in the most recent properties. This heating type is more frequent in accommodation built post-1980; this is credited to the intense development of flats during this period. Thus, Figure 7.1 and 7.2 are intrinsically related.

Another characteristic that contributes to the sustainability approach of the SDT is the type of window glazing. In like fashion with walls' insulation, window glazing is a building element that affects the thermal insulation of an accommodation. Both walls and windows considerably influence the heat loss of a dwelling. Since 1970, there has been a striking uptake of the proportion of homes with some level of double glazing, amounting up to 93% of the dwelling stock in 2011 (DECC, 2013b). The 2002 Building Regulations made it compulsory that in case of the replacement of a deteriorated window, it has to be substituted with double glazing. Seemingly, all new houses built have fully double window glazing as a universal standard. Consequently, dwellings with double glazing are more likely to have a higher SAP score than those without. As well, housing with double glazing often combine other energy efficiency measures such as wall insulation (e.g. cavity walls and loft insulation) (DCLG, 2013).

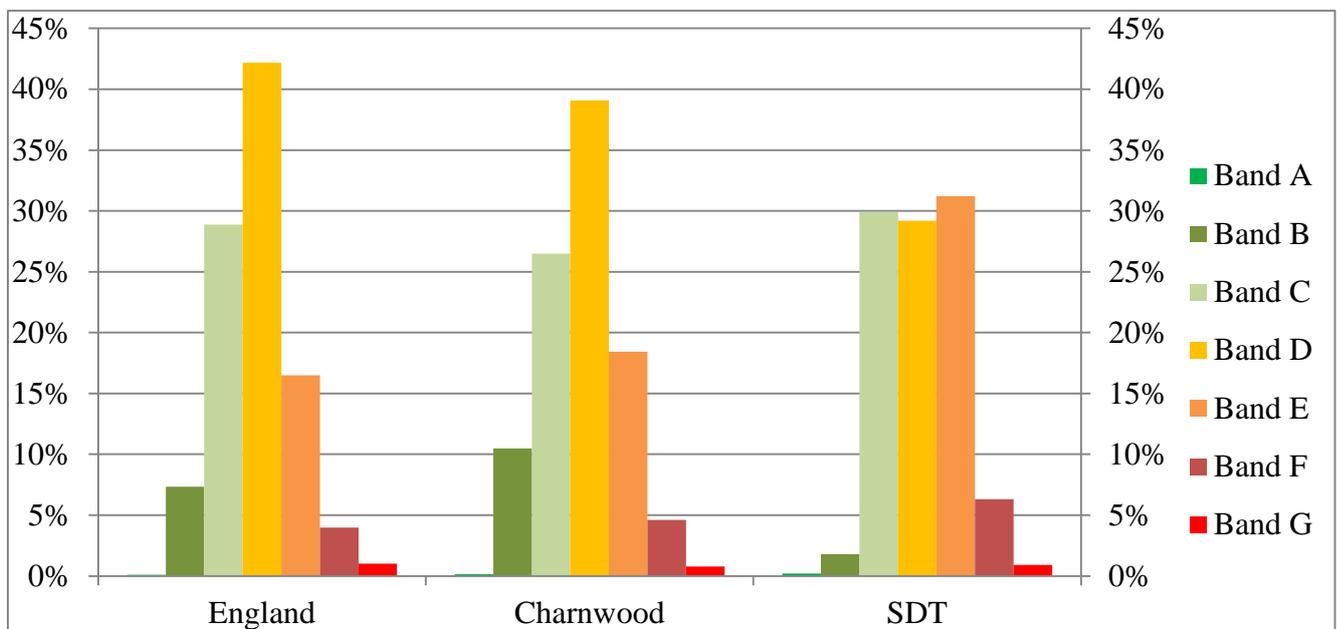
The housing stock in the SDT is, on average, constituted of up to 83% full double glazing, 13% partial double glazing, 4% single glazing, and less than 1% triple glazing windows. This implies that the level of double glazing in the SDT's population stock is 3% higher than compared to the national average. As captured in Table 7.1, fully double glazed windows are the most frequent in most dwelling types. D houses and bungalows have a considerable rate of full double glazing. This is identical for flats, although limited fractions of single and triple glazed windows are integrated in this building stock. With regard to M-T and S-D properties, the proportion of double glazing remains significant but is slightly obstructed by the presence of partially double glazed windows; this is parallel to single glazing regarding M-T houses. This dispersion is more remarkable within E-T accommodation where full double glazing applies only for two-third of the population stock.

The uniformity of double glazed windows is perceptible through the housing’s construction periods. On one hand, pre-1919 dwellings are compounded by 75% of full double glazing, 19% of partial double glazing, and 6% of single glazing. On the other hand, fully and partially double glazed windows in post-1995 buildings account respectively for 92% and 3%. This dwelling age class is the only one having triple glazing (5%).

As part of the SDT’s sustainability approach, the analysis of primary heating systems and window glazing has allowed the appraisal of the level of energy efficiency in students’ dwelling stock. Table 7.1 includes a supplemental indicator which can, by itself, summarise the sustainability quality of a building: the SAP.

Vigorously discussed in Section 3.6, the SAP symbolises the national barometer of dwellings’ energy efficiency. The average English SAP rating is 59, which corresponds to Band D (DCLG, 2014b). Figure 7.3 allows the comparison of SAP index (or score) at various geographies: from the national level to the local authority (LA), and town level. One can observe that the most recurrent SAP Band for England and Charnwood is Band D, which does not differ from the country’s average. Bands C and E are, respectively, the second and third most prevalent SAP scores.

Figure 7.3 – SAP Bands at the National and Local Levels



In contrast, the SDT indicates that dwellings rated Band E are the most frequent (32%), despite Bands C (30%) and D (29%) following closely. Interestingly, the average SAP score for housing in the SDT is 59 (SD= 14), which is identical to England’s SAP average score. The absence of

SAP scores (only SAP Bands are officially released) for the LA is regrettable as sets of data cannot be compared.

The discrepancies in EER between the three geographical scales can be explained by the population studied and residing predominantly in the PRS, which encompasses an abundant portion of low-energy efficient properties. The EHS (DCLG, 2013) points out that 95% of accommodation rated Bands F and G depend on the PRS, which is the housing tenure preferred by LU students. It is interesting to note that the share of Band B dwellings in the SDT is approximately five times lower than compared to the overall Charnwood’s housing stock. This could imply that students are not supplied with the most highly energy efficient accommodation compared to the general population in the LA. Students’ limited income(s) and pending debt(s) compel them to make residential choices according to their resources, could be one of the plausible reasons for the low occupation of energy efficient accommodation (cf. Chapter 8). Within the housing stock included in the SDT, some variations have been demonstrated within the types of heating systems and window glazing, as well as through a physical approach (cf. Chapter 6).

Figure 7.4 – SAP Bands by Dwelling Types

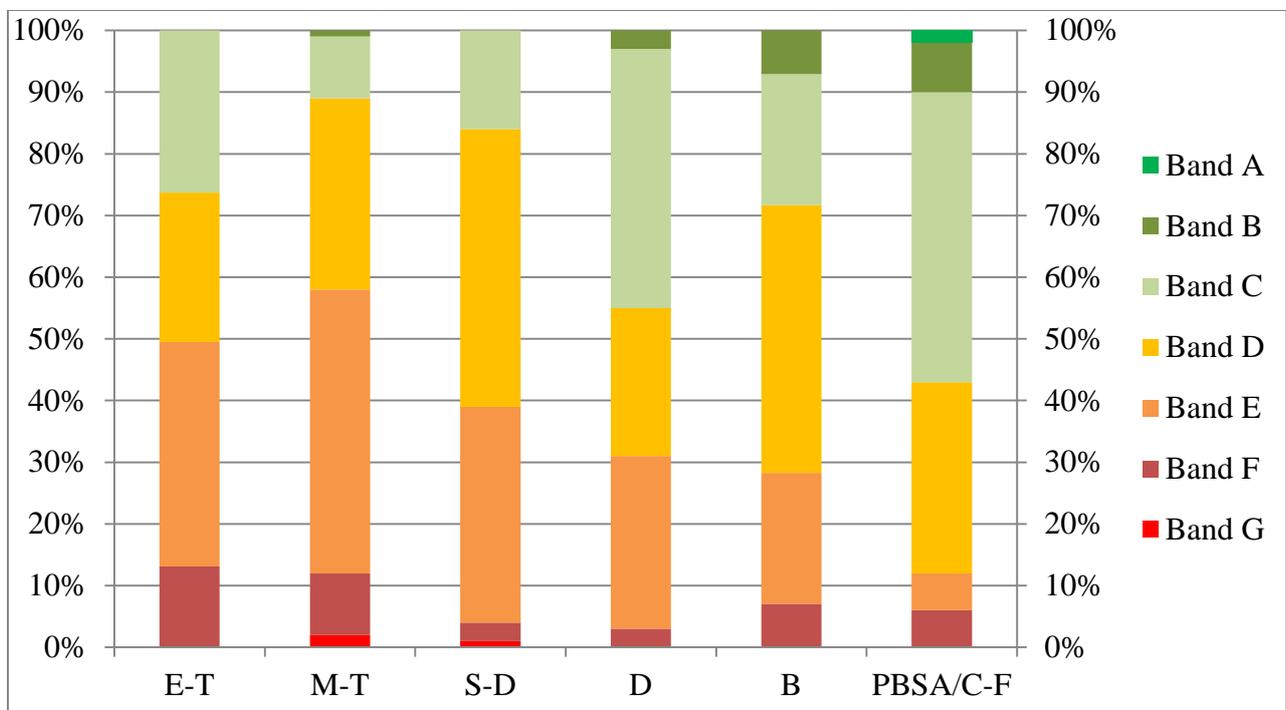


Figure 7.4 showcases the inequalities in energy efficiency across several types of student dwellings’ profiles. The first observation to make relates to the limited presence of Bands A to C (illustrated by green colours) in most housing types, except for D properties and PBSA/C-F.

Consequently, the less energy efficient classes (symbolised by orange colours for Bands D and E, and by red tints for Bands F and G) predominate for the other houses. Epitomising the student accommodation in the PRS, terrace properties are also known for often being of restricted quality. The chart displays that Band E is the dominant SAP category for E-T and M-T houses, accounting, respectively, for 36% and 46%. Simultaneously, these two dwelling types have the highest share of Band F, 13% for E-T and 10% for M-T properties, and the latter also includes accommodation rated Band G (2%). Seemingly, their average SAP score is situated well-below the SDT's mean: 53 (SD= 12) for M-T houses and 54 (SD= 14) for E-T buildings. D and S-D accommodation are characterised diversely; Band C qualifies 42% of D houses and 16% of S-D properties. Inversely, the proportion of dwellings assessed Band D is more significant in S-D (45%) than in D houses (24%). The average SAP score for S-D is 57 (SD= 11) and 62 (SD= 12) for detached habitations. Albeit its limited sample size, bungalows possess a SAP distribution similar to the detached one. With 57% of its population comprised within Band A and Band C, PBSA/C-F has the highest mean score 68 (SD= 14). Again, the building's construction period is an influent factor of the energy quality rating of the accommodation.

Figure 7.5 – SAP Score by Dwelling Age

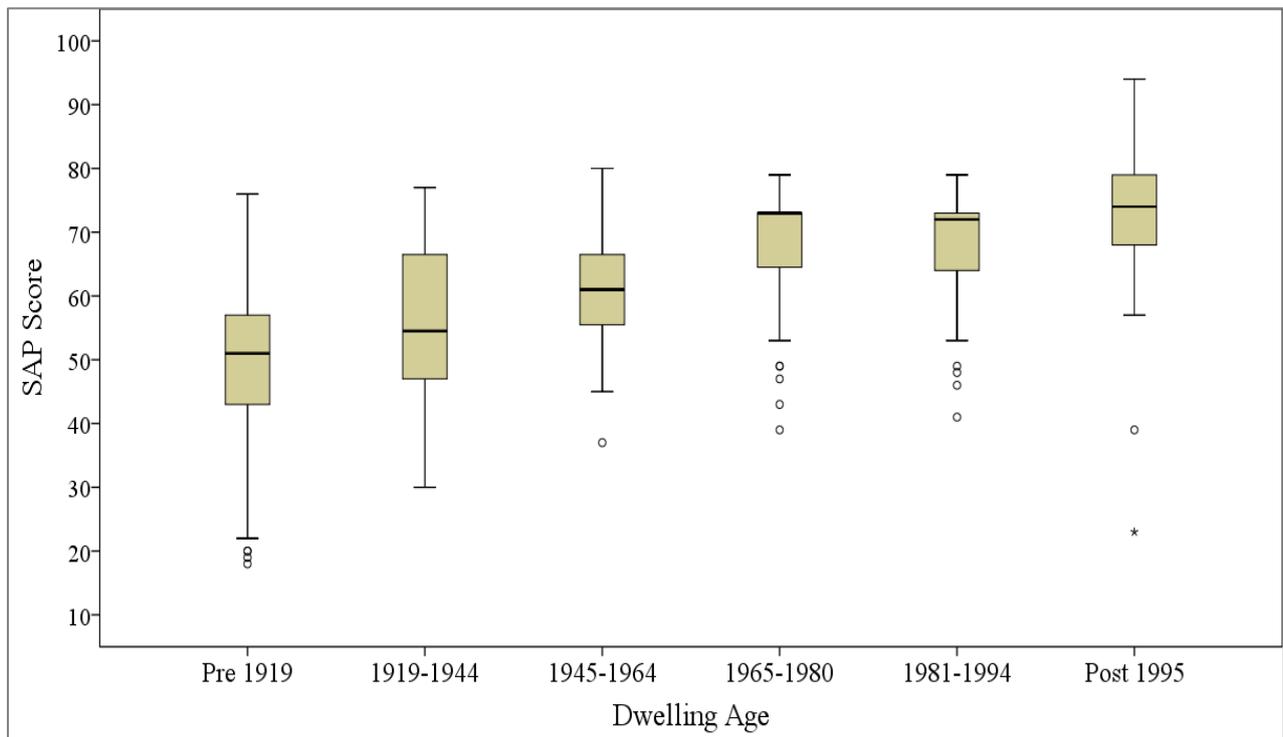
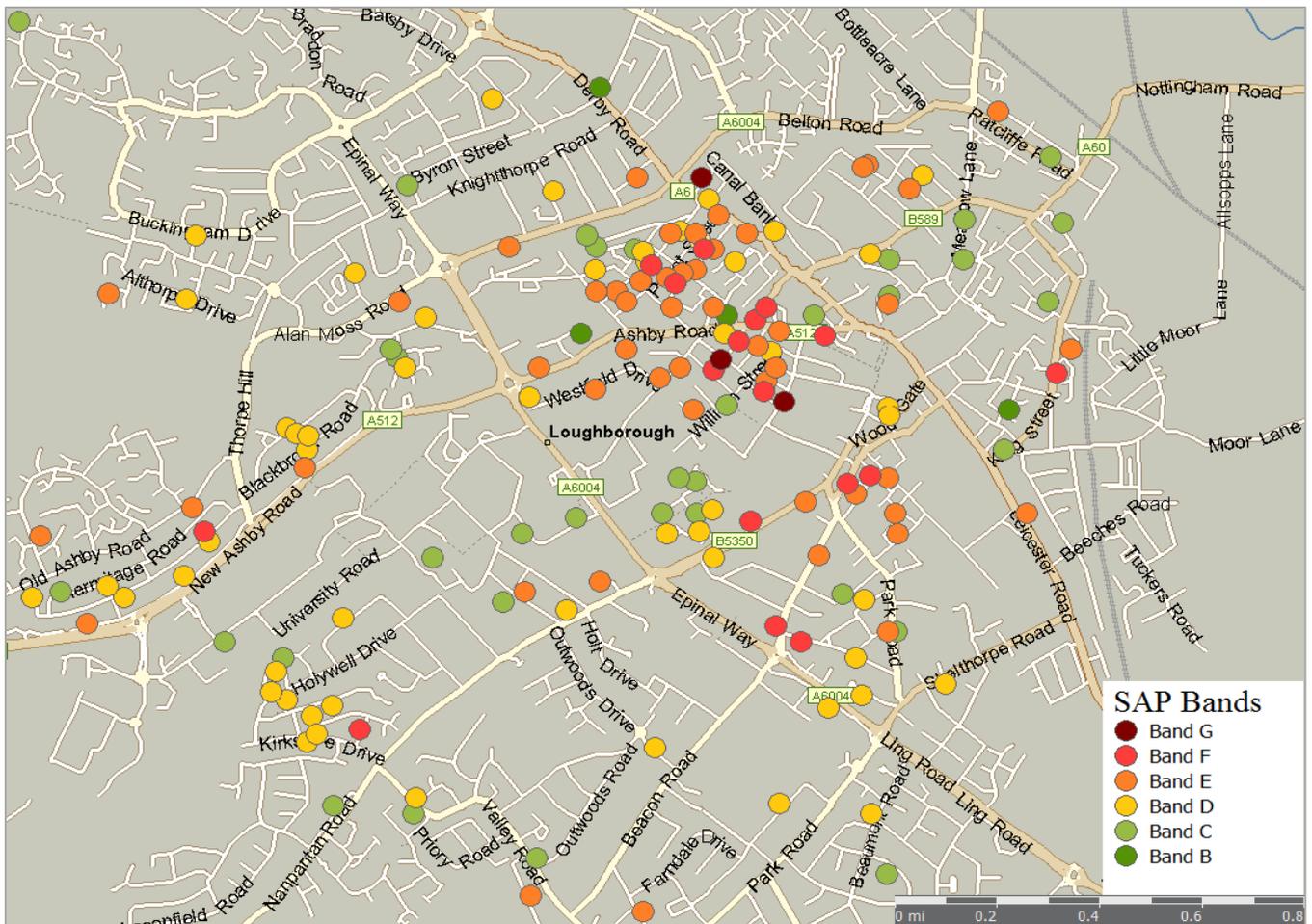


Figure 7.5 highlights the existing correlation between the SAP score of a dwelling and its age. One can observe that pre-1919 housing have the lowest SAP rating median (52) and that the medians gradually expand as the dwelling age is more recent. The difference between the SAP

median scores in dwellings built from 1945 to 1964 and those built from 1965 to 1980 is glaring. The application of a linear regression method has proven that the dwelling construction period can explain 64% of the variations in the SAP score. This confirms that the accommodation age is a robust predictor of the EER of a building.

Figure 7.6 – The Dominant SAP Band by Postcode



The distribution of the dominant SAP Band by postcode is captured in Figure 7.6. It shows that in studentified areas such as Storer and Burleigh, dwellings are often rated Bands E and F. The presence of housing assessed Band C and above is scarce, which indicates that most students reside in low-energy efficient buildings in these areas. Properties rated Bands C and B are spread out in various parts of town such as the Kingfisher area near campus, the eastern part of the town, as well as in the outskirts of Loughborough. A concentration of accommodation rated Band D is distinguishable in the vicinity of campus. Notwithstanding the geographical distribution of low-energy efficient dwellings is heterogeneous, studentified streets within the Golden Triangle area are mainly compounded of energy inefficient accommodation. The impact of this housing characteristic on the energy cost and consumption is tested in Section 7.4.

All the characteristics explored in the SDT through its physical and sustainability approaches considerably contribute to the actual energy consumption of its residents (see Kelly, 2011). However, in the case study of the SDT, and generally in most student properties, quantifying students' energy consumption is made difficult because of all-inclusive packages offered to the occupants. The following section deals with this hindrance.

7.3 Students' Energy Consumption and the All-Inclusive Packages Dilemma

A few scientific publications have raised the issues of energy consumption in halls of residence by focusing on the various ways of monitoring students' energy conservation (Marcell *et al.*, 2004; Petersen *et al.*, 2007; Emeakaroha *et al.*, 2012, 2014; El Asmar and Tilton, 2015). To date, the literature has paid no attention to student energy consumption level at the household level, and particularly for young people residing in the PRS. Hence, the issue of evaluating the energy cost in all-inclusive accommodation has not been addressed.

One of the key challenges in quantifying students' residential energy cost has been to create a model that estimates energy cost for individuals in all-inclusive housing. Indeed, there are no practical ways to find out precisely how much energy is used in an all-inclusive setting, except maybe enquiring each landlord of the studied dwellings to provide the researcher with the energy bills. Consequently, for the purpose of this research, the estimation of all-inclusive energy cost relies on four attributes: the SAP index, the estimated energy cost of the dwelling (e.g. lighting, heating, and hot water) as provided by the EPC assessor, the size of the accommodation, and the number of occupants in the property.

Of course, the analysis of energy consumption for all-inclusive package is sensitive to the data provided by the EPC assessor. For instance, energy costs related to cooking activities or the amount of electricity used to power all electrical appliances are not encapsulated in the model due to the absence of data indicated in the EPC. Furthermore, it is stated on the EPC register website (www.epcregister.com) that the energy cost of the building is calculated for a standard occupancy, which excludes variations in residents' energy usage. Although, the innovative model used in the thesis is perfectible and has some limitations, it represents, to date, the most effective measurement of energy cost for all-inclusive bills.

Lastly, the original method applied in the quantification of the energy cost of residents benefiting of all-inclusive package paves the way for further improvement. The discussion should be orientated towards the question of measuring energy consumption when data is unavailable, as it

is the case for students in all-inclusive properties. As rightly stated by William Thomson (1883: 73):

“When you can measure what you are speaking about, and express it in numbers, you know something about it; but when you cannot measure it, when you cannot express it in numbers, your knowledge is of a meagre and unsatisfactory kind; it may be the beginning of knowledge, but you have scarcely, in your thoughts, advanced to the stage of science, whatever the matter may be.”

Proliferating on the housing rental sector chiefly targeted towards the student population, the all-inclusive packages elaborated by the landlords consist of a commodification strategy that integrates additional expenditure in the total rent cost. Whether they are energy bills such as gas, electricity, and water, or utility bills, such as internet, home phone, TV licence and cable, these packages or bundles became quite popular amongst students (see Figure 7.7) as well as becoming irrefutable selling arguments for the landlords.

To illustrate this statement, the LSAS proves that 29% and 33% of all surveyed students (n=1,125) deemed having energy bills included in the rent cost as, respectively, ‘very important’ and ‘fairly important,’ in their decision to reside in their current accommodation. For students who opted for energy bills rent inclusive, this proportion is understandably higher: 36% deemed it was a ‘very important’ residential motive and 40% assessed it as ‘fairly important’.

Rooted in the pastoral spirit of on-campus properties, these appealing deals have since been exported to the PRS. Qualified as ‘hassle free’ by housing providers, such packages leave students without worry about paying several bills or contacting the stakeholders involved (e.g. energy, water, insurance, and internet providers):

“We just feel like not concern about it so much.” (Kevin, HMO resident)

“As a foreign student, from our point of view, we don’t have to contact like “how much the bill cost?” if it’s not included the bill. So when I saw the contract the first time in China, I saw it included bill whereas some other houses they didn’t include bills. I don’t know how much it cost monthly like £100, few hundreds or £50. So it was a pretty big advantage to include bills.” (Jim, Chinese student in HMO)

“So to have an all package and then get the vouchers and stuff included to students it’s quite a good thing but for some people I think if you can get a cheaper rent and sort out your own bills and have your own gym membership and stuff. That could work better for some.” (Stanley, moving from Uni halls to HMO)

It should be noted that most students interviewed had energy bills included in the rent cost. All-inclusive packages relieve students from necessary residential constraints and responsibilities. This feature has become an influential motive in the housing selection:

“There are a lot of houses that we looked up that didn’t even include Internet and things. So that would have been something that we would have had to sort out.” (Pamela, HMO resident)

“For us, it was quite important. It was just an extra hassle we didn’t want. I know of course we thought it might have caused arguments because when it’s included, it’s there. But if it’s not included, you would have more wanted to get the price of it down. So when people who wanted to put the heating on, we thought it would cause more arguments if they were not included.” (Meredith, HMO resident)

Energy bill packages have the particularity of being diverse. Some allowances offer unlimited energy consumption, whereas others are subject to a cap limit. This is the case for this student who is ironic within this matter:

“We’re all trying our best to use as much electricity as we can but even so we can’t seem to break what we’re giving. It’s a very generous limit. We never have any problems with going over or...certainly, we’ve haven’t heard of any. The landlord never told us anything.” (Michael, HMO resident)

Another student indicated that some energy deals rewarded residents under the condition that they manage their consumption carefully, which led to discords within the household:

“If we go under as well we get the money back. So whatever we don’t spend of our allowance, they’ll give it us back at the end of the year. So we don’t want to spend it all because we kind of like getting some money back at the end of the year. See, even though it was included, we did have many arguments about it. There were a few when people were using electricity and heating unnecessarily.” (Meredith, HMO resident)

Thus, integrating auxiliary expenditure in the total rent cost contributes to facilitate students’ residential decision-making. From their point of view, this convenience helps them to reduce distractions and to not deal with additional constraints. This is perceived highly by this transient population. However, this residential bundle truncates the reality by concealing substantial issues.

Figure 7.7 – Student Lettings’ Advertisements Promoting the All-Inclusive Packages



Source: Author’s photographs

Indeed, by blending various sources of expenditure under the same umbrella, it becomes particularly complicated to disentangle specific costs. This is the case for residential energy costs, notably. Consequently, identifying student households in FP is arduous, which explains the limited amount of research undertaken on this topic as well as the paucity of data. The contradictory observation of deploring the lack of data on students’ energy consumption and costs while their residential constraints are confined would be futile if its repercussions would not go beyond this relationship. Yet, energy bills mixed in rent value raise issues of a financial and environmental nature. Asking interviewees if their energy consumption behaviour would change if the bills were to be paid on top of the rent, their reactions were unanimous:

“We don’t seem to have gotten over the top of the bills, but if we were paying bills we would really worry about that.” (Judith, HMO resident)

“Probably not good when we move out, when we have to pay our own bills.” (Pamela, HMO resident)

“I think it’s going to be a shock when we’ll move into a house where we have to pay our own bills.” (Kevin, HMO resident)

Respondents dread the transition from student accommodation to the general market. They do not seem prepared to take responsibilities for living conveniences that are, in the student sphere, taken for granted by most. When enjoying the many benefits of having all-inclusive rent, students miss out on developing a cultural capital related to managing their energy use. Therefore, the fear they expressed during the interviews is the outcome of a competitive PRS combined with students’ adoration for smooth living conditions. However, some students provided pragmatic comments with regard to opting for exclusive utility bills:

“Manage your expectations; the reality is that you gonna have to pay for bills. So if you then say, “Oh, I can’t afford it...that’s why I’m gonna have to turn the heating off”, then you’ve gone in to a house under false pretences, because that’s what you have to do.” (Stanley, moving from Uni halls to HMO)

For some students, like Michael, having to pay energy bills separately appeared to be an unfortunate experience:

“I’ve done bills excluded for one year in my life so far and I absolutely hated it. I hate the fact that ...yeah, it was cold all winter because they didn't want to put the heating on and I still had to pay too much for everything. I was still paying more than I wanted to. It was just very difficult. But what can I say, it’s part of life I suppose. You’ve gonna have to at some point.” (Michael, HMO resident)

This record reinforces the impression that disagreements on restricting energy use persist amongst co-residents, especially when economic motives are at stake. Trade-offs seem to be essential in order to restrict the energy expenditure or, in some cases, to get some financial reward. Although the financial rationale is dominant in students’ energy behaviour, the environmental factor is not necessarily ignored:

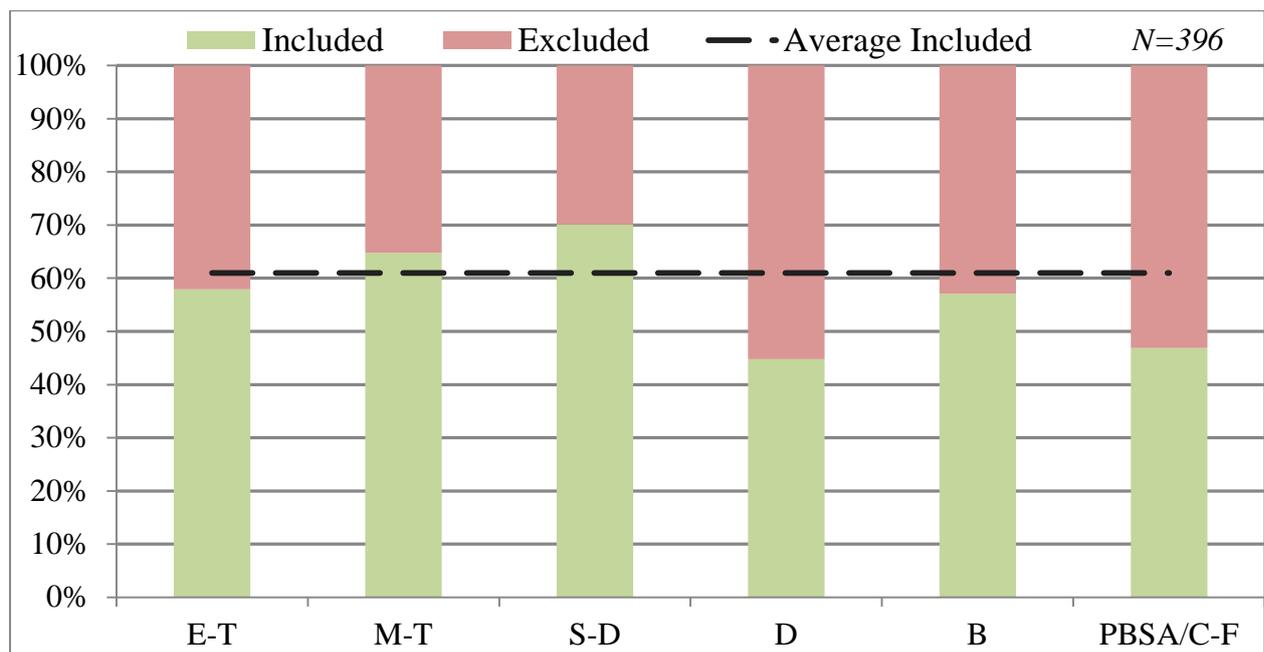
“We turn off the lights a lot. I can’t think of anything else. We turn off the lights, we turn off the heaters. Just little things like that... In campus, even though we can’t turn off the lights ourselves, but like people are always going out, especially if you live with freshers. So the hallway lights would be on. People always use their kitchen

even if they're not cooking. It's a lot of activities whereas when it's in a house you can control what you're using and hopefully not going over your bills and stuff.” (Sam, HMO resident)

“I think you'll have to be more conscious and keep an eye on what you're doing like in halls if I was cold, I'd turn the heating up full. I obviously know that it wouldn't matter, I wouldn't be on the limit. Whereas when I get in the house, I'd use a thermostat and if I was cold I would probably put a jumper on or something just in case our bills are creeping up... But yeah, I think that's just natural.” (Stanley, moving from Uni halls to HMO)

As revealed in these two statements, the reference to halls of residence is not negligible. Students who live on-campus observe the energy behaviour of other students. Once in the PRS, with chosen flatmates and housing, some residents tend to gain consciousness regarding their energy usage even though the energy bills are rent inclusive. Nonetheless, this behavioural change does not apply to all students, in particular when energy bills are rent inclusive and tenants have no information about their actual consumption level. In the LSAS, 80% of students do not pay energy bills separately (n=903). Except for students living in Uni halls, students domiciled in the PRS and PBSA/C-F have the possibility to choose whether they want the energy bills included in the rent cost or not. Students in the PRS and PBSA are respectively 60% and 90% likely to have an energy inclusive package. However, discrepancies exist according to the types of housing. Using Sample 2, Figure 7.8 shows the share of residents with energy expenditure rent inclusive and exclusive, and by housing profiles.

Figure 7.8 – In-Exclusion of Energy Bills in Rental Cost by Housing Profiles



On the one hand, one can remark that the average of students having energy bills included equal 61% of the population in the rental market. For a few types of accommodation such as M-T and S-D houses, the average of all-inclusive tenants is situated above the overall mean. For the latter, 70% of residents do not pay the energy bills separately from the rent. This represents the highest score within all dwelling profiles. On the other hand, several housing categories are characterised by a higher share of students having to manage their own bills. As an example, the proportion of D residents benefiting of all-inclusive packages falls to 45%, so 16% below the general mean. Notwithstanding, students willing to live in the PRS are more likely to obtain an all-inclusive rent contract. The ratio of energy bills included/excluded is more homogeneous in the PBSA/C-F due to the presence of converted flats and maisonettes in this housing class. Most PBSA in Loughborough offer packages to their tenants (Hubbard, 2009; Kinton, 2013). Lastly, utility bills are often included within standard energy performance of a building. Therefore, approximately two-thirds of residents in dwellings rated Bands D and E benefit from energy bills included in the rent.

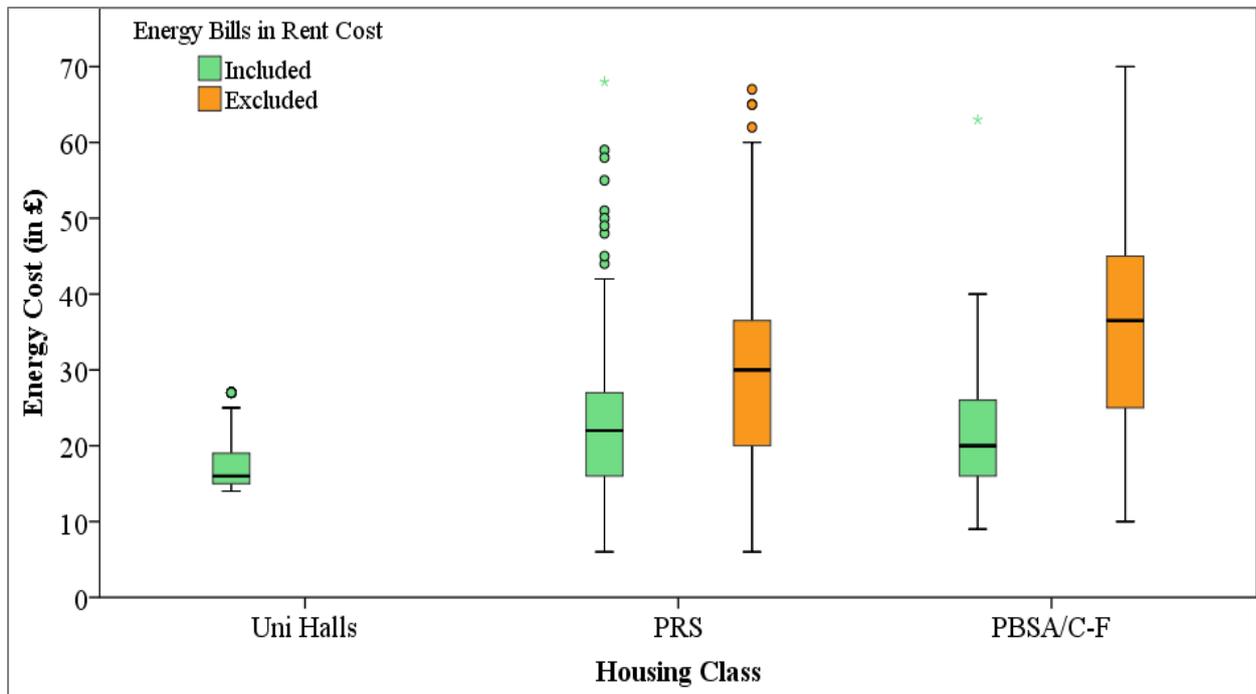
The high proportion of students opting for all-inclusive deals distorts the analysis of their energy use and cost in their accommodation. Bearing this in mind, it was decided that the most appropriate solution would be to estimate this data. In order to do so, information available on EPCs related to estimated energy costs (i.e. heating, lighting, and hot water costs) were collected and computerised. However, the data does not take into account the variations in fuel prices or the characteristics of the household (e.g. number of residents, age, and social status). As a consequence, the data was cross-checked with the SDT's data such as dwelling location, household size, tenants' age, and individual floor space. Although the assessed values are strongly correlated to the SAP rating, these estimations have allowed appraising the amount spent on energy expenditure by students that have an all-inclusive rental bundle. A similar process was applied to university halls of residence, but this time employing data from the Display Energy Certificate (CSE, 2014). Thus, the following section quantifies students' energy consumption and costs for each building class of the SDT.

7.4 Evaluating Students' Energy Cost

It has to be made clear that embedded in the energy category are electrical and gas consumptions. Figure 7.9 displays the distribution of the energy cost according to the three housing classes which are Uni halls, PRS, and PBSA/C-F and whether the energy bills are rent inclusive. One can remark that major variations occur between (and also within) housing classes. Due to the

limited amount of data available for Uni halls, it is not surprising to see a very condensed distribution. Regarding the energy costs in the PRS and PBSA/C-F, energy costs are greatly dispersed. This accordingly to influential factors previously identified such as the household size, the individual floor area, the primary heating system, and the SAP rating of the building.

Figure 7.9 – Energy Cost (in £ per Month) by Housing Class

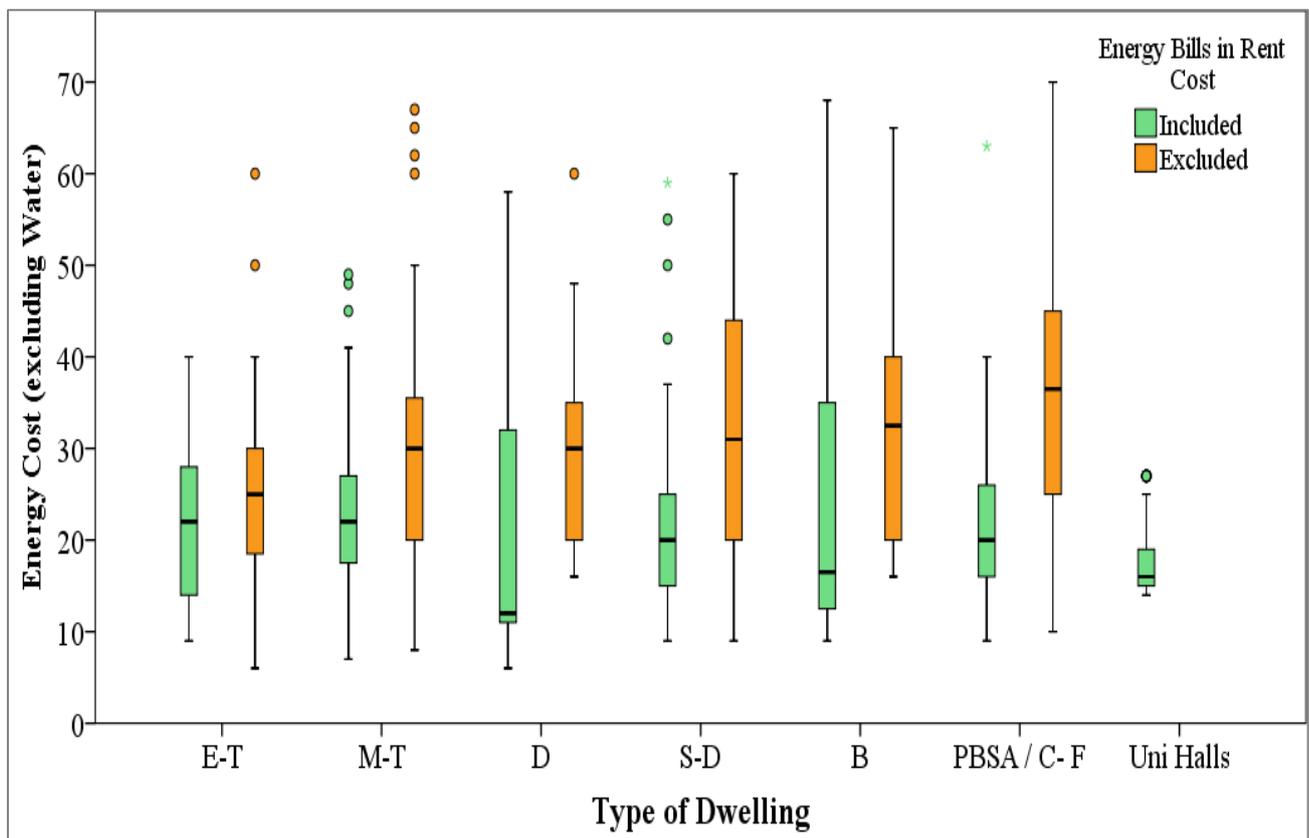


Discrepancies in these variables can produce outliers, which is particularly the case in the PRS. In this housing segment, it is assessed that the energy cost of students benefiting of an all-inclusive package is on average £7 lesser than for residents paying their bills separately. In addition, the statistical range between these two rent categories is greater for non-inclusive residents. As stated in Section 7.3, the model assessing energy values in all-inclusive housing can be improved in order to provide more accuracy in the data analysis. The highest average energy cost is paid by PBSA/C-F residents that have energy bills rent excluded and equals £36 per month. In contrast, the monthly average energy cost for residents in university properties is estimated at £18, although it is rent inclusive. Hence, living on-campus appears to be the most financially advantageous option with regards to energy costs. Notable disparities subsist amidst the types of dwelling which could suggest that the energy bills can be lower in some accommodation compared to Uni halls. Once types of dwelling in the PRS are broken down, differences in energy cost are perceptible. Figure 7.10 captures this by showing sizable variations between accommodation profiles and types of rental package. It allows also seeing the extent to which the energy estimations mirror the actual energy cost data provided by students. In this

manner, the boxplot shows that the quantified energy cost for terrace houses reflects quite accurately the amounts given by residents. For instance, the average energy cost for all-inclusive residents in M-T HMOs amounts to £23 per month. For students paying their bills separately, the mean represents £29 per month. This difference of value is similar within types of rent in E-T houses.

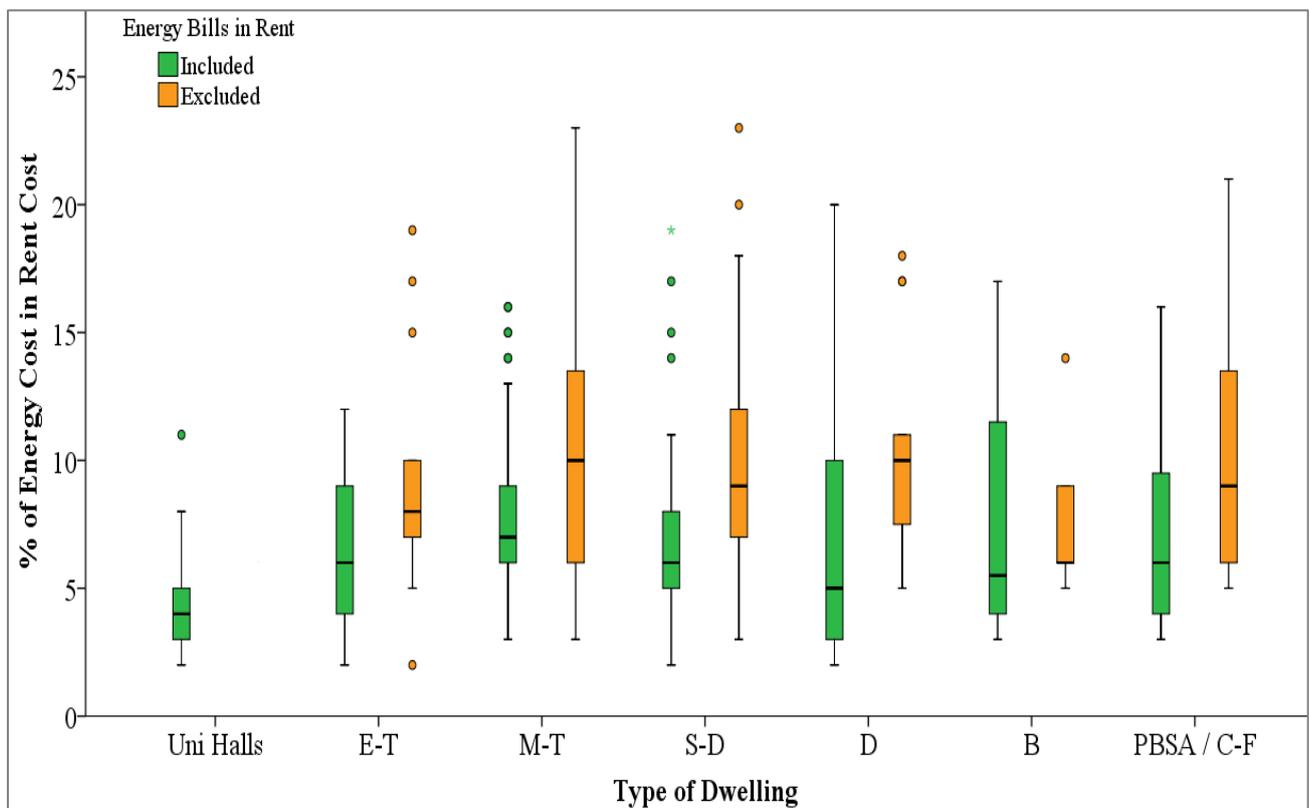
As well, the estimated energy costs for students living in D properties are inconsistent with the actual data. Indeed, half of detached residents not having an energy bills package spend less than £30 per month on energy cost whereas the median for all-inclusive residents is evaluated to £12. Yet their average energy costs are respectively £30 and £23, which implies that the differences in means are confined even though the statistical amplitude for all-inclusive beneficiaries in D dwellings is considerable. In this specific dwelling, the size of the household and the individual floor area can predict 39% of the variations in energy cost. Finally, the analysis of the estimation model for all-inclusive deals and the data provided by students shows that the most significant average gap in energy cost is located amongst students in S-D properties, with a monthly difference of £11. Similar to D housing, the number of tenants and the floor space per resident account for 43% of energy cost variations in S-D houses.

Figure 7.10 – Energy Cost (in £ per Month) by Type of Dwelling



Adding an additional economic component to the analysis, Figure 7.11 depicts the relationship between the proportion of energy bills in the total monthly rent cost and the dwelling profiles. The rent cost appears to be a pivotal indicator amongst LSAS' respondents (n=1,125) as 36% and 43% assessed it as 'fairly important' and 'very important' in their residential motives. Pinning down the weight allocated to energy costs over the total rent cost can contribute to putting the energy expenditure into perspective. The graph discloses multiple discrepancies in the portion of energy cost over the total rent cost between distinct types of accommodation. As an example, for half of M-T houses residents with utility bills excluded, spending on energy amounts to 10% of the rent value, and 25% of individuals in this sample pay 13% of their rent in energy cost. Further, it is estimated that for half of students living in Uni halls, the share of energy expenditure on the rent price equals only 4%. Although the bills are included, this signifies that the estimated energy amounts are limited compared to the rent value. Otherwise, this could imply that the housing rental cost is exorbitant, and by consequence, the 'normal' cost of energy is undervalued. Chapter 8 emphasises, notably, the financial perspectives encompassed in students' residential decision-making processes.

Figure 7.11 – The Share of Energy Cost (in %) in Monthly Rent Cost by Type of Dwelling



It is reasonable to assume that the consumption and cost of energy are affected by the SAP score of a dwelling. In order to establish potential correlations between these variables, it is necessary

to isolate students benefiting from all-inclusive packages and those that pay their energy bills on top of rent. Figures 7.12 and 7.13 point out the distribution of monthly energy cost by SAP score and by the type of rent.

Figure 7.12, which is related to the energy costs of residents with non-inclusive bills in the rent cost, encapsulates the data given by the LSAS' respondents. This chart shows no significant trend that suggests a relationship between the energy performance score of the accommodation and students' spending on energy. Most tenants with the highest energy expenditures occupy dwellings with a SAP index of 50 and more, whereas monthly energy costs lesser than £20 are spread in both energy efficient and inefficient buildings.

Figure 7.12 – Energy Cost (in £ per Month) by SAP Score when Energy Bills Excluded in Rent Cost

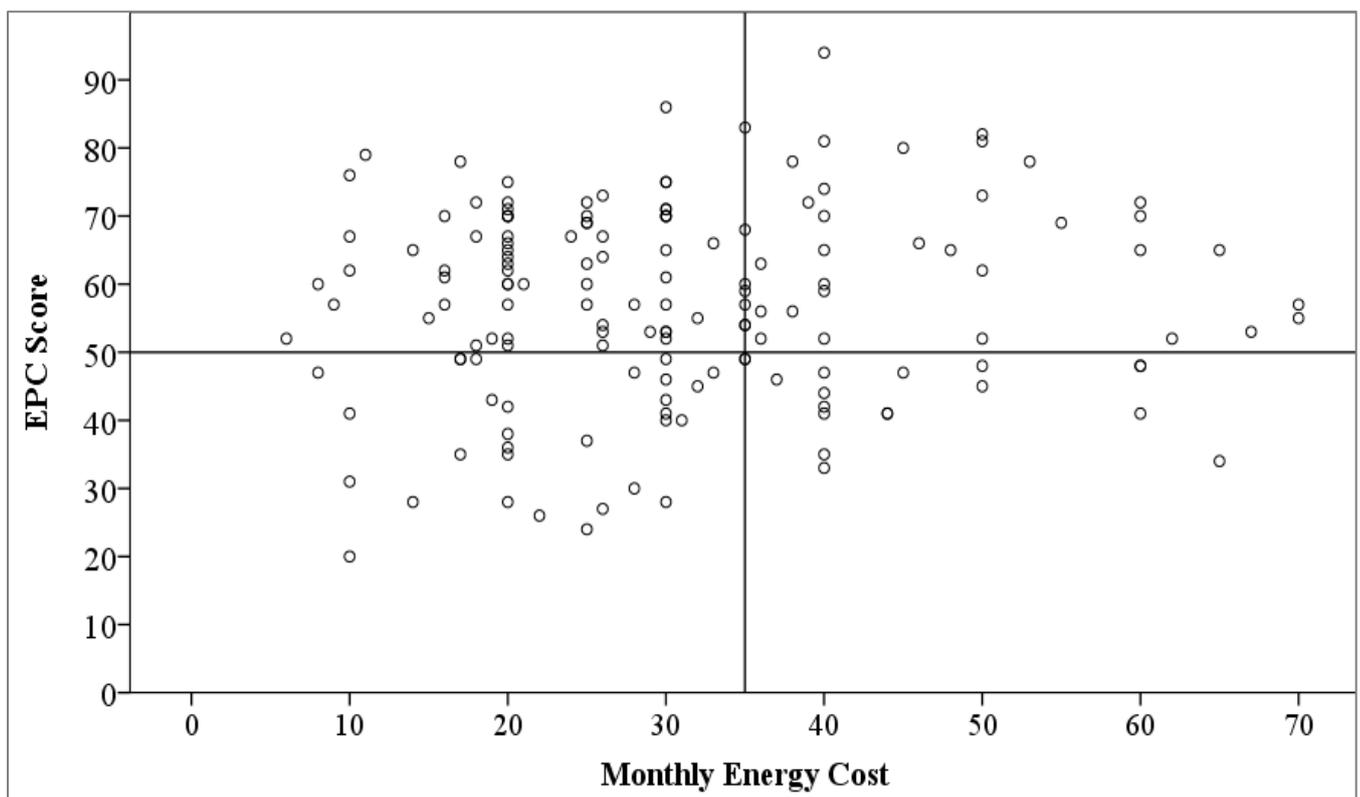
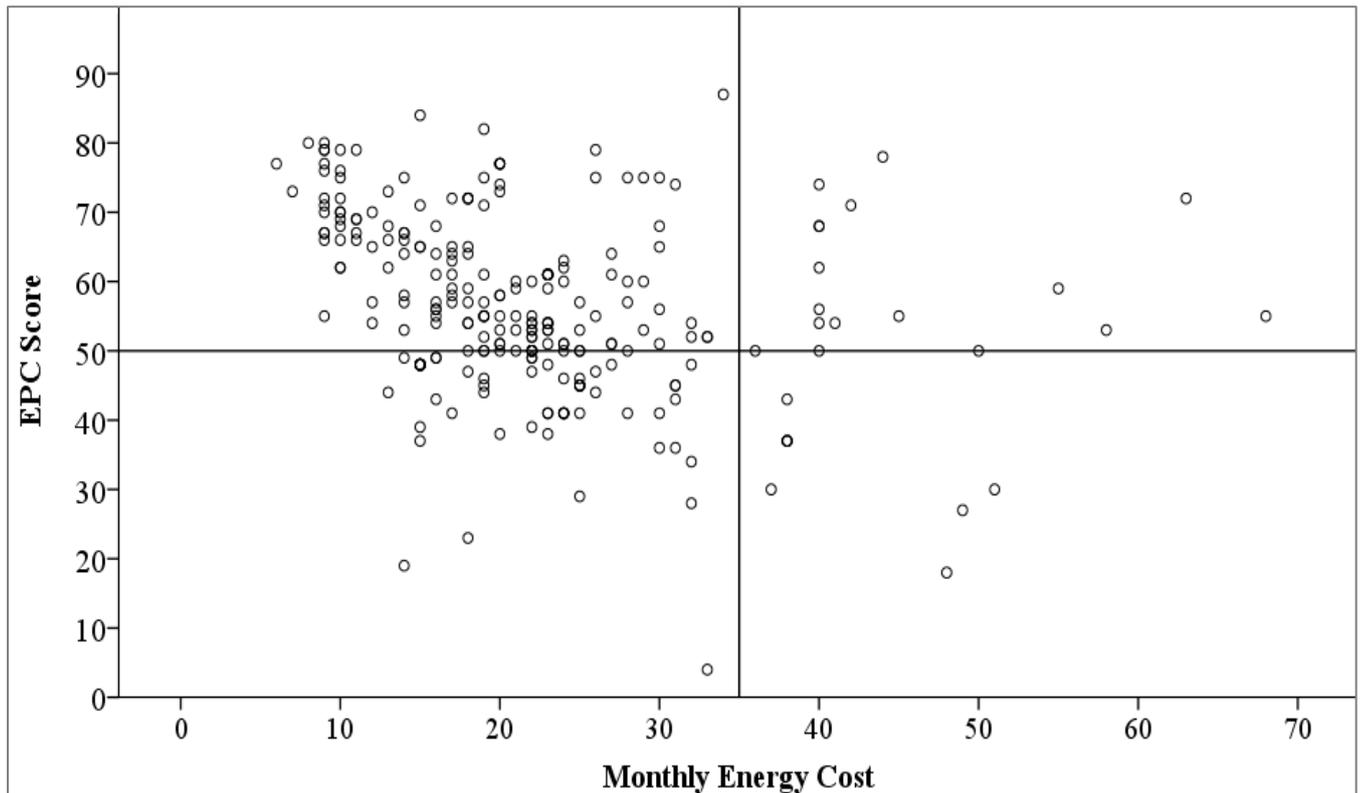


Figure 7.13 outlines the estimations of energy cost for all-inclusive beneficiaries. The graph indicates that, unlike Figure 7.12, a prominent proportion of energy costs are inferior to £35 per month, and most of them originate from buildings rated 50 and more. Once more, nuances in comparing all-inclusive with non-inclusive utilities bills should be added because of the two distinct methods of data collection (e.g. data provided by students vs. data provided by EPC's assessors). Given the limitation in data collection, the estimation of all-inclusive energy costs is as good as it gets. Having a closer look at the data in the top left corner of the chart, a moderate

negative correlation can be noted. This measured trend suggests that an increase of energy costs can be observed as the SAP score diminishes. However, the overall sample does not replicate this tendency, which infers that no meaningful relationship has been found between these two variables for all-inclusive dwellings. This is due to the inclusion of peripheral elements having the potential to affect student consumption of energy.

Figure 7.13 – Energy Cost (in £ per Month) by SAP Score when Energy Bills Included in Rent Cost

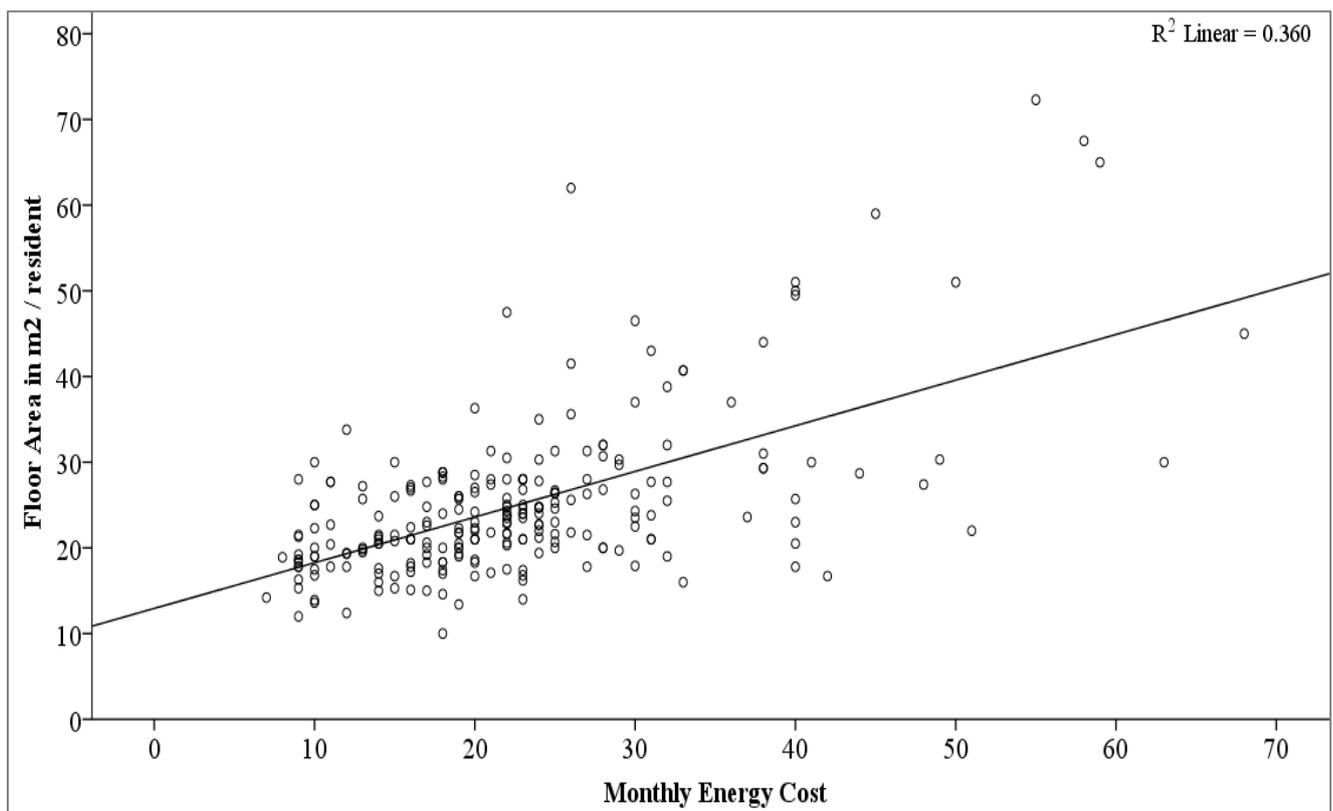


Although the SAP score is a weighty predictor of the energy cost, other variables can influence the expenditure. For example, the analysis of a multiple regression model reveals that for all-inclusive residents in HMO terraces, factors such as the SAP rating, the household size, and the individual floor area are responsible for 62% of variations in energy bills (see Appendix 4). Widened to all types of housing in the PRS and PBSA/C-F, the same variables can predict 52% of energy cost fluctuations.

Breaking down these predictors individually allows the understanding of their respective weight in the model. For instance, the individual floor space in all-inclusive households accounts for 36% of energy costs variations. This encompasses several concentration pockets of energy use for costs from £17 to £25 (cf. Figure 7.14). The average energy spending of £23 per month is confined in individual floor space within 14 and 28 m². The best-fit linear regression line points

out that some outstanding cases, or outliers, exist. The correlation between the energy bills and the living floor size is, however, moderately robust. It could be asserted that the energy cost in all-inclusive accommodation is likely to be less significant in smaller individual floor areas. Regarding students in non-inclusive dwellings, no relationship has been established. This infers that for tenants assuming the payment of their energy bills, the size of their individual floor area does not influence the amount of spending on heating and electricity.

Figure 7.14 – Energy Cost (in £ per Month) by Individual Floor Area when Energy Bills Included in Rent Cost



In terms of household size, its influence on students’ energy expenditure appears to be limited. Indeed, whether the utility bills are rent inclusive or exclusive, the number of occupants can solely explain, at its maximum, 20% of variations in energy costs. This means that small student households do not inexorably signify higher heating and electricity spending and vice-versa. Present in the SDT physical approach, the construction period of dwellings has, after performing regression models, no significant relationship with the amount that students spend in energy expenditure. The analyses are similar for other variables such as the source of primary heating and the quality of the window glazing. While it could have been assumed that the last factors were potential predictors of energy cost, another interpretation of these statistical models can emerge.

It has been proven that the combination of several factors (i.e. SAP rating, number of co-residents, and floor area per capita) has had moderated incidence on the fluctuations of energy expenditure for tenants with non-inclusive bills. An explanation would be that students managed their energy consumption in various ways according to individual preferences that statistical models unsuccessfully capture. These decisions can also fall under the aegis of the whole household, in which values embraced in the philosophy of the *vivre ensemble* prevailed over individual initiatives. This is particularly the case regarding tenants' thermal comfort:

“You wouldn't feel as comfortable like just turning the heating on and everything, you would have to consult the general household and check almost before you did anything because if we were all doing that...” (Michael, HMO resident)

“We all agreed we'd rather spend the money and be warm than have more money and be cold. Se we all thought the same. We had our heating on for about 2 hours in the morning, 2 hours in the afternoon, and 2 hours before bed. So it was always pretty warm.” (Meredith, HMO resident)

In Jim's household, he is the only resident that has been allowed by his landlord to set and control the temperature in the accommodation:

“It's the oldest resident in this house that takes care of the main system. I rarely make the heating constant, I always use the timer. So it's energy saving. [...] if the others are too hot or too cold, they tell me and I can change it. I know the system. It's quite dangerous to operate since the pressure inside it. But I can because the landlord told me how to do it.” (Jim, Chinese student in HMO)

These statements espouse the notion that within multi-person household, tacit agreements and trade-offs are elaborated in order to manage the energy consumption and satisfy residents' thermal comfort. However, these thermal arrangements can also insinuate that some renunciations have to be made, whether financial or in terms of comfort, and consequently does not reflect the amount spent on energy (cf. Figures 7.15 and 7.16).

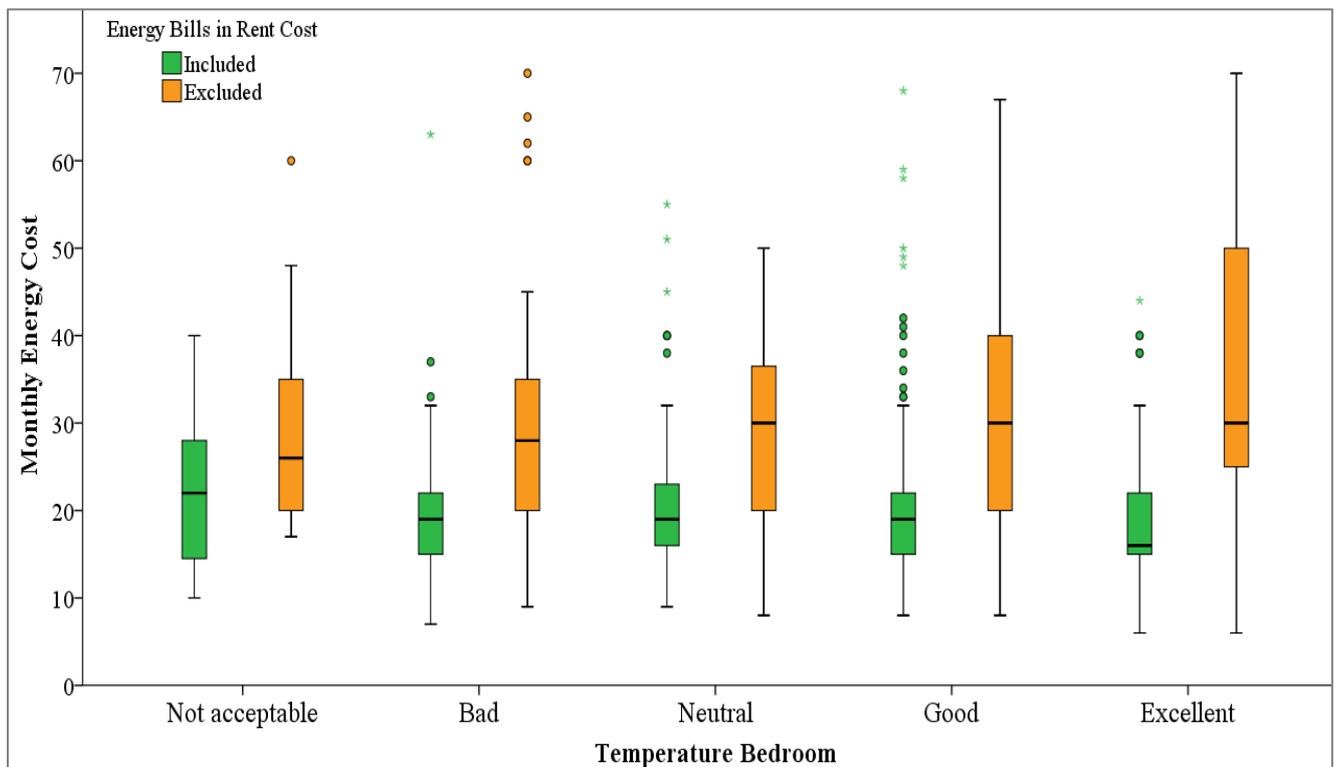
As exemplified in Figure 7.15, the amounts spent on heating one's bedroom does not necessarily convey that tenants are satisfied with the temperature of their bedroom. The median energy costs oscillate between £25 and £30 a month for students not having the rent inclusive utility bills.

This indicates that half of non-inclusive students assessing the temperature of their bedroom as 'not acceptable' pay approximately as much as half of students rating the temperature as 'good' and 'excellent'. However, respondents who rated their bedroom's temperature as 'excellent' have

the largest energy spending range, notably with one-quarter paying £50 in energy expenditure. Concerning students with all-inclusive bills, the trend is different. As Figure 7.15 points out that estimated energy costs are slightly higher amongst unsatisfied residents regarding the temperature in their bedroom. In contrast, half of students that rated ‘excellent’ have an estimated energy bill of £15, although this is already included in their monthly rental cost.

The interviews allowed the detection of a parameter that was so far ignored; it concerns the physical layout of the property.

Figure 7.15 – Energy Cost (in £ per Month) by Students’ Rating of their Bedroom’s Temperature



Though the physical attributes of dwellings have been examined in this thesis, it appeared that the location of the bedrooms within the property can also affect the thermal comfort of its residents. This was the case of Sam and Pamela, who expressed their discontentment about their bedroom’s temperature, and stressed that its position represented a drawback in terms of thermal satisfaction:

“I think for me, my room is the worst because I’m downstairs, in the extension. So my radiator is the last one out of the all house to get warm. People would come into my room, and they would be like “it feels like outside.” It’s that cold in my room. We have a set timer on our heater. To me it feels like a waste because my room doesn’t

get warm anyway. So, I'd say...I don't know. The fact that we even got our heating bill was a bit annoying as well. And... it was cold. It was cold." (Sam, HMO resident)

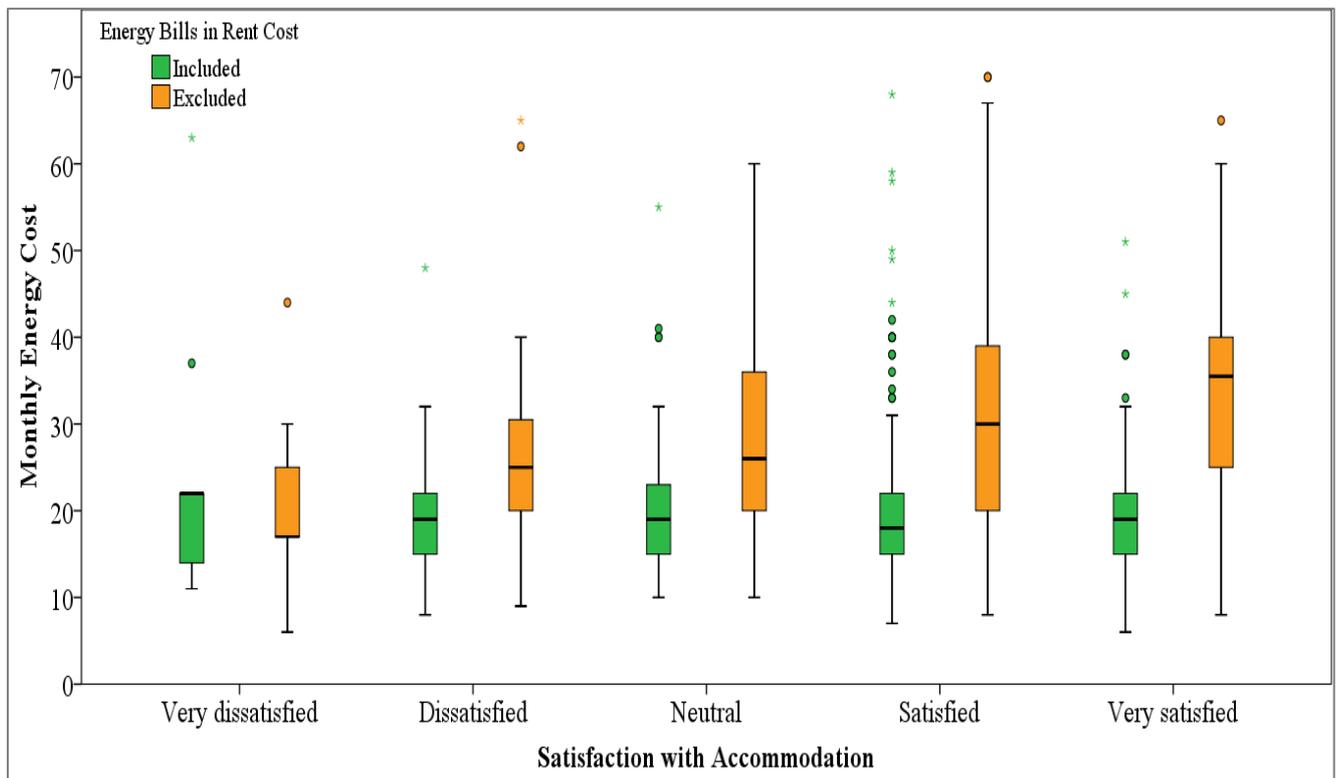
"My room's downstairs and it got cold in the winter. If you leave the door open... obviously the front door will be closed and leads straight into the corridor but if someone leaves it open, the air would rush in. We got the door of the garage as well and that can be quite cold if it's left open." (Pamela, HMO resident)

Kevin, Pamela's flatmate stated that there was a "6 degrees temperature difference between Pam's room and upstairs". Additionally, it should be noted that, within the same accommodation, not all occupants enjoy the same level of comfort. This can be produced, for example, by a mismatch in energy efficient measures:

"Apart from the top floor that had a really old window, we all had double glazing. So there was this person in the house, it was freezing all the time. She wanted to heat a lot more and that's the only argument we had about the heating. But then they did eventually fix a new window for us, so next year that won't be a problem." (Meredith, HMO resident)

These statements are essential to comprehend that the conversion of family homes into student HMOs by unconventional landlords can generate unadapted living conditions with presumably detrimental effects on students' health, well-being, and finances.

Figure 7.16 – Energy Cost (in £ per Month) by Students' Level of Housing Satisfaction



An interesting aspect to focus on is to observe the relationship between the monthly energy costs spent by students and their level of housing satisfaction, according to the types of energy bills. Figure 7.16 explains that, overall, amongst tenants having to pay their bills separately, the degree of satisfaction with accommodation increases as the energy expenditures become heftier. Hence, half of very dissatisfied tenants with their dwelling spend £17 on energy cost, whereas half of the most satisfied pay over double the monthly cost. Furthermore, the statistical amplitude for each group also follows this trend.

It has been demonstrated that, under specific conditions, the energy cost can have an impact on students' living conditions and well-being. In Chapter 8, the impacts of energy expenditure on students' finances will be explored. Due to distinct physical and sustainability characteristics, it can be assumed that the degrees of thermal comfort and housing satisfaction differ by types of dwelling.

Figure 7.17 – Students' Ratings on Temperature in their Bedroom According to Dwelling Types

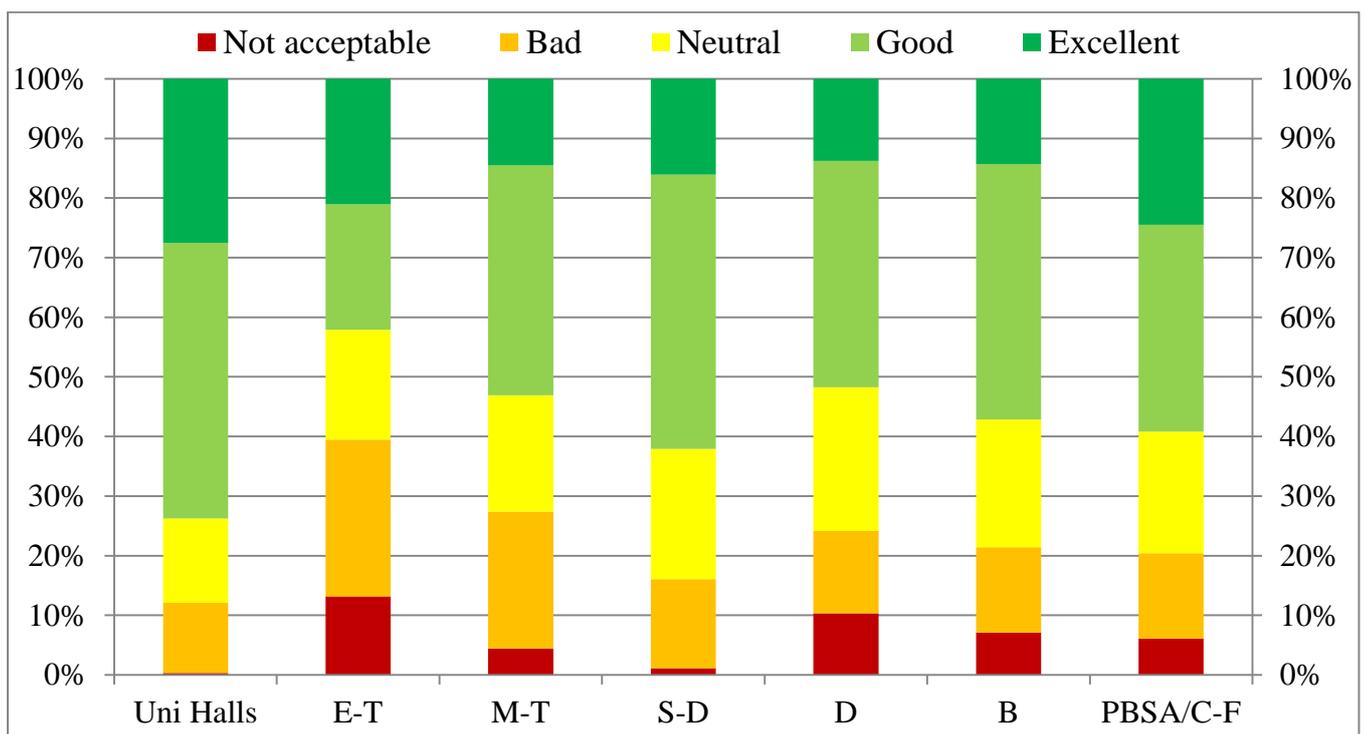


Figure 7.17 epitomises students' rating of their bedrooms' temperature according to the types of dwelling they reside in. The chart notifies that tenants in the PRS assessed their bedroom temperature with more dissimilarity compared to residents in university halls. For the latter, a substantial majority positively rated the temperature in their bedroom. On the other hand, HMO residents in terrace houses and detached properties expressed negative opinions about it. For instance, 39% of tenants in E-T houses evaluated their bedroom temperature to be 'bad' and 'not

acceptable,’ and only 21% rated it as ‘good’. Although differences in appreciating students’ bedroom temperature appear between dwellings, energy use to heat up one’s bedroom varies within the same housing profile, whether the utility bills are rent included or excluded.

The bar chart of Figure 7.18 shows the discrepancies existing in students’ temperature bedroom assessment defined according to the inclusion or exclusion of energy cost in the total rent value. The first observation to be made is related to the low rating of a bedroom’s temperature when tenants have to pay utility bills separately. Justifying this finding, nearly one-fifth of students occupying E-T properties has rated the temperature of their bedroom as ‘not acceptable’. Approximately half of this sample expressed a negative evaluation based on this variable. The degree of the bedroom’s temperature dissatisfaction for all-inclusive tenants in the same accommodation type is much lower. Similar observations can be established between B residents, despite a restricted sample size. Stanley’s comment rightfully captured this contrast in bedroom temperature satisfaction in arguing that “when the bills are included in the rent, there is even less reason to be cold”. Besides the arbitrary character of these variables, the temperature of the bedroom has a sizeable influence on students’ satisfaction with their accommodation, as it accounts for over one-fifth of variations in level of housing satisfaction. The level of bedroom comfort explains one-third of alterations in the housing satisfaction.

Figure 7.18 – Students’ Ratings on Temperature in their Bedroom According to Dwelling Types and Energy Bills Included vs. Excluded in Rent Cost

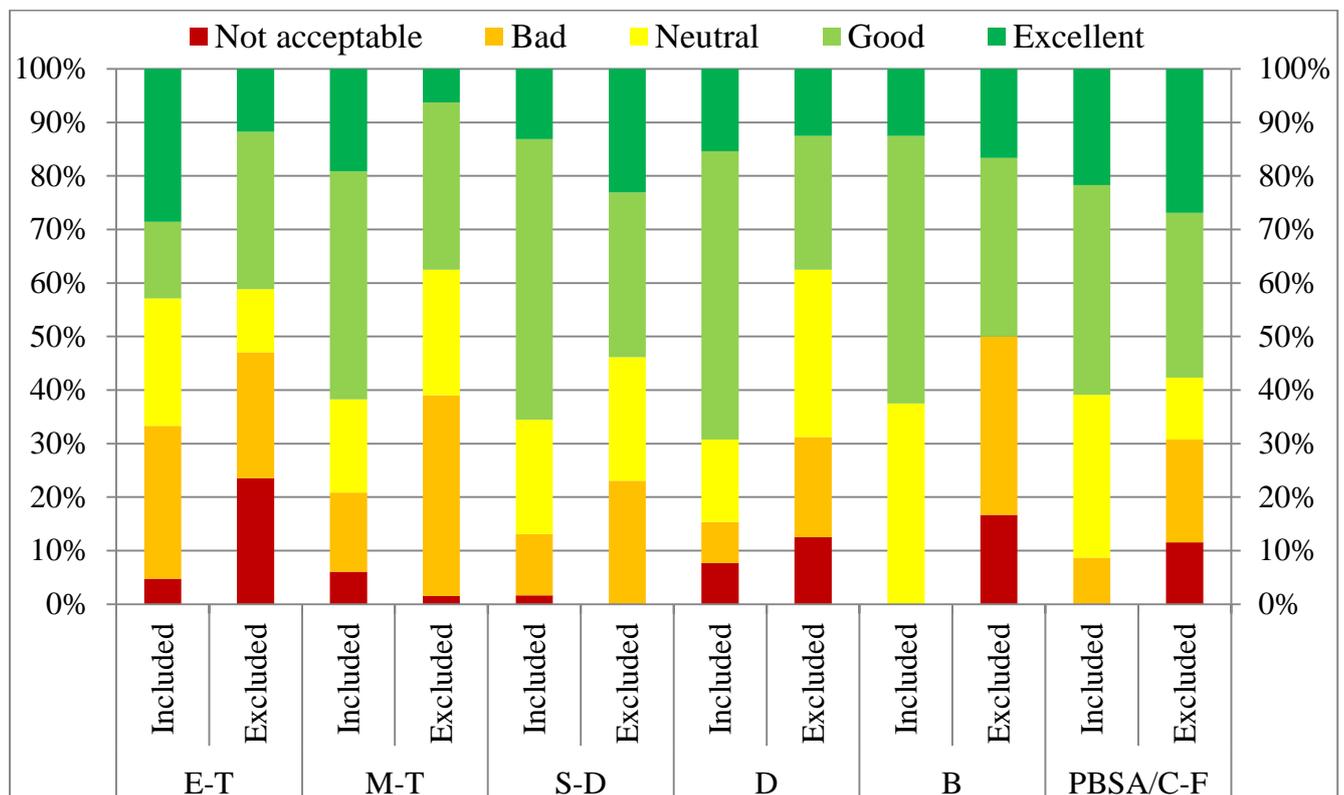
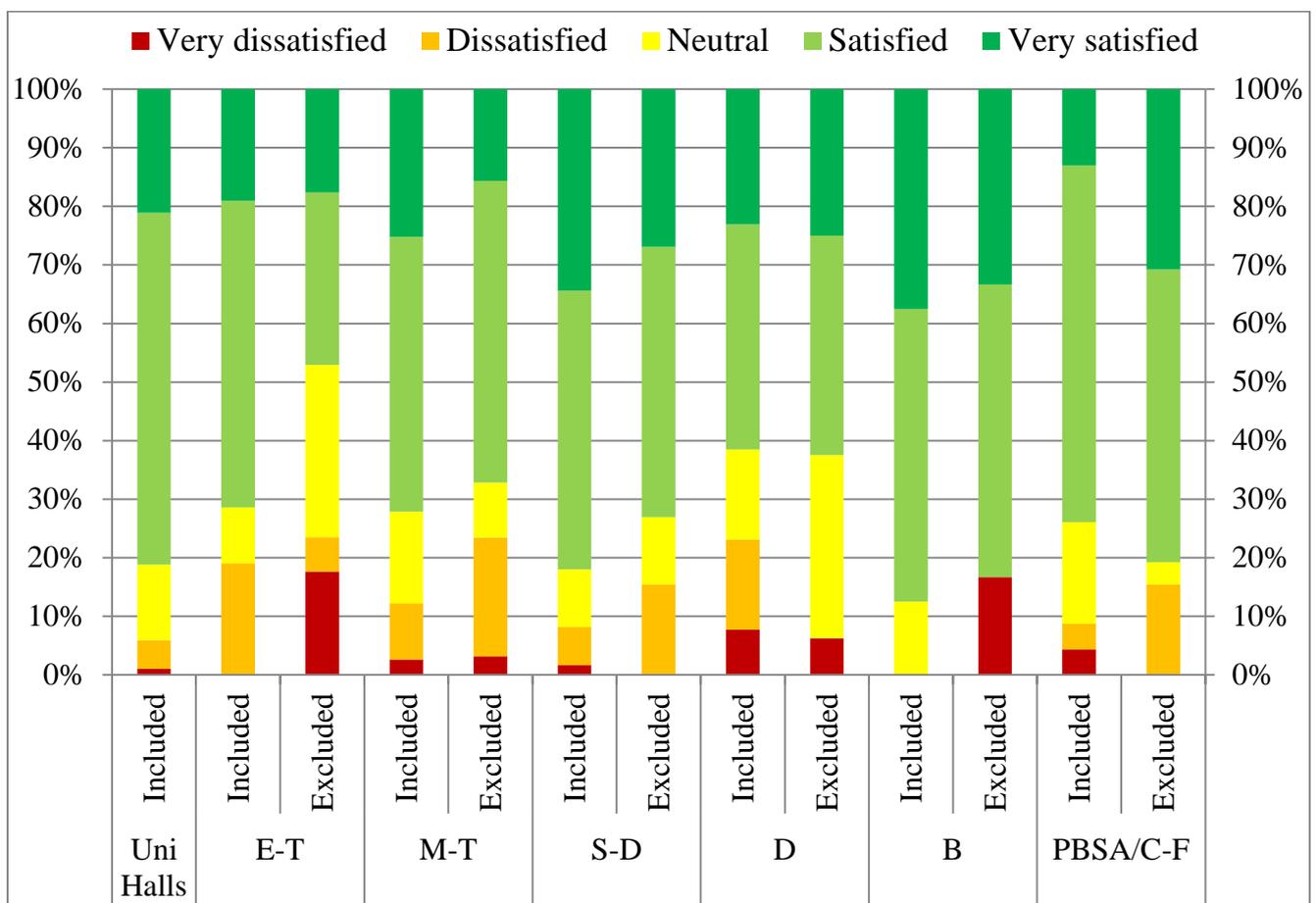


Figure 7.19 scrutinises the degree of housing satisfaction by dwelling types and whether the utility bills are included in the total rent cost or not. Residents in Uni halls, and to a lesser proportion those all-inclusive in bungalows, manifested intense levels of satisfaction with their accommodation. It should be specified that 53% of the sample (n=701) are satisfied with their dwelling whereas only 9% are dissatisfied. Due to its diversification, the PRS concentrates solid dissimilarities in terms of tenants' level of satisfaction. *De novo*, the most dissatisfied group is found amongst residents in E-T accommodation with utility bills excluded (18%).

This can be partially explained by the effects of a bedroom's temperature and comfort which are associated with approximately half of variations in students' level of satisfaction with their housing ($R^2 = 0.471$). The level of satisfaction of S-D residents is induced up to 36% by the temperature and comfort of the bedroom. With respect to bills excluded students occupying mid-terrace properties, these variables justify 46% of changes in housing satisfaction. Lastly, it is interesting to recognise that residents in PBSA/C-F showed more discontentment when the bills are included than when they are to be paid in addition to the rent.

Figure 7.19 – Students' Housing Satisfaction According to Dwelling Types and Energy Bills Included vs. Excluded in Rent Cost



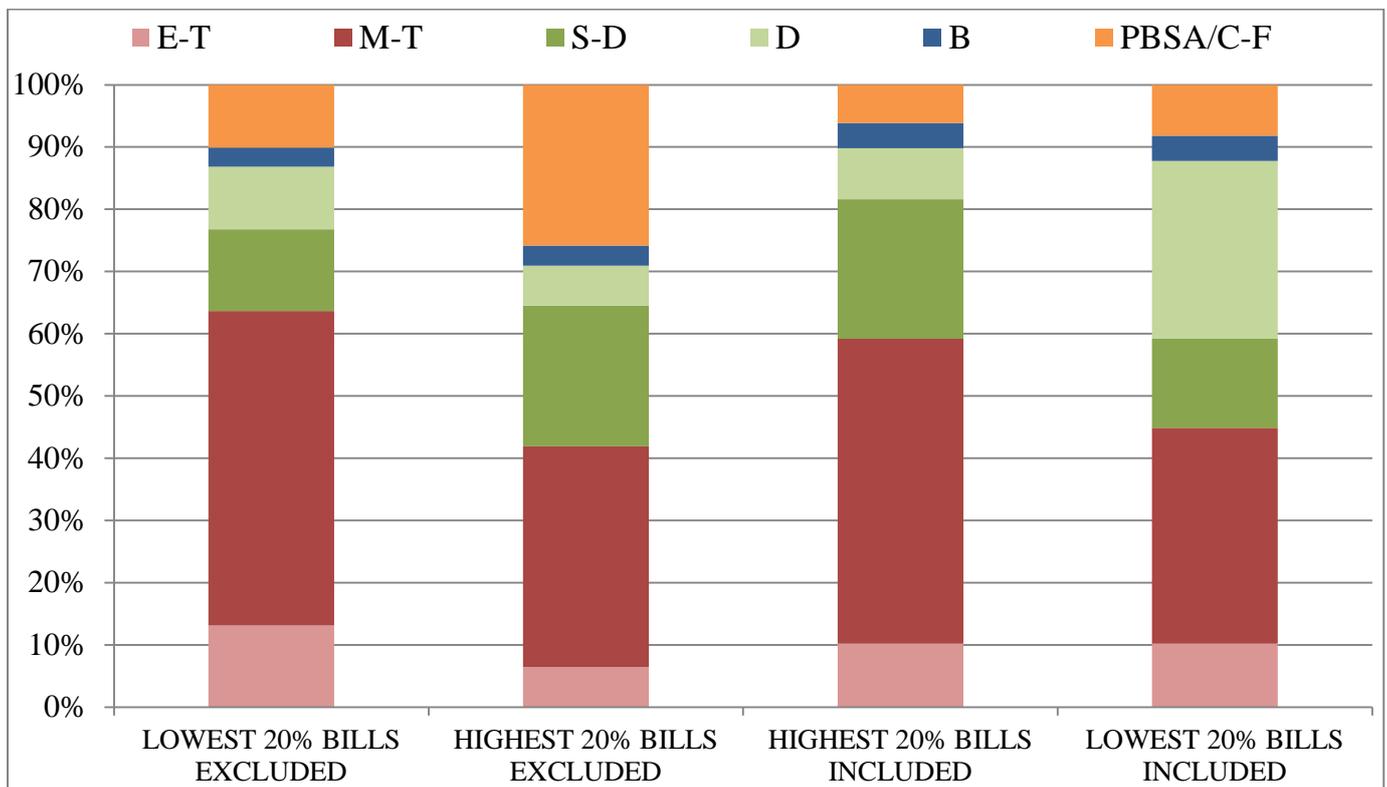
This section has brought a focus on quantifying the residential energy bills of LSAS' respondents. It revealed that the energy cost does not necessarily predict the quality of residents' thermal comfort. Section 7.5 establishes the comparisons of social and well-being aspects between the students that spend the highest amount on energy and those that have the lowest energy bills.

7.5 Comparisons of the 20% Highest and the 20% Lowest Energy Bills

This section aims to compare the discrepancies of living comfort unfolding between the residents that have the highest and the lowest 20% of energy bills, both all-inclusive and rent cost excluded. The share of 20% appeared as the most appropriate sample size to statistically identify possible trends. This dissymmetrical approach allows the measurement of the extent to which inconsistencies in energy cost affect distinct resident groups.

The first phase of the analysis between residents that pay the highest energy bills and those who spend the least amount is to designate the type of housing they occupy. Unsurprisingly, due to its large sample size, tenants in terrace properties are amply represented in each four groups. For instance, amongst residents having the lowest 20% non-inclusive energy bills, M-T occupants embody half of the sample, whereas 13% are E-T inhabitants.

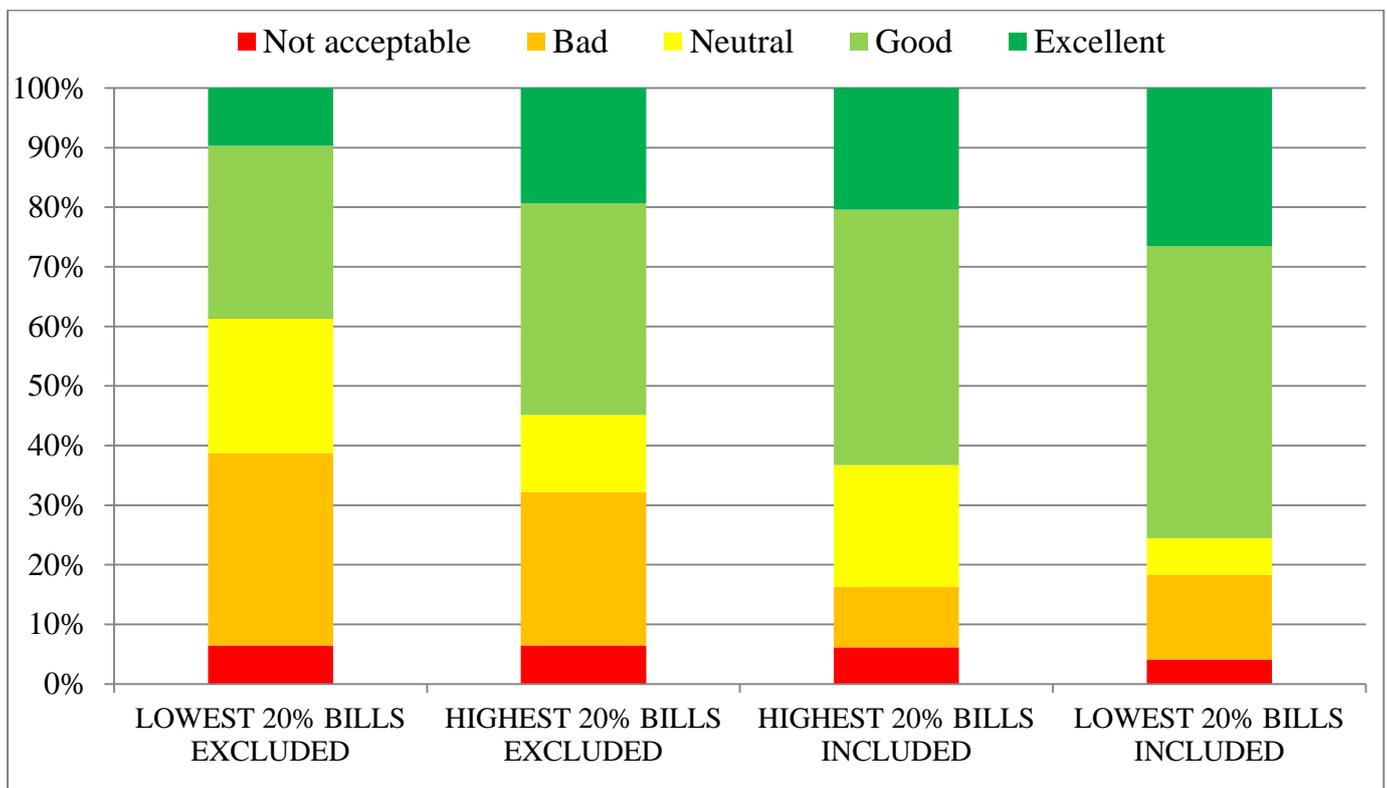
Figure 7.20 – The 20% Highest and 20% Lowest Energy Bills by Rental Type and by Dwelling Profiles



The average energy costs of the highest 20% rent exclusive and all-inclusive are respectively £53 and £39. In contrast, the means of energy expenditure for the lowest 20% bills excluded and included are £14 and £11. Figure 7.20 denotes that students living in PBSA/C-F account for one-quarter of the 20% most expensive energy bills, with a monthly average of £55. This chiefly concerns individuals residing in converted flat as the vast majority of PBSA in Loughborough offers all-inclusive deals. Besides, PBSA/C-F residents have the specificity to be made up by the smallest average household size (1.7 person per household) compared to the overall sample size's average (4.9 person per household) (n=701).

It has been argued in Section 7.4 that for tenants with excluded energy bills, the amount spent had an influence on the appreciation of the bedroom's temperature. Figure 7.21 presents the temperature ratings of the 20% of tenants that spend the most and the least energy expenses. It reveals that noticeable variations exist between the classes. The most adverse ratings are found amongst students that pay the least energy bills when these are excluded. Albeit the portion of students assessing their bedroom temperature as 'not acceptable' is similar to the other groups (6%), the share of temperature appraised as 'bad' is significant (32%). In contrast, this ratio diminished up to 14% for the all-inclusive 20% lowest energy spending. This expenditure class concentrates over two-third of positive temperature rating.

Figure 7.21 – Students' Ratings on Temperature in their Bedroom by Classes of Energy Expenditure



The least satisfied students with regards to the temperature in their bedroom are the ones spending the lesser amount of expenditure. This could mean that students would rather restrict their energy consumption to the detriment of an acceptable thermal comfort. In contrast, the distribution of the highest 20% bills excluded implies that approximately half of the respondents deemed the temperature to be ‘good’ and ‘excellent,’ although 26% have rated it as ‘bad’. As described in Figure 7.15, residents with the greatest energy expenditure are more likely to be content with their bedroom’s temperature. Nonetheless, Figure 7.21 shows that despite the consistent sums spent on heating up their bedroom, approximately one-third of the sample stated their bedroom temperature to be insufficient. This sort of frustration is reinforced in that the share of energy expenditure in the total monthly rent cost for these students amounts to 17%. This proportion is three times more important than for the three other classes.

Thus, amongst students that pay their energy bills separately, two trends emerged. On the one hand, a portion of tenants seems to make economic trade-offs in which heating up the bedroom to a sufficient temperature is not a priority. On the other hand, some residents with the highest monthly energy bills expressed a dissatisfaction gap between the amount paid for heating and the thermal comfort in the bedroom. These two trends suggest, once more, that a wide range of factors are involved in the analysis of students’ residential energy consumption and costs.

Figure 7.22 – Students’ Housing Satisfaction by Classes of Energy Expenditure

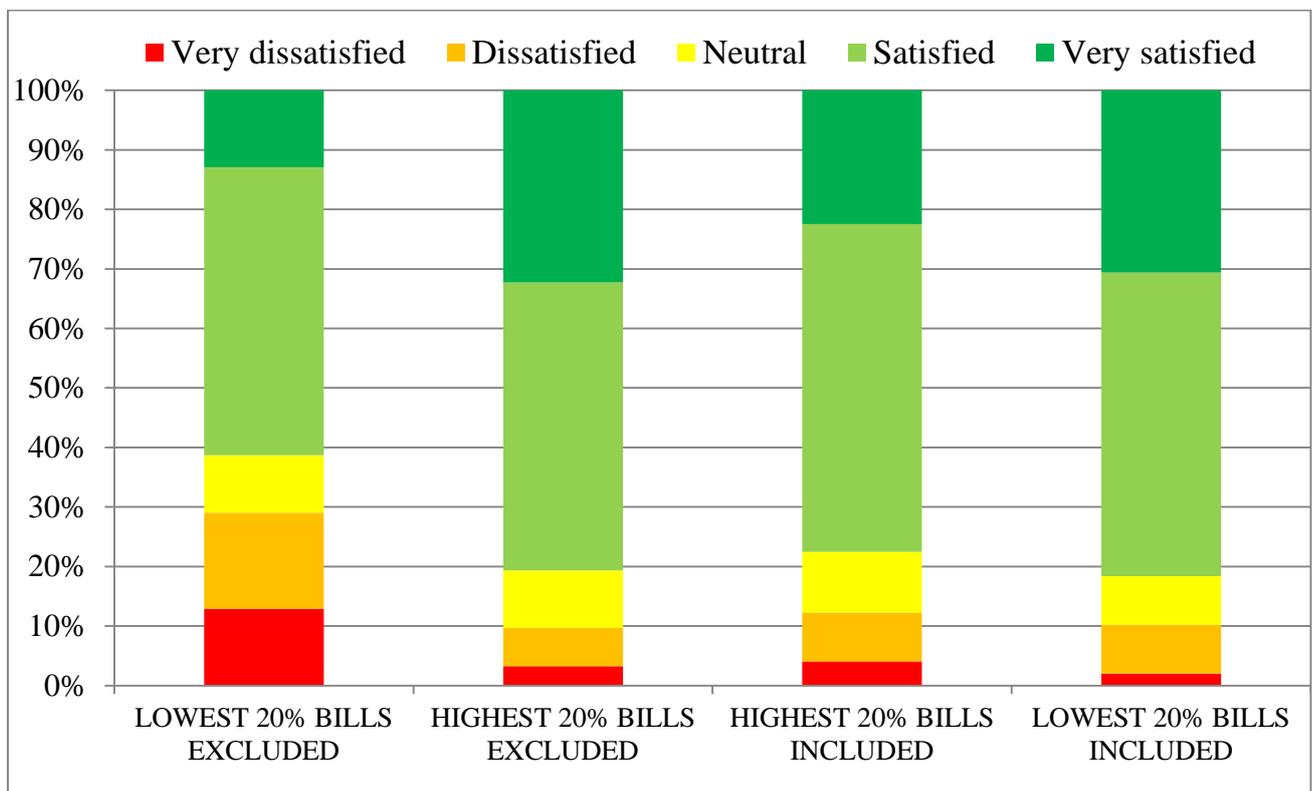


Figure 7.22 introduces students' level of satisfaction with their accommodation and in regard to their energy expenditure class. This bar chart designates similar distributions amongst three of the four groups, in which residents firmly expressed their housing satisfaction. Yet again, the sample of the lowest 20% of excluded energy bills show a greater variation. In this class, the share of students being 'satisfied' and 'very satisfied' amounted to 61%. For the same ratings, the other groups present an average of 80%. Consequently, students paying the 20% of the lowest bills separately from their rent have manifested a considerable level of disgruntlement: 16% are 'dissatisfied' and 13% are 'very dissatisfied' which for both cases is twice more than in the other classes. The relationship between temperature and bedroom comfort as well as satisfaction with accommodation, is sturdy as the first two variables explain 55% of changes in the latter. This infers that, for this specific group, if students have a limited appreciation of their bedroom thermal comfort, this will be reflected in their degree of contentment with their living environment.

Section 7.5 has identified the housing profiles of the 20% of students spending the most and the least amounts in energy expenditure. It also has brought evidence that, despite no relevant variations were observed amongst students with all-inclusive bills, significant discrepancies were discovered amidst residents that pay their utility bills on top of their rent.

7.6 Summary

This aim of the chapter is to evaluate students' energy consumption and cost and the ways they impact their living experiences. The combination of the physical and sustainability approaches is decisive to define the energy performance of an accommodation (Druckman and Jackson, 2008). Thus, the SDT embodies the first innovative study addressing the relationship between the energy efficiency of student housing and the residents' energy cost. The sustainability characteristics for each building category are examined, illustrating many environmental inequalities.

The findings report that terrace houses and converted flats are the last accommodation types equipped with single glazed windows, whereas almost the entirety of D and B housing stock have fully double glazed windows. As well, the analysis has proven that buildings' construction period epitomised the most robust predictor of the SAP score of an accommodation. As noted in Chapters 6 and 7, terrace HMOs are, at the same time, the oldest and the least efficient dwellings supplied to students. This finding is reinforced with the spatial homogeneity of inadequate housing in studentified streets of Loughborough. . In a concomitant way, the newest buildings

show an improvement of the energy performance through higher SAP scores, also distinguished in the EHS (DCLG, 2013). Although Macintyre (2003) points out that the supply of high quality student housing should be encouraged by universities as a powerful tool to attract new students, the overall low-quality of student HMOs does not however affect the extensive demand for these types of properties. It is, hence, possible to ponder what type of population, apart from students, would be inclined to migrate in these neighbourhoods, and whether the unfolding of studentification processes in draughty terrace houses can be interpreted as a residential phenomenon of environmental segregation.

Overall, students are excluded from the most sustainable dwellings on the local market (cf. Figure 7.3). HMOs providers expand the commodification of their products by often including the energy bills to the rent cost. Such deals were not apprehended in the literature over a decade ago (Christie *et al.*, 2002), most likely due to its scarcity. They have since been identified (see Hubbard, 2009) but their impacts in students' housing selection have not been previously studied. Hence, the share of energy bills inclusive is particularly high in M-T and S-D houses, which are the most supplied properties in the student market. Salient in student housing selection, the inclusion of energy cost in the rent price produces two major issues. The first one relates to the complexity of estimating energy costs and consumption. Accordingly, the identification and measurement of students living in FP are intricate. Basically, students can reside in the most inefficient dwellings on the market (e.g. SAP Band G, single glazed windows for the whole house, and deficient insulation) and not be recognised as fuel poor, as long as their energy bills are included in their housing cost.

This chapter has also stressed the quandary caused by the commodification of draughty HMOs. The second issue is articulated around the regulation of students' energy consumption. Because the utility bills are rent inclusive, residents do not, generally, control their energy uses. Although being 'hassle-free,' it has been demonstrated that students have accumulated a limited knowledge on ways to reduce their energy consumption. Pilkington *et al.* (2011) argue that improving education and awareness for sustainability would strongly motivate residents to adapt their energy behaviours without disrupting their lifestyles. This solution appears coherent, yet it would require intense efforts from the key stakeholders, such as the HEI, the LA, the landlords, and, of course, the students. Another repercussion of embedding energy bills in the housing cost is related to its aftermaths in individuals' residential career. Indeed, interviewed students are apprehensive of having to pay the energy bills once in the general market because of an obvious

lack of awareness about sustainability and the development of misconceptions regarding energy monitoring.

Even though HMO terraces are the least energy efficient types of dwelling, the highest energy costs have been detected amongst residents of PBSA/C-F and S-D accommodation. The analysis of individuals' energy cost also revealed that a sizeable portion of students may feel restrained about heating up their bedroom because of the accumulated energy costs, which could explain a more controlled and limited energy consumption. Bouzarovski *et al.* (2012) have reported similar conservation practices in their research on fuel poverty among young adults in HMOs in Birmingham.

The absence of relationship between the SAP rating of a dwelling and the monthly energy cost, when the bills are paid separately, confirm this statement. This signifies that the energy expenditure of an individual living in a property with an SAP score of 50 can amount from £20 a month up to £70. It has been affirmed that the correlation between individual floor area and energy cost was solely significant for residents in all-inclusive properties. In regards to tenants with bills exclusive, these two elements are not correlated, which contradicts the findings of Yohanis *et al.* (2008). The household size has also been proven as having a limited effect on the residents' energy cost. This suggests that students' manage their consumption in various and uneven ways. Lastly, the temperature and comfort in the bedroom can have, under some conditions, a solid influence on residents' degree of housing satisfaction. This is particularly the case for students that spend the lowest amount of energy costs, when the energy bills are rent exclusive. Nonetheless, it remains pressing to bear in mind individuals' perceptions of thermal comfort result of a mixture of physiological and psychological elements (cf. Milne and Boardman, 2000).

The following chapter examines the relationship between students' accommodation choice considering their social characteristics and their levels of income, expenditure, and debt.

Chapter 8

Socio-Economic Inclusion: Income, Expenditure, and Debt

8.1 Introduction

Along with the modern changes in HE characterised notably by the tripling of tuition fees, the provision of student housing necessitates adjustment to the constant evolution of student demand. Social and financial characteristics are becoming more sensitive in their engagement with student residential decision-making processes. In order to examine the effects of the socio-economic differentials of students on housing outcomes, the chapter is formed of five sections.

First, Section 8.2 presents the most decisive residential factors embedded in student housing choices according to the types of dwelling occupied. Section 8.3 evaluates the effects of social factors involved in student residential decision-making processes, such as their year of study and nationality. This part stresses the extent of student residential pathway from halls of residence to the PRS. Section 8.4 considers whether students' incomes are producers of diverse residential geographies, or if their impacts are more constrained. This part also distinguishes individuals' income by year of study and nationality. Section 8.5, analyses the relationship between students' sources of expenditure and their housing selection. Additionally, the substantial weight of rent cost in tenants' budgets and the adoption of a new indicator to identify FP in student properties are explored. Section 8.6 considers the extent of student debt by year of study and the ways it affects residents' housing choice. Finally, Section 8.7 reviews the key findings analysed in the chapter. By demonstrating the weight of financial variables embraced in students' residential experiences, the chapter contributes to the expansion of academic debates on the intricate interface of student housing demand and supply.

8.2 Student Residential Choices by Dwelling Profiles

This section presents the important housing criteria embedded in students' residential choices by the type of dwelling occupied by the respondents. This refers to the analysis performed in Section 6.4.

Students living in E-T properties highly praised their residential proximity to campus over their proximity to the town centre in their motives to reside in their current housing. Indeed, the former was weighed as 'fairly important' and 'very important' by respectively 34% and 51% of

the residents. Regarding the latter, it was assessed as 'fairly important' by 49% of residents and 'very important' by 23% of them.

With 78% of students occupying M-T dwellings located in the Golden Triangle, it takes, on average, 14 minutes to walk to their classrooms. This is reflected by the residential motives of these inhabitants, who highly valued the location of their accommodation as one of the most crucial element in their decisions. Indeed, the proximity to campus was regarded as 'fairly important' for half of the residents and 'very important' for 38%. Concurrently, occupants of M-T houses cited the proximity to the town centre to be 'very important' and 'fairly important,' 24% and 57%, respectively.

Students living in S-D properties were almost unanimous: the proximity to campus was assessed 'very important' and 'fairly important' for respectively 46% and 42% of them. On the other hand, the proximity to the town centre appeared to be less imperative: 45% deemed it as 'fairly important' but only 11% as 'very important'. One-fifth of these respondents considered it as 'not so important' in their residential motives.

All students in D properties equally rated the proximity to campus as 'fairly important' and 'very important,' which designates the most consistent views shared by the student population in the LSAS. Conversely, living in the heart of town is assessed as 'fairly important' for 55% of occupants of D houses, and only 10% stated it was 'very important'. Furthermore, one-quarter of the sample weighed this residential motive as 'not so important,' which can qualify it as secondary.

Thus, it can be argued that the location of the dwelling to campus and to town centre is salient in student residential decision- making processes, regardless the housing profiles.

8.3 The Social Factors Embedded in Housing Selection

This section considers the extent of social characteristics' dynamics embedded in student housing selection processes and experiences. Two social characteristics have been recognised as probable influential factors in housing selection processes: student's year of study and his/her nationality (i.e. UK vs. International students). On the one hand, it has been recognised in Section 2.9 that students' follow a residential pathway in accordance to their year of study, and the spatial knowledge and residential experiences accumulated over time. In particular, Smith and Holt (2007) and Hubbard (2009) have emphasised that the age/year of study are a salient component

in students' housing spatiality, nurtured by a diversity of residential motives, which reflects shaping lifestyles. On the other hand, domestic students have at their disposal greater housing choices such as living at parental home (see Holdsworth, 2006) compared to international students who are more likely to have a limited knowledge of the local housing environment and residential opportunities. Additionally, the shaping of students' new identities through housing choices is seemingly stronger for national students than for foreign students (cf. Smith and Hubbard, 2014). In this section, the hypotheses considering the production of diverse residential trajectories are also tested. Concurrently, they influence the various economic factors (i.e. levels of income, expenditure, and debt) analysed further in the chapter.

8.3.1 Residential Patterns and Year of Study

Prior to the emergence of student geographies in the late-2000s, research examining the relationship between transition to adulthood and student housing was relatively scarce (cf. Kenyon, 1999; Christie *et al.*, 2002; Holdsworth, 2006). The individual's age and year of study, which are strongly correlated, constitute the initial triggering of student residential pathway (see Morgan and McDowell, 1979; Ford *et al.*, 2002). Using the data encapsulated in Sample 3, Figure 8.1 shows the 'classic' residential pattern of students, as described in Section 2.7. The chart denotes the progressive residential shift from Uni halls to HMOs amongst UG (i.e. undergraduate) students. 94% of UG Year 1 candidates occupy university owned/maintained accommodation. The decline of UG Year 2 and Year 3+ populations in Uni halls, with respectively 42% and 19% of students, to the profit of the PRS, confirms the production of the traditional student pathway.

The ritual nature of living in Uni halls for the new HE entrants is hence confirmed in Figure 8.1. This housing domination is not a mere coincidence. According to Christie *et al.* (2002: 314), the presence of freshers on campus is nurtured by HEIs:

“Many universities seek to make available places in halls of residences or other university-controlled accommodation, particularly for young, 1st-year students.”

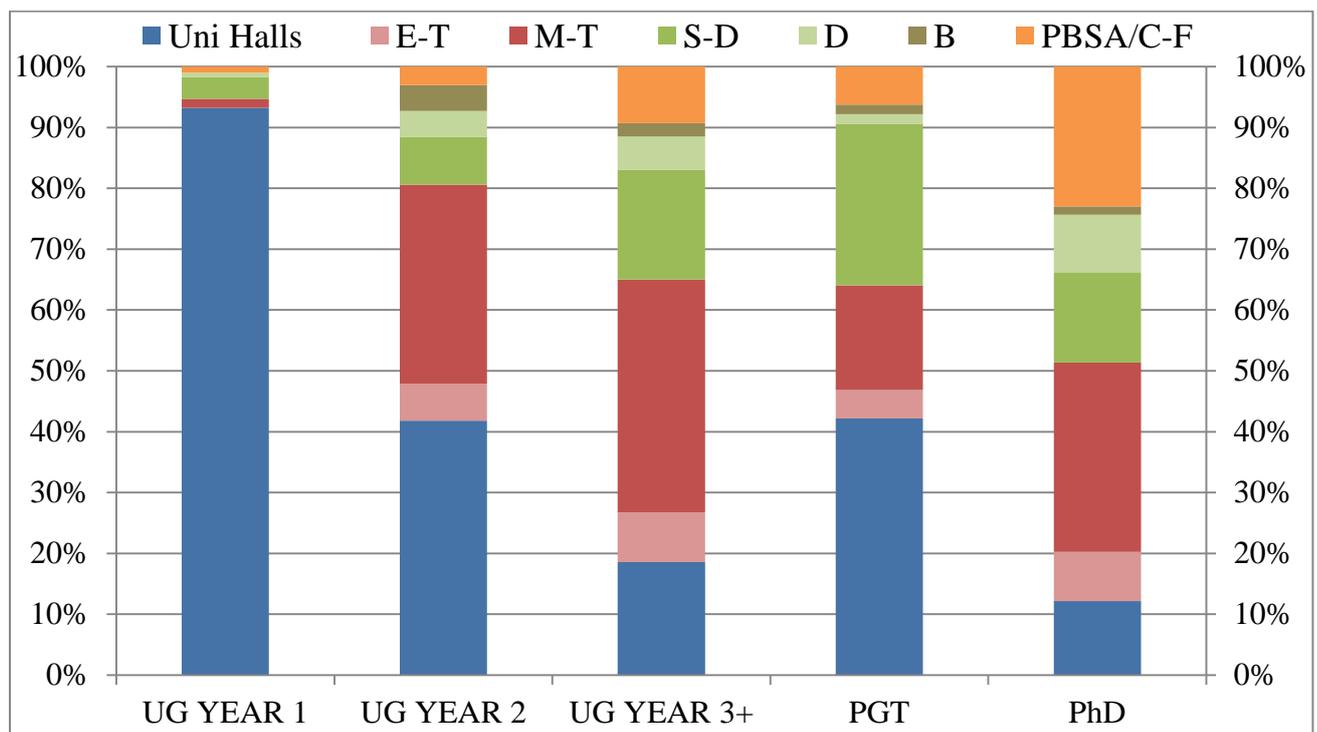
Being no exception to this housing policy strategy, LU guarantees to provide bedspaces available for all new UG Year 1 students. Undeniably, this partakes to attract freshers in one of the 15 university halls of residence, although some other significant elements are engaged in the residential choice mechanisms. The benefits for students to start their residential careers in HEI

accommodation have long been established (e.g. Robbins Report, 1963; Brothers and Hatch, 1971; Chatterton, 1999; Rugg *et al.*, 2004).

Forged by the profuse opportunities for social interactions, the fabrication of students’ social and cultural identity is intensified in Uni halls. The ‘hall experience’ defines the spirit of a residential *entre-soi* in which steps towards adulthood are learned and accomplished collectively. This ‘coping strategy’ (cf. Smith and Holt, 2007) facilitates the transition from the parental/guardian home to studenthood, where anxiety and home-sickness can occur. Thus, the maturation of a student lifestyle unfolding in Uni halls is a pivotal residential argument:

“I was looking into getting in private halls in my 1st year instead of halls of residence and it’s so much better getting into halls of residence because of the social life you get there.” (Kevin, HMO resident)

Figure 8.1 – Residential Distribution by Level of Study



Furthermore, LSAS’ participants were unanimous regarding the spatial convenience of having the accommodation and lecture buildings on the same site: 97% of domestic UG Year 1 students rated the proximity to campus as ‘very important’ and ‘fairly important’ in their housing selection. Thus, living in halls of residence appears to be the *sine qua non* for new HE entrants.

The selection of the on-campus accommodation incorporates diverse motivations. First, the hypothesis that parents/guardians had, to some extent, influenced the choice of Uni halls during

interviewees' fresher year was rejected. Respondents stated that they took the decision of what halls of residence to live in by themselves. Then, the survey analysis revealed that 94% of student assessed the quality/condition of the building itself as 'very important' and 'fairly important'. On the other hand, the housing cost was not perceived as a prominent influence, at least for most individuals. Lastly, the interviewees provided other specific criteria for deciding on the Uni halls:

"I picked it literally because it was relatively inexpensive; it was self-catering which it had to be for me. It just looked...I just felt that it was a good location for where I would be, compared to where nightlife would be and where my lecture and my entire academic life would be. It was just the best I guess." (Michael, HMO resident)

"Well, I didn't actually choose Telford. I was given it because I have diabetes. I was put into Telford. But I also chose it because I wanted to cook for myself. I wanted to learn." (Judith, HMO resident)

"First of all, it's self-catered. So that kinda ruled out Elvyn (Elvyn Richards, a Uni hall) and it was between Elvyn and Rigg-Rut (Hazlerigg-Rutland, another Uni hall) because they seem the two nicest looking halls, really. Robert Bakewell was a bit bigger, so it was my first choice and I got it." (Stanley, moving from Uni halls to HMO)

Therefore, the location of the halls on campus, the building's physical appearance, and the catering type are the key drivers in the housing selection processes of halls' residents.

The choice of the Uni hall in UG Year 1 is momentous as it will create a pool of social interactions and opportunities for the new residents. The quality of relationships and friendships established by a fresher with his/her peers has proven to be momentous in students' housing trajectory. They seemed to be aware of the production and unfolding of student housing patterns:

"It's traditional that you start your 1st year in halls of residence and then almost everyone moves out to find a house. That's how most people tend to play it..." (Michael, HMO resident)

In the research, all interviewees who lived in Uni halls and moved, or were about to move, to the PRS met their (future) co-residents through the same halls of residence they lived in. Coming to the second year of undergraduate studies, students have the propensity to move to the PRS, and most likely in terrace HMOs. Hence, 55% of UG Year 2 resides in the local housing market. The main reason to move from Uni halls to the PRS was:

“To be with my friends mainly because they didn't live...I didn't have a very good flat. When I say good, I wasn't living with any of my friends. So I wanted to live with my friends.” (Meredith, HMO resident)

Similar to Meredith's statement, 94% of UG Year 2 candidates who shifted from Uni Halls to the PRS cited that living with friends was 'very important' and 'fairly important'. This characteristic is as equally decisive as to live in proximity to campus. In total, UG Year 2 students were 86% likely to state that living with friends was an essential factor of residing in their current accommodation. The 42% of students who had decided to stay in Uni halls did it for two chief reasons. The first is the convenience to live in proximity to lecture buildings, as indicated by 95% of respondents. The second one is related to being surrounded by friends:

Kelly: “None of my friends wanted to move into a house last year. So I just stayed in halls. But next year, I'm moving to Meredith's house.”

Laura: “And none of my friends wanted to go to a house either so...I just stayed with them in halls.”

Thus, the extent of friendships stand out to be powerful leverage that can concurrently provoke students to move into the PRS, and also retain them in halls of residence for an additional year. The shift from on-campus accommodation to the PRS is even more accentuated in the UG Year 3+ population. Figure 8.1 demonstrates that the local housing market is a robust counterpart of the Uni halls, which only accommodate 19% of UG Year 3+ individuals. Contrarily, 72% of this population reside in the PRS and 9% have opted for PBSA. The key residential drivers for students in their final year of undergraduate studies to move out of the Uni Halls are various. Besides the requisite motive of living with friends, UG Year 3+ students are 90% and 89% to consider the proximity to campus, and the housing condition/quality to be respectively 'very important' and 'fairly important'. For want of containing numerous reasonably sustainable dwellings, the studentified area of the Golden Triangle appeals to students due to its spatiality:

“One of the reasons that the Golden Triangle is a popular place is because it is literally half way between town and campus. So you're very close to everything. So I guess when we were looking at the house that we wanted, and this house on Ashby Road which isn't far from the Golden Triangle is the one that suits us.” (Stanley, moving from Uni halls to HMOs)

Because this specific neighbourhood mostly offer terrace HMOs, students are ready to seize housing opportunities suitable to their requirements elsewhere:

“When we looked around we didn’t see like in the Golden Triangle. We just wanted to get it further out because it was a bit bigger. And we just wanted the space, really [...] people always say to me: ‘Oh you don’t live in the Golden Triangle? You’re so far away’. I’m like ‘No, it’s exactly the same distance. It’s just on the other side of campus’.” (Meredith, HMO resident)

“I don’t think it’s that important to live in that... I think people are just like because there’s more students. So going from halls, they’re not like missing out on the atmosphere too much but... I don’t think it’s that important.” (Laura, moving from Uni halls to HMOs)

All interviewees who lived in Uni halls asserted that it was globally a ‘great and fun’ experience. However, many conceded that their residential cycle on campus was coming to an end. The change of scenery and the house experience were relevant motivations for UG Year 3+:

“I like the change of scenery. I’ve lived in halls when I did my foundation year at a different university. And I’ve never lived in a house with like friends; I always lived with people I don’t know in a flat. So I decided that a house would be better for me.” (Sam, HMO Resident)

“Sometimes students between like 18 and 21, you kinda get fed up with and you want to be a bit more in reality anyway so... I guess living in town with a mixture of people is a bit more settling in times.” (Stanley, moving from Uni Halls to HMO)

The ubiquity of UG Year 1 students in Uni halls, accounting for approximately half of all residents, and the need of tranquillity to focus on their studies, cause the departure of UG Year 3+ students in the PRS and to a lesser extent the PBSA. 94% of students remaining in Uni halls considered that living on campus, and consequently being in proximity of the various services provided (e.g. library, lecture buildings, the Union, restaurants, and shops), was the most decisive factor. Additionally, students could often be part of the hall’s committee, which involves staying on campus.

Regarding the selection of the housing type, UG Year 2 and 3+ students seemed to not make any distinction whether a house is terraced or detached. Nevertheless, it has been stressed in Section 6.3 that D properties can, on average, host six residents. This makes it the dwelling with the highest number of bedspaces, which is of great importance if students aim to live with a large number of friends. All in all, because of the abundant supply of M-T HMOs, individuals are more inclined to reside in this housing type. This is the case for 33% and 38% of UG Year 2 and Year 3+ students, respectively. Half of UG Year 2 and Year 3+ students are aware of what an EPC, significant indicator of the building’s energy efficiency (see Section 3.6), consists of. It does not, however, influence their residential decision-making process. There are no

discrepancies with regards to the SAP score between individuals who know what an EPC is and those that do not. The extensive provision of energy inefficient housing in the PRS does not create many opportunities for residents to live in high quality accommodation. Reflecting this assessment, UG Year 2 and Year 3+ respondents who strongly valued the housing condition/quality in their residential motivations occupy dwellings with similar energy performance ratings than respondents that neglected this motive. Consequently, it is fair to assume that the PRS in Loughborough shows severe sustainability incompatibilities in regard to students' residential criteria.

During the qualitative data process, two opposite housing selection mechanisms were recognised. On the one hand, some participants often expressed the complexity of finding a suitable accommodation for every co-resident without compromising one's conviction and aspirations:

“Everyone got different views and opinions. Luckily I think with the house we have everyone was kind of happy to live there. It was most people number 1 favourite, not everyone's but then the people whose it wasn't their favourite are still happy to live there.[...] The main point [of discord] for me was the parking because I knew five of us wanted to use their cars and there were only two spaces. Again it wasn't something that completely put me off. There was (*co-resident's name*) he likes kind of oldie type stuff, so it almost looked too modern. He liked another house that was a bit further out because it had a bit more of a garden. But I think in reality it was as good and everyone else was just happy with our house.” (Stanley, moving from Uni halls to HMO)

Exemplified in this quote, individuals' needs and preferences are tangled in interplays of constraints, trade-offs, and agreements. One person's opinions are embedded in a collective decision-making mechanism. This unconventional housing choice perspective differs from other housing approaches noted in the literature (cf. Lindberg *et al.*, 1988; Timmermans *et al.*, 1994; Mulder, 1996; Rérat, 2012b), due to the formation of a household by several students. On the other hand, some interviewees reported that they preferred not to be involved in the housing selection, and delegated this task (or duty) to future co-residents. They solely intervened to approve or disapprove the housing opportunity:

“With me, I already knew who I was going to live with but I didn't do any of the searches basically. My friend... one of my friends, she was just in charge. She kinda knew what she wanted whereas I am not that fast. So we kind of all went to look at houses. And I just thought if I like it or not, as long as there's a bed and enough space, I'm not really that fussy.” (Sam, HMO resident)

This approach emphasises once more the role of friendships as a dominating apparatus in students' quest for accommodation. Although key elements involved in the housing decision-making processes are explored in this section, they are overshadowed by the weight of social interactions. They influence both the triggering of moving to the PRS and the housing selection. This pattern is rightfully summarised by the following statement:

“I would have rather lived in a horrible place with good friends rather than in a nice place with no friends.” (Meredith, HMO resident)

It is appropriate to reflect on how the provision of student accommodation in the PRS targets students. For many years now, housing suppliers have observed the residential patterns of UG students. Urban transformations tied to the unfolding of studentification processes have been profitable for most HMO landlords. With the ongoing uncap of MASNs, the student housing demand is more likely to increase within the coming years. If the accommodation strategies established by the university, the local council, housing developers, and other appropriate stakeholders do not effectively address the potential changes, new HE entrants will come down to move prematurely in the PRS. HMO landlords who have so far failed to penetrate the market of hosting freshers are in alert. Figure 8.2 illustrates the variety of arguments employed by private housing suppliers to adjust to the 'right type' of student demands.

Figure 8.2 – Advertisement for Student Accommodation in the PRS



Source: Author's photograph

Lastly, the housing selection of postgraduate students (PGT and PhD) is considered. PGT students (most of them being enrolled in a Masters programme) are residentially well distributed: 45% in Uni Halls, 42% in the PRS, and 7% in PBSA. The length of the programme (i.e. one year) and the abundant supply of on-campus bedspaces available attract them to Uni Halls. It is also interesting to remark that half of individuals in the local housing market have moved in S-D properties. This makes PGT candidates the second most represented group, after UG Year 3+ students, in this dwelling type. Residents in the PRS praised the rent cost as being the top residential motivation to live in their current housing: the entire sample rated as ‘very important’ and ‘fairly important’. Additionally, they seem a bit more flexible regarding the proximity to campus compared to PGT Uni halls residents. As for PhD students, 65% of them reside in the PRS, majoritarily in M-T properties, 23% in PBSA/C-F, and 12% in Uni Halls. It should be stressed that within PRS residents, there is a notable share of home-owners (14%) and 17% of PhD participants revealed to be living in a one-person household. Lastly, their presence in on-campus properties is often due to being enrolled as a sub-warden for the various halls of residence.

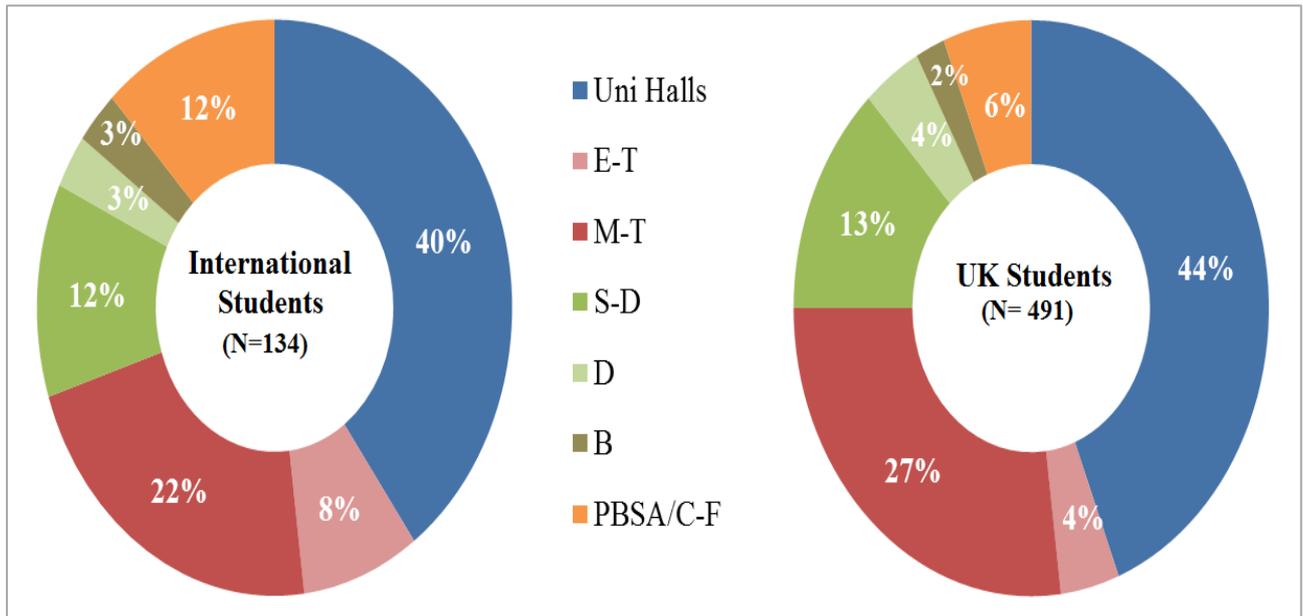
The following sub-section examines the effects of students’ nationalities on the housing selection processes with a particular focus assigned to PGT and PhD individuals.

8.3.2 Residential Distribution: UK vs. International Students

This section reflects on the housing type selected according to whether survey respondents are UK or international students. The latter includes all non-UK respondents (e.g. EU and non-EU citizens). Due to the great variety of nationalities in the LSAS, a cross-comparison within the sample of international individuals was deemed ineffective.

Figure 8.3 presents the breakdown of housing distribution by nationality category. One can distinguish the limited variations existing in housing choices between UK and international students. Their residential situation in the PRS is equivalent. The most notable discrepancy is situated in the PBSA/C-F market segment, with the share of international students being twice greater than for UK individuals. Meeting difficulties to attract UK citizens, private halls’ developers and operators strongly rely on their marketing strategy to bring international students in their properties. To illustrate this assertion, the website of Waterways, a PBSA development owned by Unite, is fully available in Mandarin. Such cultural distinctions could lead to unintentional segregation processes as observed in Melbourne by Fincher and Shaw (2009).

Figure 8.3 – Residential Distribution of UK and International Students



Looking at the big picture, it would seem that the nationality of residents does not have major repercussions on the housing demand. Yet, because of diverse social attributes and cultural background, it could easily be assumed that UK and international students use different rationales in their housing decision-making processes.

The analysis of the LSAS has highlighted strong dissimilarities in students' residential motives. The most significant relates to the weight of the housing cost in selecting their accommodation. This variable is carefully considered by domestic students, 35% and 43%, stating it to be, respectively, 'fairly important' and 'very important' in choosing their current housing. With regards to international students, the rent value does not appear to be preponderant as 49% assessed it as 'fairly important' but only 1% deemed it to be 'very important'. This can imply that non-UK students are willing to pay a higher rent. This is explored in Section 8.4.

By aggregating the scores as 'very important' and 'fairly important,' UK participants have two residential attributes beyond 90% of importance (i.e. proximity to campus and housing condition/quality). These two motives are the most influential in their selection processes; the third and fourth highest scores being the rent cost (78%) and living with friends (75%). The significance bestowed upon the proximity to campus and housing condition/quality suggests that UK students have some certainties, and as a consequence, an assured knowledge about the student housing market. Another argument can be attributed to the strong presence of freshers: 87% are UK citizens and amidst them, 95% live in Uni halls on-campus.

The other group, international respondents, expressed greater caution, which might indicate their unfamiliarity with the accommodation provisions. With respectively 87% and 85%, the housing condition/quality and proximity to campus embody the most crucial residential criteria. Living in a decent property in the vicinity of (or on) LU campus consists of pivotal components for UK and non-UK individuals housing selection processes. Besides, 57% of international students rated the proximity to campus as 'very important'. In third position of the motivation ranking, 70% of students admitted that having the utility bills included in the rent cost was a decisive factor in their decision-making processes. The 'hassle-free' advantages of rent inclusive energy bills are stressed in Section 7.3.

Differences in accommodation choices and motivations also emerge as the nationality variable is linked to the level of study. Unlike the UG population mainly constituted of domestic people (88%), the postgraduate population fairly combines UK candidates and international students (56%). The PGT population is characterised by a domination of international students (63%). Appealed by the short length of a Masters degree (one year) compared to abroad (in general 2 years), non-UK students have, however, the hindrance of being less familiar with the local housing market than their UK peers, especially if they obtained their UG degree overseas. On the one hand, Uni halls appear to be a cautious and secure residential choice. 60% of international PGT students have opted to live in halls of residence and amongst them, 46% live in ones that are located off-campus, such as Harry French and Forest Court. International PGT students living in Uni Halls were almost unanimous about the extreme importance of residing on-campus. The spatiality between housing and lecture buildings is highly regarded. On the other hand, one third of international students occupy PRS properties (S-D and M-T, 10% each), and less than 10% reside in PBSA. In contrast to the residential distribution of international Masters candidates, nearly all national PGT students lived in the PRS (84%). The most influential motive was the housing cost, assessed as 'very important' by 75% of the respondents.

Approximately half of the doctoral population is composed of international participants. Although some discrepancies in the residential choices were expected, the results indicate, *au contraire*, that UK and non-UK PhD students have a very similar housing distribution. It is formed by a solid presence in the PRS (circa 60-65%), around 23% in PBSA/C-F, and approximately 12% in Uni Halls. Unlike the PGT scheme, the length of doctoral study programmes (usually from 3 to 5 years) provides PhD students with more time and opportunities to become familiar with the accommodation supply. Whether the candidates are UK or non-UK

citizens, they hold similar knowledge of resources in the housing supply. This explains the solid similarities in housing motivations between the two nationality groups.

Thus, UK and international respondents have varying residential criteria. One of the main reasons is the lack of knowledge of foreign students about the spatiality and functioning of the accommodation market. Their housing selection can sometimes be carried out via Internet and through abstruse mechanisms:

“I think most Chinese students they will find their house on social media. It’s a social media called QQ, something like MSN before but in China. So there will have a society like to establish and give them advertising before you can connect with them. And then, you can find a house.” (Jim, Chinese student in HMO)

Non-UK citizens often decide on their accommodation without a viewing whereas domestic students possess more leeway to assess the housing provision and to adapt their aspirations. Although the extent of this inequality is striking, limited distinctions are observed in residential dwelling types selected between UK and non-UK students.

8.4 Student Income

This portion of the chapter assesses the impacts of students’ level of income in their housing decision-making processes. As well, the social attributes, explored in Section 8.2, year of study and nationality, are integrated in the analysis.

8.4.1 The Complexity of Measuring Student Income

It is pertinent to introduce few nuances in the assessment of student income as a measure of financial condition. First, although the SIES strongly relies on a qualitative data collection method by using face-to-face interviews and expenditure diaries, this method was ruled out for this thesis due to time and logistic constraints. Some of the issues perceived in the analysis of the LSAS are what can be translated as ‘non-monetary means’. This encompasses all non-financial contributions that benefit students’ financial conditions. One of the most established examples would be parents purchasing food for their offspring, or preparing meals on week-ends for students to take back to his/her student accommodation for the week. The researcher has observed such patterns in various countries (e.g. France, Sweden, and England) and has experienced it himself. Consequently, if the income section in the LSAS may fail to capture the amount and complexity of information collected, it gathers, nonetheless, reliable and crucial data

which contributes significantly to the understanding of the relation between financial conditions and housing choice.

Second, the Save the Student website (<http://www.savethestudent.org>), self-defined as ‘the number 1 student money website in the UK,’ compiled a list of ‘40 easy ways to make money quickly’. Although this list is far-reaching, it demonstrates the myriad of options for students to expand their income, without necessarily addressing the potential dangerousness of some jobs. Save the Student indexed income sources from answering online surveys, searching the web, mobile phone recycling, claiming tax back, being a medical guinea pig, selling course books, renting out car parking space, babysitting, dog walking and sitting, busking, selling personal stories to newspapers, and even selling private videos to entertainment shows (e.g. ‘You’ve Been Framed’ in the UK). This excessive inventory of income sources reflects on the substantial diversity of (legal) money earnings for students. Lastly, it is interesting to note that earning an income from a paid work only showed up at the 16th position whereas gambling and betting topped the list (see Save the Student, 2015). This latter source of income illustrates the desperate measures taken by students to raise money and improve their financial condition at the risk of creating an addiction (The Guardian, 2013d).

Third, it should be clarified that, despite optimising the response rate of LSAS’ participants, some individuals entirely (or partially) failed to answer the questions related to their personal income/expenditure. This signifies that some responses are incomplete as not all options were answered. Adding to the complexity of answering questions with a high degree of accuracy, it is fitting to point out that the data provided by students only reflects their financial situation at the time of the survey completion (between January 2013 to April 2013). Furthermore, it would be erroneous to assume that students with the highest income are the richest and on the opposite, students with the lowest income are the poorest. The LSAS’ data does not take into account participants’ personal savings, occasional incomes (e.g. money from birthdays or Christmas) or inheritances, which can imply that some students may have limited income while living in a comfortable environment.

Thus, the complexity and diversity of potential sources of income makes the analysis of students’ financial conditions more challenging. This also stresses the unsuitability of the LIHC indicator, discussed in Section 3.9, in the measurement of FP cases within student populations. As well, the data collected can only reflect the responses provided by students and may as well ignored financial and material intertwining mechanisms benefiting students (i.e. material support from

parents through providing meals, purchasing car petrol, clothes, transport card, house equipment, among other).

8.4.2 Income and Residential Distribution

LU students living in Uni halls earn, on average, £868 per month, which testifies to a significant statistical amplitude. Moreover, 25% of tenants in Uni halls have a monthly income greater than £1,200. Sources of this income are mainly constituted of student loans (39%), family/partner/friends (24%) and maintenance loans/grants (19%). Residents in PBSA/C-F have an average monthly income of approximately £1,000. Nearly half of this income originates from university scholarships and grants, and one-quarter comes from paid work. Economic support from students' entourage (family, partner and/or friends) only amounts to 12%. Concerning students residing in the PRS, the income value varies distinctly, with a statistical range of £2,460. Although the mean equals £834 a month, half of PRS residents receive less than £694 of monthly income. Certainly, these figures may as well exclude 'non-monetary means' as noted in Section 8.4.1.

In a similar way that it has been processed in the previous chapters, Figure 8.4 examines the monthly income by type of dwelling, notably within the PRS. The analysis reinforces that the level of income for PRS residents fluctuates in relation to the dwelling profile. For instance, all-inclusive residents in E-T houses experience a high level of income, with half of them earning £1,125 or more, whereas the median income for tenants with energy bills rent exclusive represents £800. The amount of paid work income for all-inclusive residents is five times greater than for students that pay their utility bills separately. This income discrepancy is complicated to decipher, especially when comparing with the income amount for students in M-T properties, which is equivalent. It should also be noted the hefty revenue range for S-D residents with utility bills excluded. For this category, income from paid work explains approximately one-third of the overall income.

The fluctuations of income levels emphasise the inconsistencies of students' housing distribution. Income inequalities persist at different scales: between and within housing types (Figure 8.4), and between and within areas (Figure 8.5). Once again, it should be stressed that the measurement of student income is as good as it is and that additional income sources could have possibly slipped through the data collection method. Consequently, nuances have to be brought up in any major key finding surrounding students' financial issues.

Figure 8.4 – Level of Income (in £ per Month) by Type of Dwelling

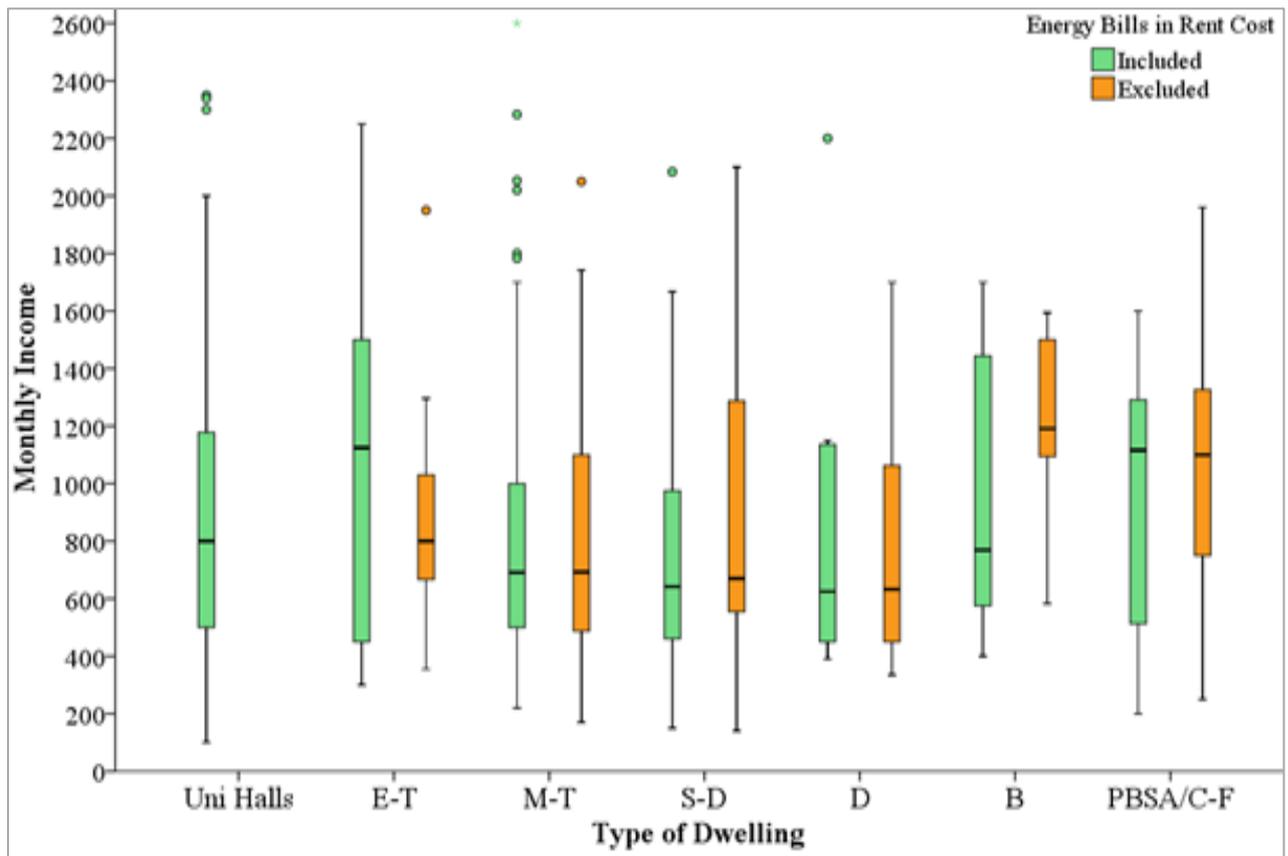
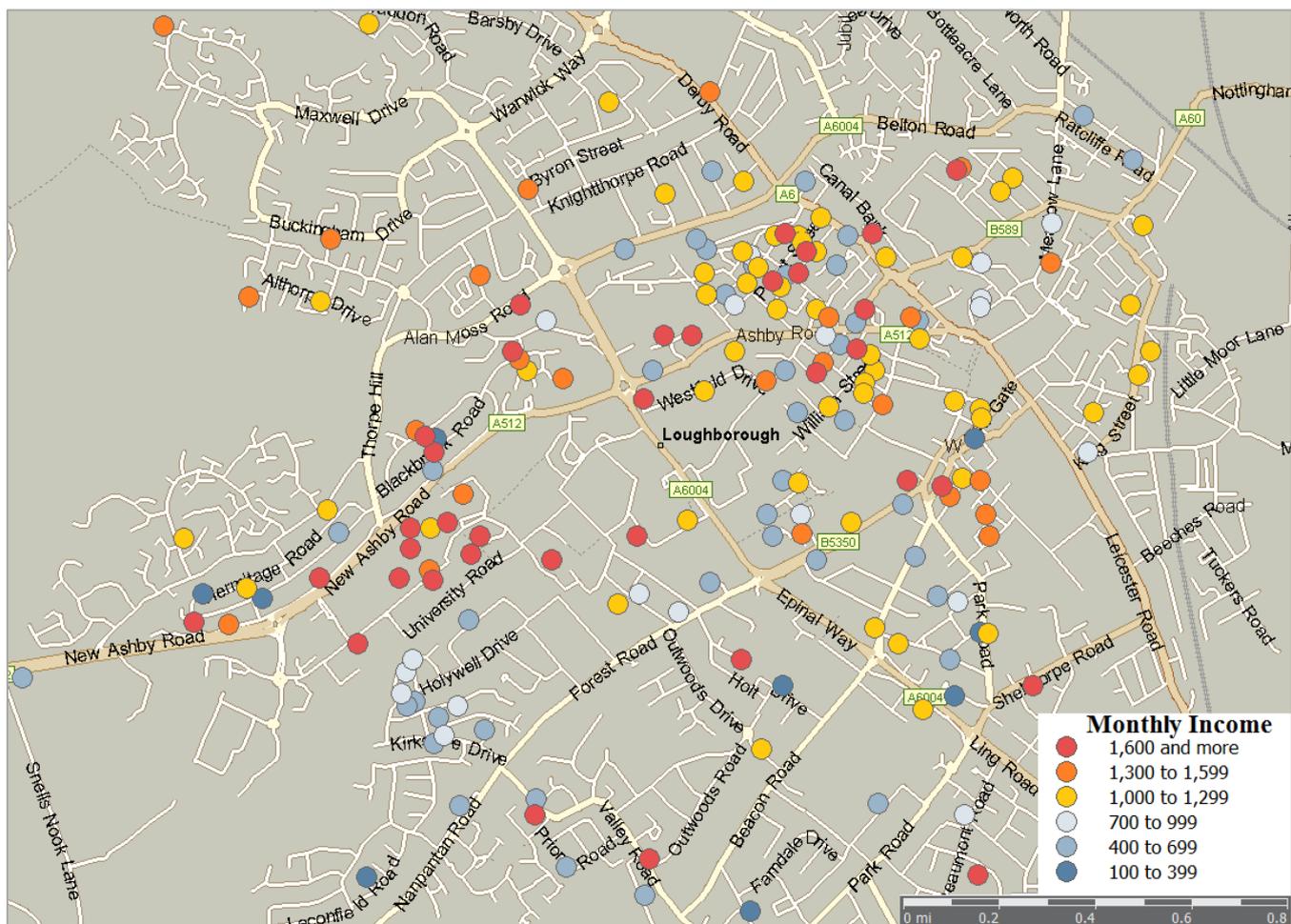


Figure 8.5 shows evidence of a spatial mix of income levels. There are no spatial separations produced by the amount of monthly income earned by students. Epitomising the diverse geographies of student financial resources, individuals with the highest levels of income are mixed in the Golden Triangle area with residents having the lowest incomes. Yet, it is interesting to realise that south of the campus, in the Forest Road North and Holywell Drive area, there is a significant concentration of low-income residents in HMOs. As indicated in Figure 8.4, residents in on-campus Uni halls dispose of high levels of income, principally issued as student loans. According to the analysis in Section 8.2.1, most of these students will move into the PRS within the following two years. This in-migration process will contribute to reproduce a cyclic residential mismatch where studentified streets accommodate students with the highest and the lowest incomes. Thus, students' amount of income is not spatially reflected in their residential choices.

Figure 8.5 – The Geographies of Student Income (in £ per Month) by Postcode



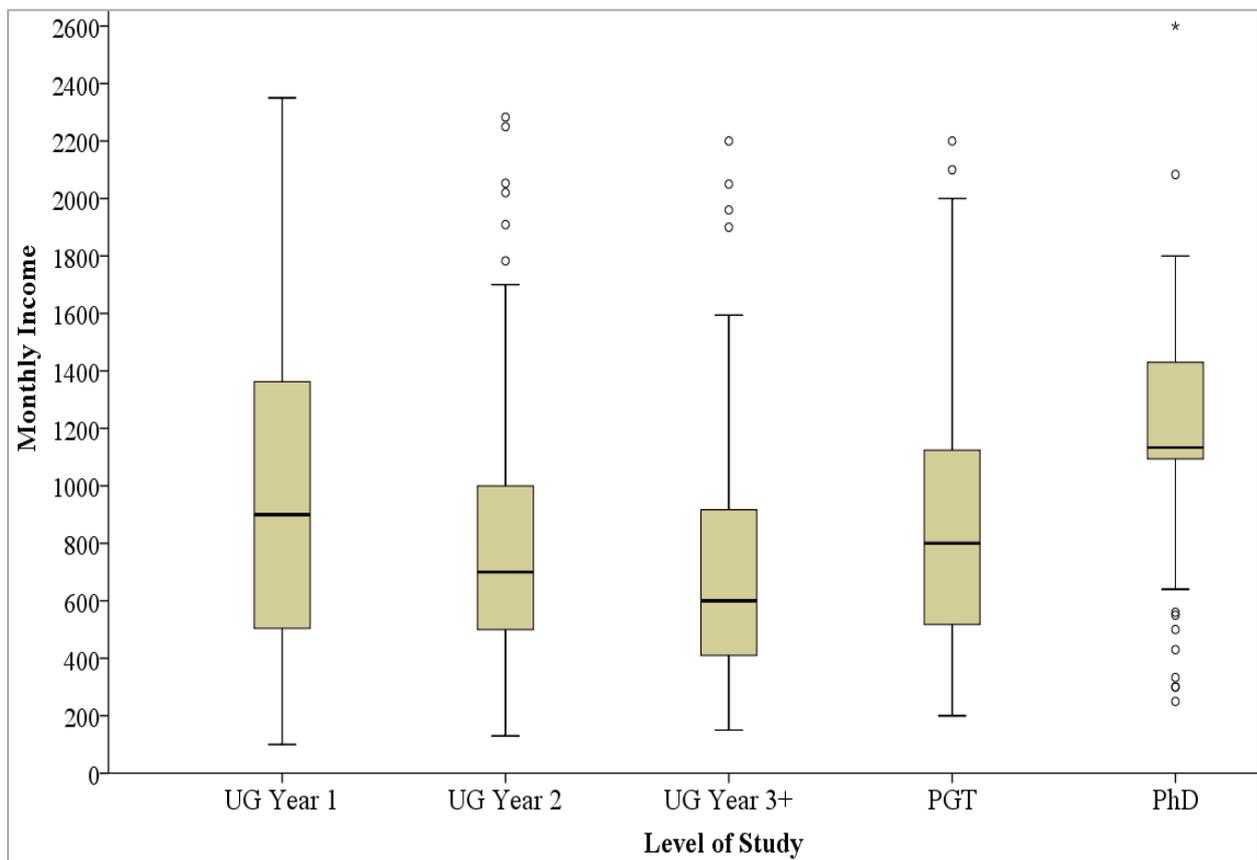
Income variations are also observed within the same household. As reported in Section 8.2.1, living with friends is a pivotal residential motive, notably for the UG population which includes 78% of the LSAS Sample 3. Therefore, students do not choose who to live with based on having comparable levels of income, but rather on how solid their relationships are. On the flipside, living with friends can exacerbate income inequalities within the household. For instance, low-income students may feel coerced to accept a barely affordable accommodation in order not to compromise his/her relationships with future co-residents. This socio-residential conundrum deserves to be investigated in further research.

8.4.3 Income and Level of Study

The level of income varies depending on students' level of study. If it is widely espoused in the literature that UG students commence their residential experience in halls of residence (see Section 2.3) then, gradually, move off-campus to the local housing market, the role played by students' income has been the object of limited investigations.

Figure 8.6 displays the variations in students' monthly income with regard to their level of study. Due to their advanced ages (compared to the majority of freshers) and higher qualifications, PhD candidates have an average monthly income of £1,175. University scholarships/grants account, on average, for 76% of this income, and equal £1,080 per month. The remaining share of income is the remit of paid works. With a mean revenue lower by one-quarter compared to the one for PhD candidates, PGT students have an average monthly income of £891. Approximately half of this amount originates from the family sphere. This is the class of students with the strongest family economic support. This can be explained by the short length of a study programme (in most cases a year for a Masters degree) and *ipso facto* that about two-thirds of the PGT students that participated in the survey were non-UK student. This characteristic is reflected in their housing choice, as discussed in Section 8.3.3.

Figure 8.6 – Level of Income (in £ per Month) by Level of Study



In spite of a great statistical range, the median income of freshers is tantamount to £900 a month, with one-quarter of students receiving at least £1,350 per month. The steady decline of income between UG Year 1 and UG Year 3+ is symptomatic of a financial worsening amidst a large share of the UG student population. Between UG Year 1 and UG Year 3+, students' mean income diminishes down to £254 a month. The difference is equal to one-quarter of the initial income. To

understand the reasons of this economic deterioration, it is well-suited to identify a reduction of income originating from student loans by 16% between freshers and ‘finalists’. In order to compensate for this income gap, paid work earnings are five times heftier. They constitute 21% of the monthly income of UG Year 3+ candidates. Students find it more difficult to balance paid work and study, so one does not encroach upon the other. Consequently, the amount of wage from paid work cannot be extensive:

“You can have a job at the university but certainly in your final year, you do have a lot of important work that all counts strongly towards your final degree. You can’t find yourself working hard (...) As a student, you don’t have enough time to make enough of an income to really give yourself much. Alright, you’re able maybe to afford your weekly shopping with a part-time job, but it’s never gonna be more than that.” (Michael, HMO resident, finalist year student)

The sporadic nature of such jobs characterises, firstly, an additional and practical economic gain. Although the amounts earned are not substantial, they can secure some reasonable expenditure categories such as monthly gym memberships, mobile phone bills, internet costs, or energy bills. Second, temporary works (e.g. student guide for on-campus tours) give students some leeway to decide whether they need the revenue or whether they have time to work, on top of their academic work load. The importance of combining studies and paid jobs requires that the latter should be adjusted to the former:

“If you have a job, you need a flexible job.” (Judith, HMO Resident, Finalist Year student)

Hence, student jobs can be a significant source of complimentary income for students, although they are insufficient for students to completely depend on it. Some of the interviewees struggled to perceive that even earning a limited amount through paid work should be considered a source of revenue:

Judith: “I do tours of the campus, to get £30. But that’s just like whenever...”

Michael: “It’s definitely a job, you’re a student guide...”

Judith: “Some weeks I can do it, some weeks I can’t. It’s up to me to choose.”

Kevin: “I do that as well but that’s only 5 times a year.”

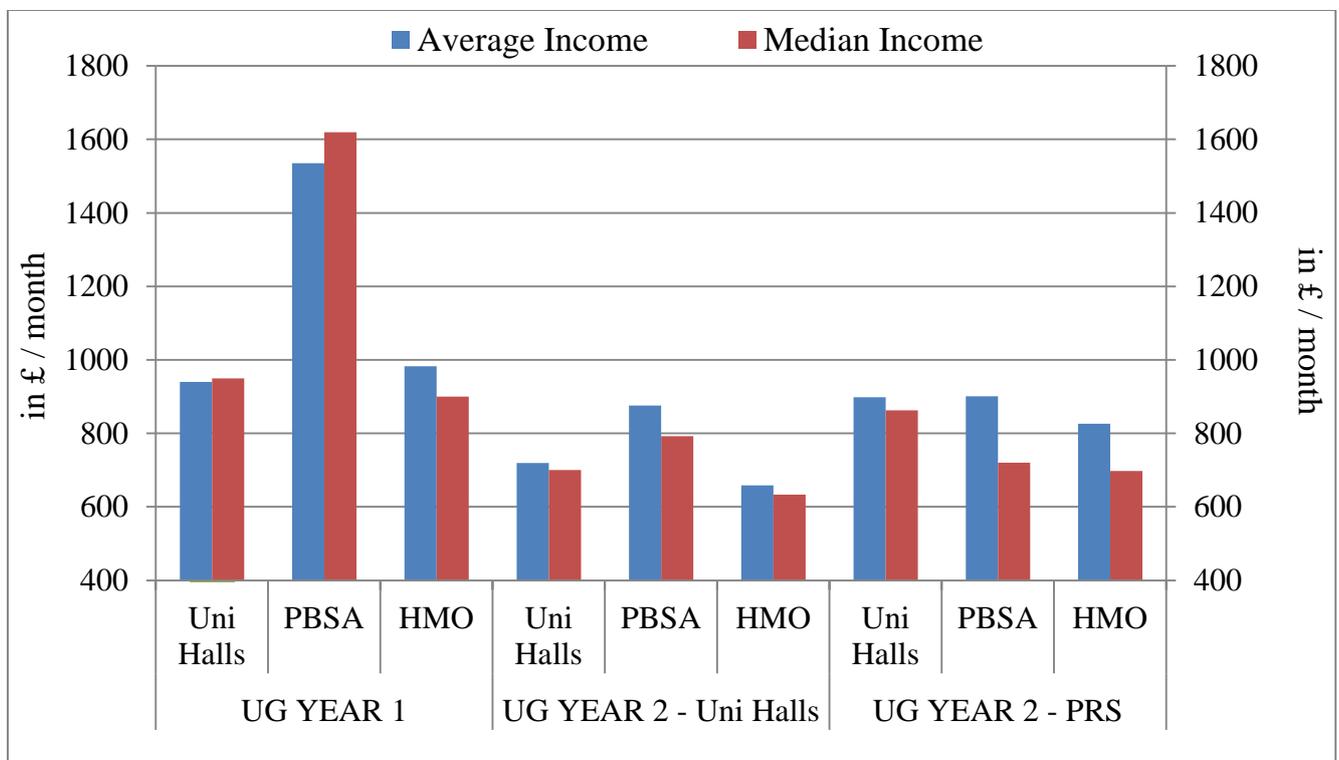
Judith: “That’s only for going out, that’s not money for rent.”

Concurrent to a marked income reduction between freshers and finalists, students’ residential shift from on-campus accommodation to housing in the PRS is firmly unfolding. Pointed out in

Section 8.2.1, living with friends is a *sine qua non* for moving in HMOs. Nonetheless, students' income has the potential to influence student housing preferences.

For instance, 37% of the fresher population have stated their preference of staying in Uni halls for the academic year 2013/2014. On the other hand, 54% indicated their inclination for living in HMOs and 3% for PBSA. Figure 8.7 demonstrates that students willing to stay on-campus and those that would prefer to move in the PRS have a comparable average and median income. This is not the case for the confined group of freshers that is motivated to live in PBSA, as their mean income equals £1,535. Hence, despite its limited size, students interested in living in private halls receive the highest amount of income monthly. Figure 8.7 also illustrates the housing preference of UG Year 2 students residing in Uni halls and in the PRS. In the former, 28% would rather stay an additional year in halls of residence whereas 61% are more prone to moving into a HMO. *De novo*, the 5% of students who desire to move to a PBSA dispose of the highest level of income. Students preferring to stay in Uni halls and individuals favourable to shift to the PRS have commensurate average incomes, respectively £719 and £659. One can observe, however, that their earning level has significantly reduced since their fresher year.

Figure 8.7 – Housing Preferences for 2013/2014 and Level of Income of UG Year 1 and 2 Students



Finally, PRS residents in their UG Year 2 are a vast majority (73%) willing to pursue their residential career in this housing sector. With an average monthly income of £898, 12% of HMO

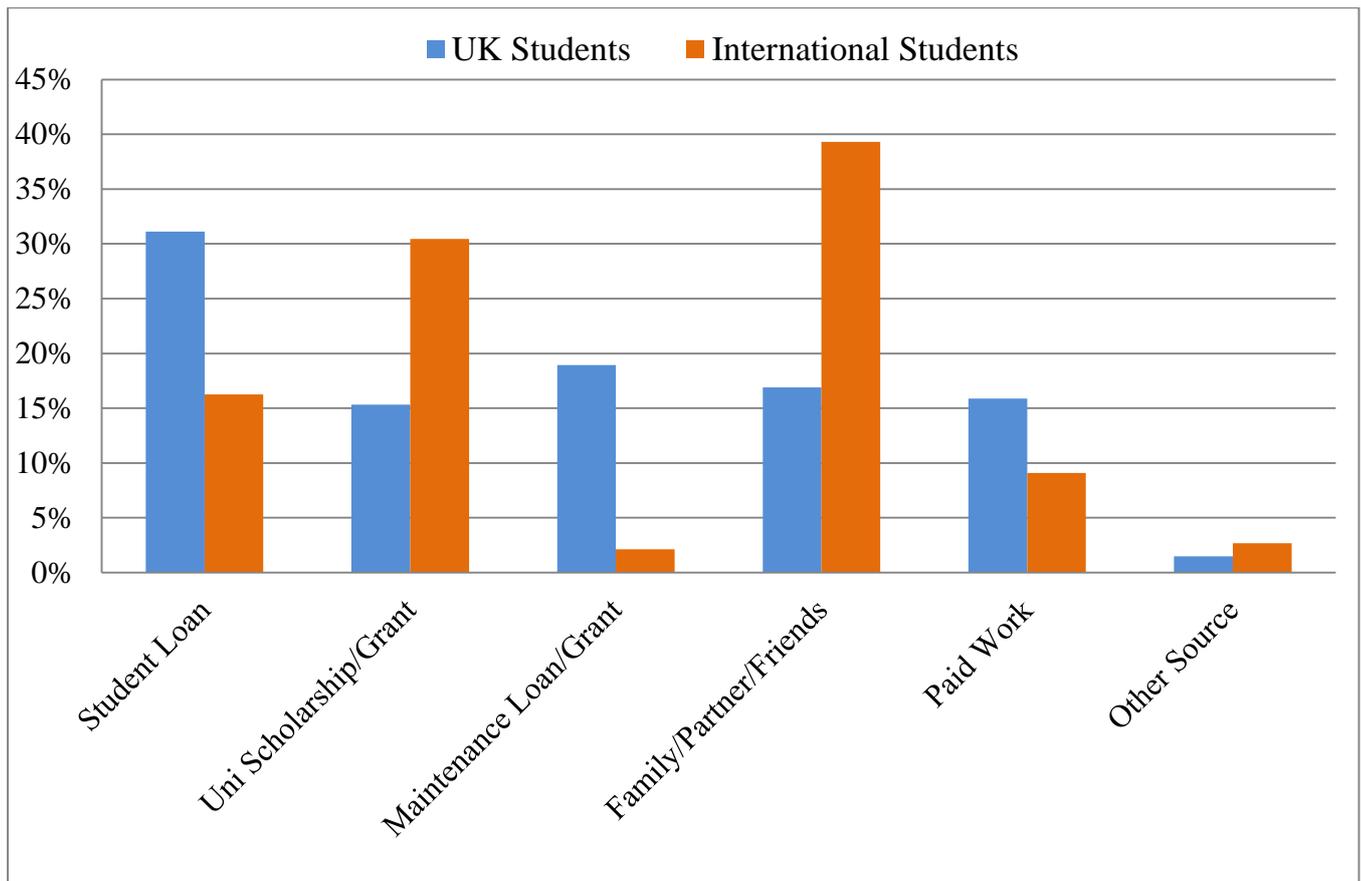
residents would prefer returning in Uni Halls for their final year. The rationale behind this retrospective residential move remains uncertain. Lastly, it is interesting to note that HMO tenants have, on average, a greater income (£853) than UG Year 2 living in Uni halls (£719), although their median income is identical (£700). In both groups, the shares of income from the various sources are alike, with the exception of paid work which contributes to 14% of the HMO residents' income, compared to Uni halls students (5%).

It is clear that the level of income affects, to some extent, the propensity of UG students to move from Uni halls to HMOs. Students more inclined to move in PBSA have the highest income mean. Contrarily, respondents preferring to move (or stay) in HMOs hold the lowest average income. Thus, this sub-section has demonstrated the variations of the sources and levels of income according to students' year of study and the repercussions in housing selection. The following part compares the level of income depending on students' nationalities.

8.4.4 Income and Nationality

Students' nationalities have supposed effects on their level of income. Because of access to some financial resources (e.g. maintenance subsidies) restricted due to migration policies (e.g. non-EU students with a Tier 4 Visa are forbidden to work more than 20 hours per week), the origins of domestic and international students' incomes are diverse. Figure 8.8 breaks down their incomes by sources. It notably discloses that amidst UK participants, one-third of their earnings come from student loans; this is twice more than for foreign students. Additionally, non-UK citizens are much more dependent on university scholarships/grants (chiefly because of PhD candidates) and family/partner/friends. The latter forms the most notable income contribution, up to 39%. This is much greater than what UK students get from their entourage. It therefore exposes how international students' financial situations strongly depend on other people's incomes, whereas national HE participants do not as prevalently. Although their incomes are structured differently, UK and non-UK students have almost identical levels of income, with respectively £878 and £882 per month. Thus, the earnings of domestic students do not vary at all compared to international students' income.

Figure 8.8 – Income Sources of UK and International Students



The next sub-section investigates potential residential differences between LSAS’ respondents with the 10% highest and 10% lowest incomes.

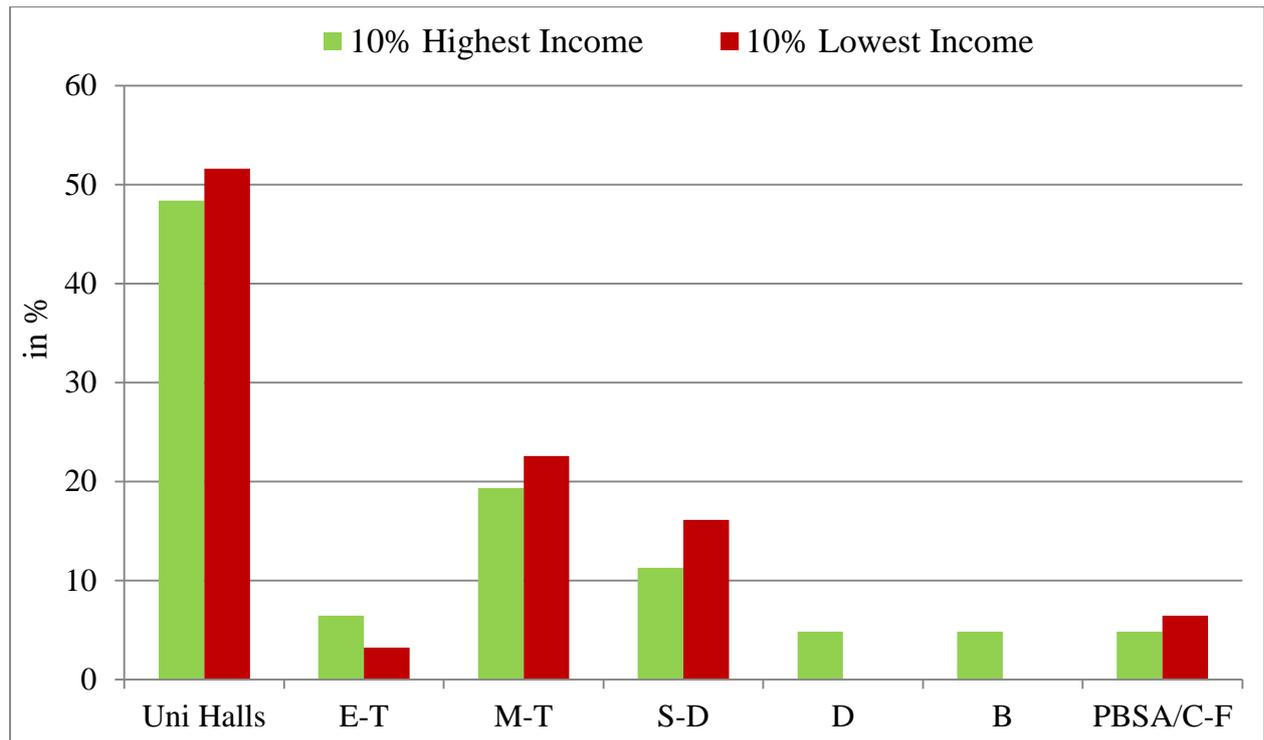
8.4.5 Housing Situation of Students with the 10% Highest Incomes vs. the 10% Lowest Incomes

It has been recognised in the literature body that income inequalities are mirrored in individuals’ neighbourhood selection and housing choices (see Durlauf, 1996; Ioannides, 2004; Watson, 2009). This section explores the extent of students’ monthly earnings affecting their residential distributions and accommodation criteria. The analysis is performed by focusing on residents with the 10% highest and 10% lowest revenues, which equals 62 people for each category. It should be remarked that whilst UK students cover 78% of the entire Sample 2, they account, respectively, for three-quarters and 83% of individuals with the 10% lowest and 10% highest earnings.

Figure 8.9 captures the housing choices of students with opposite incomes. One of the most crucial information is that residents are similarly distributed within the three housing classes: Uni halls, PRS, and PBSA. Halls of residence, concurrently, confine students with the 10% highest

income, 74% being UG Year 1, and a majority of individuals with the 10% lowest earnings, composed by 41% of freshers. Across Uni halls, 11% of residents with the 10% highest and lowest revenues live in Rutherford, a catered hall located in the Student Village. Although considerable income inequalities exist amongst residents in Uni halls, they do not alter individuals' choice to live on-campus.

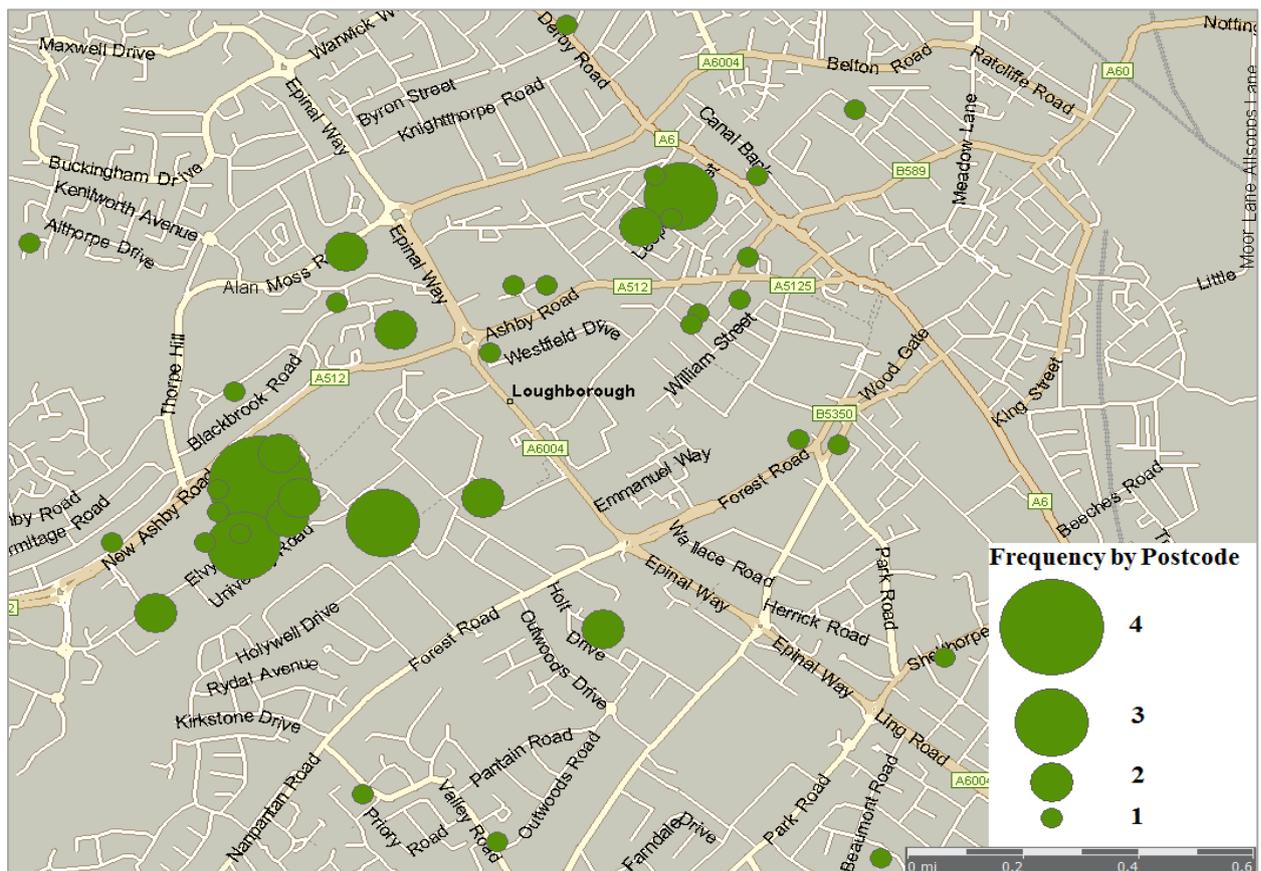
Figure 8.9 – Residential Distribution of Students with the 10% Highest Incomes vs. the 10% Lowest Incomes



In terms of residential motives, the hypothesis of students with the 10% lowest revenues prioritising accommodation attributes linked to economic scope (e.g. housing cost and energy bills rent inclusive) was brought forward. This assumption was, however, rejected. *En effet*, this group of students have assessed the proximity to campus (93% ‘very important’ and ‘fairly important’) and the housing condition/quality (92%) as their highest ranked criteria. The rent cost (78%) and the inclusion of energy bills (75%) were assessed as less imperative than living with friends (84%). Nonetheless, 87% of the sample had the utility bills included in the rent, which is slightly higher than for individuals with the 10% highest income. In this group, housing condition/quality (95%), and proximity to campus and town centre (92% each) were the most highly rated housing features. On the opposite, living with friends (64%) was not regarded as a priority by respondents.

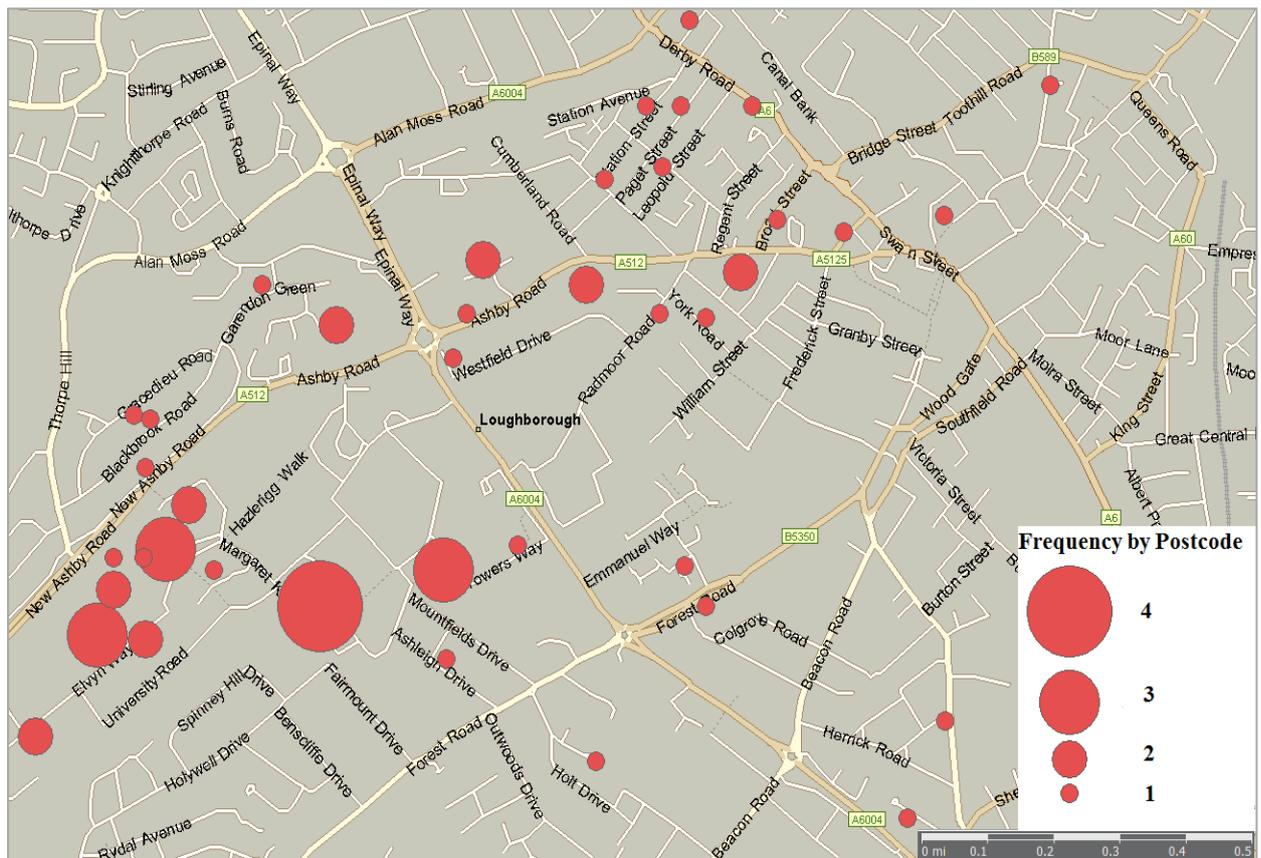
Figures 8.10 and 8.11 emphasise the residential geographies of students with the highest and the lowest revenues. One can remark in Figure 8.10 that the spatial distribution of residents with the 10% highest income is clustered. Seemingly, the separation between Uni halls and the PRS is visible. Within on-campus properties, most students with the greatest monthly earnings dwell in the Student Village. In the private sector, they are chiefly concentrated in the Storer and Burleigh areas, and sometimes within the same postcode zone.

Figure 8.10 – Residential Distribution of Students with the 10% Highest Income



On the other hand, Figure 8.11 indicates that the spatial distribution of respondents with the 10% lowest income is more dispersed and rarely encompasses more than one PRS resident by postcode. Furthermore, the lowest income students are dwelled within shorter distances to the LU campus than students with the highest revenues. This infers that commuting means and distances are not a residential obstacle for individuals with extensive income. Besides, this suggests that the residential spatiality of the 10% lowest income candidates is motivated by the proximity to campus. This assumption has been confirmed previously, while examining students' residential motives.

Figure 8.11 – Residential Distribution of Students with the 10% Lowest Income



The hypothesis that respondents’ level of income was associated with the energy performances of their dwellings was also taken into account. The mean SAP scores of dwellings occupied by students with the 10% highest and 10% lowest incomes are alike. The SAP score distribution of individuals with the most income is characterised by 13% of residents in Band B, and 9% in Band F, which is three times greater than for residents with the lowest earnings. 79% of this group is condensed in housing rated Bands D and E. As limited discrepancies emerged from the two groups, the income inequalities are not visible in student housing’s sustainability quality.

Thus, Section 8.3.4 has analysed the effects of income dynamics on neighbourhood selection and housing choices. Together, students with the 10% lowest and highest income have a similar housing distribution. University halls of residence symbolise this income mixing. Furthermore, no spatial fragmentations have been recognised within these two cohorts, as the income mixing also unfolds within the same neighbourhoods and streets (e.g. Paget Street and Leopold Street). Overall, regardless of their income amount, students’ accommodation demands are met within the same areas, same streets and possibly under ‘the same roof’. Consequently, income inequalities in student population produce original residential geographies from what is observed with other household types in the general population.

Although being a solid indicator of students' financial conditions, the level of income should be put in comparison to the level of expenditure. It was emphasised during the interviews that levels of expenditure and income do not necessarily synthesise the actual economic situation in which students developed. It was specified, for instance, that monthly rent cost can be paid in advance, which is not reflected in the survey. The following section evaluates the effects of expenditure differentials on housing outcomes.

8.5 Student Expenditure

This section scrutinises students' expenditure and its variations within residents housing types. Particular considerations are conferred to the years of study, discrepancies within rent, geographical distribution, and the weights of housing cost and energy bills in relation to residents' levels of expenditure.

8.5.1 Expenditure and Residential Distribution

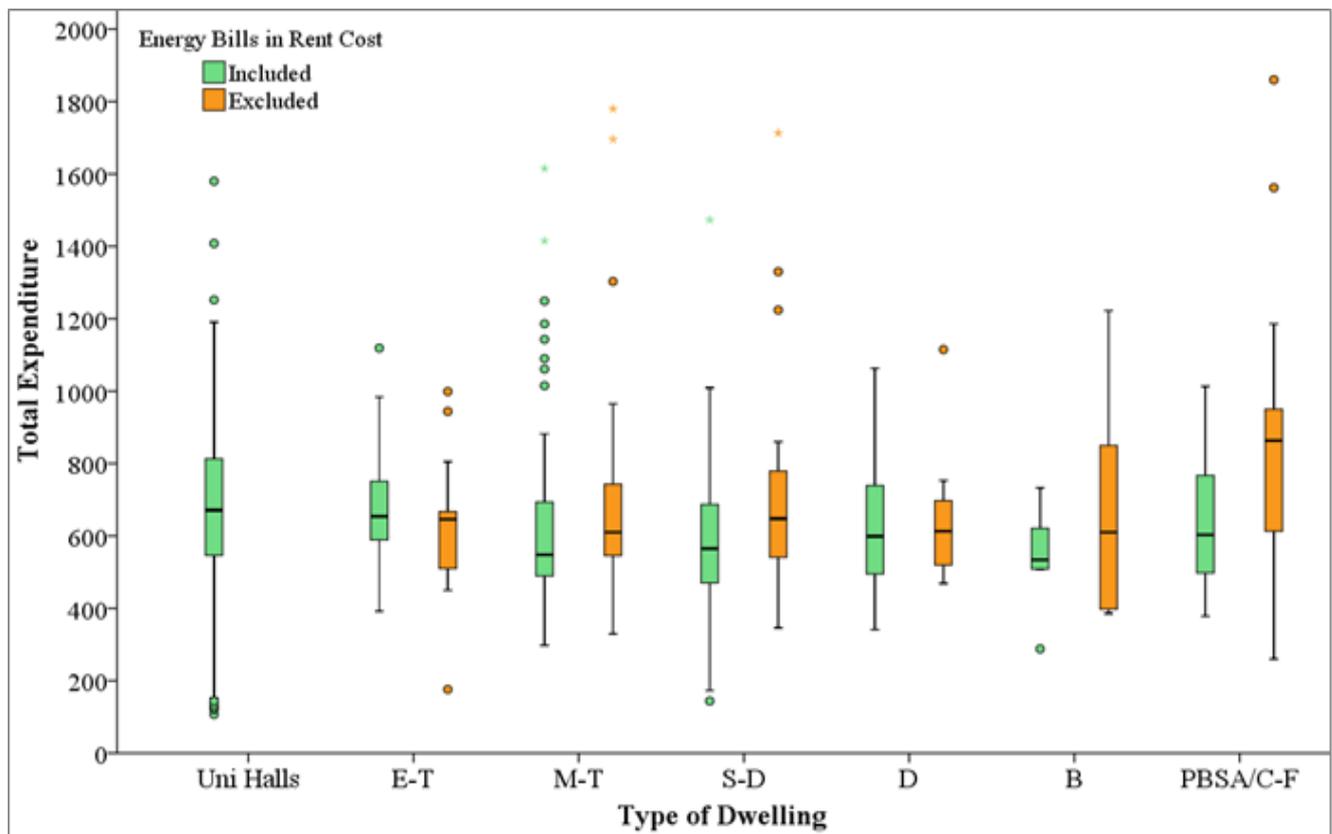
In this section, students' monthly expenditure is analysed according to the type of dwelling respondents live in. Figure 8.12 shows the inequalities in monthly spending depending on their housing choice. Uni halls residents demonstrate the greatest amplitude of expenditure with individuals spending less than £200 up to £1,600. Restrained levels of expenses have been observed in other dwellings such as E-T and S-D. The examination of this irregularity was considered in the qualitative data collection process. Asking the interview participants about the monthly rent cost of their accommodation, some responses shed the light on developed economic strategies for students to alleviate their expenditure:

“I think it's £85. But I paid it all upfront, last year. So I've never had to worry about money at all this all year. And because bills are included, I didn't have to pay anything since last July.” (Meredith, HMO resident)

Similar patterns are most likely established in halls of residence in which the accommodation cost can be paid under various regimes (monthly, quarterly, termly, or annually). Rental cost in university dwellings also includes utility bills such as energy and internet, and can also be comprised of food (for catered halls). Hence, individuals paying their accommodation cost in advance can assert to having limited monthly spending. In addition, one can postulate that students' parents can financially participate, to some extent, in the payment of the rent, especially amongst freshers living on-campus.

Figure 8.12 also points out that PRS and PBSA/C-F residents with energy bills excluded in the rent cost have, in general, greater monthly spending than individuals that opted for all-inclusive packages. LSAS respondents with utility bills rent exclusive in PBSA/C-F have an average expenditure of £855 a month, which is £210 more than their counterpart with all-inclusive bills. This significant disparity is partially generated by the sizable share of residents living with their partner/spouse (without children) up to 36% compared to none for the beneficiaries of all-inclusive deals. Students living with friends/flatmates have 14% less spending than individuals occupying an accommodation by themselves. Student households formed of 3 people have the lowest monthly expenditure (£583 per month). Moreover, students with a partner/spouse and children are the student household structure with the highest amount of expenditure with £1,164 a month.

Figure 8.12 – Total Expenditure (in £ per Month) by Dwelling Type



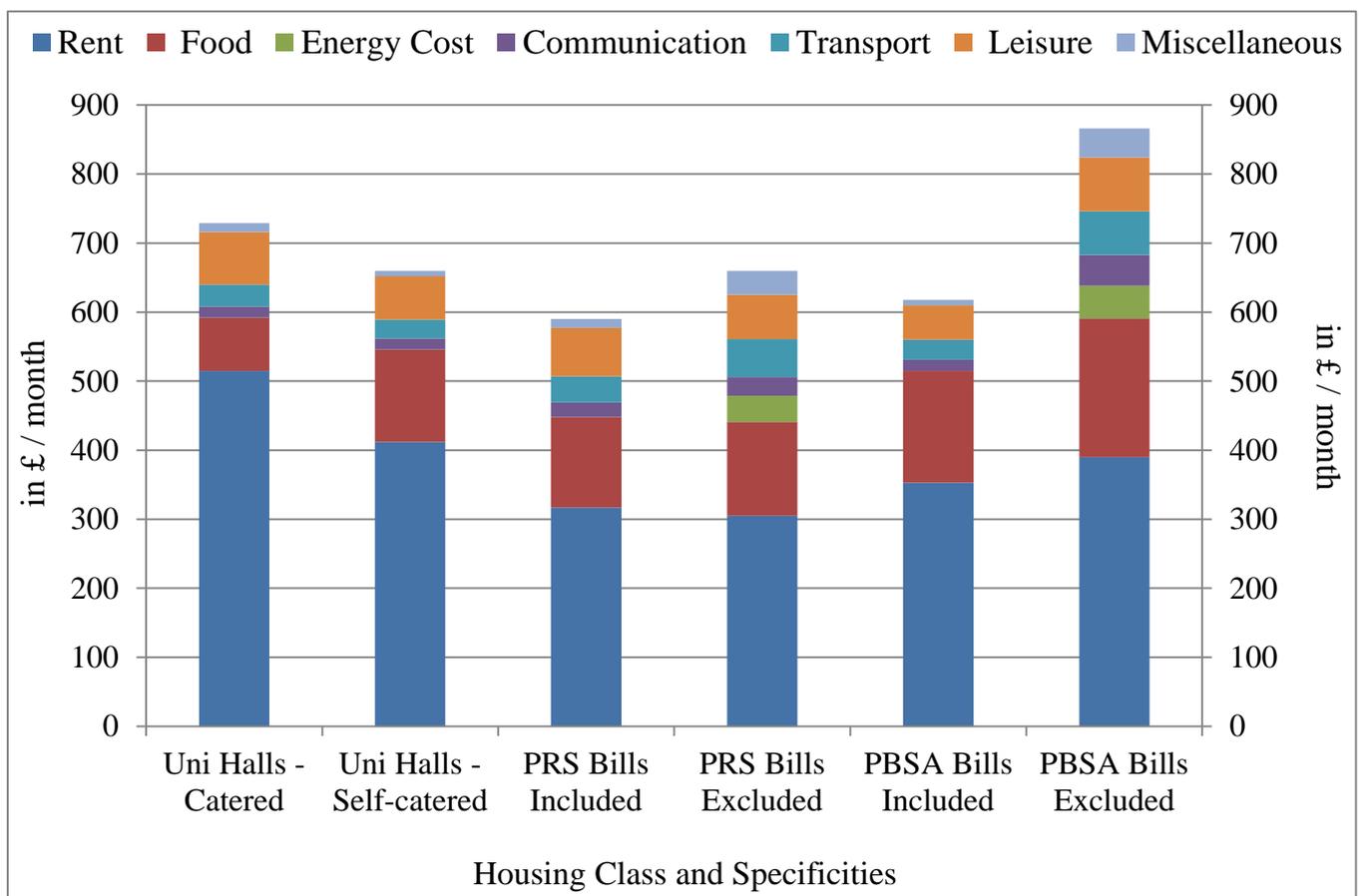
As the average total of spending differs according to the type of housing occupied by the students, it is salient to categorise their monthly expenditure. In the LSAS, 7 categories were created with several sources of expense:

- Rent
- Food: domestic food (purchased and cooked at home) and ‘eating out’ food (e.g. take away and restaurants)

- Energy: electricity, gas, and water
- Electronic communication: mobile phone, landline, and internet
- Transport: bus, car, train, and other (e.g. bike reparations, etc.)
- Leisure activities: pub/nightclub, gym and fitness, and other (e.g. music classes, attending a show or sport events, etc.)
- Miscellaneous: council tax, parking fee, TV licence, car and home insurances, and loan repayment

This classification of expenditure sources allows the evaluation to verify whether students' residential selection impacts their amount of expenses. In order to do so, the responses were scrutinised by housing class (i.e. Uni Halls, PRS, and PBSA) and by characteristics (e.g. energy bills included vs. excluded, self-catered vs. catered). The results introduced in Figure 8.13 demonstrate extensive spending discrepancies within the housing class dispersal.

Figure 8.13 – Average Expenditure Sources (in £ per Month) by Housing Class and Characteristics

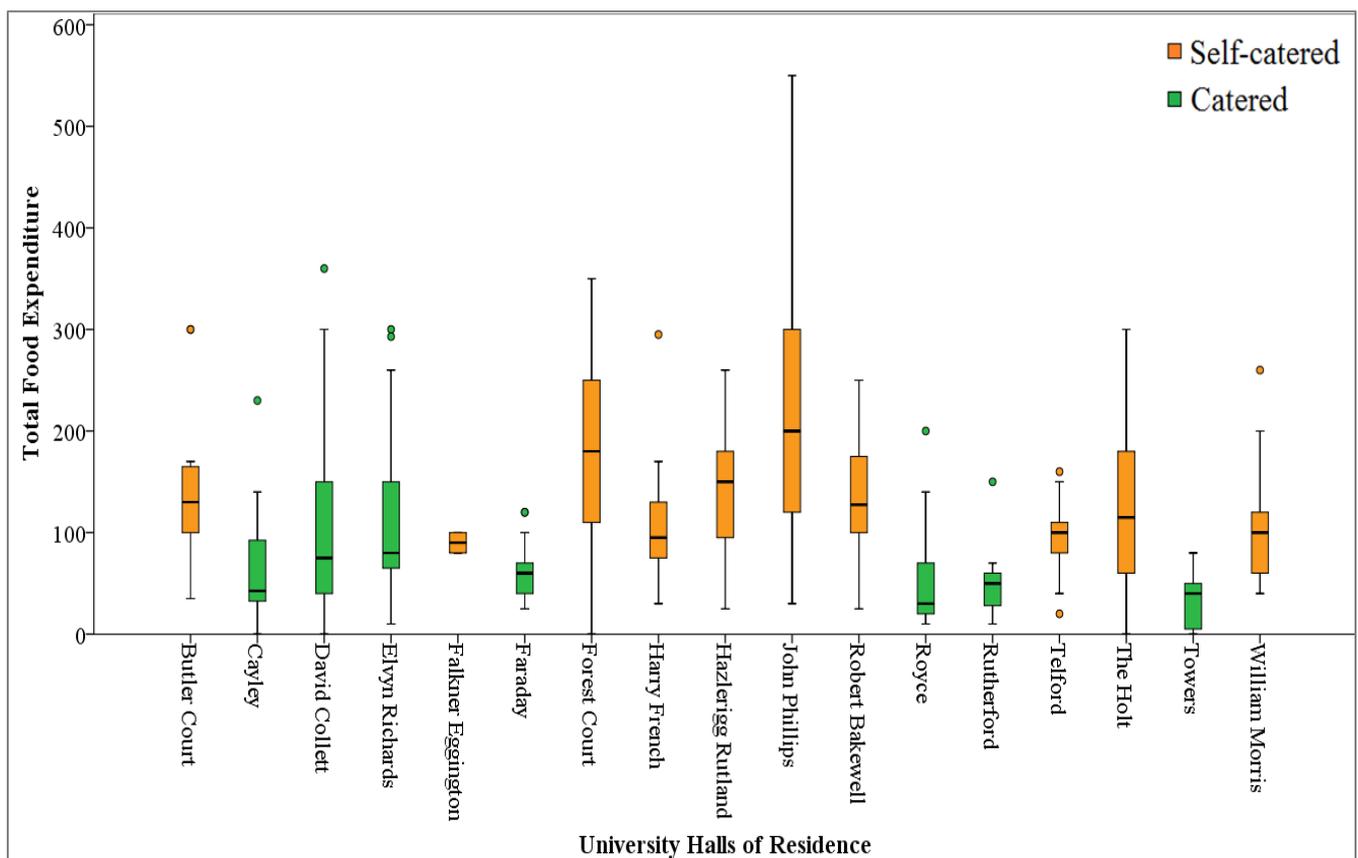


The chart reveals that the rent cost is the primary source of expenditure for all students. It involves between 40% and 50% of HE candidates' total expenditure, except for residents in Uni halls catered (71%) and self-catered (62%). Furthermore, the variation in the rent value between PRS bills included and excluded is approximately equal. The chief spending disparity between

the two groups in the PRS is related to the energy cost, which averages £38 per month for individuals that pay their utility bills separately. Regarding PBSA residents, the inequalities lie in several expense categories. PBSA/C-F occupants with the bills excluded have a higher rent and food cost, being respectively 9% and 19%. Their energy bills are £47 more than for residents with all-inclusive bills. Therefore, in both PRS and PBSA, it is financially more advantageous for students to live in an accommodation supplying all-inclusive packages or similar bundles.

In regard to tenants in Uni halls, the duality of catering and self-catering causes dissimilitude in the levels of spending. Although it is consistent for catered residents to pay a higher rent cost (due to the preparation and supply of daily meals), it is surprising to note hefty food expenses, averaging £77 a month, compared to £134 for self-catered students. The share of rent and food cost combined constitutes 81% of the expenditure among the catered residents, and 83% for students cooking their own meals.

Figure 8.14 – Total Food Expenditure (in £ per Month) in Uni Halls – Self-Catered and Catered Separated



Bringing focus on halls of residence supplied at LU, one can observe that food expenses diverge significantly (Figure 8.14). For instance, catered on-campus accommodation like David Collett and Elvyn Richards display stretched distributions: in both properties, one-quarter of the

residents spend approximately £150 a month on food. This implies that students' spending on food is substantial, although meals are provided to them. Outstanding food expenditure is less perceptible in other catered Uni halls such as Towers or Rutherford. The supposition is that students' appreciation of the service quality certainly had an effect on extra-food purchases. Nonetheless, interviews with former tenants in university halls of residence enabled the consideration of diverse rationales in outstanding food expenses amongst catered students:

“I was like: ‘If I can cook, I may as well live in a self-catered hall’. Because it’s probably going to be cheaper. Also because you get such more range of food. From what I understand, in a catered hall, it’s basically... Week on week it is pretty much the same food every...Monday is Monday, Tuesday is Tuesday, Wednesday is Wednesday. Every week.” (Michael, HMO resident)

“Dinners are like 5 o’clock. So they’re not really students at 5. So you end up missing a lot of meals.” (Kelly, Uni hall resident)

“You have to have dinner between 5:30 and 7:00 pm. If you don’t have dinner between then, then you don’t have dinner. We sometimes have dinner at 9 o’clock...” (Kevin, HMO resident)

“Some halls don’t provide food over the week end.” (Pamela, HMO resident)

Although the quality of the meals served is not necessarily reassessed by students who lived in catered Uni halls, it appears that the lack of flexibility in the food service schedule causes students to miss a certain amount of meals and consequently, coerces them to buy their own provisions. Excesses in food spending could be mitigated if the hours of service were slightly more adapted to students' preferences and availability. In self-catered properties, variations in levels of food expense are also notable. It is riveting to observe that halls of residence such as John Phillips and Forest Court, being mainly populated by non-UK students respectively 83% and 85% of residents, have the greatest food expense amplitude. The results indicate that international students have higher monthly food expenses (£179) than domestic students (£117).

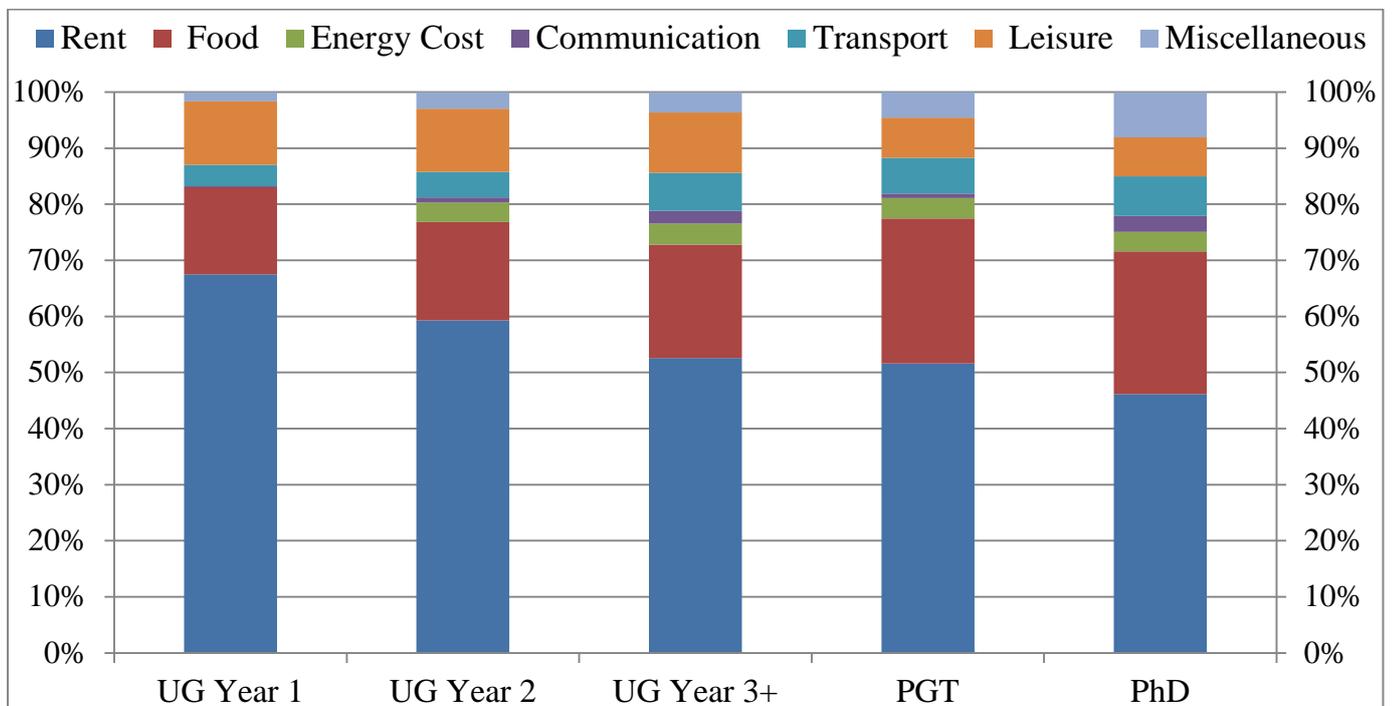
In a different expenditure dimension, residents in housing attributed to a SAP of Band B have the highest average spending with £889 per month. Total expenditure decreases by 25% between dwellings rated Bands B and D, and by 28% between properties assessed Bands B and F-G.

Thus, levels and sources of expenditure unfold differently depending on students' housing choices.

8.5.2 Expenditure and Level of Study

Besides earning the highest monthly income, PhD candidates also hold the greatest amount of expenses with an average of £801 per month. Paying on average £691, university freshers have more expenditure than their peers in UG Year 2 (£619) and UG Year 3+ (£626). On the other hand, Masters students tend to be big spenders (£683). Notwithstanding, expenses are dispensed variously with regards to residents' level of study. The share of the rent cost on the total monthly expenditure for the fresher population is striking: 67% of their total monthly expenditure is allocated to the payment of their accommodation. It should, however, be reemphasised that students opting for catering integrated in the rent cost account for 20% of all students (Sample 1).

Figure 8.15 – Sources of Expenditure and Level of Study



As HE candidates progress in their studies and follow a residential pathway leading from Uni halls to HMOs, the weight of the housing cost tends to diminish. It *only* equals to 53% and 46% for UG Year 3+ and PhD students. Such proportions would be considered astonishing if they were to be applied to the general population. Thus, accommodation expenses are a predominant source of expenditure for students at all levels, although more bolstered amongst the UG population.

The accommodation and area students occupied also act as a proxy to consumption spending by level of study. Epitomising this phenomena, the Union and its popular festive events attract

students' attention. Benefiting from the reputation to be a 'party hub,' the students' Union building is probably the most preferred venue to go out by a great proportion of freshers and undergraduate candidates in general. The LSU executive team members are fully conscious of the noteworthy product they have and the ways it acutely contributes to the full Loughborough student experience:

"I think with the Union here, it's such an easy access to a night out. That proximity to campus would then equal more nights out because it's just across the road or just around the corner. Whereas if they live further afield in town, they will be less... [...] Whereas with some universities when they don't have much of a Union for a night out, you just may have less nights out. Because we have such an amazing venue here for a night out, it's on the doorstep, why wouldn't you?" (LSU exec member 3)

Students acknowledged the various perks of living near the Union's building:

"You don't have to get taxis to go to the Union at night (*laughs*)." (Kelly, Uni hall resident, 2nd year)

"For things like pre-drinks, we have the Union 5 minutes from here; Echos (*a nightclub in town centre*) is 5 minutes that way. There're very equally placed. We're just in an ideal location for pre-drinks, for social." (Michael, HMO resident, finalist year)

The Union is consensually associated to social gatherings and nights out. Accordingly, the expenditure on pubs and nightclubs are strongly related with students' level of study and their inclination to enjoy going out and partying. Because of their strong presence in Uni halls (see Section 8.2.1) and their propensity to party (61% of the sample 'strongly agreed' and 'agreed' on enjoying a night out), freshers are habitual consumers of events at the LSU. Thus, they allocate, on average, £58 of their monthly budget to go out. Concurrently, there is a significant positive correlation ($r = .488$) between how much they disburse in night-time activities and how much they appreciate to party. The close proximity to the Union building and the high frequency of events organised in it are assuredly an influential factor in the propensity of students to go out there. In their second and third/final year, UG candidates' pub/nightclub spending diminishes respectively by 10% and 19%. This infers that students become increasingly aware of their level of expenses and manage diversely their finances and/or their time to go out (see Section 8.5). Furthermore, whether UG Year 2 or UG Year 3+ individuals reside in Uni halls or in the PRS, their monthly pub/nightclub expenses remain constant, approximately £50.

Thus, students' expenses outline the complex interweaving of factors such as candidates' level of study, which itself leads to the residential choice (e.g. Uni halls for freshers and HMOs for finalists) that produces a diversity of lifestyles (Chatterton, 1999; Hubbard, 2008; Sage *et al.*, 2012a). Preponderant in residents' expenditure budget, the rent cost, symbolising the rationale of housing selection, is explored in the following sub-section.

8.5.3 Rent Cost and Housing Types

As illustrated in Figures 8.13 and 8.15, the rent embodies the principal source of students' expenses. The variations of accommodation cost were also perceptible within the housing classes. In the calculation of the rent cost, several cases were excluded such as students residing at parental/guardian house, accommodation owners, and sub-warden students in Uni halls (often PhD students). Accordingly, the monthly average rent cost of a student accommodation in Loughborough equals £376 (SD= 114).

Figure 8.16 – Rent Cost (in £ per Month) by Dwelling Type

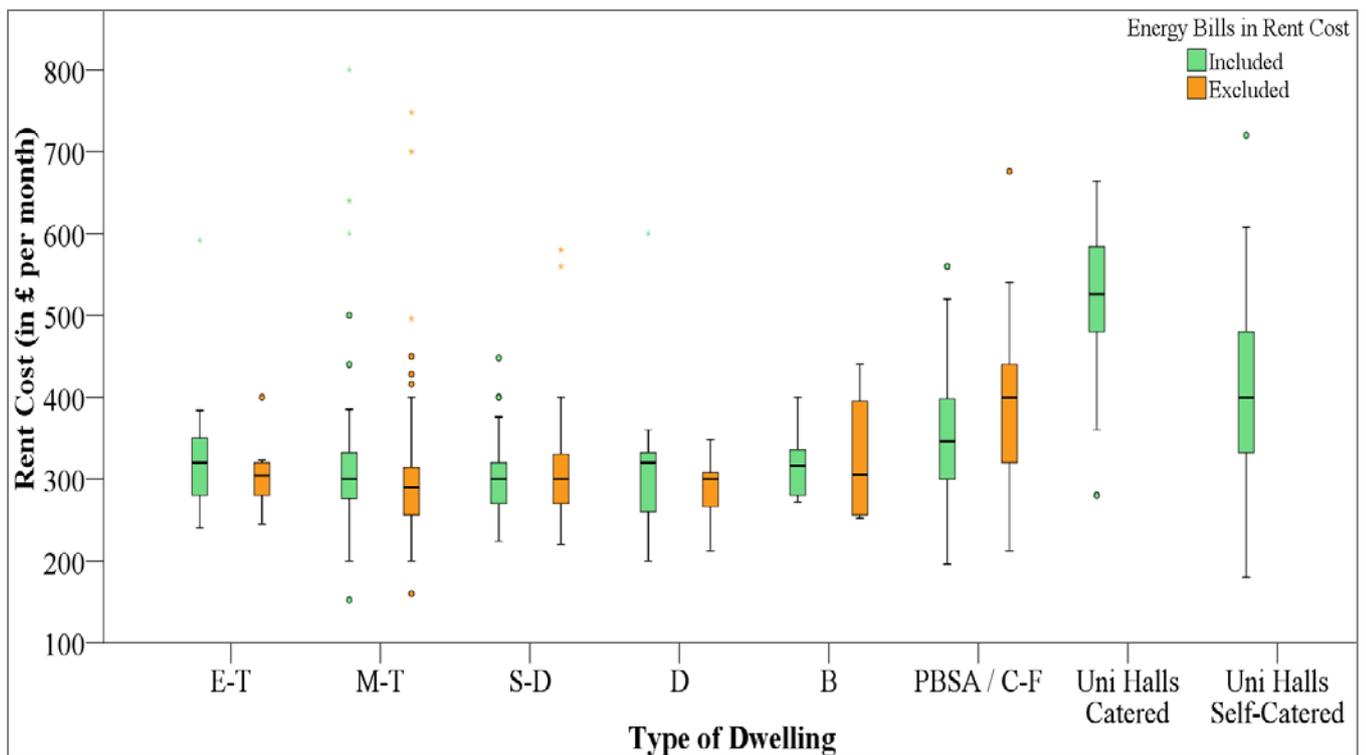


Figure 8.16 distinguishes the rent cost inequalities by dwelling types. One can observe that the separation of the diverse housing sector is flagrant. First, university bedspaces are on-average the most expensive, averaging £453 per month. The stretched range of the Uni halls' price can be explained by the catering type, the type of halls of residence (e.g. on-campus vs. off-campus or undergraduates vs. postgraduates), and the size of the accommodation (ensuite flats/studio vs.

single bedrooms with 10 co-residents). Students residing in Uni halls catered spend on average £522 a month for their rent cost. This is 21% more than for students living in self-catered halls of residence. Second, the harmonisation of rent cost amongst dwellings in the PRS is impressive. Although some outliers are represented, the boxplot chart designates that the median housing price is stabilised across HMOs: there is only an 8% rent cost inequality between the lowest (in M-T) and the highest (in B) average values. Therefore, this suggests a certain regulation of letting prices in the PRS, despite the outliers that may indicate that some landlords over-appraise the rent value charged to the tenants. Finally, residents in PBSA/C-F have an average rent cost of £372 a month. This remains 29% and 9% cheaper than Uni halls catered and self-catered, respectively.

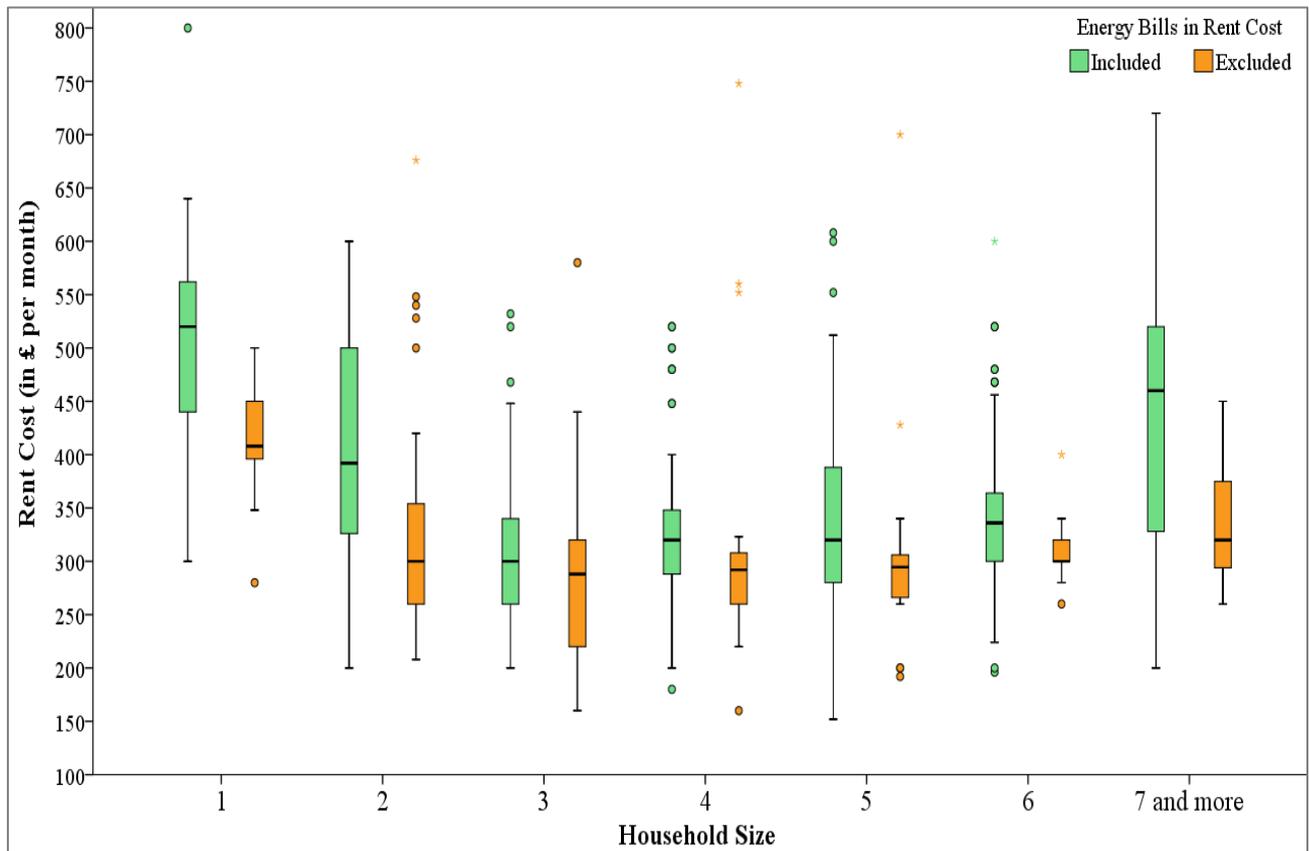
According to the NUS (2012), the average rental cost for a student house in the UK private sector in 2012/13 was estimated at £371 per month. The figure dropped to £360 for the East-Midlands. This discrepancy signifies that HMOs in Loughborough are on average 11% more affordable than similar accommodation alternatives in the region. Furthermore, whereas it appears in various reports (cf. Knight Frank, 2013; NUS, 2014) that PBSA are the most expensive option, the analysis of the LSAS has stressed that: *primo*, Uni halls have undoubtedly the greatest rent cost; *secondo*, the price inequality between HMOs and PBSA remains confined due to an over-supply of the former (see Section 6.4.4). Thus, renting an accommodation, above all in the PRS, is more affordable for LU students than for most students in the UK.

Specificities embedded in the rent cost such as catering type, incorporating all-inclusive bills, TV licence, and parking amenities affect the variations of the letting price. Moreover, students are more inclined to negotiate the rent cost depending on the period of the year, as landlords may feel sometimes more prone to lower their prices due to an oversupply of housing in town (Kinton, 2013). The household structure also appears to be a significant indicator of the rent value.

Figure 8.17 reveals the variations of the housing cost linked to the number of members forming a household. Whether they opted for utility bills rent inclusive or exclusive, individuals in a one person household, half of them occupying studios and flat within Uni halls, have an average rent expenditure of £480 a month. Predictably, this group has the highest housing cost. There is a sturdy decrease of the rent price from households with one to three people. In this specific sample, the size of the household can explain 34% of the variations in the rent cost. The mean housing cost for a three members' household is £304, which is the lowest value of the entire

sample. This indicates that students willing to pay a limited rent price should consider living with at least two co-residents.

Figure 8.17 – Rent Cost (in £ per Month) by Household Size



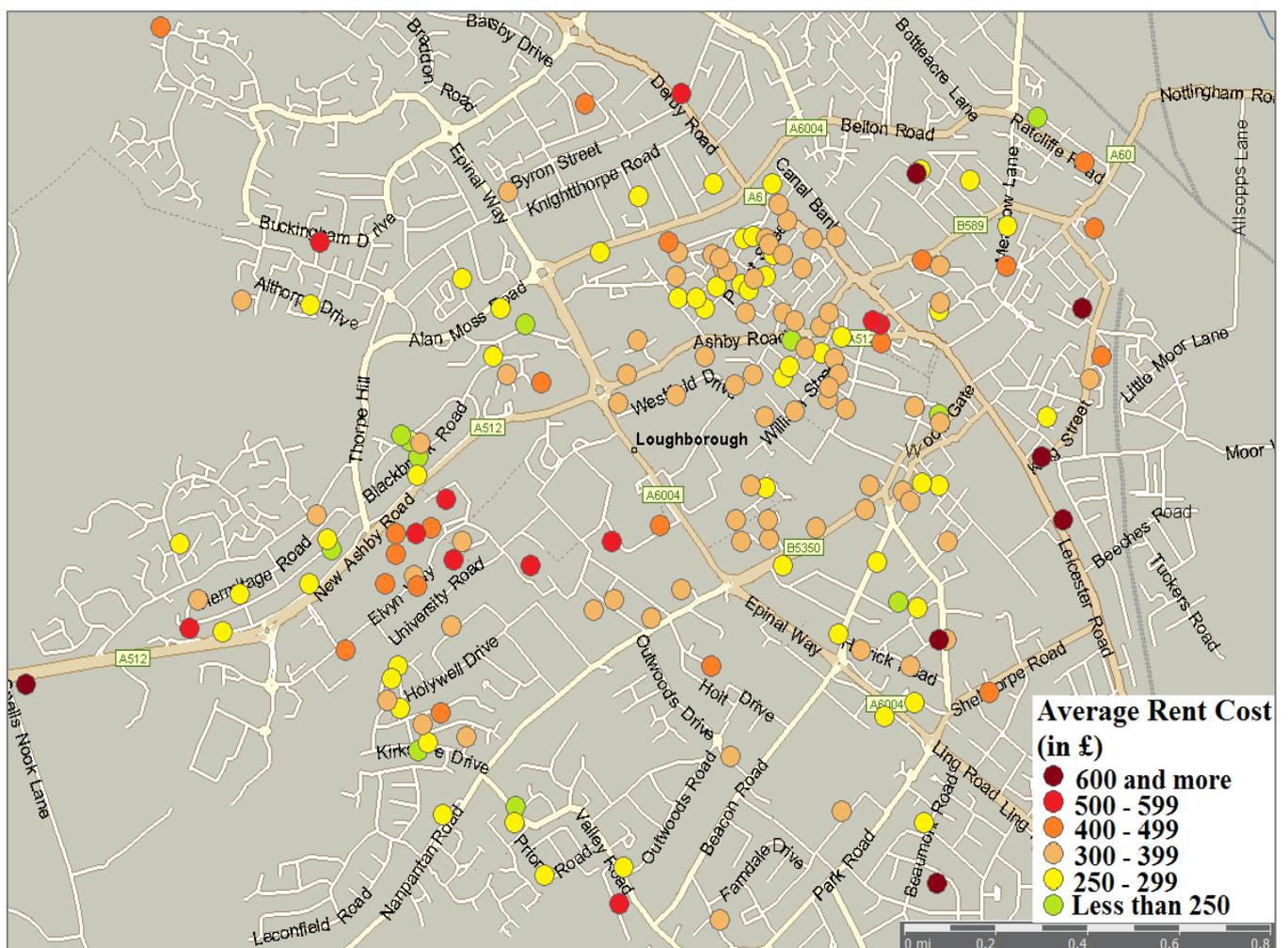
Nonetheless, one can note a stagnation of the rent cost in an up to six individual household. The average accommodation value only increases up to 10% from properties with three residents up to six people. As for students with seven or more co-residents, they are most likely located in Uni halls, where the average rent amount is considerable (see Figures 8.13 and 8.16).

Albeit being a robust indicator of students' levels of spending, the scope of the housing cost is not significantly reflected in other characteristics. This is particularly the case in regards to residents' degree of satisfaction with their accommodation. Respondents were 21% and 54%, respectively, to be 'very satisfied' and 'satisfied' with their housing. The hypothesis that individuals were more satisfied in a high rental cost dwelling was formulated. The linear regression method applied to test this hypothesis demonstrated that the amount of rent paid by students does not impact their level of housing satisfaction at all. *En effet*, the difference of rent price between the most satisfied residents and the most dissatisfied merely amounts to 9% (cf. Appendix 5).

The limited impact of monthly housing price also applies to the energy performance of the dwelling. The assumption that properties with an expensive rent cost meet the most stringent sustainability requirements, epitomised by a high SAP score, was rejected. The absence of relationship between the two variables emphasises that residents in buildings rated with a SAP score of 80 have similar rent expenses to individuals living in properties rated SAP 40 (cf. Appendix 6). Besides, it reinforces the structural inequalities persisting in the student residential market. Consequently, they could lead HMO landlords to disregard the retrofitting of their properties as the profits earned through the rent are very limited.

Finally, the distribution of rent values' disparities at the postcode level is evaluated in Figure 8.18. The map reveals a spatial mismatch of housing cost with an overall domination of lower-medium prices, from £250 to £399 per month.

Figure 8.18 – Average Rent Cost (in £ per Month) by Postcode



In addition, one can remark a solid homogeneity of the rent value in the Golden Triangle area, from £250 to £399. The most expensive housing prices are situated in the outskirts of the student

‘traditional’ residential area. Nonetheless, the proximity to campus does not imply high accommodation cost. The New Ashby Road and the Holywell Drive areas, both located on the opposite side of campus, illustrate this assertion as they combine postcode zones with limited rent values.

This section has explored the structural and spatial inequalities produced by the rent cost. Extensive variations between the three identified housing classes have been observed as well as the flagrant absence of relationship between the dwelling energy performance and the value of the rent. The following part assesses the share of energy cost in the rent price and in the total expenditure.

8.5.4 The Weight of Energy Bills in Total Expenditure and Rent Cost

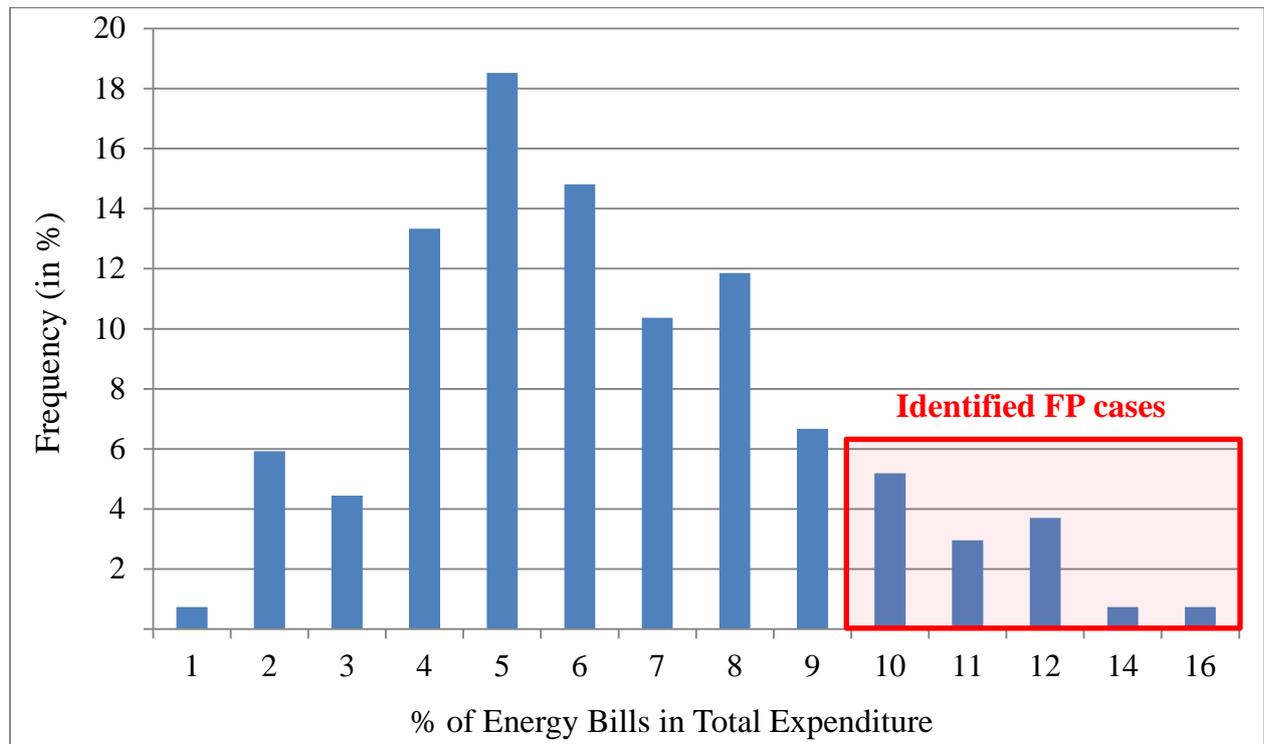
This section appraises the weight of energy cost in comparison to students’ total expenditure and rent value. This analysis allows the consideration of the share of energy bills in regards to residents’ expenses and housing cost as a more appropriate alternative measurement for transient populations such as students, in contrast with the established LIHC indicator (see Section 3.9). The current definition of FP does not provide a suitable model for detecting fuel poor residents at the individual level. Besides, the removal of the energy efficiency of the dwelling’s indicator from the LIHC framework, previously advocated by Boardman (1991, 2010), constitutes an additional constraint in the FP measurement for students.

Because of the complexity to assess students’ income (cf. Section 8.4.1), students’ levels of expenditure constitute a more suitable indicator to gauge the weight of energy bills, and to identify potential cases of FP. Therefore, a threshold to designate residents in FP should then be considered. In the purpose of this research, it is assumed that students paying energy bills accounting for 10% or more of their total monthly expenditure are identified as being in a situation of FP.

The measurement of the portion of energy bills in total expenses reveals a normal distribution throughout the student housing stock. The mean ratio energy/total expenditure is similar for all dwellings, approximately 6-7%. Nonetheless, Figure 8.19 demonstrates that 13% of students paying their energy bills separately of the rent are assessed as fuel poor. One-third of individuals in a FP situation are accommodated in M-T and 22% in S-D. Unexpectedly, 28% of students identified meeting the requirements of being in FP are located in PBSA/C-F. Thus, the general

homogeneity of the energy cost's weight on the total monthly expenses reinforces the effectiveness of this calculation method.

Figure 8.19 – Fuel Poor Students Using the Total Expenditure Framework

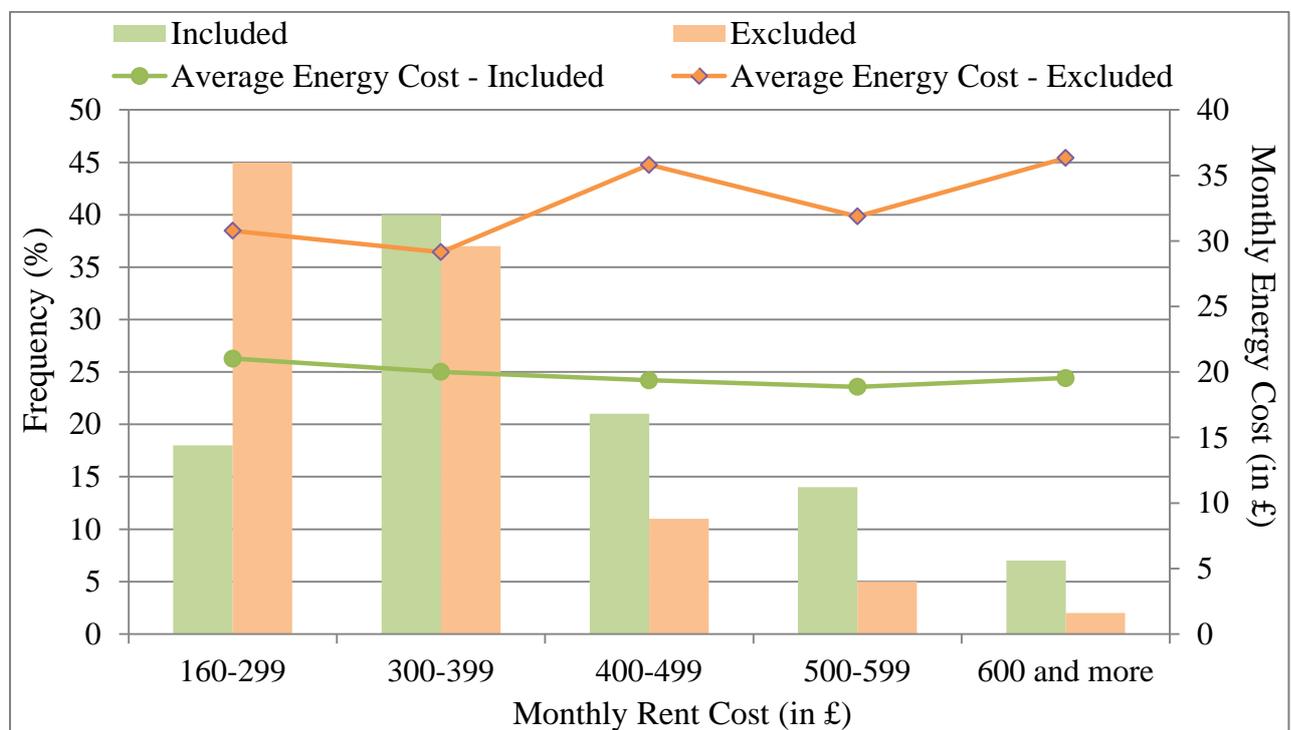


Another significant indicator to gauge the impact of students' energy bills is to standardise it to the housing cost. Similar to the results with individuals' total spending, the ratio of energy prices/rent value shows limited variations. For instance, the energy cost peaks to its highest share, 15% of the rent value, amongst residents in S-D and PBSA/C-F, and being only 3% more than the lowest percentage, situated amidst tenants in B.

The demarcation between residents with all-inclusive deals and those without provides compelling insights. Illustrated in Figure 8.20, beneficiaries of all-inclusive packages are proportionally scattered in various rent classes, with the exception of the £300 to £399 category (40%). Throughout this rent cost distribution, the average estimated energy bills show important stability. As for residents having the energy bills exclusive of rent payment, they are mainly condensed in the £160 to £299 and £300 to £399 rent classes, respectively 45% and 37%. Moreover, their energy spending critically fluctuates depending on the housing price. This is particularly the case for the rent class £400 to £499 with an average energy cost of £36 per month. Although such variations indicate that residents with a high accommodation cost are more likely to pay greater energy bills, the share of energy expenditure in the rent value

gradually declines from 12%, in the £160 to £299 rent category, to 5% in the highest housing prices. Consequently, the energy weight is more considerable when the rent value lies below £299 a month. On the other hand, the more expensive the rent is, the more reduced the proportion of energy cost is. This continuous decrease stresses, *de novo*, the prominent impact of the rent cost in students' total expenditure. Notwithstanding, it should be re-emphasised that the measurement of energy cost relies both on data provided by LSAS' respondents and on a model estimating energy bills in all-inclusive deals. This implies some limitations encountered in the data analysis (see Section 8.4.1).

Figure 8.20 – Rent Cost and Energy Cost (in £ per Month) by Energy Bills (Ex-) Included



Lastly, as discussed in Sections 7.4 and 8.4.3, energy and housing costs are not necessarily affected by the sustainable performances of a dwelling. In addition to that, limited disparities in the weights of energy bills in the total expenditure and the rent cost have been noted. On one hand, the share of energy expenses for residents in housing rated Bands B and F accounts respectively for 8% and 6%. This signifies that the extent of energy cost remains constant in students' total expenses. On the other hand, the weight of energy expenditure is fairly more substantial in properties with a SAP Band B (18%) than for dwellings rated C and F (12%).

The last section of this chapter concentrates on students' debt and the ways it affects residential decision-making processes.

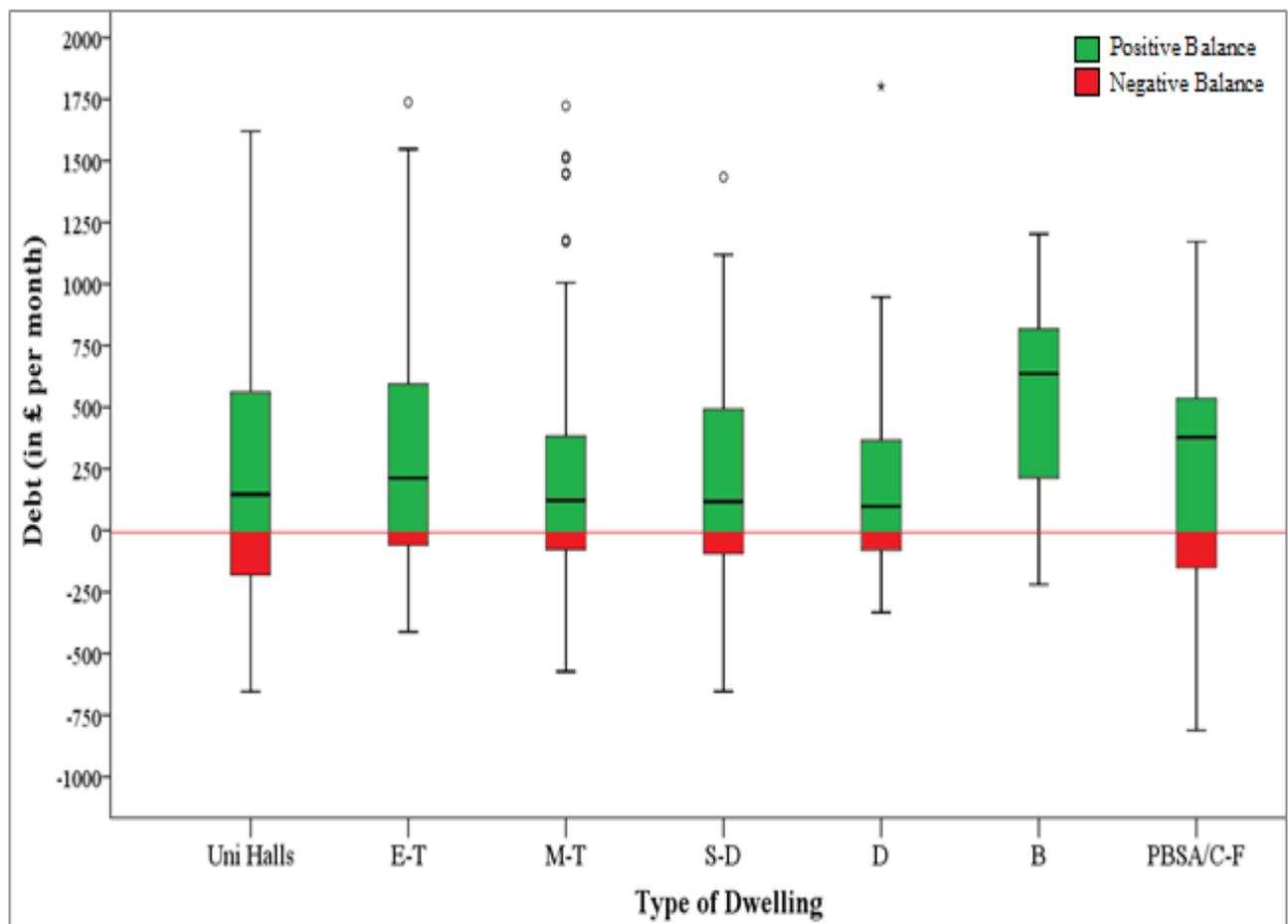
8.6 Student Debt

This section evaluates the extent of student debt. It is apt to specify that, due to manifest ethical borders, financial private data such as bank account statements was absolutely excluded as questions in the LSAS and interviews. Accordingly, the difference between students' total monthly income and expenditure represents the absence of debt (positive balance) or the presence of debt (negative balance). All savings, fees, and interests on bank overdrafts are also excluded from this estimation method.

8.6.1 The Threat of the Debt and Residential Distribution

It is widely assumed by the national media that student debt is going to increase. It has been emphasised that by their final year of UG studies, the '£9,000 students' will have an estimated debt of £44,000 (BBC, 2014c). It was reported that 73% of students will be unable to pay off such amounts (The Independent, 2014). Therefore, the financial threat of being in debt hangs over students' heads like 'the sword of Damocles'.

Figure 8.21 – Students' Financial Balance by Type of Dwelling



The debt apprehension coerces students to either reduce their expenditure or to complete their income through paid work or obtaining aids such as bursaries, fee waivers, scholarships, and/or funds. As part of a way to mitigate students' debt, adopting a different residential strategy can also be considered. The importance of the rent price in the total expenditure and the monthly value of dwellings were examined in Section 8.5.3. Consequently, the assumption that students meeting financial difficulties reside in dwellings with low housing costs, the PRS as it happens, is worth concentrating on.

Figure 8.21 shows that not a single accommodation profile is spared from hosting residents with a financial negative balance. The largest share of in-debt students is found in both Uni halls and S-D, with 37% of their sample, respectively. Tenants of PBSA/C-F dwellings possess both the highest positive (£498 per month) and negative balance (£345 per month) averages. Discrepancies also persist within the housing alternatives. For instance, on-campus catered halls accommodate a greater portion of in-debt occupants, with a more robust average negative balance (£325 per month) compared to self-catered residents in halls (£229 per month). In the PRS, the dichotomy of energy bills included or excluded in the housing cost does not particularly affect students' financial balance, apart from S-D tenants whose level of indebtedness is 28% heftier when the utility bills are rent exclusive. Hence, students' financial balance does not appear to affect their residential motivations and trajectories. Still, the inequalities of indebtedness' risk fluctuate depending on individuals' year of study.

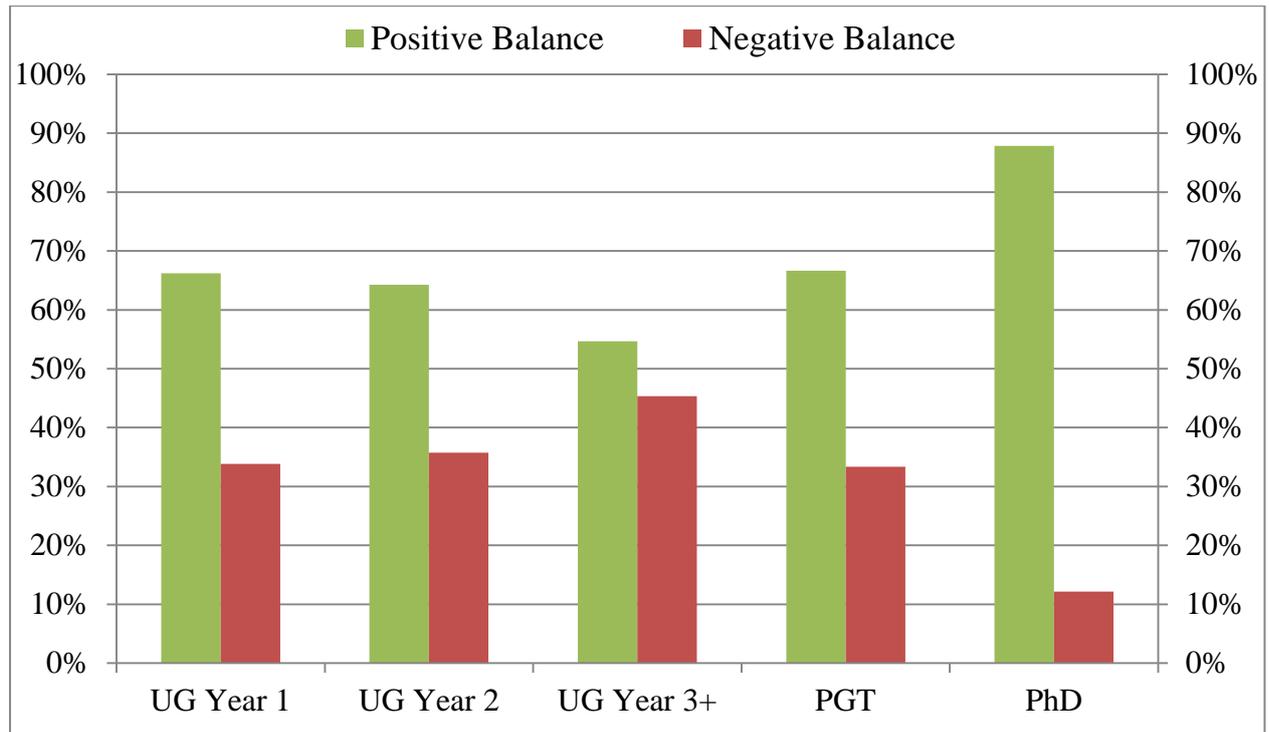
8.6.2 Debt and Level of Study

Students' inclination to develop a financial negative balance increases inexorably with the progress in study level. The accumulation of significant expenditure categories such as housing, living, and studying over the years creates a serious disequilibrium in contrast to new HE entrants. Yet again, the estimation of respondents' economic balances only focuses on monthly expenses and accordingly, excludes substantial (but periodic) costs such as HE tuition fees.

Figure 8.22 presents the bipartition, by year of study, between individuals' economic positive and negative budgets. The most essential result displayed in this chart entails the constant growth of debt between UG Year 1 (34%) and UG Year 3+ (45%). Approximately half of final year UG students find themselves in a financial situation in which income is insufficient to cover their levels of expenditure. In a context of heightened learning and living expectations from the £9,000 generation of students (The Independent, 2013; The Complete University Guide, 2014),

the blight of expanding indebtedness amongst UG candidates is less likely to be absorbed. Lastly, one-third of PGT students experience a negative balance caused by a strong dependence on income coming from the private sphere. PhD participants exist in a relatively wholesome financial environment because of a high income level, chiefly stemming from university scholarships.

Figure 8.22 – Frequency of Students’ Financial Balances by Level of Study



It has been recognised, in Section 8.4.2, that there is an upsurge of the share of paid work revenue on the total income between UG Year 1 and UG Year 3+ individuals. With limited and inadequate support from the family/friends/partner category, a large share of UG Year 2 and 3+ students have to work in order to come out of a slump. Because of a circumscribed amount of earning alternative, working alongside their studies represents a serious option for individuals. The examination of the LSAS has found that income originating from paid work was the prime choice for UG Year 3+ students. Furthermore, the pattern of increasing one’s income through employment, in order to make up for the indebtedness, was understood by executive members of the LSU:

“So they [3rd year students] are obviously working more not to bring themselves into debt.” (LSU Exec Member 3)

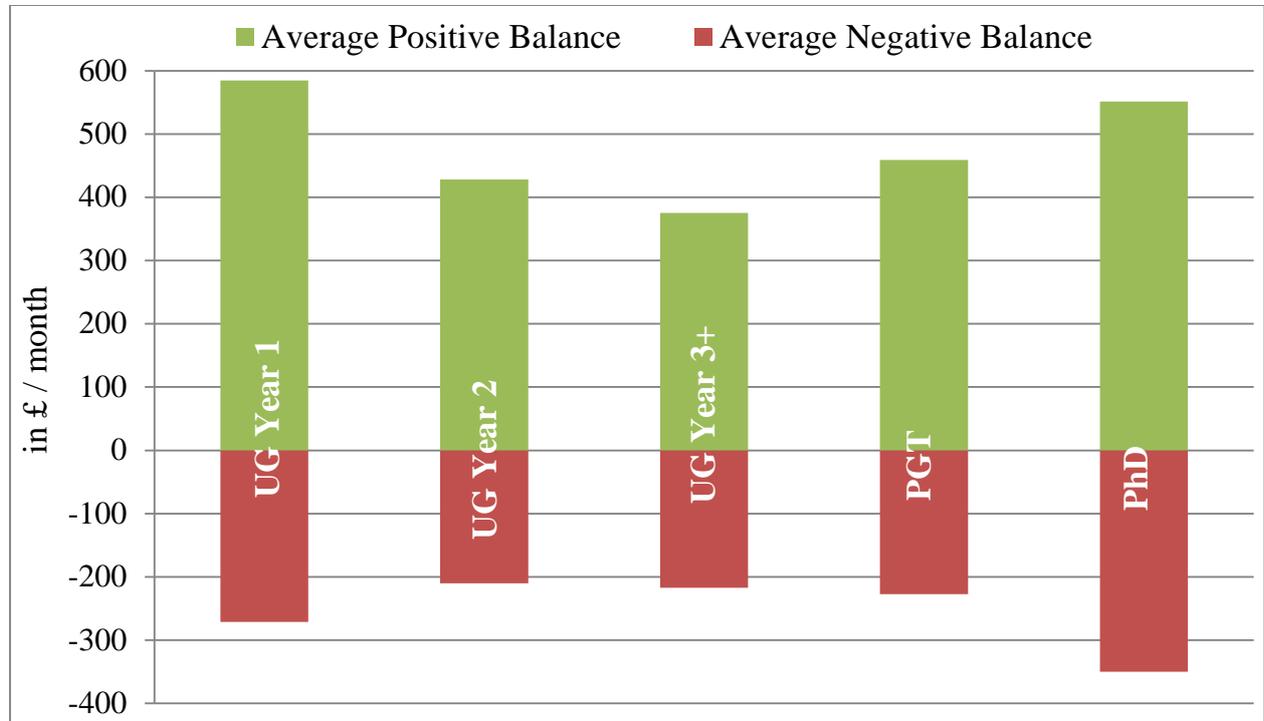
The term ‘obviously’ illustrates the widespread logic in which undergraduate students become more often reliant on paid work income to confine the debt and overdraft effects, at the risk of impacting the quality of their studies. The diverse ways for students to improve stability in their financial balances are subject to various interpretations and suggestions:

“Well, like with the 3rd years and all their paid work, it can question banks. It [the share of students with a paid work] is less than the 2nd years but they seem to have much more paid work income. So where is that money going? Is it still fuelling an active social life?” (LSU Exec Member 1)

“They had a bigger chunk of spending money on leisure. Now with the 3rd years, they said they were going out less. So do you do more things that cost more in night out like £20 maybe but if you’re going to Leicester for a meal, what is their leisure then?” (LSU Exec Member 4)

Students’ debt development is specific to individuals’ awareness about their economic situation. The lifestyle that freshers adopt is prominent for the creation of social bonds, and accordingly for their future housing trajectories, as explored in Section 8.2.1. Figure 8.23 reveals the average debt amount by level of study.

Figure 8.23 – Average Students’ Debt (in £ per Month) by Level of Study



Although Figure 8.22 confirms that only a restricted amount of UG Year 1 students are in financial difficulties, their average monthly debt (£271) is the most ample amongst the entire UG population. The Uni halls experience has a high cost for residents aiming to make the most of it:

“My 1st year was the most expensive year because you come, you join everything and you go out all the time. I was actually quite surprised that the 1st years, apart from postgraduate research, have the lowest negative balance [commenting on Figure 8.22].” (LSU Exec Member 2)

Concurrently, with holding the highest average indebtedness, freshers also have the greatest positive balance average. These major inequalities are reflected in students’ social activities. For instance, individuals in debt spend on average 18% more in leisure activities than freshers in a healthy financial position, whereas the average housing cost between these two groups are identical (£462 per month).

The economic repercussions of enjoying life as a fresher can be observed in UG Year 2 and Year 3+ cohorts. A growing number of individuals develop a financial negative balance even though the level of indebtedness is lesser than during their first year at university. Students come to realise the gravity of their economic situation and decide to act accordingly. Most of them reduce their housing cost by moving into the PRS and cut down their leisure expenditure by going out less often. Despite their best efforts, individuals in debt in their UG Years 2 and 3+ pay the cost of substantial levels of expenditure in their fresher year:

LSU Exec Member 6: “It’s a bit an accumulation, isn’t it? I know I went into my overdraft at the end of my 2nd year. So then I never go out, never come out...But I’m still in it now (*laugh*).”

LSU Exec Member 2: “You see I went in my 1st year.”

LSU Exec Member 6: “And I didn’t in my 1st year because I was like on 0 if you like. It was the 1st year I was away from home if you like and living for myself. I kept it up in that year and then I slipped in my 2nd year. So I wonder if it’s almost a bit of a backlog, spending an extra £100 each year and then you gonna get further and further in your overdraft.”

Experiences and reactions *vis-à-vis* in-debt situations fall under personal attitudes and convictions. The spreading of students in financial troubles correlates, however, with their shift from on-campus properties to the PRS. Thus, it is acceptable to support that occupying a HMO has a prominent economic benefit to mitigate students’ expenditure and debt levels.

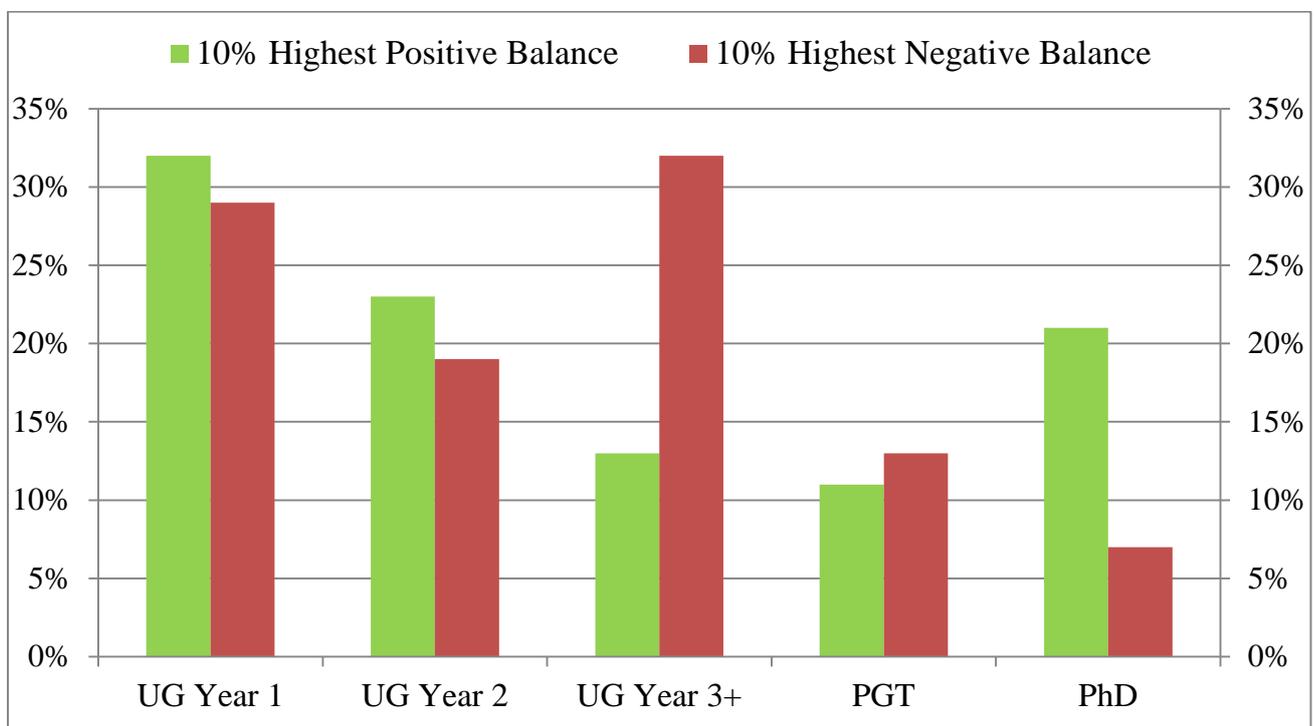
8.6.3 Students with 10% Highest Debt vs. 10% Lowest Debt

It has been clarified in the previous section that students’ finances deteriorate considerably in the course of their UG studies. Strategies and choices elaborated by students to make ends meet were

pointedly tackled in Christie *et al.* (2001). The level of student incomes originating from loans, parental support, governmental bursaries and grants, and/or paid work exacerbates the extent of inequalities between individuals. In order to emphasise this financial asymmetry, the following pages bring into comparison the 10% of students with the highest positive economic balance, and the 10% of individuals with the highest negative balance.

Figure 8.24 shows that finalist UG students account for one-third of the 10% of students with the highest negative balance. Section 8.6.1 ascertains that these individuals are the most exposed to financial burden. This signifies that the apportionment of finalist candidates amongst those that struggle financially is more than two times greater than for the most affluent. In other respects, the share of students with highest negative balance in their UG Year 1 is also significant (29%) and so is its portion within the 10% highest positive balance (32%). Due to a high mean income, PhD candidates cover one-fifth of students with the 10% highest positive balance. The differential between income and expenditure can be used, for instance, as savings or reimbursing a pending debt.

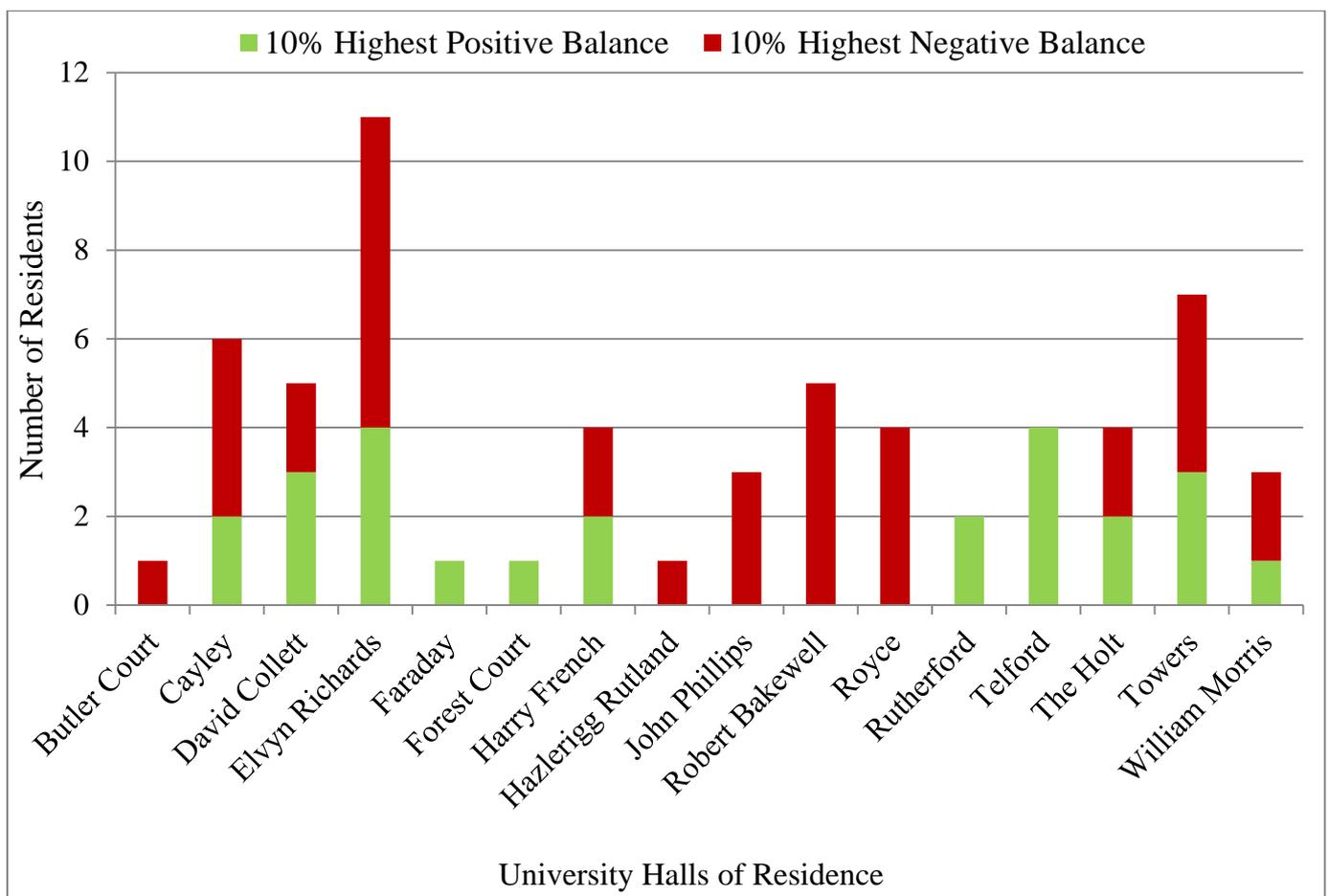
Figure 8.24 – Frequency of Students with the 10% Highest Positive and Negative Balances by Year of Study



In terms of residential distribution, Uni halls simultaneously accommodate a large portion of students with the 10% highest positive budget (60%), and a sizable amount of individuals with the 10% highest level of debt (42%). Moreover, students with financial burdens are equally

distributed in the housing stock with respectively 23% and 13% in M-T and S-D dwellings. Economic inequalities are extensively clustered in halls of residence. Nonetheless, tenants with the greatest and the lowest budgets live alongside one another. Figure 8.25 displays the residential dispersion of these two categories. It should be noted that some properties are composed of individuals with the 10% healthiest (e.g. Faraday, Forest Court, Rutherford, and Telford) and the 10% lowest finances (e.g. Butler Court, Hazlerigg Rutland, John Phillips, Robert Bakewell, and Royce). On the other hand, accommodation such as Elvyn Richards and Towers mix students from both categories. The cohabitation of the two classes of students suggests that university halls of residence fabricate a powerful agent of socio-economic inclusion.

Figure 8.25 – Number of Students with the 10% Highest Positive and Negative Balances by Uni Halls



Thus, this section has explored the effects of debt in students' dwelling selection. It has been proven that the expansion of financial negative balance is progressive amongst UG candidates. The stabilisation of the debt value in UG Years 2 and 3+ is linked with the housing transition from on-campus bedspaces to HMOs. To a degree, the unfolding of studentification processes

enables individuals to operate a tighter control of their finances, symbolised by a reduction of their debt levels.

8.7 Summary

This chapter has intended to examine the effects of students' socio-economic discrepancies on housing outcomes. Throughout the various sections, the entanglement of linkages between students' social and financial features, and the motives involved in their residential decision-making processes, has been analysed. Widely recognised in the student geographies' scholarship (cf. Kenyon and Heath, 2001; Ford *et al.*, 2002), the student residential pathway was observed in this research. Although the transition from university halls of residence to the PRS, and most likely to HMOs, characterises individuals' aspirations of more independence (Smith and Holt, 2007), students still consider location criteria as crucial in their housing selection. It also arises that deciding who to live with is equally as decisive as choosing where to live. This finding concurs with the assertions made by Christie *et al.* (2002). The role of social relations has been particularly pointed up by students in the LSAS, semi-structured interviews, and focus groups. In contrast, dwelling's sustainability features carry limited weight in the decision-making. As expressed by one of the focus group participants, Meredith, the low-condition of housing can easily be overcome by living with friends. Besides, Rugg *et al.* (2000) pointed out that housing providers had a tendency to panic students into securing accommodation, for the following academic year, as soon as possible. It is off-putting that, 15 years later, HEIs, landlords, and letting agencies still employ analogous pressure mechanisms to coerce students to make their housing selection on a 'first come, first serve' basis. As a result, students rush in signing letting agreements without fully taking into consideration the condition/quality of the future dwelling. It has also been argued that UK and international students, despite a similar housing distribution, employ distinct rationales in their accommodation selection. Domestic candidates possess a spatial awareness and knowledgeability of latent residential locations that is much accurate than for international individuals.

In terms of findings with a financial dimension, it has been demonstrated that residents' levels of income vary between housing classes and within dwelling types, subsequently producing spatial income mixing, particularly in the PRS. This finding highlights the unbalanced residential geographies of students: socially and spatially segregated to high degrees from the local population (see Munro *et al.*, 2009; Smith and Hubbard, 2014), studentifiers are, amongst them, markedly inclusive in their housing situations. In other terms, socio-economic diversity prevails

in 'student ghettos'. To exemplify this postulation, the residential heterogeneity of tenants' earnings in the Golden Triangle area embodies the scarcity of economic exclusion processes within student neighbourhoods. Additionally, revenue sources differ according to students' year of study and nationality, which in some cases influences housing preferences. Christie *et al.* (2001, 2002) contend that the parental support is essential to cover students' rent cost. Nonetheless, empirical findings in this thesis specify that this source of income is now marginal to the detriment of student loans and maintenance loan/grant.

The evaluation of HE candidates' levels of expenditure is paramount because student expenditure is weighty as it supports hundreds of jobs in the local economy (Hubbard, 2008). Hence, the findings have shown that HMOs occupants with energy bills rent inclusive hold the lowest amounts of monthly spending. Rent cost accounting for a significant portion of tenants' expenses, institution maintained properties offer the most expensive accommodation in the student housing market. Moreover, the absence of correlation between buildings' energy performance and rental cost accentuates structural inequalities in student housing supply. Finally, the establishment of a new FP identification framework using students' expenditure shows conclusive results. Fuel poor tenants have notably been detected in old dwellings (e.g. M-T and S-D houses) but also in newer developments (e.g. PBSA). As stressed by Bouzarovski *et al.* (2012), it is imperative to ameliorate the visibility of students in FP so they can get assistance; the experimental methodology presented in this chapter is a critical step in that direction.

Chatterton (2010) discusses the dependence of students to credit-fuelled expenditure as an aftermath of the HE neoliberalism. This has been made evident by the chapter's findings denoting a propagation of debt levels as students move further in their undergraduate studies. It has been exposed that the fresher year in university halls of residence is a constant trigger of overdraft and indebtedness. "Unlearning the rules of the student game" (Chatterton, 1999: 122) is a costly but necessary process, for who wants to fully immerse in the student experience. Besides, the decline of income after the UG Year 1 strongly contributes to a re-assessment of individuals' lifestyles, which entails developing new budgeting strategies and trade-offs, as distinguished during the interviews and focus groups. Notwithstanding, housing trajectories are not really affected by individuals' degree of indebtedness. In consequence, the comparison between residents with the highest positive and negative balances lays emphasis on the absence of spatial inequalities. This means that students in the most comfortable economic situations and those struggling live alongside one another and occasionally under 'the same roof'.

Chapter 9

Discussion and Conclusion

9.1 Introduction

This final chapter draws together the key empirical findings of the thesis, and explores the main original contributions of knowledge in the field of student geographies. The discussion stresses the importance of examining the magnitude of sustainability issues in student housing. First, Section 9.2 exposes the key findings which are tied to the main aim and objectives of the thesis. This outlines the chief drivers underpinning distinct changes of the student accommodation profile in the UK post-1945, as identified in Chapter 2. The section synthesises the implementation of sustainable development processes in the residential sector, as addressed in Chapter 3, and shows that this has profound impacts on the accommodation experiences of students. Furthermore, this section summarises the salient findings of the empirical research developed in Chapters 6 to 8. Section 9.3 highlights the diverse ways in which this thesis engages with academic debates in student geographies, with a specific focus on housing and sustainability. Section 9.4 reflects on further research avenues sparked by the thesis. Section 9.5 presents some comments in hindsight, and considers how the research process could have been approached differently. Finally, Section 9.6 provides some concluding remarks.

9.2 Key Findings

Holton and Riley (2013) call for a re-assessment of the student mobilities debate within human geography, arguing that the tripling of tuition fees may affect students' university selection in order to reduce living costs. In this emerging context, young people may prioritise an institution within commutable distances from their (parental) homes, which may intrinsically reduce the need for student housing, notably in the PRS. Consequently, processes of destudentification in local areas may possibly expand (see Sage *et al.*, 2012a; Kinton, 2013).

Although it is perhaps too early to undertake a vigorous evaluation of the effects of rising tuition fees upon the student housing market, the aim of the thesis is to **evaluate the dynamic interface of supply and demand for student housing within the context of national sustainability policy and planning, using Loughborough as a case study**. Each chapter of the thesis (except for the methodology section, Chapter 4, and the justification of the case study, Chapter 5) responds to a research objective, as stated in Section 1.2.

Chapter 2 has addressed the first objective of the thesis which sought to analyse the changing post-1945 profile of student housing in the UK, and the key drivers underpinning these changes. Throughout the different eras, it is shown that the HE mission has developed and adapted to changing political and socio-economic contexts. A plethora of educational, housing policies, reforms, and regulations have participated in the shaping of the student housing market. Thus, it can be argued that the profile of student housing post-1945 in the UK has been developed by multidimensional drivers. In addition, Chapter 2 has outlined the literature gap surrounding students' residential decision-making processes.

The second objective of the thesis is to define the UK sustainable development policy, focusing on the residential sector including energy, CO₂, and social sustainability. Chapter 3 has exposed the various ways in which environmental policies aiming to reduce GHG emissions have been translated in the housing sector. Epitomising the UK government's commitment to improve energy efficiency in inadequate properties, the GD struggles to make a strong impact in the refurbishment of the UK dwelling stock. Furthermore, the entanglement of applying an adequate measurement framework of FP, a thorny and recurrent topic in the political and media agenda, has been explored. The chapter stressed that eco-residences have recently been developed on UK campuses and that the production of such modern and environmental friendly accommodation contributes to the increase of the institution's reputation and visibility.

Chapter 6 focused on the third research objective which consisted of establishing a residential taxonomy in order to analyse the supply and demand dynamics of student housing. Holding specific and inherent characteristics, dwellings in the PRS meet intricate and abundant demands. To illustrate this claim, for an identical average number of occupants, tenants in detached houses benefit from an average floor per person 19% greater than residents in end-terrace properties. This suggests that, depending on the accommodation profile, residents benefit from different levels of comfort, interpreted here in individual floor space. In terms of residential geography, terrace properties, commonly built pre-1919, are mainly located in the Storer and Southfields wards, whilst semi-detached and detached dwellings are more scattered through Loughborough's neighbourhoods. Consequently, the geographies of student housing can be spatially associated to an area, such as terrace houses in the Golden Triangle, and *vice-versa*.

Addressed in Chapter 7, the fourth objective of the thesis is to evaluate the energy consumption and costs within the context of a sustainability framework and their impacts on students' residential experiences. The complexity of measuring energy cost when the utilities bills are

already included in the rent cost is examined. The innovative model to estimate energy cost in all-inclusive dwellings applied in the research currently provides the most precise measurements. Also, it has been demonstrated that the most robust predictor of a dwelling energy performance is its construction period. Older and non-retrofitted buildings (e.g. terrace houses) are more likely to be inefficient whilst new constructions (e.g. PBSA) meet tighter environmental regulations. The chapter has also stressed that students' monthly energy cost was not assuredly affected by the dwellings' SAP score or the floor area per person. This hints that students manage their energy consumption in various ways. Therefore, it appears that in several cases energy consumption falls under the household's power of decisions rather than the individual's. Also, thermal satisfaction in the bedroom has a great influence on students' satisfaction with their accommodation. In contrast, the amount spent on energy does not necessarily predict the quality of residents' thermal comfort.

Chapter 8 explored the final research objective which was to examine the effects of the socio-economic differentials of students on housing outcomes. The findings show that students highly prioritise the housing location and its condition/quality in their decision making processes. Yet the opportunity to live with friends is fundamental in the motivation to move into HMOs. The research has asserted that students' levels of income differ between types of accommodation, which creates a spatial income mixing in students' neighbourhoods. The absence of spatial economic exclusion is also visible through students' level of debt as university halls of residence lodge individuals with the highest positive and negative debt balances. These findings illustrate the uniqueness of residential motives imbricated in students' decision-making processes. Finally, the non-correlation between the housing rental cost and the energy performance of the dwelling, presented in Section 8.5.3, is a meaningful finding. For example, it can benefit students willing to live in properties with a high SAP rating (e.g. Band B) while paying the same rent cost as inadequately maintained buildings (e.g. Band F). This has drawn the lack of regulation existing in the PRS and its limitation to environmental policies.

9.3 Contributions to the Scholarship of Student Geographies

Responding to Holton and Riley's contentions (2013), the findings of this thesis have produced a new impetus to the scholarship researching student geographies by addressing the magnitude of sustainability issues embedded in the dynamic interface of supply and demand of the student housing market. New evidences of the diversity of environmental challenges in students' dwellings have been reported. Therefore, the contributions of this research to the scholarship of

student geographies are numerous. They pertain to the local level, Loughborough, but also to the national level due to its socio-economic, environmental, and political implications. The following sections emphasise the key original contributions of the thesis to ongoing debates of student geographies, and the integration of a focus on sustainability.

9.3.1 The Diverse Morphologies and Sustainability Attributes of Student Housing

As noted by Garmendia *et al.* (2011), processes of studentification operate in high-rise rental flat markets, hence displacing long-term inhabitants. The authors have affirmed that the unfolding of horizontal and vertical studentification processes affected the local residents in diverse ways, although the presence of high student concentration remains more visible at the street level. Clearly, it is valuable to consider whether differences of studentification impacts exist in the market segment of houses. Consequently, the dispersal of studentification processes in new building types has fostered the breakdown of supplied student accommodation in the PRS in order to better discriminate the scope of such effects.

By providing an extensive examination of dwelling types occupied by students with the SDT and resources extracted from EPCs, the research has differentiated the physical and sustainability diversity of buildings supplied to students. Holding specific and inherent characteristics, dwellings in the PRS meet intricate and abundant demands. This suggests that depending on the accommodation profile, residents benefit from different levels of comfort, interpreted here in individual floor space. Recognising the importance of discerning the various features of properties supplied to young people also means a better understanding of their lifestyles, residential practices, and well-being as “housing conditions emerged strongly as an indicator of the students’ quality of life” (Christie *et al.*, 2002: 219).

The findings are vital as they bring new elements into debates of studentification. Indeed, it is postulated in the existing literature that studentified neighbourhoods are principally composed of terrace houses (Hubbard, 2008; Rugg and Rhodes, 2008; Sage *et al.*, 2013), prominently of Victorian style. Yet, the SDT have made evident the weight of other property types, exemplified by semi-detached and detached altogether accounting for 30% of privately rented dwellings. The findings are consistent with Thomsen and Eikemo’s assertion (2010) that housing attributes have a far-reaching influence on students’ residential experience and their dwelling satisfaction. Consequently, it is crucial to not apprehend the PRS as a ‘catch-all’ term but rather as the recipient of a significant assortment of buildings, styles, shapes, and features.

Furthermore, the adoption of a sustainability approach for the SDT has contributed ‘to open a Pandora’s box’ in student geographies by connecting it to the growing presence of environmental challenges in this field. The findings discussed in this thesis raise pressing questions related to energy consumption in student households. The NUS’s report (2014) provides interesting evidence of negative effects in low-quality housing. However, it struggles in targeting these issues by types of accommodation, which does not pave the way for further political implications.

Thus, the creation of the first student housing taxonomy contributes to the advancement of understanding the physical and sustainability attributes of dwellings occupied by HE candidates. This also signifies a cornerstone for further research in the field of student housing.

9.3.2 Sustainability Challenges in Student Housing and Identifying Fuel Poor Residents

By outlining the sustainability attributes within the diverse housing types supplied to students, this thesis has assessed the impacts of dwellings’ energy efficiency on students’ energy consumption and cost. Grappling with the relationships between the effects of residing in low-quality HMOs and occupants’ lifestyles and residential practices, this thesis has confirmed the prevailing lack of knowledge in regards to the scope of sustainability issues in students’ housing careers.

Although the persistent commodification of supplying all-inclusive packages to private tenants has been previously distinguished (e.g. Hubbard, 2009), this study originally informs of their influences within students’ residential decision making processes and on individuals’ housing experiences. It has been shown that in order to offset low-quality properties and to remain attractive on the market, HMO landlords have commodified their product by often including energy, water, and internet bills in the rent cost. Labelled as all-inclusive packages, such deals have proven to be important in prospective tenants’ decision-making processes. Perceived as ‘hassle-free’ and appreciated by the residents, such accommodation bundles, however, cause worries amongst its beneficiaries because of the non-environmental friendly practices it instils in students’ routine as well as the lack of experience in planning for paying energy bills.

This thesis advocates for a better transparency of students’ energy use. This is consistent with Priemus’ recommendations (2005) to provide residents with feedback regarding their energy consumption and confronting them with the energy costs. Moreover, it is argued that students dread the move from HMOs to the general housing market, partly because of their inexperience

in managing their personal energy consumption. It has been made evident that students, as residents, lack environmental education and ability. Therefore, this research approves the statements made by both Poortinga *et al.* (2004) and Pilkington *et al.* (2011) of intensifying the environmental education and awareness of tenants. Notwithstanding, it has been supported throughout this thesis that students form an atypical residential population. Finally, the all-inclusive packages make the evaluation of students' energy consumption and the identification of fuel poor households a strenuous task.

The thesis has called into question the viability and the resiliency of the current FP definition in regards to the student housing perspective. Boardman's (2010) discussion about the controversy surrounding the definition of FP is reinforced in this study. The elaboration of an original and experimental FP framework based on individuals' expenditure rather than income has been more suitable to the student population. As well, it has been emphasised that water expenditure should be included in the FP calculation methods. This research has expanded on preliminary findings studied by Bouzarovski *et al.* (2012). It has provided crucial insights on the magnitude of FP among students and the housing types the most affected by FP occupants. Albeit experimental, this assessment process has the merit of reconsidering the overall FP framework and to step into the breach of excluding transient populations (e.g. students). Finally, the empirical findings have exposed unsatisfactory living conditions comparable to those reported by the NUS (2014).

Disrupting the linear nature of the student experience, this thesis has shed the light on regular ordeals generated by sustainability issues within student accommodation. In this manner, it can be confirmed that student housing experiences are diverse, and often at the mercy of the sustainability condition/quality of the dwelling occupied.

9.3.3 'Tell Me Where You Live and I Will Tell You Who You Are'

This thesis has responded to Holton and Riley's (2013: 69) proclamation for a re-assessment of the student mobilities debate within human geography:

“Future research would do well to pay attention not only to how students make decisions on their choice of residence, but also how this changes through the course of their study...”

The unfolding of a student residential pathway, intensely commented in the literature (e.g. Kenyon, 1999; Ford *et al.*, 2002), has been reiterated within this thesis. It has become a ground rule for new HE entrants to start on their housing career in university halls of residence. It was

recognised that since the Niblett Report (1957) students residing in institution properties foster social interactions and the apprenticeship of *vivre ensemble*. The thesis has acknowledged that, over a half-century later, similar observations are still valid. In addition, the regimented nature of living in university halls of residence considered in in this thesis concurs with Hubbard's (2009) assertions. The temptations of UG Year 2 and 3+ students to 'experience residency in a house,' galvanised by a stronger desire to exercise autonomy, correspond to the observations made by Smith and Holt (2007). Moving into the PRS is strongly driven by the robustness of existing social networks. Indeed, it has been verified that UG students would trigger a residential shift to HMOs based on a collective rather than a personal decision. If the individuals selected as future coresidents prefer to stay in university maintained accommodation, which was the case for several focus groups' participants, the move into a house can be postponed to the next year, if and when a general consensus has been agreed upon. Thus, this consolidates findings in the existing literature:

“Who to live with seemed to be the first, most important, part of the decision about moving into private accommodation.” (Christie *et al.*, 2002: 218)

This thesis has highlighted several incompatibilities between the accommodation provided to students and what they actually prefer. These discrepancies were blatant when comparing the residential distribution and aspirations between UK and international residents. One of the most resounding outcomes is the limited residential interest expressed by domestic students for PBSA. This finding confronts Hubbard's (2009: 1920) comment:

“Purpose-built development may well reduce overconcentration of HMOs, and help solve some problems of studentification.”

On the one hand, PBSA's high levels of unpopularity, possibly nurtured by derogatory testimonies from former residents (see Section 6.4.5), have pushed UK students away from this accommodation option. Students' persisting preference to live in HMOs suggests that studentification processes are more likely to linger on within targeted Loughborough's neighbourhoods. Moreover, this statement tempers the sturdiness of destudentification processes noted by Kinton (2013), although the creation of voids, linked to an oversupply of housing, should still be considered. This implies a revision of the current planning strategies developed by the Charnwood Borough Council, in order to confine the studentification in local neighbourhoods.

On the other hand, international students show no apparent aversion for PBSA (cf. Figure 8.3), as indicated by the share of non-UK residents in PBSA being twice more than for domestic students. This unbalanced residential interest poses some questions related to the commercialisation strategies operated by PBSA providers. Thus, this begs the question: to what amplitude the emphatic commercialisation towards non-UK students by PBSA providers participates in the development of social and spatial exclusion processes?

Overall, this research concurs with Kinton's findings (2013) that student residential preferences and choices are essential in the dynamic of the student housing market.

9.3.4 The Socio-Economic Diversity of Studentifiers

Notable contemporaneous policies and reforms have transformed the HE marketplace, such as the widening participation in candidate numbers and the introduction and upsurge of tuition fees. On one hand, one direct consequence of the massification of HE has been the upsurge of the number of university candidates from modest social backgrounds has increased (Mayhew *et al.*, 2004; Offa, 2014). This has reinforced socio-economic discrepancies within the student population (Galindo-Rueda *et al.*, 2004; Crawford, 2012). On the other hand, effects on the student housing supply have been conspicuously remarked on. The unfolding processes of studentification have been identified in several parts of the UK, which reinforces its magnitude (e.g. Smith, 2005, 2009; Allinson, 2006; Munro *et al.*, 2009).

Examining the relationships between students' socio-economic profiles and their housing choices, this thesis has recognised that, in terms of residential geographies, socio-economic inequalities are highly limited. Most student residential areas encompass income mixing (see Figure 8.5), and so, students with the highest income cohabite with individuals with restricted earnings. This is particularly perceptible in the PRS and studentified areas. The finding allows the affirmation that despite being socially and spatially segregated (see Smith and Hubbard, 2014), there are no processes of residential exclusion within student population occupying HMOs. Also, this statement fortifies the great diversity of students' preferences entangled in the specific interrelations between the local supply and demand for student residence.

Furthermore, this research has considerably refreshed the findings extracted from Christie *et al.*'s (2002) investigation of student financial conditions. This thesis has shown that the share of parental support to cover the rent cost has diminished. It stands out that students are now primarily relying on loans and grants as sources of income. Nonetheless, distinctions have been

made between individuals with freshers mainly depending on government's funds whereas UG Year 3+ students compensate the decrease of loans with higher paid work earnings. The argument made by Christie *et al.* that students have limited exposure to financial risk as student, due to significant parental support, seems contemporarily obsolete. This assertion is supported by the increasing propensity for students to develop a substantial level of debt at the end of their studies. Lastly, by analysing students' monthly expenditure, not exclusively the rent cost as considered in Christie *et al.*, this thesis stresses the various impacts tied to the residential decision-making processes.

Thus, this research has contributed in various and significant ways towards the expansion of the knowledge in the scholarship of student geographies.

9.4 Paving the Way for Further Research Avenues

Overall, this thesis has widely participated in the expansion of the geographies of student accommodation by demonstrating the physical and sustainability diversity of dwellings, by linking student residential preferences and housing types, and by highlighting the impacts of low-condition housing in student living experiences. Throughout the richness of data provided in the LSAS, SDT, and interviews, several findings have opened the gate to new research questions and avenues.

First, the profile of student accommodation is highly affected by HE reforms as examined in Chapter 2. The introduction of the £9,000 per annum tuition fees in September 2012 has been, or will be, a hard financial blow for students. At the time of the online survey (Spring 2013), its effects have not been perceived as of yet. Nonetheless, the worsening of students' financial condition can be perceptible in their residential selection. As an example, the number of UG Year 3+ students living at the parental home is three times more considerable than for UG Year 2 individuals. Although the removal of the MASN cap signifies a revenue boost for HE, it also raises the question of supplying bedspaces to new entrants. It would seem that the PRS might be, once again, the recipient of the demand spillage. Yet, what about mitigating the development of studentification processes? Increasingly relying on the PRS to accommodate the surplus of students might accentuate urban changes. Moreover, students' levels of residential expectations have increased with the HE cost whilst the student housing market has shown limited ameliorations. Therefore, it may be fruitful in a few years to evaluate the effects of students' financial deterioration on the housing supply and demand.

Second, this thesis has advocated that studies on student residential geographies should, henceforth, espouse a sustainability dimension. Student geography is a 'breeding ground' of theoretical concepts that should be investigated. The creation of the dwelling taxonomy has emphasised the physical and sustainability diversities of student housing supply. In addition, the linkages between energy efficiency measures and changes in the residential sector may be appropriate to explore further. For instance, it would be compelling to analyse the retrofitting of houses in the PRS and its ramifications on processes of studentification (or destudentification). Additionally, alterations in student housing demand can have remarkable effects on building provision. If, in the future, sustainability criteria are more considered in students' residential decision-making processes, will that encourage HMOs landlords to refurbish their property? In a similar fashion, it would be enriching to examine the future residential choices of students having coped with poor level of comfort in their dwelling. Hence, the entanglement of sustainable development and student housing has engaged a plethora of research avenues.

Third, on the eve of the UN Climate Change Conference COP21, to be hosted in Paris in December 2015, the rise of pressing questions about more effective ways to reduce CO₂ emissions in the residential sector is to be expected. Over two years after its official launch, it seems evident that the GD has failed to meet most of its goals. Consequently, the sustainability industry is struggling because of a paltry demand due to a high level of unawareness from the general public. Although entrenched in a moribund economic climate, the GD has not yet been the motor of green growth desired by Prime Minister David Cameron (Vaughan, 2013a). Accordingly, it may be fruitful to follow the evolution of sustainable implementations and potential effects on the PRS.

Finally, important issues associated to the FP definition deserve to be addressed. It is pertinent to reevaluate the FP framework so that transient populations, like students, can be identified as fuel poor. There is no doubt that, using the innovative calculation method, a fair portion of students in the PRS are exposed to FP situations. In the light of this finding, further research focusing on this issue is required to support the emergence of a growing body of literature about sustainable student housing.

9.5 Retrospection

Looking back at the production of this thesis, it is germane to insist on the impediments and flaws that appeared during this research. Whether related to methodological processes, time

management, or data limitations, the difficulties encountered were various and are worth describing.

First, it has become clear that the key methodological process was the online survey. By virtue of its nature, digital surveying fittingly suits students' familiarity with technologies and the Internet. Therefore, instead of a sizeable hard copy pilot survey (37 respondents), a more productive piloting of the online survey could have been performed. Although a pilot survey was conducted amongst colleagues and peers, it mainly informed on the use of BOS, the survey design and structure, and the quality of the questions. It could have been beneficial to receive feedback on the pilot of the LSAS from UG students. This could have helped to reduce the large number of students who left the survey after only 10 questions.

Second, the researcher reiterates his gratitude towards the LSU's President, Director, and Deputy Director. The help provided has added a strong legitimacy of the LSAS as well as a great exposition. Nonetheless, entrusting a third party to send the survey invitation email also came with flaws. The 'bug' of the personalised salutations (see Section 4.3.5) may have given the participant an impression of 'amateurism'. The positive aspect is that this occurred during the soft launch and was amended for the general sending. Emphasised in Section 4.3.5, delegating the sending of email invitations suggests that the researcher had limited influence over the diffusion of the survey. One solution to overrule such hindrance would have been for the researcher to involve himself in the diffusion process. This would have required more effort in order to collect students' email addresses from their schools and/or departments but would have been rewarded with total control over the survey protocol.

Another aspect of the data process that could have been carried out differently is touching the span of time between the launch of the online survey (January 2013) and the conducting of the interviews and focus groups (May 2014). This is due to time consuming analyses as well as to the collection and computerisation of data extracted from EPCs. Certainly, it was pivotal to find dates where students were available and not distracted by their revisions and exams. Thus, it would have certainly been possible to conduct more focus groups and semi-structured interviews if the timing had been coordinated more efficiently. Lastly, it is regrettable that energy consumption data in halls of residence has not been available to the researcher. Despite countless attempts of contact with the officer in charge of monitoring energy consumption at LU, no support had been provided. This is prejudicial, as the obtaining of official data would have reinforced the accuracy of the analysis and benefited even more LU. To conclude, retrospective

commentaries are inherent in the reflection of the realities of research and the building of for further studies.

9.6 Conclusion

In conclusion, this thesis provides empirical evidence that student residential geographies unfold within the entanglement of conglomerate social, economic, and sustainability components. One of the main contributions this research makes towards existing academic knowledge is related to the complexity of student residential decision-making processes. It has been affirmed that students' housing criteria refine as individuals progress in their undergraduate studies. The findings signify that the accommodation proximity to campus, the rent cost, and the possibility to live with friends are paramount in students' residential decision-making. In contrast, prospective tenants do not, globally, consider sustainability criteria as influential. However, it is contended that dwellings supplied to students hardly meet their environmental expectations.

This thesis serves to demonstrate that students follow a residential pathway epitomised by the shift from university maintained properties to the PRS in their second and final year of UG studies. The apprenticeship of adulthood operating in university halls of residence is consequential for the proceeding of students' housing career. Indeed, the opportunities for social interactions in halls of residence create solid social bonds, which are paramount in the residential decision-making of students. The findings also indicate that selecting an accommodation with coresidents becomes a collective decision encompassing trade-offs and agreements rather than individual aspirations. Therefore, education spaces and experiences should not only be restrained as a platform for young people to become 'apprentice migrants' (Smith *et al.*, 2014), but also as a rudimentary stage for 'apprentice residents'.

The thesis also outlines sustainability inequalities in the housing stock, exemplified by the SAP rating of dwellings. Newly built developments such as university halls of residence or PBSA are more energy efficient than most PRS properties, particularly terrace houses. Nonetheless, discrepancies between rent cost and housing condition/quality are limited. This implies that accommodation's sustainability characteristics are not yet regarded as a decisive component in the housing provision. From an economic perspective, it is asserted that there is a residential heterogeneity of students with the highest and lowest incomes. This refutes the idea of processes of economic exclusion within student population.

The research raises pressing questions about the questionable quality and condition of some accommodation supplied in the PRS. Residents have shared their concerns about the condition they live in, experiencing unsatisfactory comfort and cold temperature in their bedroom. It appears pivotal for the key stakeholders (e.g. local authorities, HEIs, NUS, landlords associations, and letting agencies) to engage in a complete assessment of the energy efficiency of the student housing stock. This would constitute a salient turning point in amending the FP definition in order to encapsulate student households. In a similar manner, the sustainable benefits of all-inclusive packages would merit revision. Indeed, by not having to pay their energy consumption, residents acquire energy behaviours that could be detrimental to them once living in the general housing market. As well, the case study of Loughborough has served to illustrate the sustainability discrepancies of the dwelling stock and the diversity of student demand in an environment tied down to processes of studentification. There may be opportunities to conduct comparable studies in other settings in the UK or elsewhere.

Finally, the thesis has filled a gap in the existing literature with respect to the physical and sustainability approaches in the student housing market. Empirical outcomes stemming from the dwelling taxonomy have highlighted the heterogeneity of the student residential sector. As well, sustainability challenges arising in the processes and patterns of youth residential migration have been addressed. To conclude, it has been argued throughout this thesis that the interface of student housing supply and demand intervenes in a complex dynamic compounded of socio-economic, sustainability, and political characteristics. Exemplifying the simultaneous fuelling and consuming of urban changes, the student accommodation market remains perpetually on the verge of transformations.

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Appendices

Appendix 1 – Example of Data Extracted from EPCs

Appendix 2 – The Loughborough Students Accommodation Survey 2013

Appendix 3 – Timeline of the LSAS's Response Rate

Appendix 4 – Multiple Regression Model of Monthly Energy Cost when All-Inclusive Bills in HMOs with Floor Area in m²/ Resident, SAP Score, Size of Household as Predictors

Appendix 5 – Levels of Housing Satisfaction and Rent Cost (in £ per month)

Appendix 6 – Linear Regression between Rent Cost (in £ per month) and SAP Score

Appendix 1 – Example of Data Extracted from EPCs

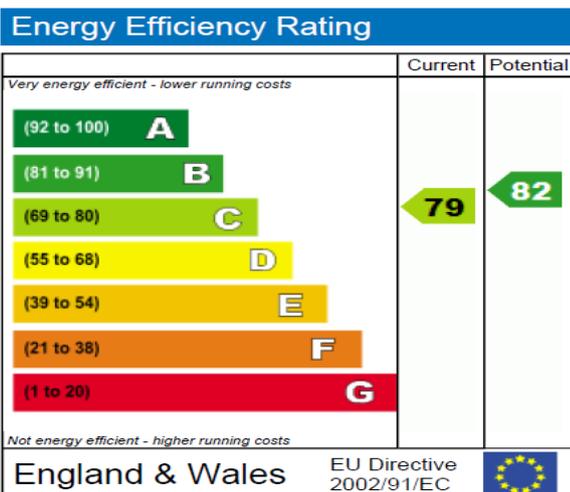
Energy Performance Certificate



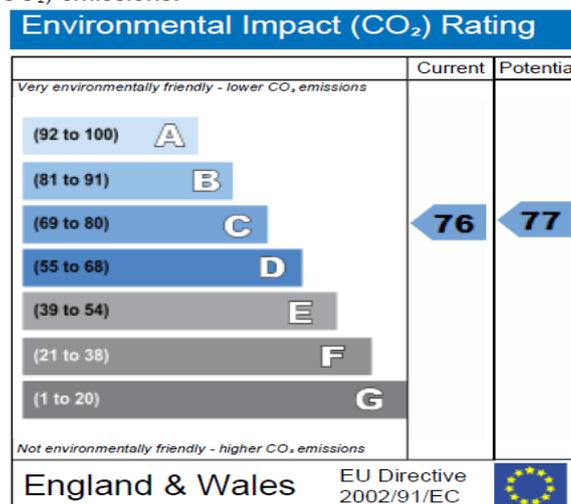
LOUGHBOROUGH
LE11 2TJ

Dwelling type: Top floor flat
Date of assessment: 15 August 2008
Date of certificate: 17 August 2008
Reference number: 0558-2805-6382-0098-4725
Total floor area: 70 m²

This home's performance is rated in terms of the energy use per square metre of floor area, energy efficiency based on fuel costs and environmental impact based on carbon dioxide (CO₂) emissions.



The energy efficiency rating is a measure of the overall efficiency of a home. The higher the rating, the more energy efficient the home is and the lower the fuel bills will be.



The environmental impact rating is a measure of a home's impact on the environment in terms of carbon dioxide (CO₂) emissions. The higher the rating, the less impact it has on the environment.

Estimated energy use, carbon dioxide (CO₂) emissions and fuel costs of this home

	Current	Potential
Energy use	193 kWh/m ² per year	184 kWh/m ² per year
Carbon dioxide emissions	2.0 tonnes per year	1.9 tonnes per year
Lighting	£71 per year	£35 per year
Heating	£122 per year	£128 per year
Hot water	£109 per year	£109 per year

Based on standardised assumptions about occupancy, heating patterns and geographical location, the above table provides an indication of how much it will cost to provide lighting, heating and hot water to this home. The fuel costs only take into account the cost of fuel and not any associated service, maintenance or safety inspection. This certificate has been provided for comparative purposes only and enables one home to be compared with another. Always check the date the certificate was issued, because fuel prices can increase over time and energy saving recommendations will evolve.

To see how this home can achieve its potential rating please see the recommended measures.



Remember to look for the energy saving recommended logo when buying energy efficient products. It's a quick and easy way to identify the most energy efficient products on the market.

For advice on how to take action and to find out about offers available to help make your home more energy efficient call 0800 512 012 or visit www.energysavingtrust.org.uk/myhome

Summary of this home's energy performance related features

The following is an assessment of the key individual elements that have an impact on this home's performance rating. Each element is assessed against the following scale: Very poor / Poor / Average / Good / Very good.

Element	Description	Current performance	
		Energy Efficiency	Environmental
Walls	Cavity wall, as built, insulated (assumed)	Good	Good
Roofs	(another dwelling above)	-	-
Floor	(other premises below)	-	-
Windows	Fully double glazed	Good	Good
Main heating	Electric storage heaters	Poor	Poor
Main heating controls	Manual charge control	Poor	Poor
Secondary heating	Room heaters, electric	-	-
Hot water	Electric immersion, off-peak	Average	Poor
Lighting	No low energy lighting	Very poor	Very poor
Current energy efficiency rating		C 79	
Current environmental impact (CO₂) rating		C 76	

Recommendations

The measures below are cost effective. The performance ratings after improvement listed below are cumulative, that is they assume the improvements have been installed in the order that they appear in the table.

Lower cost measures (up to £500)	Typical savings per year	Performance ratings after improvements	
		Energy efficiency	Environmental impact
1 Low energy lighting for all fixed outlets	£30	B 82	C 77
Sub-total	£30		
Higher cost measures			
None			
Total	£30		
Potential energy efficiency rating		B 82	
Potential environmental impact (CO₂) rating		C 77	

Further measures to achieve even higher standards

The further measures listed below should be considered in addition to those already specified if aiming for the highest possible standards for this home.

Higher cost measures			
None			
Enhanced energy efficiency rating		B 82	
Enhanced environmental impact (CO₂) rating		C 77	

Improvements to the energy efficiency and environmental impact ratings will usually be in step with each other. However, they can sometimes diverge because reduced energy costs are not always accompanied by a reduction in carbon dioxide (CO₂) emissions.

Appendix 2 – The Loughborough Students Accommodation Survey 2013

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Loughborough Students Accommodation Survey 2013



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Welcome to the Loughborough Students Accommodation Survey 2013

The Geography Department and CREST (Centre for Renewable Energy Systems Technology) in the University are conducting a survey of **student accommodation needs** and **environmental aspirations**.

The research is fully endorsed by your **Students Union, and the Loughborough Students Union President, Ellie Read**, urges you to complete the following survey:

"This piece of research is one that I think will have a real positive impact on students in Loughborough and their experience when it comes to accommodation and housing. I would urge all students to fill out this questionnaire in order to help the university gain a better understanding of students living arrangements and enable them to use the data to benefit the student population."

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Data Protection statement

All data collected in this survey will be treated in strictest confidence, anonymised, and held in a secure environment.

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Your accommodation

Please note:

Questions are **mandatory** unless marked otherwise.

Follow the instructions if you are asked to jump to another question (e.g. go to Q.1)

Once you have clicked on the **CONTINUE** button your answers are submitted, and you cannot return to review or amend that page.

Your accommodation

1. Did you live within Loughborough during the last academic year (2011/12)?

- Yes
- No (go to Q.4)

2. What best describes your type of accommodation during the last academic year (2011/12)?

Select an answer

3. Was your accommodation during the last academic year (2011/12):

- Self-catered
- Catered
- Other (please specify):

How many **other residents** shared your accommodation?
Select an answer

4. What best describes your type of accommodation for the current academic year (2012/13)?

Select an answer

5. Is your accommodation for the current academic year (2012/13):

- Self-catered
- Catered
- Other (please specify):

How many **other residents** share your current accommodation?
Select an answer

6. Do you rent your current accommodation from a landlord/organisation?

- Yes
- No, I do not rent my accommodation from a landlord/organisation
- No, I own my current accommodation (go to Q.11)
- Don't know

a. If Yes, please indicate from the list who your landlord/organisation is:

Select an answer

b. If your landlord/organisation is not present in the list, please indicate its name:

7. When did your tenancy agreement commence for your current accommodation?

Select an answer

Year
Select an answer

If you selected Other, please specify:

8. What is the length of your tenancy agreement?

Select an answer

If you selected Other, please specify:

9. Please rate your overall level of personal satisfaction about your current landlord /organisation:

- Very satisfied
- Satisfied
- Neutral
- Dissatisfied
- Very dissatisfied

10. Which of the following services/charges are included in your current rental cost?

				Please add any information
	Yes	No	Don't know	
a. Food/Catering	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
b. Heating	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
c. Electricity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
d. Gas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
e. Water	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
f. Internet	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
g. Parking space	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
h. Council tax	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
i. TV Licence	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
j. Management Fee (e.g. cleaning, maintenance)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

11. Please rate the importance of all the following reasons in your decision to reside in your current accommodation:

[More Info](#)

	Very important	Fairly important	Neutral	Not so important	Not at all important	Not applicable
a. Proximity to campus	<input type="radio"/>					
b. Proximity to city centre	<input type="radio"/>					
c. Desire of living Independently	<input type="radio"/>					
d. Cost of housing	<input type="radio"/>					
e. Energy/utility bills included in rent cost	<input type="radio"/>					
f. The availability date of the housing	<input type="radio"/>					
g. Living with friends	<input type="radio"/>					
h. The rental contract length	<input type="radio"/>					
i. Proximity to leisure/fitness activities	<input type="radio"/>					
j. Safety/low crime rate of the area	<input type="radio"/>					
k. Visual appeal/aesthetic of the area	<input type="radio"/>					
l. Good housing condition/quality	<input type="radio"/>					
m. Parking availability	<input type="radio"/>					
n. Facilities of area (pubs, shops, etc.)	<input type="radio"/>					

12. Please rate the following facilities and features concerning your current housing:

	Excellent	Good	Neutral	Bad	Not acceptable
a. Furnishings (e.g. bed, sofas, desk, etc.)	<input type="radio"/>				
b. Appliances (i.e. kitchen, bathroom, utility, etc.)	<input type="radio"/>				
c. Temperature in my bedroom	<input type="radio"/>				
d. Internet	<input type="radio"/>				
e. Comfort of my bedroom	<input type="radio"/>				

13. Please state the primary heating system in your current accommodation:

- Gas central heating
- Portable heaters
- Electric central heating
- Don't know
- Other (please specify):

14. Your current accommodation is equipped with:

- Single-glazed windows
- Double-glazed windows
- Triple-glazed windows
- Don't know

15. Please rate your overall level of personal satisfaction about your current accommodation:

- Very satisfied
- Satisfied
- Neutral
- Dissatisfied
- Very dissatisfied

16. What is the approximate age of your current accommodation?

- Pre 1919
- 1919-1944
- 1945-1964
- 1965-1980
- 1981-1994
- Post 1995
- Don't know

17. State the frequency and the mode(s) of transport you usually use to get from your current accommodation to the University. Also, in the last column please indicate on average how much time it takes to get from your accommodation to the University.

	Frequency in number of days per week							Single time journey (in minutes)		
	No days	1 day	2 days	3 days	4 days	5 days	6 days	7 days		
a. Bike	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="text"/>	<input type="text"/>
b. Bus	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="text"/>	<input type="text"/>
c. Car	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="text"/>	<input type="text"/>
d. Motorbike	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="text"/>	<input type="text"/>
e. Walk	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="text"/>	<input type="text"/>
f. Other	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="text"/>	<input type="text"/>

18. If you have selected "Car" in the previous question, is it:

- Your car
- The car of someone living with you
- The car of someone not living with you

19. What would be your preferred accommodation choice for the next academic year (2013/14)?

Select an answer

Your personal income and expenditure

Income

This section focuses on the approximate amount of your income during the academic year. Please try to be as accurate as possible. If you are not sure of the precise totals, please provide an estimate.

20. What is the source of your personal income during the current academic year (please indicate the amount in the boxes that apply)?

More Info
More Info

	Amount (in £/month)
a. Student Loan	<input type="text"/>
b. University Scholarship / Bursary / Study Grant	<input type="text"/>
c. Maintenance Loan / Maintenance Grant	<input type="text"/>
d. Commercial Loan (i.e. bank)	<input type="text"/>
e. Family / Partner / Friends	<input type="text"/>
f. Paid work	<input type="text"/>

21. If you have another source of income (in £/month) which is not captured by the previous question, please describe here.

Expenditure

The following section focuses on the approximate amount of your expenditure during the current academic year. Please try to be as accurate as possible. If you are not sure of the precise totals, please provide an estimate.

22. How much rent do you pay a week (in £) for your current accommodation?

Are the energy / utility bills included?

- Yes
 No
 Don't know

23. What is your average monthly expenditure on food?

More Info

	Cost (in £/month)	Not Applicable
a. Domestic food	<input type="text"/>	<input type="radio"/>
b. Eating out (University, restaurants, etc.)	<input type="text"/>	<input type="radio"/>

24. What is your average expenditure on Internet and mobile phone bills (when not already included in your rent cost) per month?

More Info

	Cost (in £/month)	Not Applicable
a. Internet	<input type="text"/>	<input type="radio"/>
b. Mobile phone	<input type="text"/>	<input type="radio"/>

25. What is the amount of your approximate monthly expenditure on the following categories (when not already included in the rent cost)?

More Info

	Cost (in £/month)	Not Applicable
a. Electricity	<input type="text"/>	<input type="radio"/>
b. Gas	<input type="text"/>	<input type="radio"/>
c. Water	<input type="text"/>	<input type="radio"/>

26. How much do you spend on transport every month?

	Cost (in £/month)	Not Applicable
a. Bus (e.g. tickets, bus card, etc.)	<input type="text"/>	<input type="radio"/>
b. Car (i.e. petrol)	<input type="text"/>	<input type="radio"/>
c. Train (e.g. tickets, railcard, etc.)	<input type="text"/>	<input type="radio"/>

27. If there is another source of expenditure on transport that is not captured by the previous question, please describe here.

28. How much do you approximately spend on the following leisure activities?

	Cost (in £/month)	
		Not Applicable
a. Pubs / Nightclubs	<input type="text"/>	<input type="radio"/>
b. Health and Fitness (e.g. gym membership)	<input type="text"/>	<input type="radio"/>
c. Other leisure activities	<input type="text"/>	<input type="radio"/>

29. If there is other expenditure on leisure activities which is (are) not captured by the previous question, please describe here (with totals).

30. How much do you spend on the following?

	Cost (in £/month)		Don't know	Not Applicable
a. Council Tax	<input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>
b. Parking Permit	<input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>
c. TV Licence	<input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>
d. Car Insurance	<input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>
e. Home / Contents Insurance	<input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>
f. Loan Repayment	<input type="text"/>	<input type="text"/>	<input type="radio"/>	<input type="radio"/>

This question includes your direct participation in paying one of those services. This participation can be **individual** (you are the only one concerns by paying one or many of the services above) or your participation can be **collective** (paying with your partner/family/flatmates one or many of the services such as TV Licence, Council Tax and so on).

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Environmental Perceptions

In this section, we are interested in the environmental characteristics of your current accommodation, and your awareness about environmental issues.

Environmental perceptions and awareness

31. Do you **have access** to recycling facilities in your current accommodation / property?

- Yes
 No
 Don't know

32. Are you **involved** in the recycling of materials/products in your current accommodation / property (e.g. metals, paper, glass, plastic, etc.)?

- Yes
 No
 Don't know

33. Please rate the importance of environmental impacts in your everyday life?

- Very Important
 Important
 Neutral
 Not very important
 Of no importance

34. To what extent, do you believe that global warming is human induced?

- Very induced
 Fairly induced
 Neutral
 Not really induced
 Not at all induced

35. Do you know what an Energy Performance Certificate (EPC) is?

- Yes
 No

What is the EPC ranking of your current housing?

- A
 B
 C
 D
 E
 F
 G
 Don't know

[Continue >](#)

What type of students are you?

The last section of this online survey aims to know a bit more about your student condition and viewpoint.

Some personal details

36. What best describes your personal viewpoint?

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
a. I like to have a big night out	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Achieving things that will benefit others give me more satisfaction than anything else	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. I know exactly who I am and what I can achieve	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. I often feel excluded by the Loughborough culture	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. I am easily influenced by others	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. I am overall satisfied with my student experience at Loughborough University	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

37. What is your current residential status?

- Living alone
- Living with partner/spouse (without children)
- Living with partner/spouse and children
- Living with friends/flatmates
- Living with family members
- Other (please specify):

38. Are you:

- Female
- Male

39. How old are you?

40. Are you:

- Full-time student
- Part-time student
- Other (please specify):

41. What is your current level of study?

- Undergraduate
- Postgraduate taught
- Postgraduate research
- Other

42. What is your school/faculty/department?

If you selected Other, please specify:

43. What is your ethnicity?

If you selected Other, please specify:

44. Please select a country to describe your nationality:

If you selected Other, please specify:

45. Please indicate the town and the country of your non-term time address:

Name	
a. Town	<input type="text"/>
b. Country	<input type="text"/>

46. Please indicate the postcode of your current accommodation (e.g. LE11 3TU):

47. Please indicate your street / building number:

48. To be entered into the prize draw, please indicate your student card ID:

49. Would you be willing to take part in follow-up focus groups?

- Yes
 - No
- Please provide your email address:

[Continue >](#)

Loughborough Students Accommodation Survey 2013



Final Page

Thank you for completing the Loughborough Students Accommodation Survey 2013. Your participation is greatly appreciated.

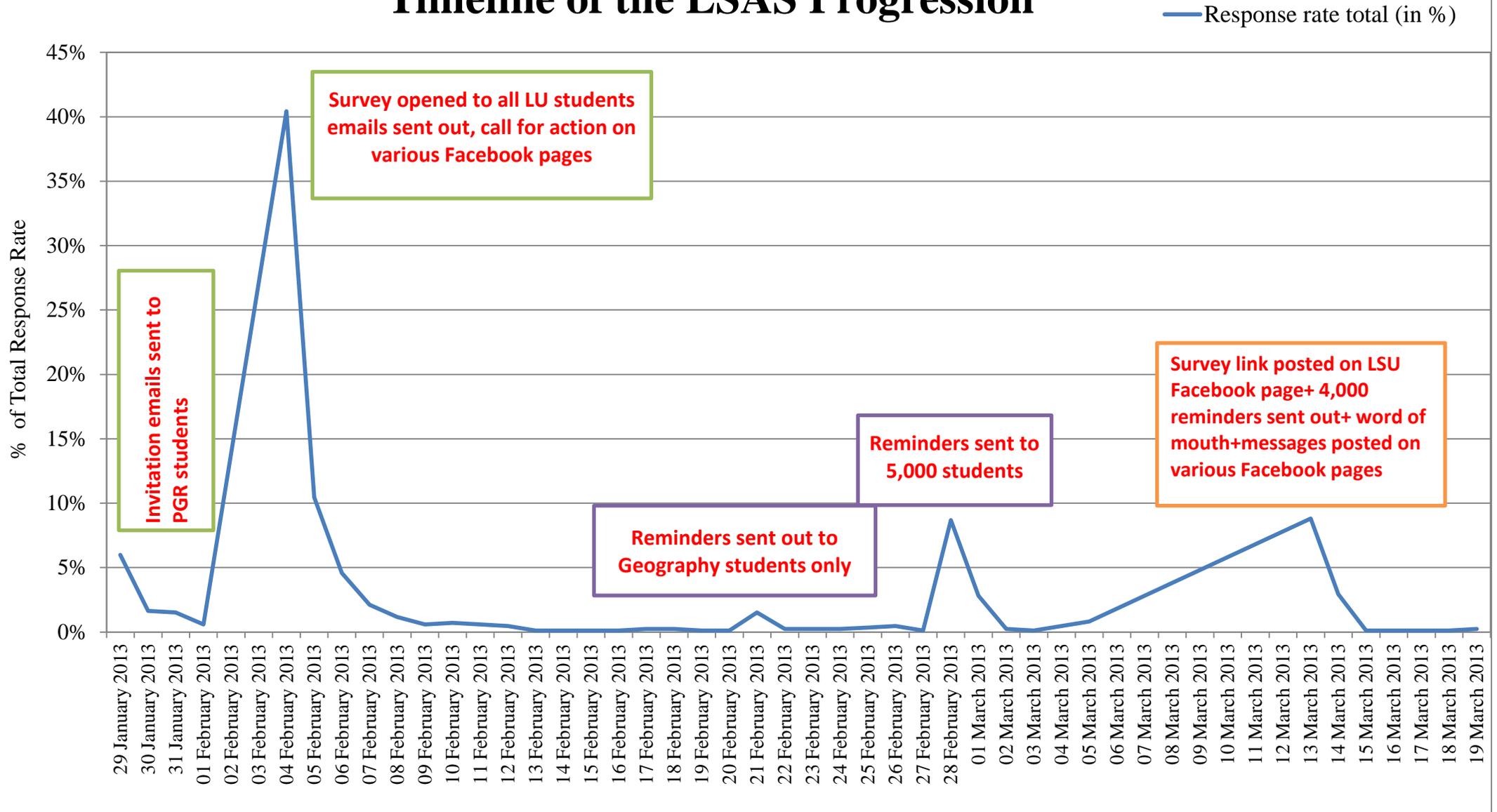
You can now leave the survey.

Please follow this link if you want to return to the Loughborough Students Union 's website:

<http://www.lufbra.net/>

Appendix 3 – Timeline of the LSAS’s Response Rate

Timeline of the LSAS Progression



Appendix 4 –Multiple Regression Model of Monthly Energy Cost for All-Inclusive Bills in HMOs with Floor Area in m²/ Resident, SAP Score, Size of Household as Predictors

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.790 ^a	.624	.618	6.313	.624	119.290	3	216	.000

a. Predictors: (Constant), Floor Area in m2 / resident, SAP score, Size of Household

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	14262.536	3	4754.179	119.290	.000 ^b
	Residual	8608.460	216	39.854		
	Total	22870.995	219			

a. Dependent Variable: Energy Cost (excluding Water)

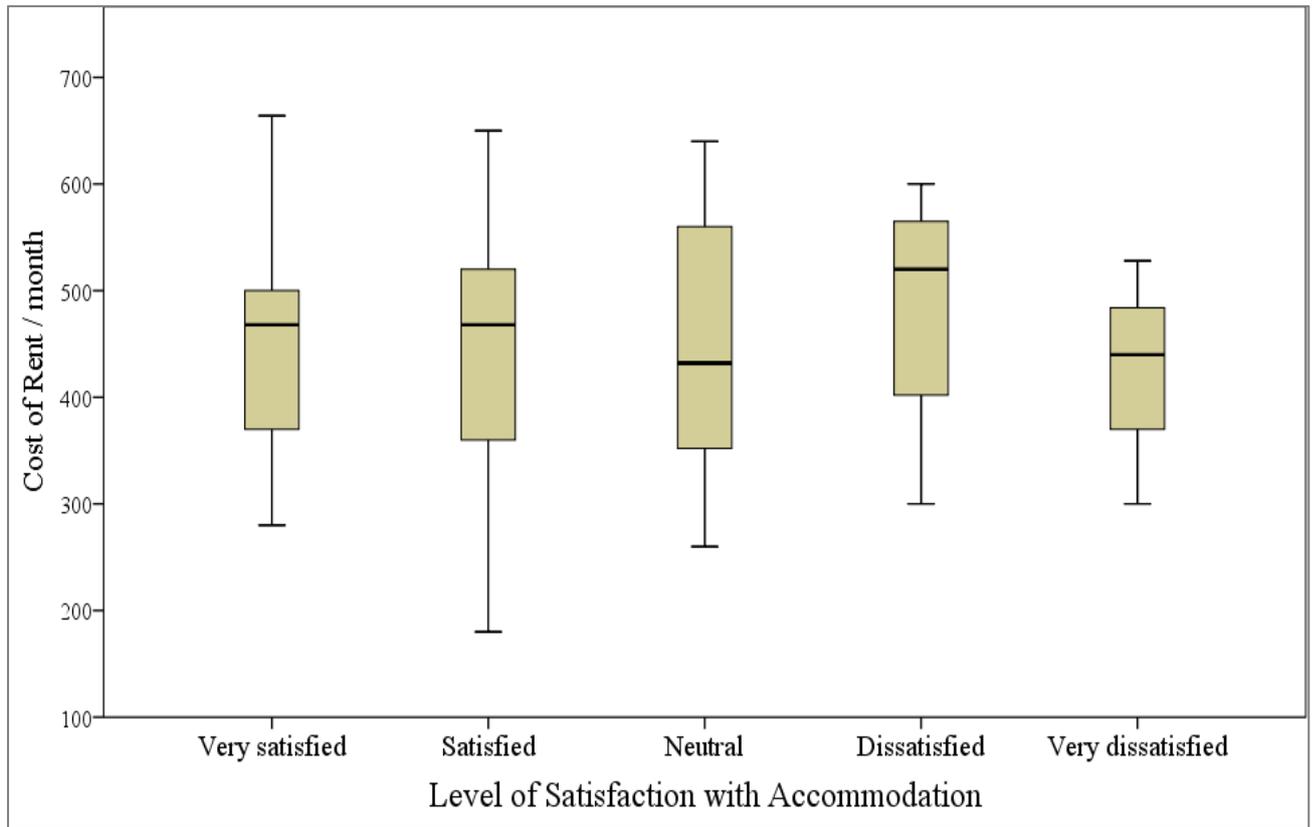
b. Predictors: (Constant), Floor Area in m2 / resident, SAP Score, Size of Household

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	41.382	2.983		13.872	.000
	SAP Score	-.384	.034	-.469	-11.175	.000
	Size of Household	-1.806	.333	-.273	-5.428	.000
	Floor Area in m2 / resident	.436	.047	.470	9.297	.000

a. Dependent Variable: Energy Cost (excluding Water)

Appendix 5 – Levels of Housing Satisfaction and Rent Cost (in £ per month)



Appendix 6 – Linear Regression between Rent Cost (in £ per month) and SAP Score

