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HIGHER EDUCATION STUDENTS CROSSING INTERNAL UK
BORDERS

Student and country differences and their
contribution to higher education inequalities

Susan Whittaker

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Declaration

The work and composition of this thesis are my own. The analysis draws on data provided by the Higher Education Statistics Agency (HESA). HESA does not bear any responsibility for the findings, inferences or conclusions of the analysis.

The work has not been submitted for any other degree or professional qualification. Some aspects of this work have been published in the form of a working paper (Whittaker, 2014); an evidence paper (Whittaker, 2015a); a conference paper (Whittaker, 2015b); and a book chapter (Whittaker, Raffe and Croxford, 2015), as detailed in the references section. The latter included aspects of my own work and that of the co-authors. The vast majority of the thesis contents have not however previously been published.

Susan Whittaker

Abstract

The aim of this research was to undertake cross-county comparisons within the UK in relation to cross-border HE study mobility in order to inform understanding of, and raise issues in relation to, social inequalities between students, and the role and effect in this of policy and sectoral conditions associated with where they live. The research examined whether cross-border mobility for study within the UK reinforces inequalities in higher education (HE) participation, in relation to students' social origin, educational background and ethnicity. It contributes new knowledge on this form of HE participation, to wider research on social inequalities in HE, and on issues of social citizenship in post-devolution UK. Sectoral and policy differences within the UK provided context for the study, which also drew on research evidence on student choice and participation, and theoretically on the concept of situated rationality in both rational action theory, specifically relative risk aversion, and cultural reproduction theory as applied to HE participation. Student and country/region differences in mobility to geographical and institution destinations were analysed using Higher Education Statistics Agency (HESA) data, principally of young full-time undergraduate entrants in 2012 (N=290510; N movers=22155). Key variables were social characteristics, attainment, field of study and tariff level of the institution entered; and additionally field of study supply, average earnings and professional employment rates. Descriptive, logistic regression, marginal effects and average marginal effects analyses provided findings on student differences and inequalities in outward mobility.

The findings suggest that cross-border mobility serves different purposes by country of domicile. Established paths in relation to social and geographical origin appeared important in the high outward mobility from Northern Ireland and Wales, as did HE supply within Northern Ireland, and to a lesser extent within Wales. From Scotland, there was less concentration of destinations in relation to place, with patterns of mobility explained better by institution type entered; and from England mobility was defined more strongly by place of domicile for movement to Wales and by institution type entered for movement to Scotland. Mobility was associated with entering an institution with a higher average entry tariff compared to staying in the home country. An overall relationship was found between socio-economic advantage and

mobility, but there were important findings that could not be interpreted as simply reproducing wider inequalities in HE participation which sectoral and policy contextual factors helped to explain. Although social class effect on mobility from England was limited, and being 'first generation' was positively associated with mobility from Northern Ireland. Despite the extent of mobility from Northern Ireland and Wales of students from a range of backgrounds, social class effects were strong for students from both. Shorter compared to longer distance cross-border mobility appeared less strongly associated with socio-economic advantage and more strongly with movement to lower tariff institutions. Relative field of study under-supply within the home country was associated more with mobility to lower than higher tariff institutions. Some Black and Minority Ethnic students may be mobile to enter an HEI or location with greater ethnic mix than their home area. Inflows from the rest of the UK had the strongest impact on Welsh and Scottish institutions.

Cross-border mobility can be conceptualised as reasoned action based on a cost-benefit evaluation influenced both by the students' cultural and financial resources, and external constraints and opportunities. It reinforces social inequalities in HE participation, but there is under-recognised social diversity in this mobility, as enabling policy conditions also benefit those from less socio-economically advantaged backgrounds. Such students are least likely to have the resources to mitigate any policy changes that increase the cost of or create barriers to cross-border mobility; and would be least likely to have the resources to be mobile to overcome any reduction in the availability and accessibility of HE in the home country. These groups of students that should be the main focus of concern and attention both in further policy development and in future research

Lay Summary

There are broad differences in the extent and forms of higher education (HE) participation amongst young people in the United Kingdom (UK) in relation to their socio-economic backgrounds and ethnicity. This applies particularly to differences in student characteristics with respect to the level of selectivity of HEIs and subjects entered, which reflect and result in inequalities in opportunities and outcomes. Young people's perceptions of desirable and feasible HE options are influenced by a wide range of personal and social factors. These perceptions at the transition point into HE are also influenced by contextual factors, which include institutional and subject provision and HE policies in their country of residence. In the devolved policy context of the UK, these institutional and policy factors differ across the four countries of the UK, and have the potential: to encourage staying in the home country for HE, due to financial factors or due to the availability of provision; to require a move out of the country due to lack of provision; or to penalise those who move due to the requirement to take on higher tuition fee debt than if they stayed in their home country. The potential for differing costs and benefits of moving country to study may affect students differently in relation to their characteristics, and in doing so may contribute to wider inequalities in HE participation. This study explored whether this was the case through analysing the relationships between: the socio-economic background and ethnicity of students; where students live and the institutional and policy characteristics in their home country; and whether students enter an HEI in their home country or in another UK country. This analysis was carried out using Higher Education Statistics Agency (HESA) data, principally of young full-time undergraduate entrants in 2012 (N=290510; N movers=22155). The research found:

- Overall, the extent and patterns of mobility differed by UK country of domicile, and there were both commonalities and differences in their relationship to student characteristics at country level.
- A relationship was found between socio-economic advantage and mobility and movers were also more likely than stayers to enter higher status institutions. Moving country to enter HE may in these cases serve to further secure the advantages of socio-economically and educationally privileged young people.

- However many movers were not socio-economically advantaged. In particular there was social diversity of movers to institutions with relatively low entry requirements. Mobility can be used to enter HE at accessible entry levels for students with all prior attainment levels.
- It was found that under-supply of provision in the home country in relation to institution types or fields of study can help explain mobility. In particular, mobility to less selective institutions was associated with field of study under-supply, which further helps to explain why movers from a range of social backgrounds cross borders.
- There was also social diversity of movers amongst movers living relatively close to a border. The findings suggest that if the social as well as financial costs of mobility are lower, it is a more feasible option for those who are not socio-economically advantaged.
- Some Black and Minority Ethnic (BME) students may in addition be mobile to enter an HEI or location with greater ethnic mix than their home area. This may help to explain the higher levels of mobility of BME students into England than out of England.

Inequalities were therefore found in the propensity and capacity for cross-border study mobility in relation to socio-economic background and ethnicity. In the devolved UK, the policies of the four territorial governments create conditions which affect students differently depending on which country they come from and whether they move or stay, resulting in further inequalities. Difficulty accessing places in particular institution types or fields of study, or lack of ethnic diversity in the home country, mean that students may leave their home country who may otherwise have preferred to stay. However in all cases there is no additional financial support for less socio-economically advantaged mobile students. Such students are least likely to have the financial and cultural resources to overcome any policy changes that increase the cost of or create barriers to cross-border mobility; and would be least likely to have the resources to be mobile to overcome any reduction in the availability and accessibility of HE in the home country. The research findings show that student differences in relation to socio-economic background are important in explaining differing forms of HE participation. However these student differences also interact with situational and contextual factors. By exploring this interaction in the context of

whether HE students stay in their home country or leave, this research has contributed to understanding wider country-level differences as well as student-level differences that contribute to social inequalities in HE participation.

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List of abbreviations

BIS	Department for Business Innovation and Skills
DA	Devolved administration
DENI	Department for Education Northern Ireland
DfE	Department for Education
DfES	Department for Education and Skills
EU	European Union
HEFCE	Higher Education Funding Council for England
HEFCW	Higher Education Funding Council for Wales
HESA	Higher Education Statistics Agency
LFS	Labour Force Survey
ONS	Office for National Statistics
RUK	Rest of the United Kingdom
SFC	Scottish Funding Council for Further and Higher Education
UCAS	Universities and Colleges Admissions Service
WAG	Welsh Assembly Government
WP	Widening participation

Chapter 1: Introduction: aims and overview

This research explores cross-county comparisons within the UK in relation to cross-border study mobility to inform understanding of, and raise issues in relation to, social inequalities between students. The overarching aim is to examine student differences in cross-border mobility for higher education (HE) within the UK for two purposes. Firstly the research aims to identify whether student differences in relation to this action indicate that it contributes to wider well-evidenced inequalities in HE participation, and if so whether this differs between UK countries. Secondly to identify whether these student differences between and within countries may be explained by HE sectoral and policy conditions in their country of domicile, and whether these contribute to inequalities of opportunity or outcome.

Cross-border mobility for HE study concerns students from one country of the UK moving to study in another country of the UK. It is an issue that particularly affects Wales, Northern Ireland and Scotland and their devolved governments (the 'devolved administrations'). Cross-border mobility is a substantial issue for Wales and Northern Ireland due to the extent of flows and the issues this creates in terms of HE funding and in supporting students. It is an issue that raises similar, but less strong, concerns for Scotland. However, during the debate on Scottish independence a contentious topic was whether an independent Scotland would have to extend its free tuition fee policy in line with European Union (EU) rules to incoming students from the rest of the UK (RUK), and if so whether inflows would increase¹. England is affected by cross-border flows insofar as its HE sector receives far more students in numerical terms than the other countries.

The scope of my research therefore encompasses the whole of the UK and concerns why cross-border mobility occurs, and to different extents for each country. It is an issue that is relevant to other nations with devolved or federal HE systems in which internal cross-border mobility may operate. Cross-border mobility can be explored from the perspective of governments, in terms of its impact on funding, policy-making, and political priorities; the perspective of institutions, in terms of its impact

¹ At the time of the 2014 referendum the terms of debate about an independent Scotland were based on all parts of the (former) UK remaining in the EU.

on their contribution to the country's economy and social objectives, on recruitment, funding, provision, and their local, national and international positioning; or students, in terms of its impact on their options, and educational, social, and economic outcomes. This research focuses on the student perspective, in the context of policy and sectoral issues.

As will be discussed in chapter 2, the differences within the UK context, both in terms of the HE sectors within each UK country, and the policies of each, create different conditions for students depending on whether they stay in or leave their home country. These different conditions exist between countries, and in the case of Scotland and Northern Ireland, within countries. Policy differences have become stronger since, and have been enabled by, the devolution arrangements in the UK introduced in 1999. The devolution arrangements are characterised by unequal power relations in which the UK Government's policies for England dominate (Greer, 2009; Raffe, 2013a). This raises questions about social citizenship in the UK. Social citizenship concerns seeking to improve equality of opportunity (and in some cases outcomes) through the provision of social rights in the form of welfare and public service provision (Greer, 2009). In the context of HE, the impact of country differences in tuition fees and student support raises issues in relation to a UK-wide social citizenship (Jeffrey, 2009; Keating, 2009; Raffe, 2013a, b). It is further proposed in this research that the availability and accessibility of HE options in the home country, that is the service provision within each administration, are important to this issue.

Further discussed in chapter 2 is that the UK Government's HE policy treats students as economically rational actors (BIS, 2011). As this position sets the direction of policy to which the devolved governments must respond, and the funding levels in which they must operate, policy relevant to cross-border flows also works from the position that students respond to financial factors in the decision to cross borders. This fails to recognise the greater complexity of factors in HE decision-making and outcomes. Drawing on the wide literature on student choice (chapter 3), the real and perceived options, and costs of these options relative to expected benefits, will differ for students in relation to their social background, and concern not only financial costs, but social ones.

In order to better understand the differences in the choices and actions of students in relation to sectoral and policy conditions, chapter 3 focuses on how student differences in participation, and response to external conditions, can be better explained than as a form of economic rational choice. Students' choices or decision-making relative to their social and educational background are discussed in relation to theories which seek to explain student differences at the transition point into HE, which further take into account situational and contextual factors in the perception of the feasibility and desirability of options. These theories are rational action theory, and specifically relative risk aversion which concerns differences in social class-based choices at educational transition points (e.g. Breen and Goldthorpe, 1997); cultural reproduction perspectives (Bourdieu and Passeron, 1977) applied to HE transitions which concern the role of cultural and social factors which differ by social class, schooling, ethnicity and place of domicile (e.g. Ball et al., 2002a); and the related theories of effectively maintained inequality (Lucas, 2001) and positional competition (Brown, 2013) which are concerned with how the relatively socio-economically advantaged maintain their advantages through seeking to gain differentiation and positional goods through the types of HE choice made. The differences and commonalities of the theories are discussed. These perspectives all seek to explain the reproduction of inequalities in HE participation, and would identify the benefits of mobility to be in maintaining or improving social position through accessing high status institutions or selective fields of study. Applying the theories, and evidence from wider student choice literature, would also more generally suggest that a decision to move into another country or stay would be a reasoned action that is taken based on a form of cost-benefit evaluation or evaluation of risk, informed by their own circumstances, resources and expectations, but also by external factors including the feasibility of gaining a place in particular institutions or fields of study and the location and distribution of these. The impact of policy conditions on the costs of different options is included in the conceptualisation of external factors in this research. The policy, theory and evidence review led to four empirical research questions:

- RQ1: What are the patterns of geographical movement for undergraduate HE study in the UK?

- RQ2: How are students' social characteristics and educational background associated with geographical mobility?
- RQ3: How is mobility associated with institution or field of study entered and how does this differ in relation to student characteristics?
- RQ4: How are students' social characteristics associated with the relationship between place of domicile and destination?

Chapter 4 describes the quantitative approach used to address these questions, which identified aggregate patterns in students' backgrounds in relation to geographical, institutional and field of study destinations using Higher Education Statistics Agency data. This analytical approach situated it in the field of micro-macro studies in sociology rather than as an individual level study which would suit a psychological theoretical and methodological framework. The approach put limitations on the research, and even with the data available, I have limited the findings presented in a few ways. I have focused on socio-economic advantage and ethnicity. As explained in chapter 4 I also focused on entrants to higher education institutions aged under 21. Because of the link to policy differences and devolution, the focus was on cross-border mobility, with some inter-regional analysis within England for comparison, but did not otherwise include within-country mobility analysis. Suggestions for future research that addresses these and other limitations and omitted factors are made in chapter 8. However by taking an exclusively quantitative approach I was able to explore the data in depth, compare findings across four countries, identify new and useful findings, and areas for further exploration.

The findings are reported and discussed in chapters 5 to 7, and identify some commonalities across all countries, but other differences both between and within countries of domicile. Overall the association found between cross-border mobility and socio-economic advantage, and movers entering higher tariff institutions than stayers, indicates that it contributes to the reproduction of inequalities. Importantly however there are findings that contradict this proposition. The cultural factors in the cultural reproduction perspective and the notions of reasoned actions and costs-benefit evaluation in the rational action perspective do however help to explain these findings, which concern the mobility of less socio-economically advantaged students, those moving to enter lower status institutions, differences in relation to the home

area's proximity to a border, and differences in the propensity for cross-border mobility between ethnic groups. The data suggest there is mobility undertaken by students for whom the costs may be greater than the benefits. It is in these findings that the effects of different country contexts within the UK raise important policy implications and issues of social citizenship, as discussed in chapter 8. This discussion helps to identify that the conceptual relationship between the theories of educational transitions and the concepts relevant to social citizenship work in both directions in this research, which shows the importance of treating social class background, or financial or cultural resources, as explanations for differing outcomes that operate in conjunction with situational and external factors.

The thesis chapters are as follows: discussion of contextual factors (institutions, sectors and policy) in chapter 2; theories and evidence of student differences in HE transitions in chapter 3; data and research methods in chapter 4; empirical findings on mobility patterns and destinations (RQ1) in chapter 5; empirical findings on student differences by country of domicile (RQ2-4) in chapters 6 and 7; the empirical and conceptual contribution and policy implications of the research in chapter 8.

Chapter 2: Contextual factors in cross-border mobility: institutions, sectors and policy

2.1 Introduction

This chapter explores and describes sectoral and policy factors which may affect patterns of cross-border mobility due to their influence on the propensity and motivation for mobility, and on their differential impact of mobility on students, in relation to students' social background. This raises issues that will be explored in the context of theory in chapter 3. Following a broad overview of changes in the HE system since its expansion in the 1960s, differences within the UK HE sector are discussed, firstly by country; secondly in relation to higher education institutions in terms of expansion, stratification, and differences in participation and outcomes. The chapter then addresses differences in HE policy between the countries, within the context of devolution. This includes the scope and limitations of devolution including the issue of social citizenship; the dominance of England and its policy and funding approach; and the issues underlying policy divergence in the DAs relevant to cross-border mobility.

2.2 The institutional and sectoral context

2.2.1 UK-wide overview

Cross-border mobility is one facet of HE participation. The extent and forms of participation are affected by changes in the size and shape of the HE sector, and a brief history of these changes provides an overarching context for this research. Access to higher education institutions (HEIs) had historically been for the social and cultural elite, and for some of the small number of working-class grammar school pupils² (Ross, 2003a) but this changed from the 1960s. The Robbins Report in 1963 recommended expansion of HE, through the foundation of new institutions and development of existing ones. The recommendation for expansion was based on a range of factors, including the post-War increase in the birth rate, and more pupils attending grammar schools and being suitably qualified as a result of the 1944 Education Act in England (Ross, 2003a). It was driven also by a desire for social justice

² Grammar schools are state secondary schools that select by an entrance examination.

and greater education equality (Ross, 2003a). The Report bore the idea that HE could be considered as a social right, but conditional on having the potential to benefit from HE (Watson, 2014) and a grant and fee free system was put in place. The 1960s also marked the foundation of a new wave of universities, and establishment of polytechnics³, linked to the local community and intended to provide vocational higher education and more part-time and mature provision than did the universities (Ross, 2003b)⁴. Initial sharp expansion in the participation of young people was followed by a steadier increase until the 1980s (Blanden and Machin, 2004). Student grants and the funding per student eroded during the 1980s, and student loans were introduced in 1990. In 1992 administrative devolution was enacted when separate funding councils for England, Scotland and Wales were created, following a period in which the university sectors in Scotland and England/Wales had been becoming more convergent (Gallacher and Raffe, 2011; Keating, 2005). This change provided a clearer opportunity for each country to introduce local policies, or local approaches to implementing UK-wide policies or processes. The Further and Higher Education Act 1992 (and its Scottish equivalent) also ended the binary divide between on the one hand universities and research-oriented higher education institutions, and on the other polytechnics and technical colleges (Gallacher and Raffe, 2011). Further expansion to create a mass system became policy for the Labour government elected in 1997. This was accompanied by the introduction of student liability for tuition fees.

In 1999 legislative devolution was enacted and the devolved Scottish Parliament and Welsh and Northern Irish Assemblies were created, which gave more power to the three smaller countries of the UK. All powers not explicitly devolved remain 'reserved' to the UK Government. The UK Government has responsibility for reserved issues that affect the whole of the UK but responsibility in England only for issues devolved to other governments. In these areas, including policy concerning most aspects of undergraduate HE for UK students, references to UK Government in this work essentially mean the 'government for England'. Each of the devolved governments has

³ The creation of polytechnics was in opposition to the recommendations of the Robbins report (Scott, 2015).

⁴ However there was 'academic drift' by the polytechnics which resulted in their HE offerings and student populations often being very similar to those of universities. This was due to a combination of funding peculiarities, lack of government guidance, and attempts to achieve 'parity of esteem' with universities (Ross, 2003b).

different, and evolving, policy, legislative and funding powers and responsibilities. In the early years of devolution, Wales and Northern Ireland had less legislative and policy autonomy with regard to higher education than did Scotland, but in all countries devolution has allowed policy divergence from the UK Government.

The focus of this research is on student differences in cross-border mobility, for which the issues of greatest relevance are those of institutional provision within countries, issues of institutional differentiation and stratification, and the effect of devolution on issues of social citizenship and policy divergence in relation to funding of students and places.

2.2.2 Institutional provision within countries

2.2.2.1 England

There are six ancient universities in the UK of which two, Oxford and Cambridge ('Oxbridge'), are in England. Throughout the changes to the HE system in England, Oxford and Cambridge universities have retained a 'special status' (Watson, 2014). The federal University of London and the University of Durham were founded in the 19th century, and several civic or 'red brick' universities in the first half of the 20th century. These universities are still regarded as high status, as are some of the 'plate glass' universities established in the 1960s. While Oxbridge drew from a nation-wide highly privileged student base, the universities founded at the start of the 20th century often grew out of local institutions, and largely served a regional student base; those created in the 1960s however recruited more nationally (Ross, 2003a). For other institutions in England, the end of the binary divide in 1992 did not lead to greater equality in the status of institutions, but to levels of prestige differentiated by whether the institution had university title before 1992 ('old' universities) or any time since 1992 ('new' universities). The 'old' universities are also differentiated in terms of prestige between those which are more or less research-intensive, or self-identified 'Russell Group' universities and the rest (Bathmaker and Bowl, 2015; Boliver, 2013). Russell Group universities, and a few outside this group (e.g. Bath, Sussex), retain prestige through high qualification requirements, more limited expansion than the new universities, and in most cases having a medical school, as well as the early date they were established relative to the Post-92 universities. Their entrants are relatively socio-economically advantaged compared to all students (Boliver, 2013; further

discussed in chapter 3). Even within the Russell Group there are notable differences in terms of occupational status and wealth of those who graduate from ‘Golden Triangle’ universities – Oxbridge and the London universities – compared to others (Wakeling and Savage, 2015). This suggests “a subtle interplay between geographical, occupational and educational processes, in which elite institutions in south-east England are part of a wider ‘London vortex’ which conveys advantages to those caught up within it” (Wakeling and Savage, 2015, p316). For students able to study in these particular universities located in a limited geographical space, additional advantages may accrue, but would require mobility from most parts of the UK.

Overall there is a highly stratified HE system in England, which has been stable over time despite the growth in number of institutions and students (Croxford and Raffe, 2013; Scott, 2015). There is a high amount of provision and also of institutional differentiation within England. All fields of study and types of institutions are not however equally spatially distributed, and mobility between regions is high, much higher than cross-border mobility (Raffe and Croxford, 2013; and chapter 5). Attending a local institution has not been a strong historical feature of English HE, but moving away to study was particularly associated with HE students who were socio-economically advantaged. The tendency for students to stay at or close to home has increased as HE participation has expanded since the 1990s (Holdsworth, 2006, 2009).

2.2.2.2 Scotland

Despite its much smaller population size than England, four of the ancient universities are in Scotland: Edinburgh, Glasgow, Aberdeen and St. Andrews. The ancient universities were founded as local colleges in the 15th and 16th centuries, each serving a large region of Scotland. Paterson (1993) describes their history in relation to a tradition of recruiting students from the local region (‘regionalism’), which has continued in Scotland, in the ancient universities until the middle of the 20th century and then in the universities founded from the 1960s onwards. According to Paterson (1993) by 1990 the percentage of students entering a university in their home region had notably declined but regionalism still existed, most strongly in the West of Scotland. He identified that the decline within regions followed the local Scottish institution joining the single UK applications and admissions system in 1964

(currently known as the Universities and Colleges Admissions Service or UCAS⁵). There was no decrease however in the very high percentage of Scottish school leavers entering Scottish universities between the 1960s and 1990 (Paterson, 1993), and this percentage has since increased (Raffe and Croxford, 2013). The ancient universities in Scotland therefore originally served an elite but their ties to place and local community meant that “higher education in Scotland never acquired the same intensity of social remoteness as came to characterise English higher education strongly influenced by the culture of Oxford and Cambridge” (Paterson, 1997, p30). As in England however, there is a recognised difference in the prestige of ancient universities, the other Pre-92 universities, and new universities created after 1992. The universities set themselves apart in other ways. Edinburgh and Glasgow are both members of the Russell Group and are research-intensive across a wide range of disciplines. Edinburgh and St. Andrews achieve relatively high positions in world university rankings, and identify themselves as serving a UK-wide and international base. St. Andrews was the university that moved away from the regional focus of student recruitment the earliest (Paterson, 1993) and arguably that difference continues to be reflected in the modern day⁶. In relation to spatial distribution, the rural areas in the south and the Highlands and Islands are the least well served locally. In the case of the latter, the foundation of the University of the Highlands and Islands has improved access to HE, but alternative provision requires mobility. Most mobility however remains within Scotland (Raffe and Croxford, 2013; Croxford and Raffe, 2014a).

Differences in education systems are also relevant to cross-border mobility. In all countries, the structuring of undergraduate education, particularly full-time degrees, is intended to align with that of the school education in the home country (though undergraduate entrants do not all enter directly from school). The curriculum and types of school differ in all countries. Scotland stands out in four ways. State school

⁵ The UCAS system allows applicants to apply to up to 6 HEIs throughout the UK for a specified course in each, and manages the offers process from institutions and acceptance process by applicants. Almost all HEIs in the UK choose to participate in the service for undergraduate entry.

⁶ Reflected in the domicile of entrants, reported in chapter 5.

qualifications in Scotland do not include GCSEs and A Levels⁷, which are the main qualifications in England, Wales and Northern Ireland. However independent schools pupils often have the opportunity to study for A levels rather than Highers (SCIS, 2015), which may overcome issues with recognition of Scottish qualifications at English universities, and smooth the transition into HE study intended to follow A levels rather than Highers. Secondly, students from Scotland have the option to leave school and enter HE at an earlier age than their counterparts⁸. This age issue may also be directly relevant to cross-border mobility⁹. Thirdly, undergraduate degrees at honours level are usually a year longer than those at other UK HEIs. Finally, a fifth of undergraduate provision is delivered by colleges, mainly at sub-degree level (Gallacher, 2014; SFC, 2014), greater than other parts of the UK (Parry et al., 2012). Movement between countries as a student therefore requires moving from one education system to another, but this is more notable for movement into and out of Scotland (Raffe and Croxford, 2013).

2.2.2.3 Wales

University provision in Wales began with the foundation of the federal University of Wales at the end of the 19th century. The single multi-location university was seen as a symbol of national identity, serving the cultural and educational needs of Wales, specifically differentiated from HE in England (Rees and Istance, 1997). However by the 1970s “higher education in Wales had been substantially absorbed into an ‘England and Wales’ system” (Rees and Istance, 1997, p51). A second university was created when the Polytechnic of Wales became the University of Glamorgan in 1992. The constituent colleges of the University of Wales have been through a series of mergers and demergers, and other institutions in Wales have over time gained university status and themselves undergone mergers, as the Welsh Government has sought to have fewer more regionally-focused institutions (HEFCW, 2016a; Welsh

⁷ GCSEs are typically taken at the end of compulsory schooling at age 16; A levels are the traditional entry qualification to HE, typically taken at age 18. In Scotland National 5 (Standard grades before 2013) are taken at the end of compulsory schooling at age 15/16; Highers at age 16/17 are the traditional entry qualification to HE, but pupils may also take Advanced Highers after an additional year of schooling before entering HE.

⁸ In 2012, 22% of Scotland-domiciled entrants to HEIs were recorded as 17 or under, compared to 0.2% of England-domiciled entrants, and even fewer from Wales and NI (analysis of HESA student census data).

⁹ Only 2.4% of these Scottish entrants studied elsewhere in the UK compared to 5.8% of those aged 18-20 (analysis of HESA student census data).

Government, 2009). It is therefore problematic to identify the stratification of institutions based on when they were formed, in the way that is possible for England and Scotland. Since separating from the University of Wales in 1999, Cardiff University is the only member of the UK-wide Russell Group of universities, has the highest average qualification entry of the institutions in Wales and has the only medical school in Wales, and therefore stands out as the highest status Welsh institution. Higher education institutions in Wales are distributed throughout the country, but there is greater provision in the south of Wales than in north and mid-Wales in terms of number of places, types of institution and fields of study (CADARN, 2012; HEFCW, 2010).

In its early incarnation, the University of Wales recruited most of its students locally. Expansion in the 1940s to the 1960s was partly achieved through recruitment from England, and more so following the expansion post-Robbins report. By the mid-1970s there were more English students than Welsh at the University of Wales, and more Welsh students in English HEIs than at the University of Wales (Rees and Istance, 1997). By the early 1990s the percentage of Welsh students leaving Wales had slightly reduced (Rees and Istance, 1997) but has remained very high compared to outward flows from other UK countries (Croxford and Raffe, 2014a, b; Raffe and Croxford, 2013; and chapter 4). The Welsh HE system is therefore “uniquely porous” (Rees and Taylor, 2006).

There are two education system issues in Wales that could affect cross-border mobility. Firstly, Wales largely follows the same examination structure as that of England and Northern Ireland, but has introduced the Welsh Baccalaureate, which for those studying it may create similar transition and recognition issues as suggested for Scottish students leaving Scotland (WISERD, 2015). Secondly, around a fifth of Welsh schools are Welsh language. Students from these schools may prefer to undertake Welsh language HE provision only available in Wales¹⁰, or otherwise may feel for identity issues less inclined to leave Wales.

¹⁰ There were around 4000 FT undergraduates, and 4.6% of all first degree students, receiving some teaching through Welsh in 2013/14 and in 2014/15 (Welsh Government, 2016).

2.2.2.4 Northern Ireland

In Northern Ireland, Queens University Belfast was founded as one of the 'Queen's Colleges' in the mid-19th century and acquired university status in 1908. As part of the wider expansion of HE in the UK in the 1960s, the New University of Ulster and Ulster Polytechnic opened in 1970, and were merged in 1984 to create the University of Ulster, sited across four towns and cities (Osborne, 2001). There is limited HEI provision in Northern Ireland in terms of the number of institutions and the number of places compared to applicants. This has driven up entry requirements at the two Northern Irish universities and explains high levels of outflows of students at varying attainment levels (Cormack et al., 1997; and chapter 3). There are also issues of spatial distribution. In terms of geographical access, the location of HEI provision disadvantages students from the west of Northern Ireland and along the counties bordering the Republic of Ireland (Walsh et al., 2015).

Until the 1960s, most students leaving Northern Ireland had entered Trinity College Dublin in the Republic of Ireland (ROI), however from the 1960s mobility became more common to Britain – mainly to universities in the North of England and universities in Scotland (Osborne, 2001). The change is explained because firstly in the 1960s Northern Ireland adopted the same grant and fee-free system as Britain and joined the single admissions system across the UK, a factor recently identified as still influencing mobility to Britain rather than the ROI (Pollak, 2012). In addition, during the 1980s and 1990s, Northern Irish students received financial support and payment of fees from the Northern Irish authorities to study in private institutions in the ROI. When this practice ended Northern Irish participation in ROI decreased, as numbers to official Irish institutions had always been low and focused mostly in popular selective courses (such as medicine and veterinary medicine) in elite Dublin universities (Osborne, 2001). Furthermore, the social and political unrest known as 'the Troubles' contributed to the change in mobility patterns to Britain and ROI after the 1960s (Osborne, 2001). The propensity to be mobile and destinations of mobile students are associated with religious affiliation (see chapter 3), and the two religious communities in Northern Ireland have been important in the historical shaping of the HE sector in Northern Ireland (Osborne, 1994).

2.2.2.5 Summary

Cross-border mobility has been a long-standing common practice for students from Wales and Northern Ireland, though their HE systems had originally been locally focused. In Scotland a decline in localism has not however increased the extent of cross-border mobility. Shared application systems in all three countries and issues of supply in Northern Ireland and Wales appear to be factors in mobility, and this may link to the variation of geographical accessibility of HEIs within regions in countries. In Scotland, Wales and Northern Ireland some of the areas with relatively low numbers of geographically accessible institutions are located close to the borders of other countries.

There are also differences between countries in their history and structures of HE and this affects the nature of the HE provision available in a student's home country. Unlike the ancient universities in England and Scotland, the older universities in Wales and Northern Ireland do not have the same level of elite status defined both by age and perceptions of quality. To enter the very highest status universities students from Wales and Northern Ireland need to leave their home country, but so do students from Scotland wishing to enter the universities in the south of England associated with the highest additional advantages. Furthermore if students are seeking to enter institutions at a lower level of entry qualification, or specialist fields of study, these are not available equally in all countries (see chapters 4 and 5). In Scotland, the extent of undergraduate provision in colleges may have the effect of reducing HEI provision at lower entry levels (see chapter 4). In Northern Ireland, supply across HE provision is an acute issue, as there are around 30% more entrants from Northern Ireland than places in Northern Ireland, and very uneven institutional provision (see chapter 4). In Wales, many of the current universities have previously been constituent members of the University of Wales, and this may explain the limited extent of post-92 provision (though not lower tariff provision, see chapter 4). Supply within Wales, Northern Ireland and Scotland across the range of HE provision is therefore an important area of contextual difference to explore in relation to cross-border movement.

2.2.3 Institutional stratification and HE expansion

The relationship between the HE provision within countries and cross-border mobility could essentially be a straightforward issue of supply and demand. However, that would overlook the factors which may affect demand. If students move because they cannot access the type of institution they wish to in their own country, what is driving that preference for a certain type of institution? Higher status institutions carry prestige which could be a motivating factor, but mobility may also be undertaken with the more 'measurable' intention of gaining benefit from attending institutions or entering fields of study that may increase graduate employment or earnings potential. To provide context for these possible explanations, this section examines the notion of differentiation in status and outcomes of HE provision in the context of recent expansion.

As noted, historically, university study was the preserve of the socio-economically advantaged, and served to reinforce membership of the social elite. Turner (1960) described this as 'sponsored mobility', in contrast to 'contest mobility'¹¹, meaning that access to the most selective institutions was based more on social position and membership of social networks than on ability. More recently, the participation rate of young people has increased in all four countries since the late 1990s (UCAS, 2015), and recent data (HEFCE, 2013a; UCAS, 2015) indicate that HE participation rates differ across countries, still only account for a minority of the school leaving age population, but continue to grow. As participation has expanded, students from less advantaged socio-economic backgrounds have increased as a percentage of students. In relation to ethnicity, in England (where there are sufficient students in minority ethnic groups for disaggregated analysis) the entry rates for young entrants from state schools for all ethnic groups have increased over time. Recent data (UCAS, 2015) showed Chinese young people to have the highest entry rate (58% in 2015) and White young people the lowest (28%). Black young people had the highest increase in entry rate over recent years, from 21% in 2006 to 37% in 2015¹² (UCAS, 2015). The explanation for differences in participation rates between ethnic groups is discussed in chapter 3.

¹¹ Based on the US school system but with comparison made with selective and non-selective schooling in the UK.

¹² In 2015 Asian 18 year olds had a 41% entry rate; 'Mixed' ethnic group 18 year olds had a 32% entry rate; 'Any other' ethnic group 18 year olds had a 36% entry rate.

The extent to which expansion has changed the social profile of students is less important to this research than how participation differs in relation to social background, and whether cross-border mobility contributes to or perhaps mitigates participation differences. Despite expanded participation across social backgrounds, there remain differences in type of HE institution entered in relation both to socio-economic background and ethnicity. One of the ways of measuring this is in relation to the level of 'advantage' of the home area of the student. The measurement of advantage refers to the proportion of the 18 year old population from that area, based on Office of National Statistics population estimates, who in previous years were accepted into higher education through UCAS (HEFCE, 2014; UCAS, 2015). The most advantaged areas are those with the highest participation rates and the most disadvantaged areas those with the lowest. Recent figures (UCAS, 2015) show that the difference in entry rates to higher status institutions for 18 year olds by the advantage level of their home area has followed a downward trend for all countries, but the gap is still relatively wide. In 2015 the entry rate difference ranged from students in Scotland from the most advantaged areas being 4.1 times more likely to those from England being 6.3 times more likely than those from the most disadvantaged areas to enter a higher status institution. There are alternative measures used by researchers to identify inequalities in participation by institution type, including social class, parental education, and school attended, that focus on characteristics of the students rather than generalities of the area they come from (Ball et al., 2002a; Boliver, 2013; Connor et al., 2001; Crawford, 2014; Forsyth and Furlong, 2003; Iannelli, 2007; Iannelli et al., 2011; Purcell et al., 2008; Sutton Trust, 2011). These important areas of differentiation will be examined in more detail in subsequent chapters for their potential influence on cross-border mobility. There are also differences in likelihood of entering higher tariff institutions associated with ethnicity. Black and minority ethnic (BME) students are less likely to enter higher status or old institutions than are White students (Boliver, 2013; Connor et al., 2004; Purcell et al., 2008; Shiner and Noden, 2015). Hierarchical and stable institutional differences linked to the social backgrounds of students in terms both of class and ethnicity have therefore been maintained (Croxford and Raffe, 2013). Thus as evidenced in UCAS data, as access to HE has expanded and become less strongly associated with socio-economic

advantage, differentiation remains and inequalities are reproduced by qualitative differences in HE participation (Brown, 2013; Lucas, 2001; and chapter 3).

For this reason, if cross-border mobility is used to maintain social position, or has the effect of doing so, then this would be a more common phenomenon for relatively privileged students. However at the start of this section it was suggested that another driver for mobility was that it could be a means to gain other measurable and longer term employability and income outcomes. There is evidence that expansion has been achieved mainly through diversion of those from less advantaged backgrounds into lower entry level provision, and while this reproduces inequalities within the HE system, it also provides opportunities for some who would not otherwise have accessed HE (Iannelli et al., 2011). However, it has been argued that higher levels of participation have led to 'credential inflation', which has devalued HE qualifications and by extension qualifications below HE level (Brown, 2013; Collins, 1979, 2011; and chapter 3). As more people gain degrees, entering HE may be judged as a minimum requirement for competing in the labour market. The research evidence on higher participation rates is not clear in terms of its impact on HE graduates. Research has found that overall the graduate earnings premium over non-graduates has remained stable, but this masks a reduction in the premium for lower earners amongst graduates (aged 22-34), due to high percentages in non-graduate jobs in sectors such as retail and hospitality (Elias and Purcell, 2011). When high numbers of people are gaining degrees, there is evidence that higher competition for a limited numbers of places in high status and high earning positions, together with weak linkages between education and the labour market, may leave space for social inequalities in the labour market to emerge (Iannelli and Klein, 2014).

These uneven outcomes link to a debate about the advantages of attending institutions requiring higher and lower entry qualifications and how the credentials gained could be converted after graduation (Gerber and Cheung, 2008). It has been found that graduates from more selective institutions are the most likely to be in graduate jobs (HEFCE, 2013b; Purcell et al., 2012). After controlling for father's education and A levels (Walker and Zhu, 2013) or parental education, A levels, subject and class of degree (Chevalier and Conlon, 2003) graduates from Russell Group universities had higher earnings, but only slightly, on average than those from other

institutions. Differentiation between prestigious universities in the earnings premium (Chevalier and Conlon, 2003) and in terms of occupational and income outcomes (Wakeling and Savage, 2015) has also been found. The Office for National Statistics (ONS, 2013) also report higher wages for Russell Group(RG) than non-Russell Group graduates and that they are more likely to be in a high skills role. The ONS did not control for graduate characteristics, but did suggest that this could be explained by the greater likelihood of RG graduates entering fields of study that lead more often to higher paid jobs. Graduates from medicine and dentistry, maths, engineering, technology and architecture have the highest median earnings, and arts, humanities and subjects allied to medicine graduates the lowest (ONS, 2013). Walker and Zhu (2011), controlling for degree class but not institution type or student background, found that graduating from law, economics and management subjects, whatever the degree class, was associated with the highest earnings gains compared to non-graduates who may have qualified for HE. Graduating from 'other social sciences, arts, and humanities' was associated with the lowest gains, particularly for men. Wakeling and Savage (2015) found differentiation in financial advantages accrued between Russell Group graduates in relation to subject studied, and that graduates in business and management, medicine and the social sciences lived in households with high relative incomes. Entering fields of study that can lead to better jobs is more frequent for those from advantaged socio-economic backgrounds (Iannelli and Klein, 2014; van de Werfhorst et al., 2003), and so social background as well as institution differences matter in outcomes.

There is evidence then that institution type, and field of study, may affect graduate earnings. After student differences in background are controlled, earnings differences remain but are not necessarily large, though there are limits to the controls that studies have been able to apply. But if students are making choices based on expectations of future earnings, these choices will not necessarily be based on realistic earnings potential. Jerrim (2008) found that students at all institution types had unrealistic expectations of earnings. However expectations were closer to reality for some subjects studied. Those studying education were closest in their estimations, while those studying medicine under-estimated earnings. These findings suggest a relationship between career-oriented degrees and more realistic expectations, however this did not extend to subjects allied to medicine students, who tended to

over-estimate earnings. Those studying sciences, languages and humanities had the largest average over-estimation gap between expectation and reality.

2.2.3.1 Summary

HE participation has expanded in the UK, and although this has been the case for students from all social backgrounds and ethnic groups, social background differences in participation have only narrowed slightly over time. In this context of expansion, the advantages of HE may be sought through the type of participation not just participation per se. The role of social position in this is important, as will be discussed in chapter 3. If cross-border mobility is undertaken with the intention of gaining benefit from attending institutions or fields of study that may increase graduate employment or earnings potential, then the evidence suggests that attending a Russell Group university, and a more prestigious university within that group, could be perceived by potential students as beneficial. Studying arts and humanities may be the least beneficial in terms of earnings, and law, business, social sciences and medicine potentially the most beneficial. Potential students may however have limited awareness that both institution type and field of study entered are associated with pre-existing levels of advantage as well as with attainment. But if students are making the decision to be mobile because they connect these institutions or fields of study with greater benefits from HE, then it is not necessarily important whether this benefit is additional to pre-existing socio-economic advantages or whether it merely maintains them. These expected benefits may also be in the form of maintaining or improving social position if mobility is to the highest status institutions. Of interest then is whether the social background differences between those who enter different types of institution are reproduced or exacerbated among cross-border movers. Where there is mobility to lower status institutions why take on the additional costs of mobility? Could this be explained by field of study entered, or merely as better than not entering HE when there is under-supply of provision in the home country?

2.3 The policy context

The previous section identified that institutional stratification can serve to maintain differences in status and post-HE opportunities and outcomes for students. It also identified that there is differentiation between the four country sectors, although they

are also part of a UK whole. An important additional element of this context for examining cross-border mobility, which affects and is influenced by the sectoral context, is that of policy. This section discusses issues created by devolution; how devolution arrangements both maintain the dominance of the UK Government position on HE and allow for policy divergence; and policy divergence relevant to cross-border mobility.

2.3.1 Devolution: limitations and scope for divergence

UK HE is a single system in many respects, with various shared systems and services - notably undergraduate entry applications, research, and quality assurance - a great deal of collaboration across borders, and shared international branding and promotion (Gallacher and Raffe, 2011). The single undergraduate applications and admissions system is important to cross-border mobility. It can enable and potentially encourage applications to institutions anywhere in the UK, if applicants are seeking particular institution types or courses not available in their home country, or have a preference for living in another part of the UK. The portability of student support in the form of loans and grants also enables cross-border mobility. The type, level and conditions of student support are set by each country for students living there before HE entry, but students remain eligible for living support at least no matter where in the UK they study.

Policy on devolved matters is determined by country borders. This directly affects cross-border mobility as an issue, as will be discussed below. But more broadly this limitation is important for those who have critically examined the operation of devolution in the UK. There is a lack of formality in inter-government relations which means not just that convergence in policy between the four countries can be due to chance but that policy divergence can be too, and the implications of that divergence are not subject to any formal process of planning or evaluation (Keating, 2009; Raffe, 2013a; Trench, 2009). There is also “inequality of bargaining power” between the UK government and the devolved administrations (DAs) (Trench, 2009). Due to the dominant powers of the UK Government compared to the DAs, it is able to determine policies without taking into account their impact on the smaller countries. For the DAs, current funding arrangements provide limits to autonomy in that spending has to be limited to the block grant, which is determined by policy and spending

decisions by the UK government on devolved issues, i.e. policies for England. The UK Government has much greater budgetary freedom than the DAs not just because it determines the size of the budget in the first place but because of the flexibility of being able to spend new money into existence¹³. The funding arrangements also provide freedoms as there is no ring-fencing in the block grant, though difficulties can arise for the DAs when the UK Government makes in-year funding decisions on issues which require reserved policy to be delivered by devolved agencies. The lack of formal mechanisms means there are constraints on, as well as opportunities for, divergence (McLean et al., 2009).

This raises questions about social citizenship in the UK. Social citizenship concerns seeking to improve equality of opportunity (and in some cases outcomes) through the provision of social rights in the form of welfare and service provision. Its purpose, based on Marshall's (1950) conception, is to mitigate against some of the 'legitimate inequalities' that exist in a market economy, such as wage inequality (Wincott, 2009) by providing services at a national level that ensure areas of life in which equality of access and service is achieved (Greer, 2009). Marshall's focus on citizenship at the national level may have encouraged the perception that there has been a common British welfare provision at some point, particularly in the creation of the welfare state after 1945 (Powell, 2009). However, there have always been territorial differences, even before legislative devolution, in terms of provision based on need not geography, and on whether services are free or require a contribution, are universal or selective, and in terms of which services are included in the definition of welfare provision (Powell, 2009; Wincott, 2009). Devolution in the UK has brought attention to some of the issues around the extent to which a national social citizenship exists in the UK, what social citizenship means to different parts of the UK, and which social rights and public services are available and on what basis. For social citizenship to operate consistently at a UK-wide level all territories would seek to act in a way that is collaborative and increases equality of conditions across the UK (Greer, 2009). This is not the case in post-devolution UK with regards to HE, which is one of the areas in which complications from the unequal devolution arrangements have arisen (Trench, 2009). When UK Government policy decisions on HE are taken the DAs must

¹³ In the terminology of Wray (2013) the UK Government has this flexibility as a currency issuer; the devolved administrations as currency users do not.

respond, either to adopt the same or different policy, to protect their own HE sector and citizens and/or their political priorities and positioning. These complicated interactions affect what governments can do, and it affects individuals and societies. In HE terms, it affects the study options that can be accessed, as students' choices and experience take place in a confusing policy landscape and will be affected by both where they happen to live in the UK and where they want to study (Raffe, 2013a; Trench, 2009). In the context of HE, the impact of country differences in fees and student support in particular have been argued to raise issues in relation to a UK-wide social citizenship (Jeffrey, 2009; Keating, 2009; Raffe, 2013a, b; Trench, 2009).

These differences in financial support have been possible because devolution arrangements allow for policy divergence, but in relation to HE this is in response to UK Government policies and the values that underpin them. These policies and values therefore provide the starting point and set the limitations for the development of DA policies. In all four countries, governments describe the importance of HE in terms of financial and experiential benefits for students, and also in relation to the wider benefits of learning, its contribution to the economy, to the country's standing and reputation, and to the public good (BIS, 2009; DENI, 2012; DfES, 2003; Scottish Executive, 2003; Scottish Government, 2010, 2011; Welsh Government, 2009). However the conceptualisation of HE's function of education provision (with most attention given to undergraduate education) has increasingly been concerned with private benefit in terms of future earnings and employment to students rather than to public good aspects of HE (BIS, 2011). UK Government policies have increasingly emphasised neo-liberalism and moved further from a meritocratic ideal towards a market ideal in higher education (Brown, 2013; Olssen and Peters, 2005).

Under the UK Government approach, students are expected to take on financial responsibility as an investment and in order to fulfil their role as consumers as "[p]utting financial power into the hands of learners makes student choice meaningful" (BIS, 2011, p5) and because on average graduates will gain a salary premium of £4000 (Browne, 2010). The UK Government therefore introduced a policy that allowed HEIs in England to charge tuition fees of between £6000 and £9000 per annum for new UK undergraduate entrants. Defining risk only in financial terms is

very narrow (McGettigan, 2015), and in doing so the Browne review (2010), which informed the UK Government's development of student funding policy, did not consider how costs, benefits and resources may vary among different students and how risk might be more holistically perceived. Instead it assumed that student choice, of which cross-border mobility is a facet, is a form of economic rational choice. It treats HE choice as a financial decision based on expected future income gains. This perspective does not take into account student differences which affect whether the information on which they are assumed to make their choice will be evenly accessed, understood and given equal importance in coming to an informed decision as a rational actor (Naidoo et al., 2011). The notion of student choice as economic choice is at the heart of policy that seeks to marketise HE, and cross-border mobility is the outcome of one aspect of student choice.

It is argued that the dominant values placed on HE by the UK government do not entirely reflect those of the other administrations which continue to put more emphasis on HE as a 'public good' (Rees Review, 2005; Scottish Government, 2010; Welsh Government, 2009), even if this argument may be more political than based on strong difference (Gallacher and Raffe, 2011; Riddell, 2015). The UK Government approach to HE and potentially differentiation in the values of the DAs is important to this study because it shows that HE is not clearly treated as a form of public service provision by the UK Government, but in principle it is more so by the DAs. It is also important because the dominance of England and the nature of devolution arrangements mean that its policies create issues in relation to cross-border mobility for the DAs, which explain why cross-border mobility matters to them.

2.3.2 Why cross-border flows matter

2.3.2.1 Funding of HE

The DA response to the values and policies of the UK Government on student funding has led to policies directly relevant to cross-border mobility. In 1999, the newly devolved Scottish Parliament voted to introduce a 'graduate endowment', a contribution to be repaid after graduation, rather than up-front fees as in England (Scottish Executive, 2000). The variable fees proposed in 2004 in England were also opposed, and the introduction of a policy of no fees for Scotland-domiciled students

who stay in Scotland was introduced, and the graduate endowment scrapped¹⁴. The Scottish model from 2012 has been to maintain the no-fees policy for home students studying in Scotland, claiming this as a policy that increases fairness and recognises the wider benefits of HE, compared to the English model (Scottish Government, 2011). However no fee grant is provided to those studying outside Scotland, a difference of treatment that gets little attention (Hunter Blackburn, 2015a).

The Welsh Assembly used the more limited power it had in the early years of devolution by introducing Assembly Learning Grants for low income residents of Wales wherever they studied (Welsh Government, 2002). While it did not have the power to avoid the introduction of variable top-up fees in the 2004 Higher Education Act, the Welsh Assembly reacted to reduce the impact on Welsh students through changes to student support, by delaying the introduction of variable fees by a year and providing a tuition fee grant to cover the increase (Welsh Government, 2006). As there was also a desire to encourage students to stay in Wales in face of the changing nature of competition from HEIs in England, initially (2007-2010) these tuition fee grants were only available for students staying in Wales, whereas those leaving Wales would be eligible for tuition fee loans (Jones, 2008). This policy ended due to concerns that it was not sufficiently targeted on helping low income students, and it disadvantaged those who had to leave Wales for certain subject access or otherwise chose to leave Wales (Jones, 2009). The Welsh Government's powers had increased by the 2012 changes, and the Welsh model was to subsidise the difference between the old and new fee level through a tuition fee grant for Wales-domiciled students, including those who studied in the rest of the UK. However the Welsh Government is considering whether it should continue subsidising English HEIs and facilitating students to leave Wales by covering a large part of the fees of Welsh leavers (Welsh Government, 2014). The Welsh Government may decide that Welsh Government funding should be directed to Welsh institutions, rather than Welsh students, which as Hunter Blackburn (2015a) notes would prioritise institution needs over student needs.

¹⁴ Due to EU rules the same conditions must be applied to EU students from outside the UK. This of course may change as a result of the leave vote in the EU referendum.

In Northern Ireland, there was interest in adopting a version of the 'Scottish model' of a graduate endowment when fees were first introduced by the UK Government, but the support could not be found within the power-sharing government (Gallacher and Raffe, 2011). In 2006, when the variable fees were introduced, devolution was not operational in Northern Ireland, and so the English policy was implemented there (Gallacher and Raffe, 2011). For the 2012 changes, there was consideration given to following the Welsh model and covering the tuition fee difference for all students, but it was not considered affordable to provide any tuition fee grant to Northern Irish students leaving Northern Ireland (Stuart, 2011). This was because the cost of supporting the loans of those studying in RUK could not be offset by fee revenue generated by inflows of RUK students to Northern Ireland, as could be achieved in Wales with its relatively high inflows of English students.

There have therefore been differing responsive measures from the three countries to student finance changes in England. Furthermore, DAs have been concerned about the funding pressure that would be put on their fixed budget if students from elsewhere took up places subsidised by the DA (Rees Review, 2005; Scottish Executive, 2004; Scottish Government, 2010). In all three countries, the approach to this issue from 2012 was to charge England-domiciled students up to £9k a year, repayable and income-contingent, as they were if entering an English HEI.

2.3.2.2 Accessibility

Student number control refers to the maximum number of full-time undergraduate places within subject groups that governments allocate to each HEI in their jurisdiction. This is intended to keep the teaching grant and fee support funding from governments manageable, but these caps affect accessibility of HE and therefore the extent of HE service provision within each country. DAs have been concerned about home students being squeezed out of institutions in their home country (Rees Review, 2005; Scottish Executive, 2004; Stuart, 2011). This was particularly a concern when RUK students were included in the student number cap. In 2012, in response to the changes in England, all DAs ceased to include RUK students in their number controls, and only home and EU students were included in the government-funded places allocated to the country's HEIs. However an important exception to this is that the cap on medicine and dentistry and initial teacher education places continues to

include RUK students. This relates to a long-standing (e.g. Scottish Executive, 2004) additional DA concern about home students being less likely to access popular and restricted subjects, particularly medical studies, if there were an increased number of highly qualified applicants from elsewhere. The Welsh Government was also concerned about the impact on retention of students at an earlier time of expansion of HE places in England, particularly the establishment of new HEIs close to Wales alongside an increase in the student cap in England (Welsh Government, 2002). It should also be noted that from 2013 in Wales the student number cap instead became a cap on tuition fee grant to HEIs rather than places per se, and in April 2015 this funding responsibility transferred from the Higher Education Funding Council for Wales (HEFCW) to the Welsh Government (Welsh Government, 2015). As the tuition fee grant paid to English institutions cannot be controlled under current arrangements, this affects the remaining HEFCW funding available to Welsh HEIs (HEFCW, 2016b). For England in 2012 the student number cap was removed or loosened for some places, but a further policy change that could affect cross-border flows is the removal of the cap on student numbers in English HEIs from 2015, again excluding medical subjects and teacher education; and the impending change to EU students' status following the EU in/out referendum. These issues will be returned to in the discussion chapter.

With RUK students excluded from the student number or tuition grant cap in the DAs for most subjects, universities are left to make the decision of how many RUK students they accept and this should not in principle affect the places available for home (and EU) students. However this can firstly create perception issues – for example when clearing¹⁵ was closed to home students in 2012 in Scotland because all the government-funded home student places had been filled, but remained open for RUK students because the number cap had been removed for those paying fees, this was incorrectly perceived by some (applicants and media) as discriminating against home students (Scottish Affairs Committee, 2014). Perhaps more important than issues of perception is the actual effect on the overall student population within universities and within the smaller countries as a whole, an issue taken up in chapters 5 and 7. Here it can be noted that in Scotland, in the first year that RUK students were

¹⁵ The provision of unfilled places to applicants without an offer.

removed from the student cap, there was a notably higher percentage of RUK entrants at institutions which attract relatively large numbers of RUK students (analysis of HESA data)¹⁶.

In addition in terms of equality and fairness of accessibility, cross-border flows can make it harder to assess the effectiveness of attempts to improve HE participation rates of less advantaged groups (Croxford and Raffe, 2014a; Whittaker et al., 2015). Firstly, if incoming students are more advantaged than home-based students and/or outgoing students, then participation is less equitable than may appear based on current measures only of home-based students within the country. This focus on home students is also the basis on which attempts to increase widening participation are developed, which draw on the relationship between institutions within countries (e.g. school and university partnerships or school outreach activities). Secondly, widening participation is measured this way because each country only has responsibility for students domiciled in its own country – the nature of inter-government relations and relative funding and policy powers means that the DAs cannot make policy based on concerns about how it affects participation of students from differing backgrounds who are domiciled elsewhere in the UK. Thirdly, while widening participation understandably focuses on increasing the participation of those from less advantaged backgrounds, where mobility predominantly concerns socio-economically advantaged students it may also contribute to inequalities between movers and non-movers at the more advantaged end of the scale. These points demonstrate “the limits of a territorial frame of reference” (Croxford and Raffe, 2014a) identified earlier.

2.3.2.3 Retention of graduates

All governments state the desire for a high skills economy of which graduates are identified as an important component (BIS, 2009; DENI, 2012; DfES, 2003; Scottish Executive, 2003; Scottish Government, 2011; Welsh Government, 2006; Welsh Government, 2009). Students who lived in the country before entering HE are more likely to stay on in that country as graduates than those who moved into the country to study (Mosca and Wright, 2010). The loss of graduates affects Wales most strongly

¹⁶ This was specific to Scotland – there was actually a decrease in the percentage of entrants who were RUK domiciled to the higher tariff universities in Wales and Northern Ireland in 2012 compared to the previous year, discussed in chapter 5.

– in 2012, half of those who had graduated from Welsh HEIs 3 years previously and a third of graduates who had lived in Wales before HE were employed in England (HESA, 2013). In Scotland, despite a very high proportion of graduates being Scotland-domiciled before HE, there was a smaller proportion than might be expected working in Scotland (around 73% in 2012, amongst those who graduated 3 years previously) (HESA, 2013), with movement to England during the three years after graduation in evidence, and evidence that RUK students are the most likely to leave after graduation (Bond et al., 2008; Hoare and Corver, 2010; Purcell et al., 2006). Northern Ireland appears to retain those who study in Northern Ireland (most of whom lived in Northern Ireland before they were students) but also attract back some Northern Ireland-domiciled graduates who studied in Britain (Cairns and Smyth, 2009; McQuaid and Hollywood, 2008; Osborne, 2006)¹⁷. However in 2012 amongst those who graduated 3 years previously, 20% of graduates who had lived in Northern Ireland before HE were employed in England (HESA, 2013).

England is the country that gains from graduate movement out of the other countries, as well as retaining most England-domiciled and English-HEI graduates. As all governments are responsible for funding their HE sector – directly and through student loans – for the DAs this can be perceived as reducing their return on investment in students (Hunter Blackburn, 2015a; Scottish Government, 2010). This potentially has negative economic impacts for the DAs which already largely lose out to London and the South-East of England in terms of graduate flows (Hoare and Corver, 2010; Mosca and Wright, 2010). This concern about loss of graduates is also relevant to English regions, particularly the North-East of England (Hoare and Corver, 2010) but the same student funding issues do not apply. The longer term impact of cross-border flows of students is therefore a stronger issue for Wales, Scotland and Northern Ireland than it is for England.

2.3.2.4 Cross-border flows: benefits and concerns for the DAs

While they may wish to prevent large fluctuations in cross-border flows for reasons concerning funding pressures, accessibility of places in the home country, and the loss of economic benefits through departing graduates, there are benefits in

¹⁷ For example, Osborne (2006) reported that less than 30% had returned several years after graduation.

maintaining flows for the DAs. Firstly, the current DA policy for fees comparable to those at English HEIs to be applicable to RUK students makes them a source of revenue which helps to limit the development or growth of a funding gap with England (Hunter Blackburn, 2015b). For Northern Ireland, with its very low inflow of RUK students and high outflow to the RUK, providing loans to students studying in the RUK is a cost to the government but Northern Ireland gets little revenue from RUK students entering Northern Irish HEIs, so an increase in RUK students would be desirable, if difficult to achieve (Stuart, 2011). Secondly, the smaller HE systems also want to maintain diversity, be seen as attractive to students outside their country and avoid becoming parochial (Keating, 2005), and in this sense RUK students are seen as bringing social and cultural benefits that are less measurable than the financial ones. This is why when differences in fee policies emerged between Scotland and England, the Scottish Government agreed to absorb the cost of waiving fourth year tuition fees for RUK students because they did not want to discourage cross-border students (Scottish Executive, 2000). And why in Wales, when bursaries for low income students at Welsh HEIs were introduced, they were available to students from anywhere in the UK (Jones, 2008).

It is only the DAs who have concerns about cross-border flows: although most movement out of the DAs is to England, England's much larger HE sector means that these inward flows have little effect on universities, other students or government funding, while small proportions of English students moving to the less populous countries have the potential to substantially alter their student composition and funding pressures (Croxford and Raffe, 2014a; Raffe and Croxford, 2013; and chapters 5 and 7). This is reflected in the very limited attention given to cross-border movement of students in UK government documents. In 1997, the response to the issues raised in the Dearing Report concerning the effect of lack of supply in Northern Ireland on the outflow of students was dismissive at the time, although capacity was later increased in Northern Ireland. In the 2003 UK Government white paper which put forward the introduction of variable deferred fees and restored grants there was just one line commenting on the need to consider the impact of the changes on cross-border flows. The possible impact on cross-border movement of the fee and student support changes decided in 2010 by the UK Government were also not considered – thus an example of the unequal and interdependent relationship between governments.

While this has been a more pressing issue for Wales and Northern Ireland than Scotland (Gallacher and Raffe, 2011), it became more prominent in Scotland in the context of the pre-referendum debate on independence. As the assumption was continued membership of the EU (Scottish Government, 2013a), it was widely believed that the attempts to maintain cross-border movement from England at existing levels would be undone if, in the event of independence, RUK students had to be treated the same as Scottish and EU students in terms of fees (Bell, 2013; Croxford and Raffe, 2014b; Scottish Government, 2013a; Riddell et al., 2014).

2.3.3 The outcome of policy divergence

Policy divergences have therefore been used to address concerns about changes in flows. Importantly it has created a price differential across the countries of the UK determined by the combination of country of domicile before entry to HE and the country in which the HEI entered is located. All students from England became exposed to higher tuition fees from the 2012-13 academic year. Students from Scotland who study in Scotland are subject to no tuition fee but to the full rate being charged by the institution if they study elsewhere; students from Northern Ireland are liable for tuition fees, but only at the full elevated rate if they study outside Northern Ireland; students from Wales are liable for tuition fees wherever they study but not at the elevated rate. Students moving out of Scotland and Northern Ireland therefore pay the largest financial costs compared to staying in their home country. It has been argued that differences in fees and student support depending on where one is domiciled makes decisions about where to study more complicated and even if it may be financially beneficial in the long term this may deter students from crossing borders (Trench, 2008). So for students decision-making about HE and what they would consider their real options are affected by this policy divergence and indicate an unequal social citizenship by country of domicile.

Despite the position of the DAs that students should not be seen primarily as consumers and higher education should not be seen primarily as a market, the assumptions around choice and markets also underpin the main driver for DA policies which seek to maintain levels of cross-border student movement. It is assumed that given a high enough price differential a notable percentage of students would become mobile, and if that movement was from England to any of the DAs that

could overwhelm their HE system and create a substantial financial burden (Scottish Government, 2013a). Assuming that students are able to access similar quality institutions and courses as they could in their own country, this would be the economically rational response. It is however a position that largely overlooks the student differences that may affect capacity and propensity to respond to these changes and differing conditions between countries. However, examining previous research and UCAS data suggests some support for the concern that changes in fee policies affect cross-border mobility.

2.3.4 Fee changes, participation and mobility

Cross-border mobility within the UK started declining before devolution in 1999 and so before differential fees policies were in place. It stood at 12.5% of UK entrants in 1996-97 (Raffe and Croxford, 2013) and was 7% by 2012-13 (Croxford and Raffe, 2014b). Raffe and Croxford (2013) found that between 1996 and 2010 this decline mostly affected entrants to Scottish institutions. Meanwhile the application and entry rates increased within countries. From 2006-2010 there would have been cost savings for English students by studying in Scotland and Wales, but the proportion of cross-border applicants declined (Raffe and Croxford, 2013). The proportion of Northern Irish students going to the Republic of Ireland to study during this period was also low despite the substantially lower cost of studying compared to Britain (Wakeling and Jeffries, 2013). However, for Scotland-domiciled students during this period it became comparatively even cheaper to stay in Scotland, and the proportion staying in Scotland did increase (Raffe and Croxford, 2013; Wakeling and Jeffries, 2013). Based on application and entry rates, fees have appeared to be a factor in changes in the proportion of applicants and entrants to institutions in other parts of the UK from UK-domiciled students as well as the proportion of EU students especially in Scotland and Northern Ireland (Croxford and Raffe, 2014b; Raffe and Croxford, 2013; Wakeling and Jeffries, 2013; and chapter 5). However they certainly are not the whole story, as they do not explain the pre-existing levels of mobility, nor some of the application and entry data which appear to contradict predicted behaviour based on fees policy alone.

In the year before the 1998 and 2006 fee changes had been introduced there were anticipatory increases in applications, and declines in applications in the year of

introduction, both reflecting attempts by some potential students to avoid the fees, but this was followed by a return to the previous trend the following year. This indicated an introduction effect of the policy change but not an ongoing effect of the fee levels themselves (Dearden et al., 2010; Rees and Taylor, 2005; Thompson and Bekhradnia, 2012). There was a decline in participation of England-domiciled young people in 2012 compared to 2011, but to some extent this may be explained by the higher acceptance rate in 2011 for 18 year olds which would have decreased the number of 19 year olds applying in 2012, i.e. it was in part due to fewer deferrals by school leavers in 2011 (Croxford and Raffe, 2014b; Independent Commission on Fees, 2013; UCAS, 2012).

The divergent fee policies throughout the UK were expected to result in changes in cross-border applications and movement. This indeed was much of the basis for the arrangements that each devolved administration has put in place regarding fees and student support and the differentiations that now apply. Table 2.1 provides an overview of acceptances of all ages and modes of study, for six years (of which 2012 is the focus for analysis to follow). UCAS only publish acceptances not applications data on cross-border mobility. Applications data would have more directly measured any change in student preferences for cross-border mobility. The acceptances data apply after institutions have made offers and more closely aligns with the entry data that will be used in the analysis.

Table 2.1: UCAS acceptances by country of domicile and country of study/national system – all ages and modes (column percentages)

Domicile	System	2010	2011	2012	2013	2014	2015
England	England	96.1	95.9	96	96	96	96
	Scotland	1	0.9	1.2	1.1	1.2	1.2
	Wales	2.9	3.1	2.8	2.8	2.8	2.6
	<i>Total</i>	<i>359000</i>	<i>367150</i>	<i>342755</i>	<i>367900</i>	<i>382510</i>	<i>394375</i>
NI	England	25.4	28	24.2	23.2	24.1	28
	NI	65.4	62.7	68	68.8	68.2	64.3
	Scotland	8	7.8	6.8	7	6.7	7.7
	<i>Total</i>	<i>13505</i>	<i>13790</i>	<i>13280</i>	<i>14555</i>	<i>14455</i>	<i>14050</i>
Scotland	England	5.6	5.3	4.7	5	5	4.8
	Scotland	94.3	94.4	95	95	95	95
	<i>Total</i>	<i>32225</i>	<i>30800</i>	<i>30900</i>	<i>31500</i>	<i>30315</i>	<i>34775</i>
Wales	England	34.2	35.2	38	37.4	40.1	40.9
	Wales	65	64.1	61.5	62	59.3	58.5
	<i>Total</i>	<i>18675</i>	<i>18360</i>	<i>19310</i>	<i>19660</i>	<i>20170</i>	<i>20505</i>

Derived from UCAS (2014, 2015).

In 2012, the share of English acceptances to courses in England was unchanged from 2011. English applicants had no new financial incentives to study outside England, so the continued high rate choosing to study in England is unsurprising. There was a slight increase in English domiciled acceptances at Scottish HEIs from 2012 onwards, which coincided with RUK students being taken out of the student number cap. In 2015 when the number cap was removed in England, the percentage of acceptances at Welsh HEIs slightly decreased. Applicants from Wales, who would have been unaffected by fee changes, followed the trend of an increased acceptance rate to English institutions in 2012. In 2014 and 2015 there was a further increase in cross-border mobility for Welsh students.

Northern Irish applicants would have lower fees to pay in 2012 by studying in Northern Ireland compared to elsewhere in the UK than had been the case in 2011. The acceptance rate for Northern Irish institutions from home students did increase, against the previous trend. There was a reduction in acceptances of Northern Irish domiciles to Scottish HEIs. There was also fluctuation of Northern Irish students to English HEIs, but the anomaly is 2011, suggesting this was related to anticipation of the 2012 fee changes. Cross-border mobility decreased in 2012, and remained at that lower level, but increased again in 2015 to both England and Scotland when places within Northern Ireland reduced (UCAS, 2015). Finally, Scottish applicants had an additional incentive to study in Scotland, in terms of higher fees in 2012 compared to 2011 if they studied elsewhere in the UK. The already very high proportion of acceptances to Scottish institutions did rise. A small proportion of students did however enter HEIs outside Scotland, and this slightly increased again in the following years, when the number of controlled places in Scottish HEIs was frozen (UCAS, 2015).

The data suggest some impact of fees policies, but also if not more so policies affecting the availability of places, in the form of change that occurred at the time of introduction and since. This suggests that the model of student as rational actor responding to a change in financial cost-benefit is supported, but only to a limited extent, and only at the point of change which is not consistently maintained. Of course if the impact of fees policies on cross-border mobility is limited it may be because of the efforts made by the DAs to protect their HE sector and students from

the potential impact of policies implemented by the UK Government. It is also though important to consider institutional stratification, and whether the way that participation changes generally affected lower rather than higher tariff institutions in 2012 (UCAS, 2012) was also reflected in cross-border mobility. In addition, the assumption that student choice is based on financial considerations and is subject to the same circumstances, opportunities and constraints for all students is simplistic. The relationship of cross-border mobility with student characteristics is therefore also important.

2.4 Conclusion

This chapter has provided a broad overview of differences in provision in each country, and it has been suggested that supply issues particularly in relation to institution type and location may play a part in cross-border mobility and should be explored further. The issue of cross-border mobility connects to the role, distribution and history of HE within each country. In relation to institution type, the issues of institutional stratification maintained despite expansion, and its relationship to student characteristics and outcomes has been raised. These may be factors taken into consideration by mobile students, but requires further discussion on those associations and the processes by which they may occur.

There has been little discussion within policy documents of which students are mobile. At the heart of policy though is the notion of students as consumers and investors. However this way of conceptualising student choice, essentially as a financial decision based on expected future income gains, is likely to be limited and unrealistic. It fails to recognise the effects of educational expansion, of the positional competition that exists in HE between institutions, of the power that institutions have to determine whether students' preferences are met. It fails also to recognise that student choice is more complex than a financial calculation (which itself would be extremely challenging to achieve accurately for most students, as identified for example by Minty, 2015), and that differences between students exist and are important. These differences matter if they are associated with unequal opportunities and outcomes, as is well documented to be the case in HE participation. And these differences can affect whether or not students are mobile, as one aspect of the decision-making and extent of opportunity in HE participation.

The effects of devolution mean that students are also affected by policy approaches to HE as they affect what options are, or are perceived to be, realistic for them. But the territorial focus of devolution means that students are affected by the extent to which the government in their country perceives HE to be a market and the extent to which students are protected through policy conditions from the 'legitimate inequalities' present in wider society; and each government only has the power to make policy decisions that concern students living in their own territory. Students are affected by policy divergence and this may impinge on equality of participation in ways unintended and under-considered by governments.

Devolution is also directly relevant to the issue of cross-border mobility. Due to the imbalance of power in size and spending, and differences in relation to powers specific to HE, this is a much stronger issue for the DAs than it is for the UK Government. The reason that tuition fees and cross-border mobility are linked in government policy is the expectation that students make economically rational decisions when applying to HE, and will respond to price differentials in tuition fees by being mobile. In this chapter, the data on acceptances have also been summarised and as with previous research suggest some impact of the introduction of fee changes, but the narrow extent of change in flows suggest this impact is limited.

This chapter raises a number of questions about the association between cross-border mobility and supply in the home country, and where one lives. For both issues, differences between countries, and potentially within country of domicile, would be expected due to differing sectoral and policy factors. It also raises issues that require further examination before research questions can be formulated. Firstly if institutional stratification and differentiation have a role in cross-border mobility, what are the processes by which this takes place? If fee changes are only weakly associated with changes in cross-border mobility, and the evidence for students as consumers using economic rationality is limited, what are alternative explanations for cross-border mobility? How is this associated with student characteristics, with wider factors that affect student choice and with inequalities in HE participation, and how can these associations be explained? How does this relate to different sectoral and policy conditions within countries which may affect the choice and impact of whether

to stay or move? The next chapter draws on theory and further research evidence to address these issues.

Chapter 3: Rational action, cultural reproduction and student choice: theory and evidence for analysing cross-border mobility

3.1 Introduction

This chapter will develop the theoretical basis for the study's analytical approach and interpretation of findings, and review wider research evidence on HE participation and student choice. In chapter 2, differing sectoral and policy conditions by country, and the continued existence of institutional stratification by prestige despite expansion of HE were noted, and the issue of differences in HE participation in relation to social background of students was introduced. The assumption underlying a market-driven HE sector is that students are economically rational actors. Economic rationality, specifically rational choice theory, proposes that individuals make choices for self-interested reasons based on perfect information on all choices and an evaluation of which will be optimal in providing greatest utility, but is criticised for not being based on realistic assumptions (Goldthorpe, 1998).

Sociologists have sought to model rational choice as a form of 'situated rationality' that better reflects how individuals make choices and which factors affect those choices. Specific to educational choice, sociological perspectives emphasise to varying degrees the role of individual decision-making/agency, and structural and cultural factors. Two such perspectives, which differ in their focus, are included in this chapter and have been chosen as they have been influential in the field of educational transitions, and HE participation specifically. The first perspective is that of rational action theory as applied to educational transitions, which is concerned with understanding the factors that affect choice at transition points, and is clearly concerned directly with the concept of 'rationality'. The second perspective is that of cultural reproduction theory as applied to education participation, transitions and outcome differences, a perspective which does not directly use 'rationality' as an explanation for difference but which nonetheless does incorporate some sort of reasoning or evaluation leading to choice. As the theories are concerned with the broad issue of HE participation rather than the specific issue of geographical or spatial

mobility, how differences in cross-border mobility may be predicted and explained based on these theories of HE participation are then considered.

The research evidence on HE participation and student choice drawn from a wider literature will then be discussed, including evidence specific to cross-border mobility, and the gaps in that evidence this research will address. Discussion will then turn to how the theoretical perspectives and wider research literature may help to explain why differences in relation to social background, in conjunction with contextual factors, affect HE participation, and cross-border student mobility specifically.

3.2 Rational action theory

3.2.1 Overview

Rational action theory (RAT), a sociological adaptation of rational choice theory, is concerned with the situational limits on the knowledge with which choices are made (Goldthorpe, 1998, 2010). It has been used in the education field as a theoretical basis for analysing and interpreting large datasets through quantitative methods, and in doing so seeks to provide an explanation for social phenomena in relation to education at the aggregate level through analysis of micro or individual level data (examples of this type of research are referenced in the discussion below). In this research such a social phenomenon would be differences in cross-border mobility between student characteristic groupings at the aggregate level, a topic to which RAT has not been previously applied.

There are variations of RAT depending on how tightly or loosely criteria for determining rationality are applied (Abell, 2000; Boudon, 1998, 2001, 2003; Goldthorpe, 1998; Hechter and Kanazawa, 1997; Heckathorn, 1997), but within these the key aspects of rational action are: that action is undertaken by an individual for good reasons considering their circumstances, these good reasons are based on a form of cost-benefit evaluation and evaluation of probabilities of success, and that this action is consequentialist and serves to meet a goal which is in that individual's self-interest. Proponents of RAT recognise that socialisation takes place and accept that norms, cultural resources and cultural values exist, but if an action to commit to a norm comes at a net cost to an individual, it is not deemed rational. Patterns of action that follow tradition or are based on social norms are only viewed as rational if they

can adapt to situational change and continue to serve the person's goals (Goldthorpe, 1998). There are therefore cases where action at an aggregate level does not fit the RAT criteria (Boudon, 2001; Goldthorpe, 1998). Even when applied in a loose way, RAT is assumed to have limits in its explanatory potential (Goldthorpe, 1998, 2010; Hechter and Kanazawa, 1997; Heckathorn, 1997), and to be a 'special' rather than 'general' theory of action (Goldthorpe, 1998). However for proponents of RAT it is also assumed to be a privileged theory – that rational action exists prior to non-rational or irrational action – and should only be abandoned when shown to be incapable of explaining a social action (Goldthorpe, 1998). Rational action is considered 'a good working hypothesis' (Granovetter, 1985).

Even as a 'special' theory, RAT has been used extensively and is assumed to be an appropriate, and to be a potentially sufficient (Breen and Goldthorpe, 1997; Goldthorpe, 1998, 2010) empirical model for the analysis of educational outcomes and transitions. Through schooling and into post-compulsory and tertiary education there are branching and decision points (Boudon, 1974; Breen and Goldthorpe, 1997). The extent to which the individual child or young person makes the decisions at these points is variable (teachers and parents usually have a stronger role during early education stages), but these are points at which future educational outcomes are directly affected. RAT is believed by its proponents to explain why young people from different backgrounds take, on aggregate, different educational routes and leaving points even when their attainment levels, or ability measured in some other form, are equivalent.

3.2.2 Primary and secondary effects

Primary and secondary effects are important underlying concepts to this perspective (Boudon, 1974, 1998; Jackson, 2013a). Primary effects on educational outcomes are proposed as being due to ability or attainment (performance), which has been shaped by the young person's cultural and social background; and secondary effects on educational outcomes due to decision-making (choice), having accounted for differences in ability or attainment. These are separated empirically in order to try and explain inequalities in educational and social opportunities (Breen and Goldthorpe, 1997; Jackson, 2013a; Jackson et al., 2007), though the complexity of the causes of both types of effect is acknowledged (Jackson, 2013a). It is also noted that

anticipatory decisions, that is decisions on future pathways that close off options before the transition point is reached, may mean an under-estimation of secondary effects in empirical analysis because these would be treated as primary rather than secondary effects (Jackson et al., 2007).

Secondary effects, conceived as the outcome of a cost-benefit evaluation of options, involve individual choice but also institutional and structural constraints and institutional decision-making. As Hatcher (1998) explains: “These transition points are sites of social selectivity in terms of class, and often in terms of gender and ethnicity too. Social selection results not only from decisions made by the institution, but also processes of *self*-selection by pupils/students and their parents” (p57). This is a perspective on choice that reflects that outcomes are due to the interaction between possibilities and constraints attributable to the students’ social position and circumstances on one hand, and those attributable to the power of institutions on the other. Such a perspective therefore contradicts the notion of student as consumer and HE institutions merely as service or goods providers seeking to win their custom, as suggested by HE policy and noted in chapter 2. For the purpose of analysing cross-border mobility, if secondary effects or choice play a role, as would be expected, this suggests that differences in the destinations of movers and whether a student is a mover or stayer would not be explained only by attainment but by social characteristics and contextual factors which shape their perception of options.

3.2.3 Explaining educational expansion from a RAT perspective

The RAT model applied to education is concerned with what happens at educational transition points and how this affects aggregate patterns of educational participation. RAT is also intended to explain the effects of educational expansion, that is to explain why all social classes have increased participation in non-compulsory education but the gap between social classes in terms of outcomes has not greatly reduced. This phenomenon has been discussed in relation to ‘maximally maintained inequality’ (Raftery and Hout, 1993). In their research on removal of selectivity in Irish secondary education Raftery and Hout (1993) found that transitions increased overall from primary education in to and through secondary education and into higher education, but in relative terms the completion of these transitions in relation to social class origin only narrowed in the entry rate to secondary education. The authors suggest

this is due to the more privileged classes reaching saturation point in their transition to secondary education – as the percentage of children from lower classes increased the percentage from higher classes could not, so the gap narrowed. Maximally maintained inequality (MMI) therefore suggests that if expansion rises faster than demand that is caused by changes in the distribution of social origins, then expansion in capacity at a given education level will result in increased participation across all social class groups. The effect is to maintain differences in transition rate between social class groups, until saturation point is reached by the higher classes (Raftery and Hout, 1993). Their explanation of why those from different social classes respond differently to educational expansion draws on rational action theory, specifically explained as a subjective cost-benefit evaluation relative both to labour market opportunities, and the economic constraints and the cultural value attached to education associated with social class background (Raftery and Hout, 1993).

Breen and Goldthorpe (1997) also sought to explain the patterns that exist between and within social classes in the face of expansion by developing the RAT based theory of ‘relative risk aversion’. Their perspective quite deliberately sought to counter the prominence of social and cultural reproduction theory in explaining differences in educational outcomes between classes. Their view was that explanations based on cultural factors, which will be discussed later in the chapter, failed to account for the limited narrowing of class inequalities that did occur as participation expanded (Breen and Goldthorpe, 1997; Goldthorpe, 2010). Breen and Goldthorpe (1997) also did not support the assumption in cultural reproduction theory that values and norms associated with class influence education outcomes in a systematic way. They did however recognise that class resources would have an influence on both primary and secondary effects (Breen and Goldthorpe, 1997).

Relative risk aversion (RRA) is intended to explain differences in secondary effects between young people in relation to their social class background, having accounted for differences in primary effects. RRA assumes that the goal of action in relation to educational transitions is to avoid social class¹⁸ status demotion, so to maintain status or position in terms of educational and occupational outcomes. The resources and

¹⁸ Breen and Goldthorpe (1997) operationalised social class in terms of employment relations, which is based both on the type of work undertaken and the nature of the employment contract. This is described further in chapter 4.

constraints associated with social class are assumed to be the main factor that would explain choices made regarding educational transitions, which result in different educational outcomes at the aggregate level between class groups. The evaluation of the costs and benefits associated with educational choices is proposed to be principally in relation to economic constraints and resources, while the evaluation of probabilities of success is shaped by the individual's knowledge of their previous attainment. By focusing on resources and constraints in this way, Breen and Goldthorpe (1997) developed MMI by describing the 'saturation' point at that which all those who deem HE beneficial to them are able to enter, and that class differences in participation would narrow at the point at which class differences in resources become smaller.

As risk is defined in terms of class status and is relative to each class group, RRA assumes different broad perceptions of risks between those in the 'service' or middle class and those in the working class. Those in the service class are argued to enter higher education in order to maintain the same class position as their parents. The risk to their class position comes from not entering and completing higher education, especially since higher education credentials have become more important in accessing the labour market (Breen and Goldthorpe, 1997). In this sense HE is argued to serve as both an investment good and a positional good (Hirsch, 1977), the latter concerning the type and level of qualifications gained relative to others, both of which can serve to maintain the advantaged position of those in the service class (Goldthorpe, 2010). The cost-benefit evaluation of HE is also favourable to them as their parents are more likely to have the financial resources to support their continued education. It is further suggested that for the most advantaged within this class, HE may serve as a desirable consumption good and that they can afford to take the risk of entering higher education even where ability levels may lower their probability of success, because their parents' will be able to absorb the costs of failure and have the resources to create or support alternative opportunities (Goldthorpe, 2010). For those from the working class, higher education is less likely to be required to maintain their social class position and indeed may carry risks in that "a failed attempt at obtaining higher level qualifications is likely to be more serious in its consequences than from families enjoying superior resources" (Goldthorpe, 2010, p325). The 'consequences' relate to financial costs of HE and to opportunity costs. For

working class young people, Goldthorpe (2010) argues that participation in HE therefore requires higher ability to be shown than for those in the service class, to reduce perceived risk of failure. The effect of the differences in perceptions of risks that affect choice is that the aggregate outcome of choices based on cost-benefit evaluation perpetuates inequalities in education participation and outcomes (Jackson et al., 2007).

3.2.4 Applications of RRA in research

Studies focused on various education levels and national systems have sought to test RRA, and therefore seek to measure motivations¹⁹ for following different tracks in relation to social class background, having accounted for the relative role of ability. Some evidence has been found of attempts to maintain status through the level of education entered (Glaesser and Cooper, 2013 in England and Germany; Tolsma et al., 2010 for Dutch HE tracks; Van der Werfhorst and Hofstede, 2007 for secondary school pupils in the Netherlands). In the case of Stocké's (2007) research on secondary school tracks in Germany, a status maintenance motivation was found but did not meet the RRA prediction of being equally strong for all classes. Some evidence has been found of attempts to maintain status through the field of study entered (van de Werfhorst et al., 2003 in the USA; Tolsma et al., 2010). Some studies can partially explain findings in relation to an evaluation of costs and benefits, or risks, of different educational tracks for longer term outcomes (Becker and Hecken, 2009 in Germany; Glaesser and Cooper, 2013; Holm and Jaeger, 2008 in Denmark; Stocké, 2007; Tolsma et al., 2010). Support for RRA from empirical studies is not however conclusive. The findings may vary because they concern a variety of education levels and country systems (Gabay-Egozi et al., 2010). Additionally, although the concepts of RRA are operational in principle, the data required are not necessarily available in the ideal form for testing it. For example, most studies do not directly measure motivations (Gabay-Egozi et al., 2010). Nonetheless RRA has served to provide a theoretical and conceptual framework to guide study design and analysis, and it has been possible to identify that factors that could be described as secondary effects, that is that concern some intentionality and choice, play a role in educational outcomes, separately and in addition to primary effects: ability, socialisation, values, norms. These latter factors

¹⁹ Where motivations are not measured directly they are extrapolated from various measures of cost, ability/probabilities of success, family background and transition/outcome.

are however primarily the focus of cultural reproduction theory, and this difference in focus is the key area of difference between the perspectives, as will be discussed below.

3.2.5 Summary: How RRA differs from economic and cultural perspectives

As explained in chapter 2 the deficit model of HE participation assumes that if young people do not participate or they make choices with less positive outcomes, then this is due to their agency and not to structural constraints. The RRA focus on secondary effects seems that it could support this model, which puts responsibility for outcomes primarily on students, because it highlights the role of student choice in educational outcomes. However a RRA perspective also recognises the external factors in HE participation. It is concerned with action for the purpose of achieving an individual's goals, but those actions are informed by an evaluation of costs, benefits and probabilities of success, which can take into account individual preferences and abilities and the constraints and expectations associated with social background, but also how these interact with the role of institutions in determining HE participation outcomes. So reasoned action would be based not just on what one wants to study and where, but on the likelihood of gaining access to that institution or subject, and the likelihood of this affecting longer term outcomes. Importantly, this does not need to be an accurate assessment – it does not assume perfect information as in economic rational choice theory, merely some reasoning for the action. There do not appear to be studies that apply this to student mobility, but an RRA perspective would suggest that mobility could be analysed in terms of costs and benefits and likelihood of success, in terms of its potential to help maintain status and avoid downward mobility as related to social class.

The lack of direct focus on cultural factors and cultural resources to explain educational outcomes is the major source of criticism of RAT (Ahier and Moore, 1999; Hatcher, 1998; Lynch and O'Riordan, 1998; Nash, 2006; Savage et al., 2005; Scherger and Savage, 2010), as is a suggestion of lack of clarity in the conceptualisation of resources (Savage et al., 2005). This criticism is based on the view that there are potentially a wide range of other, indirect, factors in HE entry outcomes. The theoretical tool most frequently used to explain these indirect factors is Bourdieu's

theory of social and cultural reproduction (Bourdieu and Passeron, 1977). RAT and cultural reproduction frameworks are therefore often presented as oppositional, but in fact there are versions of RAT and examples of its application that directly incorporate Bourdieu's concepts, particularly cultural capital (although often in an adapted, operational form), or otherwise directly acknowledge and incorporate the influence of cultural factors on outcomes (Boone and van Houtte, 2013; Furlong et al., 2003; Glaesser and Cooper, 2013; Hodgkinson and Sparkes, 1997; van de Werfhorst and Hofstede, 2007; Van de Werfhorst et al., 2003). It is possible therefore to explore educational transitions and outcomes, including being mobile or the outcomes of mobility, using concepts from rational action theory while also recognising more strongly the cultural factors underlying primary effects that could play a role in the reasoning behind choices made and actions taken.

3.3 Cultural theories of HE participation

3.3.1 Bourdieu: some key concepts

There are alternative approaches to theorising social differences in HE participation to that of RAT, which draw to a greater or lesser extent on concepts developed by Bourdieu, so these concepts will first be briefly set out. Bourdieu (Bourdieu, 1986; Bourdieu and Passeron, 1977) elaborated a theory of educational sociology which sought to explain the ways in which education serves to reproduce culture and social inequalities. A key element was 'pedagogic action', which are actions and interactions which take place primarily within the family, but also in educational institutions. All pedagogic actions are considered to be 'symbolic violences' as they impose a 'cultural arbitrary' (arbitrary because there is no intrinsically greater value to the forms of culture imposed). The pedagogic action is necessarily hidden, so the less privileged groups are unaware that a cultural arbitrary is being imposed on them. 'Cultural capital' refers to the knowledge, values, language and other aspects of the culture that are dominant in that society (Bourdieu, 1986). Engaging with the dominant culture includes valuing education and participating in it. The pedagogic action imposed by the family, which results in more or less cultural capital being instilled, also contributes to the production of the person's early 'habitus'. The habitus of a person is "a system of schemes of thought, perception, appreciation and action" (Bourdieu and Passeron, 1977, p40) or "dispositions and predispositions" (p204), which shape

practices and in negative form lead to 'self-elimination' from forms and levels of education. Being rich in cultural capital makes education more accessible because one is more likely to have, or at least believe that one has, the opportunity to participate in education, and also that one is more likely to fit with the culture that exists in education institutions. 'Field' is conceptualised as a highly structured social domain, in which power relations are highly determined and deterministic. The fields to which one has access, and how one acts and feels within fields, are seen to be dependent on one's habitus and in being in possession of the types of capital valued in that field (Bourdieu and Passeron, 1977). Higher education has been defined as a field (e.g. Naidoo, 2004) in which power is unevenly distributed and the power structure reproduced in a hierarchy of institutions and hierarchies within institutions. HE as a field furthermore is the setting in which specific HE practices are carried out and a means by which HE-specific forms of capital are distributed and accumulated (Rawolle and Lingard, 2008).

The education system, its "functioning and functions" (Bourdieu and Passeron, 1977, p154), is therefore argued to serve the continuation of power relations that allow the dominant groups or classes to maintain their dominance. It seeks to ensure that the culture that is accepted as 'legitimate' is the dominant culture, either by changing the habitus of members of the dominated groups or classes so that they fit with these cultural norms, or by making them accept that their own culture is not legitimate and that the social structure that exists cannot be changed. Since the continuation of power relations is assumed however, the latter would most commonly be the case and members of dominated groups would rarely be changed by participation in education, which logically leaves the dominated powerless. The dominated groups allow this domination to continue because pedagogic action hides the nature of the power relations. The authors also suggest that by the time one may come to question what is taking place, it is too late because: "The man who deliberates on his culture is already cultivated and the questions of the man who thinks he is questioning the principles of his upbringing still have their roots in his upbringing" (Bourdieu and Passeron, 1977, p37). This theory utilising the concepts of cultural capital, habitus and field to explain why some people successfully participate in education while others do not, and how education contributes to cultural reproduction and social inequalities, has been highly influential on education researchers.

An important research strand in which this influence was seen is that of researchers Reay, Ball, David and Davies, who published a series of papers based on research on higher education choice in six educational institutions in London. Their life history approach, very different to the quantitative methods of RRA, allowed them to create narratives of student choice and the factors taken into account when making decisions about further study. They drew on concepts originally defined by Bourdieu to provide structure and meaning to the narratives and to offer possible explanations for the differences that existed between social groups. Their theoretical framework has as its premise that “the perceptions, distinctions and choices of HE institutions used and made by students play a part in reconstituting and reproducing the divisions and hierarchies in HE” (Ball et al., 2002a, p52). Like RAT their application of cultural reproduction theory seeks to explain persistent inequalities, but the methodological and theoretical approach differs. This approach is concerned with understanding all the complexities of choice, deemed necessary in order to be able to address persistent inequalities. RRA on the other hand is concerned with finding a sufficient, and measurable, explanation for choice using a macro approach, which Reay (1998) argues cannot provide meaningful explanation. Key findings and arguments from the research strands and selected other studies (principally those of Archer and colleagues, and Holdsworth), in which Bourdieu’s concepts are adopted and adapted, are discussed next. These include issues associated with social class, ethnicity and school background, discussed generally in relation to HE participation, and then the more directly relevant issue of spatial mobility which draws on these broader issues.

3.3.2 Social class differences and HE inequalities as a cultural issue

The work of Ball and colleagues focused mainly on inequalities between students from different social classes, which they defined in occupational, social and cultural terms. Built into their conceptualisation of class are social relationships and networks, and cultural values, norms and capital, rather than just the more measurable occupational terms used in RRA. Ball et al. (2002a) are concerned with student choice but consider ‘choice’ a problematic term as it emphasises individual preferences, rather than the relationship between preferences and constraints. For these authors HE choice concerns students matching perceptions of ability and attainment to the entry requirements to institutions, recognising that attainment is socially embedded, but that choice is also shaped by students’ perceptions of their fit with the social and

cultural environments of institutions (Ball et al., 2002a). These two 'registers' of choice seek to explain why student-institution matching takes place, from the student perspective.

Within social classes these authors suggest that there are 'normal biographies', by which they mean lives that take a well-established path common to those from a similar background, particularly in terms of class and gender, in which decisions are often not required to be taken (Ball et al., 2002a). They differentiate their approach from RRA as they argue that HE choice cannot be reduced to rational action, of treating HE as an investment good. They propose that HE participation can also be a 'non-choice' and explained by cultural factors (Ball et al., 2002a), those which in RRA are accounted for as primary effects and not directly measured. Ball et al. (2002a) suggest that choice in terms of intentionality is more common for working class students as they are stepping outside their normal biographies. Therefore not going to university is the normal biography and a 'non-decision'. This raises the question of why some students do not follow this normal biography. Their research with working class families of young people planning to enter HE suggest this was a necessary response to changes in the labour market (David et al., 2003). Archer and Hutchings (2000) similarly found, in research with young working class people from a mix of ethnic backgrounds who planned to enter HE, that HE was perceived as necessary to endure for the future employment benefits of having a degree. This suggests an investment not consumption motive for HE study, however concern about the riskiness of finding graduate work made HE an uncertain investment. Those planning to enter HE identified sufficient potential benefits compared to non-participation, despite a range of further risks identified in relation to likelihood of success (an evaluation based on their education background), fitting in, change to their class identity, finances, and meeting family expectations. Although there was a risk of failing to meet these family expectations this was an important factor in participation for many (Archer and Hutchings, 2000). Scherger and Savage (2010) suggest that if the families of working and intermediate class young people value education and have knowledge about the education system similar to that of middle class families it is these cultural tastes that can explain participation in HE, even where financial resources are lower than those of middle class families.

Reasons for participation of working class students were identified in both these strands of research (Ball and colleagues, Archer and colleagues), but amongst working class non-participants reasoned explanations given circumstances were also found, even though non-participation may have been considered a 'non-choice' as more consistent with their normal biographies. These reasons related to lack of financial and information resources, low expected probability of success, and the incompatibility of HE with their expectations for the future (Archer and Hutchings, 2000; David et al., 2003). For those who did not participate in HE, the risks and costs were evaluated as too great in the context of their circumstances, and as such HE was identified as more costly and risky for those from working class backgrounds (Archer and Hutchings, 2000). For those who did choose to enter HE, Ball et al. (2002a) argued that self-exclusion was an important factor. This meant excluding certain types of institution or locations of institutions on the basis of class or ethnic fit, or because of financial or identity risks. For others, Ball et al. (2002a) made the additional point that entering a lower status university was not necessarily due to a lack of 'better' alternatives, but could be a positive decision. Decision-making therefore incorporates evaluations of risks, which could take different forms for those from different class backgrounds, as also proposed by RRA. While for the middle classes entering HE is part of a normal biography and the greater risk would be in not following that expected route, for those in the working class entering HE can be a risk financially but also culturally and socially, and can mean changes in social relationships and sense of self and in change in class position (Ball et al., 2002a). The work of Ball et al. (2002a, b) suggests then, as does RRA, that status maintenance can be important to all. However for those from a working class background upward as well as downward positional change can be perceived as negative.

Risk is a key concept in the work of Reay, Ball and colleagues and it is suggested that these risks have changed as security in employment has decreased, roles and norms are more uncertain and there is more responsibility on individuals to map a life course (Clayton et al., 2009). On the face of it this does not sit comfortably with Bourdieu's concepts which suggest much greater stability in social positions, but these researchers use Bourdieu's work to explain that the working classes are less able to respond effectively to these uncertainties because they are less able to accrue the forms of capital which allow them to mitigate these risks (Clayton et al., 2009). The

argument seems to be that if society is changing it will be in a way that allows the dominant classes to continue to dominate and so does not change positions of power.

In these literatures, the role of social class in participation is argued to be in the cultural, social and financial resources it provides, and the extent to which these resources are perceived to be compatible with being an HE student at all, and if so with being able to enter and succeed in different types of institution. Differences in knowledge may affect understanding of the risks of HE participation, and different types of HE participation. From a cultural perspective cross-border mobility may therefore be associated with social class in two broad ways. The risks or costs of entering HE at all, and the lack of resources to offset those costs, firstly may make any additional cost of moving to another country too great to be considered a realistic option; secondly may make any additional cost of entering a high status institution, which has higher academic demands but which is also more likely to require mobility, too great to be a realistic option.

3.3.3 Ethnicity as a cultural factor in HE choice and participation

The work of Reay, Ball and David explored issues of ethnicity in HE choice. They identified that those from minority ethnic groups differ in the cultural capital and power they have in society compared to the white majority, and these differences make 'fitting in' a relevant issue and therefore affect their HE choices (Reay et al., 2001). Specifically they proposed that black and minority ethnic (BME) students in making choices are aware of the cultural mix within institutions (Reay et al., 2001). They note however that ethnicity does not on its own account for choice (Ball et al., 2002b). This is a finding supported in the research of Shiner and colleagues on HE participation of minority ethnic students (Shiner and Modood, 2002; Shiner and Noden, 2015). They did not find ethnic mix of institutions or locations a concern for most of the students in their sample and were clear that concern about ethnic mix was only one of several factors considered when making choices. However it was more evident among those from working class backgrounds, and could act more as a way of ruling out institutions or areas rather than positively choosing them. For some students it was important because it meant that their ethnicity was not foregrounded and so a variety of identities could be in play in their time in HE. Wishing to avoid the risk of marginalisation was also a factor.

Self-exclusion in institution choice has therefore been identified. The relationship between ethnicity and social class is identified as a complex issue in student choice (Modood, 2004; Shiner and Noden, 2015). In interviews with BME students, Smith (2007) found that choosing an HEI showed they recognised the ‘game’ being played by middle class students in a sector presented as a market, but also that the rules of the game were slightly different for them due to structural rather than individual constraints. Working class BME students were particularly constrained and less able than middle class BME students to make choices between a range of institution types (Smith, 2007). Matching between students and institutions also involves decisions on the part of institutions. Shiner and Modood (2002) argue that if there is meritocracy it appears to apply to access in general rather than equality of access to different types of institution. The result of any self-exclusion and institutional exclusion results in BME students being over-represented in lower status institutions, even after controlling for social background characteristics, and as such disadvantage is maintained (Shiner and Modood, 2002). In relation to cross-border mobility, ethnicity could be a factor if mobility is a means for some students to enter institutions with a diverse ethnic mix. If mobility is more likely to high status universities, which BME students (other than Chinese and Indian students) may be firstly less likely to apply to, and secondly less likely to be accepted to (Boliver, 2013), being BME could also indirectly reduce the likelihood of mobility.

3.3.4 School and school-type effects on HE inequalities

Reay (1998) extends the term habitus as defined by Bourdieu to develop the concept of institutional habitus, which is proposed to mean the impact that the dominant group within an institution has on shaping an individual’s behaviour, perceptions and expectations (Reay, 1998). The term is used in relation to schools, and is also referred to as ‘school effect’ (Ball et al., 2002a; David et al., 2003; Reay, 1998), where its impact on the individual is through the communication of the values and views of teachers and peers (Ball et al., 2002a). Examples of the impact of institutional habitus are proposed as messages about the relative status of different HE institutions and the need for the ‘right’ choice, which contributes to the greater awareness of university rankings among independent school pupils than those from state schools; and differences between schools in relation to encouraging pupils to apply for traditional ‘academic’ fields of study at HE level (Ball et al., 2002a). The focus in the work of Ball

and colleagues was on differences between selective and non-selective schools, but in addition to these, differences in school effects within the same broad sector, and within-school differences, can have a differential impact on outcomes in relation to social background (Iannelli et al., 2015).

School differences in relation to ethnicity have been found by Noden et al. (2014) using multivariate analyses controlling for other background factors. Those from Chinese, Mixed White and Asian, and Indian ethnic groups were more likely than those from other BME groups to have attended grammar or independent schools. Of interest is that Chinese applicants, who are the ethnic group most likely to enter HE as noted in chapter 2, were relatively likely to be from lower social class groups, suggesting that even when resources directly related to class position may not be beneficial to entering HE or high status HE, resources related to schooling could help overcome this (Shiner and Noden, 2015). As did Shiner and colleagues, Ball et al. (2002b) found a mitigating effect of school type suggesting that BME students in private schools shared similar values and attitudes to White students at the school, drawing on their 'transnational cultural capital'. They suggest this can overcome disadvantages associated with ethnicity, or ethnicity in combination with class.

Attending a selective school, or school type effects more broadly, may then affect not just attainment but the cultural resources of students which could increase their likelihood of entering high status institutions, which again would require more mobility overall than attending other institutions which are more widely available. An additional school effect identified by Ball et al. (2002a) was how the practices of the school, embedded in the culture of the school, can either encourage its pupils to think local or consider a wider geography of choice when making decisions about HE. This is one of the ways they bring the issue of space and place directly into their theorisation.

3.3.5 Risk and geography/spatial horizons

As well as theorising on HE participation in general, Reay and colleagues (Clayton et al., 2001; Reay et al., 2001) did so in relation to geographical mobility. They found that in relation to class differences in HE choice, only working class people were focused on localism, and this was discussed in terms of how place is part of identity. Location choice was one of the ways to manage risk associated with entering HE, as it helped

students feel comfortable and supported and have a sense of belonging. In addition, working class students were concerned about the lack of financial resources to support moving away from the home area. Both identity and financial factors can limit the institutions that are perceived as realistic options (Reay et al., 2001). 'Horizons of action' were identified as important in Reay et al. (2001). This concept was developed by Hodkinson and Sparkes (1997) in the context of young people's transitions from education into the workplace and is defined as the boundaries within which options are perceived as realistic and within which actions are taken, which are determined by the 'habitus', therefore the dispositions created through early socialisation, in interaction with labour market opportunities. Horizons of action were not necessarily spatial in their original conception (Hodkinson and Sparkes, 1997), although there is a spatial element to both habitus and opportunity structures. However as employed by Reay and colleagues the concept is employed in terms of spatial boundaries.

Holdsworth (2009) also explored how social class interacts with mobility and immobility, drawing on Bourdieu's concepts of habitus and cultural capital. She notes that mobility is associated with cultural reproduction as historically going away to university was associated with privileged classes entering elite institutions, which as discussed in chapter 2 was particularly the case in England. Changes in participation have led to more students studying locally, and working class students are more likely than middle class students to be living at home. Holdsworth (2009) argues that resources that can support or constrain mobility are unevenly distributed, and therefore that if staying local rules out high status institutions and is determined by fewer resources, it contributes to differential class outcomes in participation despite widening participation. Mobility is not however only a means for the middle classes to attain the level of educational outcome they seek, but is often still favoured even if there is a high status HEI locally. Mobility is itself identified as a desirable part of the student experience, but more commonly among the middle than working classes.

However Holdsworth (2009) questions the assumptions that associate mobility with independence and transition to adulthood. Going away to university is a well-established route, well supported and advised, rather than an action that demonstrates individualism. Well-trodden routes are not risky for those with the

resources to follow them. On the other hand those who stay in the home area and maintain relationships with family and friends “are constructing a different model of adulthood and intimacy that is centred on obligations rather than distance” (p1858-9). There are two perspectives here. One is that mobility can be beneficial due to its relationship to educational outcomes which may bring greater financial or social benefits. Another is that mobility can be perceived within society as the most valuable and valued form of independence, but does not necessarily result in greater independence, or more valued experiences and outcomes for the individual or those around them. This suggests there may be social and material inequalities associated with immobility but also inequality in the recognition of, and societal value placed on, experiences of those who are immobile. Holdsworth (2009) concludes that mobility differences are important because of their contribution to retaining inequalities in HE participation, as mobile students can potentially gain more than immobile students both academically, and in terms of social and cultural capital.

Cairns and colleagues (Cairns and Smyth, 2009; Cairns et al., 2012, 2013) have also explored spatial mobility using Bourdieu’s concepts of field and habitus. They are concerned with the capacity of Northern Irish students to be internationally mobile in order to access better employment opportunities, and suggest that capacity to be mobile requires a mixture of resources, dispositions and connections. The motivation or goal for mobility is to gain the benefits of entering the ‘elite mobility field’ and maintain social position, and as such differences in the capacity to be mobile can contribute to social inequalities. This is a conceptualisation that also fits with rational action theory. Mobility as a means of cultural reproduction and the use of cultural and financial capital to win in the positional competition have also been suggested by those researching UK students who go overseas for degree study (Brooks and Waters, 2013; Findlay et al., 2011; King et al., 2011). Positional competition is further discussed below.

These perspectives all suggest that space and place affects one’s identity. Becoming mobile relates to perceptions of risk and the resources one has to limit those risks, including the material, social and opportunity resources of one’s locality; stasis can be a means of limiting that risk particularly for some social classes and ethnic groups, but for HE students stasis can itself be risky to their identity and experience as

students. The motivation for being mobile can relate to social and cultural reproduction, and the desire to follow a well-understood route to adulthood. Collectively these points suggest that positional, investment and consumption motives can all play a role in mobility but can differ by social position and place of origin.

3.3.6 Criticisms of cultural reproduction theory

It is argued that cultural reproduction theories cannot explain the increased participation and outcomes in higher education of those from lower social classes (Ahier and Moore, 1999; Breen and Goldthorpe, 1997; Hatcher, 1998; Holm and Jaeger, 2008). This is because if education serves to maintain the dominance of the dominant classes, then even with expanded opportunities for participation those in non-dominant class positions would not value a higher education or would not have the cultural resources to enter higher education, and so their transition rates would not be expected to substantially increase. Bourdieu's ideas have however also been criticised as overly deterministic, as well for as their lack of clarity and potential to be operationalised empirically (Goldthorpe, 2007; Sullivan, 2002).

The question can be asked then whether using Bourdieu's concepts helps to explain the actions, choices and practices that lead to educational outcomes. Habitus is defined in a number of ways through the research included in this chapter (e.g. in Holdsworth, 2006 and Reay et al., 2008). The purpose of using habitus is to explain the relationship between structure and agency, between what has been internalised and external conditions (Reay, 2004). It is intended to explain why working class students have less educational success even when their attainment is similar to that of middle class students. However Sullivan (2002) criticises it not only for being "too nebulous to be operationalised" (p150) but also because it assumes that self-exclusion from educational routes is based on 'unconscious estimation' of probability of success. Sullivan (2002) considers this a contradictory notion, as estimating the likelihood of succeeding logically requires a conscious thought process, even if choice of educational route is shaped by early socialisation. However, in its use and adaptation by educational researchers, habitus allows for reasoned decisions for non-participation as well as participation, shaped by both structural factors and dispositions developed through early socialisation. Holdsworth (2006) recognises that

there is contention about the extent to which habitus achieves Bourdieu's goal of explaining how structure and agency interact in relation to a person's social position and dispositions but she considers it useful for analysing this interaction as long as it is not used in an overly deterministic way. From its uses by various researchers included in this chapter and the next, it seems that habitus has to be defined frequently, and is subject to interpretations that do not always appear consistent (also identified from a wider literature by Reay, 2004).

The concept of 'institutional habitus' (Reay, 1998) also extended the habitus concept beyond its original purpose. Goldthorpe (2007) argued that this is a misrepresentation of Bourdieu's conception of habitus and cultural capital, both of which were developed to describe socialisation processes within the family, and that Bourdieu's position was that educational institutions could not significantly change the position of dominated groups. More broadly, he criticises those who use Bourdieu's terminology of cultural capital in a looser way than intended, who he argues gain nothing by using the term that could not be more straightforwardly achieved using the more general terms 'cultural resources' and 'cultural values' (Goldthorpe, 2007).

The purpose of using the concepts of habitus and cultural capital is to provide shorthand for complex conceptualisations of what influences the actions and choices of individuals in relation to education, but this is undermined by inconsistent use of the terms by researchers. However, in the way that actions and choices are described by researchers, about the factors that matter and how and why these differ by social characteristics, there are useful ideas to structure analysis, and as points of comparison with rational action theory as an alternative means of framing analysis of student differences.

3.4 Approaches which combine the perspectives

Both Breen and Goldthorpe's relative risk aversion and the use of Bourdieu's cultural reproduction theory as applied to inequalities in education participation can be criticised. RRA focuses narrowly on class position and an explanatory model for action which may be too simplistic and has only been partially supported when tested in research; cultural theories, those that depend very heavily on Bourdieu's concepts, appear to reject the notion of rational action while recognising the existence of reasoned choice, and utilise the concept of the habitus which can be too unclear to be

an explanatory concept. However they both seek to explain persistent educational inequalities, and the data that show this maintenance of class and social background differences would be the expected effect of both theoretical perspectives (Hatcher, 1998; van de Werfhorst and Hofstede, 2007). Indeed an approach used by some is to combine elements of the two theoretical perspectives. There are examples in the literature which primarily take a RAT perspective but include measures of cultural capital (or more generally, cultural resources and values) and different cultural 'tastes' in their analysis (Boone and Van Houtte, 2013; Boudon, 1998; Glaesser and Cooper, 2013; van de Werfhorst and Hofstede, 2007; van de Werfhorst et al., 2003). The work of Hodkinson and Sparkes (1997) combines rationality with norms, values and beliefs. There are two other theoretical approaches which combine elements of these perspectives which will be outlined because they are particularly relevant to the issue of educational inequalities and institutional stratification in the context of expansion: effectively maintained inequality, and positional competition as applied to students.

Lucas (2001) sought to build on education transitions research, and maximally maintained inequality (MMI) specifically, which is concerned with the relationship between social background and level of education reached. He argued that the focus on level of education missed important qualitative dimensions in education choices and outcomes which could interact with social background, such as the effect of school differences and in-school stratification or track systems. He noted the importance that a high socio-economic position of parents could play in the extent to which they helped get their children into schools, and tracks within schools, that could increase their chance of accessing HE. Effectively maintained inequality (EMI) (Lucas, 2001) reflects this additional dimension of educational transitions and attainment and proposes that parents from more advantaged backgrounds secure advantage for their children where possible, because they have the resources to do so. Depending on the educational context he argues that such advantage could be in relation to level of education attained or in terms of qualitative differences within levels. Qualitative differences would therefore be the means to gain advantage when achievement of an educational level becomes near universal, but even where this point has not been reached and quantitative differences in education level attained remain between social classes, he proposes that qualitative advantages may still be sought.

Applying this theory of the maintenance of social advantage through education choice to HE in the UK it can be noted that although HE entry is not universal, as discussed in chapter 2 expansion has increased the participation of those from all class backgrounds, even if relative participation between social classes has only partially diminished. HE is also a field in which the main educational level that can be obtained, i.e. a degree, may be the same, but in addition to differences in the grade of degree obtained, there are qualitative differences perceived in relation to institution types and fields of study. EMI can help explain why differences in participation in institution types and to some extent field of study have only slightly decreased in relation to social background as HE expands, as those from the most socio-economically advantaged backgrounds seek to maintain social advantage through the type of HE entered. It therefore incorporates both the premises of rational action theory which assumes reasoned action in education choice in relation to class and economic resources, and cultural reproduction theory which assumes cultural and social resources are also important in the HE decisions that are taken. EMI in relation to UK HE participation has not been completely supported by evidence, because levels of social class segregation in institutions have remained stable rather than grown through HE expansion (Croxford and Raffe, 2013). However in support of EMI is that segregation in relation to school background grew as the proportion of entrants from state schools increased (Croxford and Raffe, 2013), and evidence for EMI in UK HE has been found in other studies (e.g. Iannelli et al., 2011). In relation to cross-border mobility, a possibility is that, if cross-border mobility is associated with accessing high status HE by socio-economically advantaged students, it can be used as a means by which inequality is maintained.

A related issue is the concept of HE expansion leading to 'social congestion', that is too many people holding the same qualifications compared to the opportunities available in the labour market (Brown, 2000; Hirsch, 1977). This links to the issue of credential inflation which was raised in chapter 2. Boudon (1974) argued that middle-class families would have to run faster to stay still due to credential inflation. The argument is that as more people obtain HE qualifications the entry requirement to many jobs becomes higher and the overall value of qualifications is therefore devalued (Collins, 1979, 2011); or that gaining distinction or 'positional goods' in ways other than gaining a degree alone becomes more important especially for students from

backgrounds more traditionally associated with HE participation (Brown, 2000, 2013; Goldthorpe, 2010; Hirsch, 1977). According to Hirsch (1977) and more recently Brown (2000, 2013) this attempt to gain distinction from others is a form of 'positional competition'. Positional competition is argued to operate where there is hierarchy, such as in HE, and there is conflict as competitors seek to gain positional advantage. Credential inflation means that having a degree may not be enough to secure success, however even attending a high status HEI, which is argued to be a necessary tactic to win in this competition, may not be sufficient (Brown, 2013). Distinction is sought additionally through 'hard currencies' such as extra-curricular experiences, and 'soft currencies' of confidence and social skills (Brown, 2013). Tactics are required to succeed but if everyone pursues the same tactics then social congestion is not avoided. Positional competition requires decision-making rather than a pre-determined continuation of the association between social background and later education and occupational position, even if on aggregate that appears to be the effect of it, and in this sense differs from a deterministic cultural reproduction perspective (Brown, 2013).

This conceptualisation of positional competition suggests two main effects. For those groups under-represented in HE overall and particularly so in high status institutions and fields of study, getting a degree can be insufficient for gaining the most benefit from HE, although can still bring upward mobility. On the other hand, those students with greater financial, cultural and social advantages have the resources to gain the range of positional goods, but they are competing within the middle classes to maintain distinction and reproduce advantages and some degree of scarcity in their credentials as the HE system has expanded. Risks to status, and future career and economic success, are argued then to exist for those from socio-economically advantaged backgrounds. There are evident similarities between EMI and positional competition. They both have similarities also with RRA, but are particularly focused on the conflicts and relative social positions within the middle classes, while RRA is more focused on between-class differences in educational transitions and outcomes. If cross-border mobility serves a positional purpose it would arguably be stronger for socio-economically advantaged students and could be used as a means of gaining distinction from other advantaged students.

3.5 Commonalities and differences between the perspectives

Researchers have previously brought elements of the approaches together, which as Hatcher (1998) suggests is a means to address concerns about weaknesses on each side. Both broad approaches, as well as EMI and positional competition, provide valuable ideas about why social differences in HE participation exist, which can be applied to explaining patterns of student mobility as a sub-area of HE participation, and there are commonalities within them that suggest some concepts by which the analysis can be structured.

Both RRA and cultural reproduction theory reject the deficit model of educational inequality, instead recognising that class structures provide resources compatible with higher education participation more strongly for the more advantaged classes (generally referred to in terms of managerial and professional occupational status, relatively high income level and/or family with HE experience), but greater constraints for less advantaged classes. Although cultural reproduction theory can assume some level of determination of outcomes based on class resources and constraints, in its application and development by educational researchers there is recognition of some degree of intentionality in whether and how one participates in higher education. RRA assumes reasoned action, but those reasoned actions are based on choice between realistic possibilities and expected outcomes based on circumstances, including class resources and constraints. In neither case would an increase in 'aspiration' nor simply having access to more information overcome all structural constraints, as UK Government policy would suggest. Both approaches also recognise that opportunity structures are necessary factors in education choice and outcomes, and that these differ between social classes at the aggregate level. One of the ways in which intentionality and choice interacts with structural constraints is in a matching process between students and institutions, recognised as a means by which inequalities are sustained. Both approaches are then compatible with the notions of EMI and positional competition.

This adds up to, on aggregate, those from advantaged backgrounds seeking to *maintain* status and achieve expected outcomes through education choice, and those from less advantaged backgrounds seeking to *change* status and expected outcomes through education choice. However a difference between the two perspectives is that

the cultural reproduction perspective is concerned with and seeks to understand the impact of these choices on psychological and social identity, not just occupational position. In so doing it identifies that the status change that could accompany HE participation from those less advantaged backgrounds could be problematic and a disturbing effect of participation. This would be more difficult to draw out from an approach based purely on RRA as it does not explore primary effects directly. The cultural reproduction perspective can take into account 'non-choice' which suggests that socialisation and norms rather than a goal beneficial to the individual are driving action – both perspectives would consider this to be non-rational action however it would be excluded from a RAT model as something that cannot be explained by the model, but included in research on cultural reproduction. However when this 'non-choice' is explored in more depth by researchers, it could arguably be described as reasoned action, such as non-participation driven by a young person's concern that they would not be able to access a high status institution and their degree would not give sufficient advantage in the labour market to merit the opportunity cost of studying (Archer and Hutchings, 2000).

The conceptualisation of probabilities of success also differs, in that the Breen and Goldthorpe (1997) approach would suggest that ability or attainment levels are a sufficient measure of this (also Raftery and Hout, 1993; Schindler and Reimer, 2011), but the evidence by researchers who have sought to use this measure has been mixed (Becker and Hecken, 2009; Tolsma et al., 2010). The cultural reproduction perspective on the other hand would suggest that cultural factors in probabilities of success also should be directly addressed in explanation of educational inequalities, rather than assumed to underlie the more empirically measurable factor of attainment. School effects would be one such area, and a criticism of RRA is that it fails to recognise institutionalised class power, and that school and institutions are not neutral but affect educational choices (Hatcher, 1998). There is a similar issue in the way that costs and benefits of decisions or action are conceptualised in the two perspectives: for Breen and Goldthorpe it would be sufficient to model these in relation to occupational position and financial costs and benefits, while for cultural reproduction theorists, cultural and social costs and benefits, and their impact on and shaping by the habitus or sense of identity, would be important to include in any explanation.

The commonalities between the perspectives however are strong. They share underlying notions that HE participation carries risks, resources are able to help protect from risks, and these risks and resources differ at aggregate level by social position; of some evaluation of costs and benefits to decide whether, for those who have the option, to participate in HE and if so what form that participation takes; and that participation in HE serves some sort of goal and at the aggregate level again this may differ by social background. Neither approach supports the economic rational choice perspective. This study cannot directly measure many of the factors that drive decisions about cross-border mobility as a form of HE participation, but this instead needs to be inferred from background characteristics of the groups of students who fit the different mobility patterns. These theoretical perspectives will therefore guide analysis and aid explanation of the findings.

3.6 Using theories to explain mobility

This research is analysing cross-border mobility as a phenomenon which informs understanding of, and raises issues in relation to, social inequalities between students, and as discussed in chapter 2 in which sectoral and policy conditions are contextual factors that differ at country level. These contextual factors may interact with student characteristics to differentially affect real and perceived opportunities and their costs. The theories in this chapter are intended to help explore student differences in preferences for and perceptions of HE options, which can be applied specifically to mobility.

Firstly, if cross-border mobility was a form of rational or reasoned action, framed by class position but not due only to values and motivations that have been socialised, then those from backgrounds with higher socio-economic advantage would be expected to seek to maintain status through accessing not just HE per se but higher status institutions or fields of study to a greater extent than those from less advantaged backgrounds. Whether mobile in order to enter HE at all or to enter a higher status form of HE, mobility may bring sufficient additional benefit to be rational despite its costs. Overall, this suggests that mobility could serve position or investment goals. However for working class students upward mobility could be achieved by entering any HE institution. The expectation would also be that the costs of taking on additional tuition fee debt (where relevant), or additional cost of living

(by moving a distance from home), or the cost of moving in order to attend a high status institution²⁰ would not bring sufficient additional benefit to be rational. It might however be rational if access to a specific field of study is required to achieve an intended occupational position, moving a distance from home is required to access that field of study, and the benefits of achieving that position are expected to be greater than the additional costs accrued through moving to study. That is to say, it may be rational for non-middle class students to move in response to external factors of HE provision in the home country. Overall, middle class students would therefore be expected to be more mobile than working class students.

Including cultural perspectives in the analytical framework to interpret findings would require the recognition of social, cultural and financial resources from home, school and place of domicile. They would also suggest that more socio-economically advantaged entrants would be more mobile, for several possible reasons. They would have greater financial resources to support mobility; would have access to a greater information resource from family and school and the tools to make use of that information; would be the beneficiaries of institutionalised class power particularly those who attended a selective or fee-paying school which would enable access to high status institutions and encourage a wider geography of choice; would have less attachment to locality and place more value on following the traditional route to adulthood and traditional experience of studenthood of moving away from home to study; would experience less identity risk associated with mobility and with entry to older universities, as they would have more confidence about fitting in; and would have greater 'taste' for HE, that is they would perceive more strongly the consumption benefits, through the networks and experiences to which they could gain access while studying, which again would encourage applications to high status institutions and the likely mobility required to access these.

It should also be noted that while class is the focus of much of this research, the cultural perspectives included in this section also make suggestions about how ethnicity might interact with mobility. There may be issues of ethnic identity and fitting in, which could interact with class but may also have a separate effect, which could affect choice of geographical location directly based on the ethnic mix of place

²⁰ These costs assumed to be net of available financial support.

of study. This may interact also with ethnic mix of place of domicile, so being from an area where whiteness dominates may encourage moving to an institution or area with more ethnic diversity. Ethnicity could also indirectly affect mobility if it is more likely to high status universities which firstly BME students may be less likely to apply to, and secondly less likely to be accepted to, but this will also be mediated by attainment and school type.

In the opening half of this chapter only a few studies which sought to develop theory have been discussed. There is a larger body of research evidence on HE participation in the UK, and a review of this literature can identify the support for the theoretical perspectives. This is the purpose of the next section, following which the empirical research questions drawing on the theory and research literature addressed in the chapter will be set out.

3.7 Student differences in choice and mobility: Review of research literature

3.7.1 Scope

This section draws on studies carried out since the mid-1990s, as a period in which mass HE expansion has taken place. The evidence is drawn from the student choice and participation literature and literature specific to cross-border mobility. Student choice concerns decision-making associated with becoming a student and the choices then made by individuals about their HE participation. The participants or focus of the studies are young people: school pupils, students, or recent graduates, depending on the study. Included is evidence directly related to spatial mobility including the relatively limited literature on cross-border mobility, and more general findings on the association between student characteristics and HE participation.

An overview of the type and scale of studies and country in which they were located is provided in the appendix (Table A3.1). In relation to the specific issue of cross-border mobility, the most detailed research has been carried out by Raffe and Croxford (Raffe and Croxford, 2013; Croxford and Raffe, 2014a, b)²¹. Their original study analysed UCAS applications and admissions data between 1996 and 2010. They undertook a

²¹ I collaborated on some of the later aspects of this work (Riddell et al., 2014; Whittaker, Raffe and Croxford, 2015).

second study analysing HESA entrants' data for 2011 and 2012. Wakeling and Jeffries (2013) also undertook analysis of UCAS data up until 2010. Relevant UK-wide data can also be found in Faggian et al. (2007a) and Purcell et al. (2008).

In relation to the wider topic of student choice and participation, the chapter includes findings from the Futuretrack study, a large scale longitudinal survey which followed UK students who entered HE in 2006 through to early post-graduation experiences (Purcell et al., 2008, 2012). It also draws on research from cross-sectional surveys, often focused on single countries or smaller areas. These are mainly large scale survey data (defined here as over 1000 respondents) but also studies that draw on medium scale survey data (less than 1000 respondents). There are also a large number of studies that draw on secondary analysis of large scale datasets. This includes cross-sectional data (HESA, UCAS, official school leavers surveys, and Census data) and longitudinal data; and both administrative and research data. Some studies additionally use qualitative research in the form of interviews or focus groups and therefore are mixed method. Finally a smaller number of studies use qualitative data only, so are necessarily smaller in scale but add some of the detail that may need to be inferred from larger scale quantitative analysis.

Many of the large scale studies concerned young people and students from all of the UK. The majority of the remainder are located in England, and a small number focused on each of the smaller countries, specifically or as a combination of countries including England. The findings relevant to England are therefore the most extensive, due to the greater scale of the sector, the location of some of the main research institutes which carry out secondary analysis in the field of education, the existence of more longitudinal pupil level data in England, and greater government resources to fund research. However all countries are represented in the findings.

The association between socio-economic advantage and the status or qualification entry level of institution entered was outlined in chapter 2. The theoretical perspectives identify social class, defined in occupational or wider cultural and social terms, as an important factor in differences in HE participation. There are numerous studies that confirm this association, based on parental occupation, but, in qualitative studies particularly, often also recognising social class in cultural terms (dispositions, values, norms and beliefs passed on within the family and possibly wider community

and place of domicile). Class is defined in these studies as middle class (sometimes separated into higher and lower middle class) and working class; as higher or lower class; or high or low socio-economic status (SES). The education level and experience of parents is also used as an identifier of socio-economic advantage in studies, as are measures of parental income and measures of advantage associated with where young people live. These factors, as suggested above, may also be relevant to cross-border mobility as a specific facet of participation. Research findings are presented below thematically, although there is overlap between them. In addition, findings relevant to ethnicity which are less directly associated with socio-economic advantage are summarised.

3.7.2 Place and spatial mobility

In addition to evidence specific to cross-border mobility, broader findings on student differences in where they study in relation to their home area and whether and how far they travel are also relevant to the issue of cross-border mobility. At one end of the mobility spectrum is living in the family home as a student. This has been found to be more common for those from non-middle class backgrounds; living in a location where HEIs are accessible from home; those with lower attainment level and qualifications; and is more common for some BME groups (Briggs, 2006; Christie and Munro, 2003; Clayton et al., 2009; Connor et al., 2001; Connor et al., 2004; Davies et al., 2008; Forsyth and Furlong, 2003; Holdsworth, 2009; Moogan and Baron, 2003; Pugsley, 1998; Purcell et al., 2008). Students from low income families have also been found to be more sensitive to distance (Gibbons and Vignoles, 2009). Reasons for staying at or close to home are to maintain local networks and/or contribute to the family home and family life (Briggs, 2006; Holdsworth, 2009; Mangan et al., 2010a; Minty, 2015; Moogan and Baron, 2003), and to feel safer or to reduce the perceived social risks of entering HE (Clayton et al., 2009; Davies et al., 2008; Forsyth and Furlong, 2003; Holdsworth, 2009; Moogan, 2011). On the other hand middle class pupils with a family history of HE are more likely to wish to study a long distance from home (Gibbons and Vignoles, 2009; Hinton, 2011; Pugsley, 1998) as are those from independent schools or with higher GCSE scores (Davies et al., 2008).

In chapter 2 the history of regionalism in Scotland was noted, and students from Scotland continue to be more likely than students from other countries to live at

home (UCAS, 2013), in some cases possibly due to their relatively young age (Purcell et al., 2008), and which in almost all cases precludes studying in another country. In Wales, there was an increase in the proportion of students living at home after 1995-96 (Rees and Taylor, 2006) and these students formed at least part of the increase in Wales-domiciled students at Welsh HEIs. Rees and Taylor (2006) suggested two possible explanations – that more students were choosing to live at home to reduce costs, or that there were students entering HE who would not have done so previously and who for cultural, attitudinal or financial reasons preferred to live at home.

Another aspect of difference in relation to place and spatial mobility is the finding amongst samples of lower class young people that parents could have a discouraging role in relation to going far from home (Connor et al., 2001; Pugsley, 1998). There is qualitative evidence that the wish to stay close to home and family, particularly amongst those from less affluent areas, from working class backgrounds or families with little experience of HE, is a strong factor in ruling out cross-border mobility for students from Scotland (Minty, 2014) and Wales (Donnelly and Evans, 2016; Hinton, 2011; Pugsley, 1998). More broadly, direct encouragement from parents and the more implicit form of influence from growing up with the sense that entering HE was ‘the normal thing to do’, as discussed in relation to theory, was more commonly the case for the middle classes or those from a family with an HE background (Ball et al., 2002a; Davies et al., 2014; Pugsley, 1998; Purcell et al., 2008; Winterton and Irwin, 2012), or those who went to independent school (Purcell et al., 2008). Even without parental experience of HE, knowing siblings, other relatives and friends who had been in HE could encourage participation as it showed a path they could follow (Connor et al., 2001). What is likely to be important, as suggested in the theory section, is the greater knowledge and experience that some students can draw on to reduce the perception of risks of HE entry, and potentially of entering high status institutions, and considering a wider ‘horizon of action’. In quantitative research this can most straightforwardly be analysed in relation to parental education levels. In relation to mobility, Belfield and Morris (1999) for example found that parental HE experience was associated with movement to study between English regions.

Previous research on cross-border mobility has found it to be positively associated with being from a middle class background for students from all countries (Croxford

and Raffe, 2014a, b; Purcell et al., 2006; Raffe and Croxford, 2013; Rees and Taylor, 2006). Among Northern Irish students both 'determined leavers' and 'reluctant leavers' have been identified (Osborne, 2001), differentiating between those who positively choose to go to RUK to study and those who do so as they are unable to access a place in the Northern Irish system. Studies have found that those from Protestant communities, particularly those who were middle class, were more likely than those from Catholic communities to be determined leavers (Osborne, 2006; Osborne et al., 2008). However for Northern Irish students who only reluctantly left Northern Ireland due to lack of places, the proportions of Protestants and Catholics were more evenly matched, and so non-middle class students, more likely to be Catholic, were more affected by the need to reluctantly move (Osborne, 2006). Overall however the majority of student leavers were middle class and Protestant (Osborne, 2006).

For Northern Irish students, although determined leavers were mainly driven by entry grades, as will be evidenced below, the second most important reason for moving from Northern Ireland was a positive choice to move to the north of England and Scotland where prospective students and their parents felt they would be less likely to come across anti-Irish feeling (Osborne, 2001). Osborne (2001) found that those from Protestant backgrounds saw studying in Britain, and particularly in Scotland, as a straightforward transition to a place with 'people like us'. For reluctant leavers, their reluctance was based on wanting to maintain social networks in Northern Ireland. The concern about fitting in amongst students who were aware of distinct national contexts is reflected in the evidence from a Scottish study, in which a sense of Scottish national identity and of feeling at ease affected the willingness of some students living close to the English border to consider studying in England (Hopkins et al., 2006).

Another place-related factor is that both Wales-domiciled and Scotland-domiciled students have been found to be more likely to stay in the home country if there are HEIs in the local area (Faggian et al., 2007a). The local HEI effect seems to be evident in the finding that North Wales residents were more likely to move to England than those from other parts of Wales (Fitz et al., 2005; CADARN, 2012), as there are fewer HEIs in North Wales than South Wales. More widely, there is evidence that cross-border mobility is more likely to closer than further parts of the neighbouring country

(Bruce, 2012; Purcell et al., 2008; Ramsden, 2010) and so is more common when cross-border institutions are geographically more accessible. Qualitative research with prospective students from the North-East of England found it was more unusual to apply to HEIs in the south of England than in Scotland for this reason (Minty, 2014). However the prospective students from North-East England were also not all clear about whether or not Scotland was a different country (Minty, 2014). Lack of clarity about country borders was also found by Bond et al. (2010) who interviewed England-domiciled students who attended the University of Edinburgh and found only those with family connections to Scotland understood that by attending that university they were moving to a different national context. There is evidence therefore both of awareness of national borders that can act as a psychological or practical barrier to movement, and evidence of a lack of understanding or concern about the significance of national borders amongst those moving or considering moving across borders.

In summary, as suggested in relation to theory, there is evidence that social class and other indicators of socio-economic advantage are associated with movement away from the home area as a student, and that these are factors in differences in willingness to move across borders. This may lead to different extents and destinations of mobility between social groups from the same country, which has only been explored previously in relation to Northern Irish students. The analysis will explore this issue further for all countries, analyse regional movers compared to cross-border movers, and cross-border mobility in relation to different regional domiciles. Where one lives in relation to a border, or in relation to accessible institutions in the home country, may also be relevant, but has been subject to only limited previous research, particularly in relation to student characteristics, and will also be analysed further.

3.7.3 Educational background

Based on the theories it has been suggested that school attended may contribute to propensity to be mobile, and to consider high status institutions a realistic option, though for the latter point attainment also matters. Socio-economic background is relevant to both aspects of educational background (Ball et al., 2002a). Firstly, social class is associated with educational outcomes from school as measured by attainment (e.g. Ball et al, 2002a; Crawford, 2014; Forsyth and Furlong, 2003; Hemsley-Brown,

2015; Jackson, 2013b). Prior attainment has been found to explain much of the difference in socio-economic background and likelihood of participating in HE, but differences remain (Chowdry et al., 2010; WISERD, 2015). Socio-economic background may however affect attainment if higher education is considered as not feasible and less focus is given to school work in anticipation of this (Chowdry et al., 2010; Jackson, 2013b).

At a UK-wide level, cross-border mobility is positively associated with attainment (Croxford and Raffe, 2014a, b; Faggian et al., 2007a; Raffe and Croxford, 2013), and this has become stronger since 1996. However, the relationship between attainment and likelihood of mobility differs by country of domicile (Croxford and Raffe, 2014a, b; Raffe and Croxford, 2013). How these differences relate to other student and destination factors will be discussed in the analysis chapters. Notable is that England-domiciled students from higher attainment quintiles have been found to be more likely to apply to but least likely to enter an institution in another country, indicating that cross-border university applications can serve as a fall-back option for high achievers (Raffe and Croxford, 2013). Also identified through comparing years of entry was that students from Scotland and Northern Ireland in the lowest attainment quintile increased as a proportion of movers between 2010 (before fee changes were announced) and 2012 (after fee changes were introduced), possibly due to places being less accessible in the home country as more high attainers stayed (Croxford and Raffe, 2014b).

Social class is also associated with the type of school attended (Crawford, 2014). There is evidence of differences in HE participation by school selectivity, which includes differences within the state school sector as well as between state and independent schools (Crawford, 2014; Sutton Trust, 2011), but Crawford's (2014) analysis in England suggests school differences were largely explained by the characteristics of pupils that attend the schools. Differences in HE participation remain however and she reports evidence that the main school-type effect on HE participation is accounted for by subjects, qualifications and achievements at Key Stage 4 (GCSE level), rather than on direct effects of the school (Crawford, 2014). WISERD's (2015) analysis in Wales on the other hand shows a large school effect on propensity to participate in HE after attainment and other social factors of pupils were accounted for. The type of school

attended is a key factor in which qualifications are available (Donnelly, 2015; Purcell et al., 2008), and earlier choices or externally imposed limitations of qualifications can have an impact on whether HE, and what type, is a realistic option (Leathwood and Hutchings, 2003). Russell Group universities favour some qualifications over others and so courses and institutions can be otherwise unavailable to applicants because of earlier qualification routes taken (Boliver, 2013; Iannelli, 2013; Pugsley, 1998), even within the same school where subjects taken can differ by social origin (Iannelli et al., 2015). Attending an independent school is associated with a higher level of segregation in UK HE than is social class, with these students tending to be more clustered within particular, high status, universities (Crawford, 2014; Croxford and Raffe, 2013; Hemsley-Brown, 2015; Sutton Trust, 2011).

Schools also have a role in encouraging, informing and supporting pupils to apply for HE, and in relation to the type of institutions and fields of study they apply to, and this can differ at individual school level including within the state school sector (Donnelly, 2015). There is large scale survey evidence that applicants who had attended independent schools or single-sex schools were less likely to feel they had received inadequate information about HE options than those from other types of school (Davies et al., 2008; Purcell et al., 2008; Sutton Trust and BIS, 2012); while those from lower socio-economic backgrounds, those who had studied at FE college, and females were more likely to report inadequate information (Purcell et al., 2008). Applicants to Russell Group universities had received advice from a more diverse range of people than those applying to other types of HEI (Purcell et al., 2008).

In relation to school type attended, previous research has shown an overall association between mobility and attending a selective school (Croxford and Raffe, 2014a, b; Purcell et al., 2006). McGregor et al. (2002) found that movers from Northern Ireland were more likely than stayers to have attended a grammar school. Due to the nature of the administrative data available, most comparisons are however between independent and state schools. In 2012 a key finding compared to 2010 was a stronger association between having been to independent school and cross-border mobility for those from England, Northern Ireland and Scotland, but this was unchanged for students from Wales (Croxford and Raffe, 2014a). Independent schooling has also been found to be positively associated with moving region for HE

study within England (Belfield and Morris, 1999). Overall, school type attended appears to be associated with determining an appropriate range of HE options and aiding access to high status institutions, and can contribute to the 'self-exclusion' of pupils in their consideration of HE choices, which as discussed can affect those from all backgrounds, and is suggested to relate also to choice with regards to location and distance from home.

The analysis in this thesis will add to previous knowledge on school-type effects in cross-border mobility by placing it in the theoretical context described, and by undertaking additional analysis on sub-groups of movers. It will explore the extent to which school type differs in strength as a predictor of mobility among those from differing places of origin, those going to differing destinations, and in relation to student characteristics. In relation to attainment, it will explore whether the differences found can be explained by issues of HE supply in the home country, and again undertake analysis by sub-groups of movers.

3.7.4 Institutional stratification/institution types

Young people from socio-economically advantaged backgrounds are likely to apply to and enter high status institutions (Ball et al., 2002a; Boliver, 2013; Chowdry et al., 2010; Connor et al., 2004; Sutton Trust and BIS, 2012). The association between institutional status and social class may be accounted for largely by attainment levels (Chowdry et al., 2010), but as discussed, self-exclusion can be a factor for applicants in the choices they make. Broadly speaking, academic reputation of an institution is a higher priority in decision-making for high attainers (Ball et al., 2002a; Briggs, 2006; Pugsley, 1998; Purcell et al., 2008; Sutton Trust and BIS, 2012). The theory section discussed how institution choice can help maintain an identity (amongst the middle classes) or bring about a change in identity (amongst the working classes). In support of this, there is evidence of young people from non-middle class backgrounds limiting the institutions they are willing to apply to based on their assumptions about likely success (Callender and Jackson, 2008; Connor et al., 2001), or a sense of what is the right sort of place for them (Archer and Leathwood, 2003; Connor et al., 2001; Mangan et al., 2010a; Pugsley, 1998; Sutton Trust and BIS, 2012). Applicants who prioritised choice of institution by where they would fit, culturally and/or ethnically, and who

considered their family and home life important, were the least likely to apply to high status institutions (Ball et al., 2002a, b).

It has been suggested that mobility can be a means for students to access and benefit from attending high status institutions. Cross-border students have been found on aggregate to be more likely than those who stay in the home country to attend high status institutions (Croxford and Raffe, 2014a, b; Faggian et al., 2007a; Raffe and Croxford, 2013; Tindal et al., 2015), as have inter-regional movers within England (Raffe and Croxford, 2013; Purcell et al., 2008). In interviews with Scottish students at English HEIs, Tindal et al. (2015) found that they did not differentiate between higher education sectors in relation to country borders but in relation to institutional quality, as also suggested in the research of Bond et al. (2010) on English movers to Scotland.

If mobility is more common to high status institutions, there is less need for long distance movement for those who do not have the attainment levels to enter them. This is one of the ways that socio-economically disadvantaged young people may be less likely to be mobile. However even if it was a feasible option in terms of attainment, concerns about fitting in may limit their propensity to be mobile. Lack of knowledge about options could mean these assumptions and expectations are not well-informed, and may also be geographically limited. Connor et al. (2001) found that potential entrants from lower class backgrounds knew very little about old universities located some distance away from home.

There is useful qualitative research on the institutional preferences of Northern Irish movers. Osborne's (2006) study provided evidence that Protestant middle class students often attended older universities in northern England and Scotland because they perceived them as better than the ones at home, would provide new experiences and better graduate job opportunities. Osborne (2001) had previously found for Northern Irish students that determined leavers were mostly influenced by the high grade requirements in the Northern Irish universities. Reluctant leavers on the other hand also believed that grades might force them away, but believed higher education provision was the same quality in Northern Ireland as elsewhere, and so did not feel a positive wish to leave. A large proportion leaving Northern Ireland also went to Post-1992 institutions in England and to some extent Scotland (Osborne, 2006; Raffe and

Croxford, 2013; Wakeling and Jeffries, 2013), as did a large proportion of those who moved from Wales to England (Raffe and Croxford, 2013; Wakeling and Jeffries, 2013). However, a substantial proportion of those who leave Wales have been found to enter a high status institution, influenced by both school and family (Fitz et al., 2005).

The evidence on the association between student background and institution types entered, in the context of the theories discussed, suggest that mobility could serve as a means to gain positional goods among advantaged students, widening the pool of possible high status universities they could attend. It would also suggest therefore that mobility would be strongly associated with entering high status institutions. While this has been broadly supported previously in research, institutional destinations are more complex and this potential reason cannot provide a complete explanation for mobility. The differences between students who move to enter high and lower status institutions are not well evidenced. Institutional supply issues in the home country may play a role in this mobility, but there is a gap in analysis on this point. It is also possible that the cost of moving to enter a lower tariff institution would be lower for students living close to borders and this could make the potential benefits of the move worthwhile. Although Minty (2014) found amongst prospective students in North-East England that institutional reputation was still important even when there was spatial proximity to cross-border universities, there is little evidence on this overall point. This thesis undertakes new analysis of the relationship between mobility and supply in the home country, and mobility, location and institution type, to identify the extent to which the theoretical framework can explain differences between movers within and between countries.

3.7.5 Field of study / employability and salary motivations

In discussing the motivation for entering HE, and the benefits that may be expected to justify the costs in chapter 2, the expectations of economic returns to study were identified as key to market-driven HE policy, but the factors affecting outcomes were not. In relation to theory it was suggested that due to differing perceptions of risks, or costs and benefits, socio-economic background was associated with differing expectations of HE outcomes and therefore potentially the purposes that HE was seen to serve, which may be reflected in both field of study or institution type entered. In terms of wider evidence, routes to fields of study at university start in primary school

(van de Werfhorst et al., 2003) or early secondary education (Iannelli, 2013; Iannelli et al., 2015), as earlier attainment and school subject choices set the boundaries for choices at HE level. No relation was found between social class and field of study entered by van de Werfhorst et al. (2003) (analysing longitudinal data on those aged 33 in 1991) but those from professional backgrounds were disproportionately represented in medicine and law fields of study, and this was not explained by prior attainment. Differences in field of study choice in relation to socio-economic background have been found in other studies, with future employability being more of a concern to those from working class backgrounds (Archer, 2003a; Connor et al., 2001; Purcell et al., 2008), and choosing a field of study because it is enjoyed more common for more advantaged students (Connor et al., 2001; Purcell et al., 2008), though in the former study the difference was marginal. Iannelli (2007), analysing data between 1987 and 2002, found the only clear change in field of study choice in relation to social class was business studies being entered at an increasing rate by working class students.

Connor et al. (2001) found that HE as an investment was the strongest specific motivation amongst those in lower social class groups, and this also shaped field of study choice. Although those from a low SES background may expect to gain an earnings premium by gaining a degree, this has been found to be a lower level of expectation than those from high income backgrounds (Delavande and Zafar, 2013). Qualitative research suggests that students from low SES backgrounds may be more aware of the risks of HE study and do not necessarily assume they will gain financially (Christie and Munro, 2013; Gilchrist et al., 2003). They have been found to be less motivated by salary and less likely to enter high premium subjects (medicine, maths and computing, law and some aspects of business studies) (Davies et al., 2013). Nonetheless like students from all backgrounds there is evidence that they may overestimate the graduate premium (Jerrim, 2008).

For those from high SES backgrounds, there is evidence of least career direction in field of study choice being shown by those who had attended independent school or were from a higher middle class background, for whom HE is arguably an expected stage in their lives that does not require a great deal of consideration about where it will lead (Purcell et al., 2008). Young people from high income households have been

found to have higher expectations of their earnings with or without a degree than those from low income households (Delavande and Zafar, 2013). Students from high SES backgrounds may assume they will financially gain from HE (Christie and Munro, 2013) and the higher the parental income the higher the expected wage returns (Jerrim, 2008), but again may overestimate the graduate premium (Jerrim, 2008).

It has been found previous to 2012 (which is the focus for the analysis in this study), that movers were more likely than stayers to enter medicine (Croxford and Raffe, 2014a; Faggian et al., 2007a; Raffe and Croxford, 2013). English students at Scottish institutions have also been found, before 2012, to be likely to enter arts subjects, and the concentration in medical and arts fields had increased in recent years (Croxford and Raffe, 2014a). They have also been found to be less likely than Scottish stayers to have been motivated to enter HE for employment reasons (Purcell et al., 2006). Tindal et al. (2015) found that Scottish movers were in some cases seeking distinction through entering high status or specialist fields of study unavailable in Scotland. Others were drawn to London specifically because the future economic and social benefits were expected to be much greater than in other parts of the UK (Tindal et al., 2015).

Issues of returns to study also relate to institution choice. Purcell et al. (2008) had found that those expecting to attend Russell Group universities were most likely to strongly agree that a higher education qualification was a good investment, even though their field of study choices were more based on enjoyment than expected links to employment. Those who graduated from high status institutions believed their HEI to have been an advantage to them when looking for employment more than those from the lowest status HEIs, due both to perceptions of prestige of the HEI and the quality of teaching and resources (Purcell et al., 2012). Christie and Munro (2013) found that some less affluent students regretted attending an institution that they felt would not lead to financial pay-off.

As discussed in chapter 2, there may be some future earnings and employment benefits of certain high status institutions and fields of study, but this was explained to a large extent by the social background of students. The aggregate differences in what to study and where suggest differences in expectations and goals in relation to socio-economic background that perpetuate differences in participation and

subsequent outcomes. More advantaged students are arguably making a consumption choice and less advantaged students an investment choice when it comes to field of study. However if advantaged students are concerned with institutional status as suggested by positional competition, then the positional and investment advantages expected from the institution attended may explain why field of study does not also need to be an investment choice. This is suggested in the finding of Purcell et al. (2008) that those entering Russell Group universities were the least likely to have chosen a university because it offered the course that they wanted. In relation to cross-border mobility and its expected benefits relative to costs, institution type may be a more important driver than field of study, but possibly more strongly for those from socio-economically advantaged backgrounds.

There may be other longer term implications of differences in institution choice where mobility is used to access high status institutions. Overall those more likely to migrate within the UK as students are more likely to migrate as graduates (Faggian et al., 2007a; Mosca and Wright, 2010), and the characteristics of both tend towards the more advantaged, those who attended high status institutions, and to those who are young and White (Belfield and Morris, 1999; Faggian et al., 2007a, 2007b; Hoare and Corver, 2010; Purcell et al., 2006). If migration has the potential to open up higher lifetime earnings and access to more desired locations as suggested by the evidence (Faggian et al., 2007b), then those who are impeded from migration have a more limited range of opportunities and may not achieve their full earning potential. These study findings reinforce the notion of student mobility forming one stage of a longer migration pathway of particularly advantaged young people, as has been found for internationally mobile UK students (Brooks and Waters, 2011, 2013; Findlay et al., 2011; King et al., 2011).

The relationship between mobility and longer term employment motivations, in relation to student characteristics, is an area of potential difference to be further explored. Field of study differences between movers and stayers, between country domiciles, and in relation to different country and region destinations, have not been explored in detail on 2012 data, and there is no previous analysis evident in relation to issues of field of study supply and outcomes, and these gaps will be addressed in the analysis.

3.7.6 Financial concerns

Financial matters, usually focused on the narrow issue of fees, are key to government policy on cross-border students, as identified in chapter 2, but in the theory section it was suggested that this is just one aspect of the resources which affect perceptions of costs and benefits of HE choices. Survey research with students found that not all had investigated the costs of going to university in the country where they entered HE (Davison et al., 2014), and this included cross-border movers. However, for many potential HE students finance can be an area of concern (Mangan et al., 2010b; Wilkins et al., 2012) and of uncertain knowledge (Christie and Munro, 2013; Minty, 2015) but particularly so for those from lower income families, those from low HE participation areas or from families who do not have a history of HE participation (Callender and Jackson, 2008; Connor et al., 2001; Davies et al., 2008; Delavande and Zafar, 2013; Hutchings, 2003; Minty, 2015). For students from less socio-economically advantaged backgrounds the cost of HE may be perceived as a debt more than an investment (Callendar and Jackson, 2008; Minty, 2015). Those from working class backgrounds have also been found to be concerned about lost earnings from delaying entry to the workplace (Gilchrist et al., 2003). However these concerns do not necessarily affect the decision whether or not to participate nor override all other considerations, at least at the point that HE is being considered as a realistic option. Decisions about what and where to study may however be affected by these concerns (Callender and Jackson, 2008; Davies et al., 2008; Forsyth and Furlong, 2003; Holdsworth, 2009; Mangan et al., 2010b; Moogan, 2011; Osborne, 2006). It is suggested that strategies to reduce costs could be through staying close to home, and applying to universities where there was a good chance of term-time employment (Callender and Jackson, 2008; Connor et al., 2001). These are ways in which the likelihood of cross-border mobility may be affected more directly by financial resources, in addition to any impact of fees.

As noted in chapter 2, there has been analysis of cross-border changes in relation to fee changes based on HESA data, which suggest a modest impact of the 2012 changes in terms of number of entrants, and qualitatively in terms of lower attainers increasing as a proportion of movers from Scotland and Northern Ireland (Croxford and Raffe, 2014b). Survey research has also found that the cost of tuition fees has been found to affect the willingness to cross borders particularly among students from

Scotland who would take on the highest additional debt by moving compared to those from other countries (Davison et al., 2014). Interviewing prospective students in Scotland, Minty (2014) found for a few young people they would be willing to take on this debt to access a specific course they preferred, to experience a new location, or would understand this choice if it was to go to Oxbridge as an equivalent opportunity did not exist in Scotland. Most had no interest in leaving though even if there had not been a fee difference. Prospective students in Minty's (2014) study also commented on a lack of information and encouragement from schools regarding opportunities in England and the funding system there.

Changes in Welsh funding directly relevant to cross-border mobility, notably the changes in availability in the tuition fee grant for students leaving Wales, were summarised in chapter 2. There is some evidence of effects of these fee policies after 2007 on cross-border mobility (Bruce, 2012), but fee arrangements seem less able to explain earlier changes in mobility rates (Raffe and Croxford, 2013; Trench, 2008). Earlier research also suggested that concerns that university is expensive did not relate to whether young people preferred to stay in Wales to study or not (Fitz et al., 2005).

According to survey research it was students from Northern Ireland who were the most likely, compared to those from the other countries, to investigate the costs of studying elsewhere in the UK (Davison et al., 2014). Osborne (2001) had earlier reported on the role of fees and costs on Northern Irish mobility. When the first (1998) tuition fee policy was introduced the cost of HE became a significant issue about where to study for parents and prospective students. This created in some cases reluctant stayers who had been convinced by parents to stay in Northern Ireland to reduce costs. It may also have affected the distance travelled into RUK to study due to concerns about the greater costs of living beyond the North-West of England (Osborne, 2001). In later research, only a minority of students choosing to stay in Northern Ireland cited cost as a factor, but the cost issue was more important to those who went to state schools rather than grammar schools, and more for those from Catholic than Protestant backgrounds (Osborne et al., 2008).

Students from England take on high debt wherever they study but this has the potential to be higher in Scotland due to degrees usually taking a year longer than

elsewhere in the UK. There is little evidence again on the impact this may have on decision-making, but Minty (2014) found amongst North-East England pupils that any concern was about whether the first year would be sufficiently challenging, rather than the cost of an extra year of study.

Overall, previous research suggests that if mobility is considered as a subjective cost-benefit evaluation then financial costs associated with fee debt form one part but not all of the cost side of the evaluation. To add to analysis already undertaken on the effects of the 2012 fee changes on cross-border mobility, flows data will be discussed in chapter 5.

3.7.7 Ethnicity

Overall those from BME groups are less likely than White students to move away from the home area to study (Belfield and Morris, 1999; McLelland and Gandy, 2011; Purcell et al., 2008; Smith, 2007). This general finding masks differences between ethnic groups. Pakistani and Bangladeshi students tend to attend an institution near home (Belfield and Morris, 1999; Clayton et al., 2009; Connor et al., 2001; Shiner and Modood, 2002; Shiner and Noden, 2015), however Black students are relatively likely to choose an institution away from the home area and Indian students are likely to travel far despite institutions being available closer to home (Gibbons and Vignoles, 2009). The reasons for staying close to home may also differ in relation to ethnicity. Staying close to family was found to be more frequently important for Asian applicants than White and Black applicants, while cost of living was taken into account more by White and Black applicants than Asian applicants (Purcell et al., 2008).

As identified above, there is evidence that BME students were more concerned with studying in an institution in an ethnically mixed area than were White students (Ball et al., 2002b; Connor et al., 2001; Connor et al., 2004; Purcell et al., 2008; Reay et al., 2001; Shiner and Modood, 2002; Shiner and Noden, 2015). Including this as a factor in decision-making can reduce the likelihood of applying to a high status institution (Ball et al., 2002b). Despite the fact that most BME groups are over-represented in HE once allowance is made for prior attainment (Shiner and Noden, 2015), entering a high status institution is less common for BME students overall, which can also reflect admissions decisions (Boliver, 2013; Purcell et al., 2008; Shiner and Modood, 2002;

Shiner and Noden, 2015). Levels of ethnic segregation within UK HE have been higher than levels of social class segregation and this has been stable as HE has expanded (Croxford and Raffe, 2013).

Ethnic inequalities intersect with social class, as BME students are more strongly represented amongst intermediate and working class entrants (Shiner and Noden, 2015). As noted in chapter 2, there is a greater propensity for BME than White young people to enter HE. One of the explanations put forward to explain this, in part at least, is the role of migrant parents in encouraging the prioritisation of educational achievement for their children to overcome disadvantage, who will in turn achieve upward mobility and a social position which further supports and encourages the prioritisation of education in the next generation (Modood, 2004). More broadly, family influence can play a stronger role in HE decisions for those from BME groups than for White students (Connor et al., 2004). Of all BME groups, Black Caribbean applicants were the least likely to say HE was the expected route but this may reflect the tendency of Black Caribbean (and also Black African) students to start HE at an older age than other groups (Connor et al., 2004). In the Futuretrack study, Asian applicants were the most likely to say that entering HE was just the expected thing to do or that direct parental encouragement was the reason for applying to HE (Purcell et al., 2008). This appears to be because Chinese and Indian students in particular amongst this group are more likely than other ethnic groups to be high achievers moving straight from school into HE (Purcell et al., 2008). A relationship between ethnic group and type of school has also been found, but school-type effect was stronger than the effects of ethnicity on educational outcomes (Noden et al., 2014). Attending a selective school can mitigate social class differences for some ethnic groups (mainly Indian and Chinese students) and attending a non-selective school can reinforce social class differences for other ethnic groups, in terms of attainment and subsequent HE participation (Shiner and Noden, 2015).

There is evidence that BME applicants give more importance than White applicants to employment and earnings in their decision to apply to HE (Connor et al., 2001; Connor et al., 2004; Shiner and Noden, 2015). Having a clear career direction before entry was found more in Black applicants than other ethnic groups (Purcell et al., 2008).

Amongst students from Scotland, Wales and Northern Ireland, but not from England, movers are more likely than stayers to be BME (Croxford and Raffe, 2014a, b; Faggian et al., 2007a; Fitz et al., 2005; Raffe and Croxford, 2013). Regional movement has been found to be more common for BME students than is cross-border movement (Croxford and Raffe, 2014a). Findings directly relevant to mobility would suggest the propensity to be mobile would differ between BME groups; and would be explained partially by social class, school type attended, attainment and the area they live in before entry. Other findings may more indirectly predict mobility, in relation to likelihood of entering a high status institution which may require mobility, or prioritising field of study by expected employment outcomes which, depending on the field (e.g. business studies as opposed to medicine), may be considered feasible at a range of institutions and so for which mobility may not be required. This research will help to address a gap in evidence in terms of the strength of ethnicity as a factor among sub-groups of movers in relation to student characteristics or different destinations. There has also been little previous attempt to theorise why these differences in relative cross-border mobility exist, and the suggested explanation of moving to institutions or locations with higher ethnic mix than the home area will be considered in relation to the findings in this research.

3.8 Overview: explaining cross-border mobility

Overall there is a wide body of evidence that social class, and measures of advantage related to family background and schooling, have a strong and continuing role in student choice. It has been proposed that student mobility can be conceptualised as a facet of student choice, and that cross-border mobility is a particular form of that mobility. The findings available on cross-border mobility suggest that social background factors relevant to student choice are indeed relevant to this specific issue. These findings also confirm the need to analyse the situation for each UK country, as mobility out of each country has distinguishing features. This will allow the exploration of implications of differences in cross-border mobility within the UK for students, but also in relation to the policy and sectoral issues raised in chapter 2. It will also allow consideration of whether, from a conceptual perspective, theories of student differences in educational transitions inform understanding of country-level differences in the context of devolution which may contribute to social inequalities.

The findings overall support the suggestions based on theory about how students' resources associated with their social background and characteristics may affect participation, their perceptions of the costs and benefits of HE, their perceptions of probabilities of success and what purpose HE serves for them. The findings can support the theory of HE participation as rational action, as long as the reasons for action are defined in cultural as well as financial terms. They can support the theory of HE participation as cultural reproduction if it includes a conscious process of identifying feasible options and making decisions. In both cases, constraints and circumstances external to the individual will shape the perception of reasons and options. Based on the research findings the following may be expected in relation to mobility generally, and therefore cross-border mobility as a particular form of mobility, for students with higher and lower levels of socio-economic advantage and for BME students.

Young people with *higher levels of socio-economic advantage* are more likely to be high attainers and so more likely to enter high status institutions. They are more likely to attend selective and independent schools, associated with higher attainment than non-selective schools. School attended can also affect whether qualifications are available which are more likely to give access to higher status institutions. As higher status institutions are more dispersed, mobility may be necessary. They are likely to associate higher status institutions with increased benefits after graduation, and in part this will be informed by family experience and knowledge. Institution type may be more important than field of study in the cost-benefit evaluation of mobility.

A less strong role of school may be providing information and influencing applications to high status institutions, and encouraging the consideration of a wider horizon of action. Moving away from home is also likely to be a more accepted part of the transition into adulthood. Therefore there are fewer risks to moving away from home in terms of expected role. They may be more confident they will fit in and succeed in a place away from the home area. They may also have less practical reason to stay close to home if they do not have any financial or caring responsibility within the family. As the financial costs of mobility are higher, greater financial resources are needed and these are more likely to be available to these students. For a range of reasons therefore, young people from high SES and more privileged education

backgrounds are expected to be more mobile than those from less advantaged backgrounds.

Young people with *lower levels of socio-economic advantage* would be expected to be less mobile therefore in relation to differences across this range of factors. They are more likely to be lower attainers (in relation to other HE entrants). They are more likely to attend non-selective state schools which are associated with lower attainment; and there may be more limited qualifications available, compared to selective schools. These factors can all prevent access to high status institutions. If attending lower status institutions, they are more likely to have feasible options closer to home. If the school is not informing and encouraging a wide range of options this could help to limit horizons of action. If HE is financially risky then they may seek to enter fields of study expected to lead to employment. However, if any HE qualification is expected to be an investment, as some studies suggest, then moving a long distance is unlikely to be worthwhile in cost-benefit terms. Moving is likely to be for the purpose of accessing fields of study expected to bring benefits, in cases where attainment levels do not give access to high status institutions. For low SES students with high attainment, accessing high status institutions may explain mobility. It may just be a less common event than for high SES students, potentially influenced by school attended, family knowledge of HE, or encounters and opportunities that may be more individual and difficult to account for at an aggregate level.

However even for high attainers amongst this group, high status institutions may be seen as somewhere they would not fit in and therefore may not succeed. If entering HE is risky to the identity of some among this group, then entering high status institutions would be more so, as would moving far from the home area. They may have less family influence and experience to draw on that would encourage moving away as a feasible option. Identity may also be tied to place more strongly, emotionally or practically. They are likely to have fewer financial resources, and may need to stay closer to home to reduce costs.

The external constraints of supply of fields of study, and the location and spread of institution types have also been identified as possible factors in mobility. In addition the literature review provided evidence that capacity and propensity to move away from the home area is affected by financial and cultural resources, and constraints

and opportunities, associated with class position. These points suggest that cross-border mobility would be more likely for those with fewer resources when the physical and social distance required to make the move is relatively small, while those with greater resources would be less affected by distance.

Finally, young *BME* students are less likely to be middle class and therefore less likely to be high attainers, attend selective schools, and access qualifications that high status institutions seek. Being less likely to enter high status institutions would reduce the mobility required. It is likely that only in relation to socio-economic background (directly, or indirectly through attainment) might there be a relationship between ethnicity and likelihood of entering a high status institution through mobility. Overall, field of study may be prioritised over institution status amongst the *BME* group as a whole but less so for Chinese and Indian students. Within *BME* groups, Pakistani and Bangladeshi students are less likely to be mobile at all, and so less likely to be cross-border movers. The other specific issue with regard to ethnicity, rather than bound up potentially with other factors, is that mobility may be motivated in part by the ethnic diversity of the institution or location. Cross-border mobility would be most likely from less to more ethnically diverse places.

3.9 Conclusion

At the end of chapter 2 a number of questions were posed for further exploration.

- If institutional stratification and differentiation have a role in cross-border mobility, what are the processes by which this takes place?
- If fee changes are only weakly associated with changes in cross-border mobility, and the evidence for students as consumers using economic rationality is limited, what are alternative explanations for why cross-border mobility takes place?
- How is this associated with student characteristics, with wider factors that affect student choice and with inequalities in HE participation, and how can these associations be explained? How does this relate to different sectoral and policy conditions within countries which may affect the choice and impact of whether to stay or move?

This chapter has begun that exploration. It has discussed alternative ways of understanding student choice to that of economic rationality. It has discussed how HE participation in general is associated with social background and provided possible explanations for how social background influences student choice. It has also discussed how those associations between social background and HE participation both are shaped by and reinforce institutional stratification, despite expansion in HE opportunities. The importance of place has been suggested, and that this again has different meanings associated with social background, which can translate into differing capacity and propensity to be mobile.

Combining the theoretical perspectives would suggest that student mobility, as a facet of student choice, is driven by reasoned action that is influenced by cultural and financial factors, situated in relation to external constraints, opportunities and contexts. The latter may relate to supply of field of study, and location and spread of universities within countries. The ways that these theoretical perspectives and the evidence on student choice may translate into differences in cross-border mobility have been proposed in section 2.8. To identify whether this is the case, the research questions build on the findings of the literature review and are as follows:

- RQ1: What are the patterns of geographical movement for undergraduate HE study in the UK?
- RQ2: How are students' social characteristics and educational background associated with geographical mobility?
- RQ3: How is mobility associated with institution or field of study entered and how does this differ in relation to student characteristics?
- RQ4: How are students' social characteristics associated with the relationship between place of domicile and destination?

One of the contributions of this research will be to use these theories to address cross-border mobility, taking into account sectoral and policy factors, and how this differs by country of domicile. The next chapter sets out how data and analysis will be used to address these questions.

Chapter 4: Data and research methods

4.1 Introduction

This chapter sets out how the research questions have been addressed. Firstly it describes the dataset provided by the Higher Education Statistics Agency (HESA). Secondly it discusses the selection of cases. The variables that are used are then described and discussed, including how missing data has been accounted for, and how variables have been recoded and in some cases combined with additional data sources. It then discusses how the data have been used to represent factors important to student choice and mobility identified in chapters 2 and 3, but also their limitations. The types of analysis that have been undertaken are described next. Finally ethical issues are discussed. Additional material is supplied in the Appendix to Chapter 4, and appended tables referenced as A4.x within this chapter.

4.2 Using HESA Data to analyse student mobility

HESA produces annual censuses of students in higher education institutions in the UK. The analysis for the research has been undertaken on a dataset supplied by HESA on entrants to undergraduate higher education courses at UK HEIs²². HESA data have been used extensively in research, including in some cases research on student mobility (e.g. Bailey, 2013; Croxford and Raffe, 2014a, 2014b; Faggian et al., 2007b; McQuaid and Hollywood, 2008; Pollak, 2012). Using UCAS data on applications and acceptances would have been a preferable option as it would take into account application preferences and the role of offer-making by institutions in whether students cross borders. UCAS data have been used in previous studies on student mobility (Holdsworth, 2006; McLelland and Gandy, 2012; Osborne, 2006; Raffe and Croxford, 2013; Wakeling and Jeffries, 2013) and on HE access (e.g. Boliver, 2013). However, UCAS were not supplying datasets to external researchers at the time of the research. Other data sources that have been used in student mobility research are described in the appendix to this chapter. HESA data do however meet the needs of this research as they provide population data and include all HEIs and all parts of the UK.

²² The dataset was provided for use for the ESRC-funded Senior Fellowship “Higher education in Scotland, the devolution settlement and the referendum on independence”, awarded to Prof Sheila Riddell. Further information on its use in that project is provided in the appendix.

The dataset provides data on entrants of all ages domiciled in the UK at time of entry to an undergraduate course. This concerns all those in their first year of study, though in some cases the student's first year may be the second or subsequent year of a programme if they have transferred in or articulated from a sub-degree course. 96% of the cases in the dataset were entrants into the first year. The dataset also provides data on non-UK domiciled entrants. Undergraduate courses consist of first degrees (including sandwich degrees), foundation degrees, higher national certificates and diplomas, and various other forms of sub-degree courses and professional courses classified as undergraduate level by HESA. The dataset includes entrants for five academic years: 1996-97, 2004-05, 2010-11, 2011-12, 2012-13. These years were selected for the original ESRC-funded project as they included years preceding and following fee changes, and included both the earliest available data (1996-97) and the three most recent years of data at the time the research commenced. All five years of data are drawn on in my research but the majority of the analysis was carried out on 2012 entrants' data.

The dataset only includes entrants to institutions classified as HEIs, and therefore does not include those entrants who enter undergraduate level courses at further education colleges. This mainly affects the data on Scotland-domiciled entrants, as higher education in colleges is more prevalent in Scotland than in the other countries of the UK (as noted in chapter 2). In Wales although most HE provision delivered in colleges is franchised and included in the data for its HEI partner, non-franchised HE is offered in some colleges, notably in Grŵp Llandrillo Menai located in North Wales (Welsh Government, 2015c). The data therefore underestimate the number of HE students from less advantaged backgrounds, who are more likely than HE students from advantaged backgrounds to study in colleges (Gallacher, 2014; Iannelli et al., 2011). The dataset also does not allow direct comparison with those who do not enter HE.

The data show which fields of study and institutions were entered, rather than those to which applications were made successfully or unsuccessfully. They do not show any subsequent changes in subject or institution, nor completion rates. These data therefore provide information on what happens in the stage that immediately follows the application and selection process to higher education institutions. They are cross-

sectional data, so the analysis focuses on the transition point into HEIs. In order to interpret what the findings suggest about the factors that influence choice before the transition point it is therefore necessary to draw on research evidence and theory, identified in chapter 3.

Based on the issues raised in chapters 2 and 3, there are a number of variables which could be expected to be or have previously been found to be relevant to cross-border mobility or which have been proposed to have an association with student mobility. These are measures of socio-economic advantage, schooling, attainment, ethnicity and place of domicile. In addition, the institution type and field of study entered, and location of place of study, are required. The following sections address how the dataset will be used to analyse mobility in relation to these factors.

4.3 Selection of cases

Cases were selected for inclusion in analysis in relation to mode of study, age, location, and year of entry.

4.3.1 Mode of study

HESA distinguishes between full-time and part-time study, with part-time study that which requires less than 21 hours per week or less than 24 weeks per year of study. Initial descriptive analysis of part-time students showed that cross-border mobility is rare, particularly for young students. There appeared to be little value in including these cases. Only full-time students are included in the analyses.

4.3.2 Age

The dataset distinguishes between young (aged under 21) and mature (aged 21 and over) students. Table 4.1 shows the number of full-time entrants within each group from each country.

Table 4.1: Percentage and number of full-time entrants who were young and mature, by country of domicile, 2012 (column percentages)

	England	Scotland	Wales	Northern Ireland
Young entrants				
% of all entrants	77.5	74	74.9	82.2
Count	242970	22405	14585	10555
Mature entrants				
% of all entrants	22.5	26	25.1	17.8
Count	70600	7880	4895	2280

Counts rounded to nearest 0 or 5.

Young entrants predominate among full-time entrants. There are also more socio-economic and background variables available for young entrants. The decision was taken to report only findings for young student in this thesis, for reasons of data, theory and research literature. For mature entrants, there are high levels of missing social class data and this is based on their own occupational position not that of their parents; no data on attainment or school type attended; nor on the HE participation rate of the home area. There were therefore important limitations in the data. Nonetheless, analysis was undertaken on mature students both descriptively and inferentially based on the available characteristics: gender, ethnicity, fee support, country/region of domicile, country/region of HEI entered, institution and field of study entered, and mobility in relation to field of study supply, employment rate and earnings. This identified differences in the extent and patterns of mobility of mature compared to young students, and potentially different motivations for mobility at the aggregate level. In undertaking this analysis it was identified that drawing on the theories in chapter 3 would be problematic based on the available data. The findings also suggested differences between young and mature movers that would require additional literatures to be brought into the thesis: on policy and access issues specific to mature students, and wider literature on the factors and risks both of HE participation for mature students and of spatial mobility specific to adults beyond the teenage years, as noted in chapter 8 in the overall discussion on limitations of this research and future research possibilities. The difficulty of adequately treating this aspect of the research in the permitted length of this thesis led to a decision to exclude mature students, but the importance of research on this group is recognised.

4.3.3 Location

Data have been analysed for the whole of the UK (England, Scotland, Wales, Northern Ireland combined) and separately for these countries, in relation to both the domicile of entrants (before they entered HE) and the location of HEIs. Data have also been analysed by region. Scotland, Wales, Northern Ireland are all classed as regions in the data but England is broken down into nine administrative regions as shown in Figure 4.1. Again, these regions are used both in terms of the domicile of entrants and the location of HEIs. Data on domicile have been further explored by local authority area, which are smaller administrative areas than regions.

The analysis includes UK-domiciled, young full-time entrants only. However limited descriptive analysis on EU and other international students has been undertaken to illustrate the extent and importance of internal UK cross-border mobility for HE entry in countries and institutions in comparison to the importance of international cross-border mobility.

Figure 4.1: Map of UK countries and English regions



Contains Ordnance Survey data © Crown copyright and database right 2013

4.3.4 Year of entry

2012 is the focus as the most recent year available in the dataset at the time the analysis commenced. It was also a year in which policy changes were introduced which might be expected to affect cross-border movement/HE decisions more generally (as discussed in chapter 2). The analysis that has been undertaken in previous research on cross-border mobility of 2012 entrants (Croxford and Raffe,

2014b; Tindal et al., 2015) is more limited than that for those entering HE between 1996 and 2011, and therefore there are more notable evidence gaps to be filled through this further research by focusing on 2012 rather than previous years. For some data, trends over years are also analysed, to illustrate the extent to which mobility has changed. Pooled years of data have also been used to a limited extent where this is helpful to addressing research questions.

4.4 Missing data and multiple imputation

Some of the key variables have missing data. Table 4.2 shows the percentage of cases with missing data, amongst young full-time UK-domiciled entrants in 2012. The high rates of missing data on parental education for students from Northern Ireland and Wales will be discussed later in the chapter.

Table 4.2: Percentage of cases with missing data, by variables and country of domicile

	England	Scotland	Wales	Northern Ireland
Social class (treating 'unclassified and not known' as missing)*	19	16	21	16.6
Social class (not treating 'unclassified and not known' as missing)*	1.2	0.8	3.3	2.7
Ethnic group	0.6	0.5	0.8	0.2
Parent has HE qualification	21	14	32.4	39
Attainment quintile	6.2	22.3	10.4	9.1
School type attended	3.9	3.5	3.8	2.8
HE participation rate of home area	1.1	1.7	0.8	0.8

*'Unclassified' comprises 3 categories: students; occupations not stated or inadequately described; not classifiable for other reasons.

59% of cases had complete data. An option was to run the analyses with the data as available using listwise deletion, and therefore exclude cases with missing data depending on the analysis run. However, running analyses with missing data reduces the amount of information available and could decrease the representativeness of the findings and lead to 'biased inference' (Klein, 2014). An option was to drop variables with high levels of missing cases, but the variables to which that applied were important to the analysis. The further option taken was to use multiple imputation (MI) to estimate 'plausible' values for the missing data for each case based on statistical inference (White et al., 2011). This increased the number of complete cases that could be included in subsequent analysis.

Pattern analysis on the missing data was undertaken, as a recommended exploratory step before carrying out MI (White et al., 2011). The most common patterns are shown in Table 4.3.

Table 4.3: Most common patterns of missing data

Pattern	Percentage of cases
Complete data	61.2*
Parental education only missing	15.1
Social class only missing	11.4
Social class and parental education missing	4
Tariff quintile only missing	3.6

*Differs to percentage for all complete cases above as only variables with at least 5% missing cases included in pattern analysis.

A monotonic pattern means that if a variable has a missing value then all preceding variables for that case also have missing values. The pattern analysis indicates the missing data are not monotonic. The appropriate MI method for non-monotonic data with a mix of categorical and continuous variables is that of ‘chained equations’. In SPSS the chained equation method used is the ‘Markov chain Monte Carlo’ method. In this method as described by White et al. (2011), each variable with a missing value is estimated in turn using logistic regression to predict a statistically valid value based on all other variables of those cases for which the variable is not missing. Logistic regression was used as it is recommended that the method used in MI is the same as used for the substantive analysis. This estimation process is repeated ten times, or for ten iterations, with the estimates in each iteration created through regression with the observed data and the imputed data from the previous iteration. An overall estimate for the missing values is computed from the ten iterations, to produce a complete imputed dataset. The whole process is repeated a specified number of times. There is no agreed required number of imputations but it is recommended that at least five imputations are carried out. As there are a large number of missing values on two of the variables, ten imputations were carried out, which produced ten ‘complete’ datasets, and also produced pooled results drawing on all ten datasets. Pooled results are considered more accurate than those based on a single imputation (Klein, 2014). MI does not therefore attempt to produce an ‘accurate’ value for each individual case but produces a range of plausible values - estimates which may differ in each of the imputed datasets - as the basis for further statistical analysis.

The imputations for the missing values are estimated by identifying patterns in a range of variables, and the requirement is to include all variables in the model of interest, including the dependent variable (Klein, 2014). The list of variables included is provided in the appendix. There is no agreed threshold for how much missing data can be accounted for through MI, but Klein (2014) comments that if over half the data are imputed then this will be problematic, as the data being analysed would be more strongly imputed than observed data. Equally a low percentage of missing cases are unlikely to have a strong biasing effect and it is more straightforward to use observed data only in those cases. The threshold for inclusion in the multiple imputation was set at 5% of cases missing for all young UK full-time entrants. This therefore included parental education (21.7% cases missing), social class (18.6% cases missing or unclassified), and attainment quintile (7.8% cases missing). With regard to social class, this meant that values for cases where the data were missing were imputed, as were those classified as having never worked or long-term unemployed, and those identified as unclassified. All data analysis reported was carried out using the imputed datasets and the results reported are based on the pooled output.

4.5 Key variables: Issues of measurement, distribution and interpretation

In this section the relevant available variables are discussed in terms of what they measure, and any limitations they have. New variables created through recoding are also described.

4.5.1 Outcome variables

4.5.1.1 Movers and stayers

Movers and stayers will be referred to in the analysis, in relation to cross-border and inter-regional movement. Where relevant, differentiation is made between ‘movers-out’ of countries/regions of domicile, and ‘movers-in’ to country/region HEIs.

Movers who cross an internal UK border to enter a HEI. This refers to those who cross country borders and therefore study somewhere in the ‘rest of the UK’ (RUK). It is based on the ‘country of domicile’ and ‘country of HEI’, and so assumes that where these are different then physical relocation has taken place. There will be exceptions to this however: it is feasible that one could live close to a country border (in Wales,

England and Scotland), and not relocate to enter an HEI in another country. In addition, those who enter the Open University (a distance learning university) would be unlikely to relocate so the OU was excluded from analysis of movers. OU entry was far more common for mature than young entrants. Students entering other HEIs as distance learners cannot be identified and there is no other systematic collection of these data. There will therefore be some cases included as movers who were distance learners and did not move, but based on previous research (White et al., 2010), the assumption is that number will be small, particularly among full-time young entrants.

Movers who cross a regional border to enter an HEI. This only applies to England-domiciled students as data are provided for the nine regions in England. Due to the relative size of England and its HE sector, there is value in comparing cross-border mobility with the much more common inter-regional mobility which can involve long distance movement without moving into a different country and into a different education, policy and funding environment. Inter-regional mobility is based on the 'region of domicile' and 'region of HEI', and so assumes again that where these are different physical relocation has taken place. However this approach could erroneously include cases as movers when they are not. It assumes that entry to an HEI is at a main campus in the region in which the HEI is principally located, though it is possible that students enter a satellite campus within their own region. It is also possible, more so than with country movement, that one can enter an HEI in another region without relocating to that region. Bailey (2013)²³ has analysed postcode data from the HESA dataset to identify different types of migrant across local authority, county and region borders²⁴. He found that amongst the full student population at UK HEIs in 2010-11, 21% were registered at an HEI in a different county to their term-time address, suggesting that they commuted or distance learned. Such cases could show up as movers-out in the regional analysis (if the two counties are in different regions), though no relocation has taken place, and Bailey's findings suggest that London HEIs will be most affected by this. However Bailey also found movement out of counties was high compared to movement out of regions. This suggests that analysis at the level of regions will understate the percentage of students who relocate.

²³ Further detail on Bailey's findings is provided in the appendix.

²⁴ Local authority areas in England are usually smaller than counties, though can refer to the same geographical area; both are smaller than regions.

There may be a case then for using a smaller geographical area of analysis within the DAs, and within regions, but this research is also concerned with the relationship between devolution and cross-border movement, and drilling down into more local internal mobility would increase the scope of the research substantially. However, cross-border mobility in relation to the local authority of domicile has been analysed to provide additional context to the exploration of student differences.

4.5.2 Explanatory variables: Institution factors

4.5.2.1 Institution types and tariff level

154 individual HEIs are identifiable in the dataset. These were analysed to identify common patterns in destinations of mobile students, and which institutions are affected most by cross-border mobility. A breakdown of the student population within named institutions is included where it adds to understanding student differences in mobility. Institutions change names, gain HEI status and merge. Most of the analysis focuses on 2012 entrants but the individual institutions in 2012 may not appear in the same form in earlier years²⁵. Where this affects references in the analysis to institutions in years before 2012 this is stated.

For much of the analysis the focus is on grouping of institutions, in relation to status, as an important factor in the theoretical perspectives. There are a number of ways of grouping them. A common approach is to break them down into four types for the whole of the UK, as indicated in chapter 2:

- Russell Group universities (or ancient universities in Scotland)
- Other Pre-92 institutions
- Post-92 institutions
- Other HEIs

A more detailed description of these breakdowns is provided in the appendix. They represent a hierarchical structure from elite to accessible in the HE sector, though there are overlaps between them as well as variation within groups. To some degree however the 'Other HEIs' are a stand-alone category outside this hierarchy. While these are recognised institution groupings, there are difficulties with using them on a

²⁵ Furthermore, some institutions have changed names or merged since 2012.

cross-country comparison basis. Not all types are available in all countries: there are no Post-92 HEIs in Northern Ireland, and no Other HEIs in Wales. In addition, the Russell Group classification excludes two ancient universities in Scotland, as well as some high tariff universities in England; and the changes in Welsh university structures, from a University of Wales with multiple institutions to separate universities, and recent mergers, makes classification of several universities as 'Other Pre-92' potentially misleading.

Where it is appropriate and helpful to do so, findings are reported by these well-known classifications²⁶. However for the majority of the analysis, an alternative classification based on tariff level is used. HEIs have been categorised by the average qualification tariff level of its entrants as a proxy for reputation and a measure of selectivity. Some previously used classifications were considered but did not meet the needs of the research (see appendix). A more comparable variable has therefore been developed empirically for this research. It is based on average UCAS tariff of entrants as at 2013, as it is available for almost all institutions²⁷ and provides the average entry tariff up to 2012, so fitting the period for the data. It includes all specialist institutions so the same measure can be used for all HEIs. Like all the categorisations, it cannot account for different tariff levels into subjects within institutions²⁸. There is precedent for using the UCAS tariff as a measure of institution status. It is used by HEFCE and has been used by the Office for Fair Access to analyse 3 groups of tariff level of institutions (OFFA, 2010).

The UCAS tariff score for each institution was coded to create an interval variable for use in regression modelling and descriptive analysis. It was also converted into a categorical variable for use in descriptive analysis. Table A4.1 (appended) shows institutions grouped by the UCAS entry tariffs. The aim was to identify groups by tariff score range which gave roughly equal numbers of institutions in each group, apart from the highest tariff institutions – it is helpful for the analysis to identify those

²⁶Analysis using these groupings is also available in Croxford and Raffe, 2014a,b; Raffe and Croxford, 2013; Whittaker et al., 2015.

²⁷The institutions for which this is not available are: Wolverhampton, Liverpool Hope, Birkbeck and Institute of Education – these institutions were instead categorised based on the most common entry tariff quintile in the HESA data.

²⁸Analysis using the HESA dataset of the tariff groups of those entering each institution identified some with a wide range of tariff scores.

institutions that have very high average entry tariffs.²⁹ Five categories were created: lowest (tariff score below 275), low (275-299), medium (300-349), high (350-450), highest (higher than 450). The outcome of this grouping in each country HE system is shown in Table 4.4. The relatively low extent of lower tariff provision in Scotland may be explained by the extent of HE delivered in colleges rather than HEIs. In Wales the high number of institutions in the lowest tariff category shows that the lack of institutions classed as Post-92 (as noted in chapter 2) is misleading as a measure of lower tariff provision in Wales.

Table 4.4: Number of institutions by tariff groups, by national HE system, 2012

	England	Scotland	Wales	Northern Ireland	UK
Lowest	33	1	4	0	38
Low	27	4	2	1	34
Medium	27	4	2	1	34
High	23	5	1	2	31
Highest	14	3	0	0	17
Total	124	17	9	4	154

Source: HESA Student Census 2012 / UCAS tariff score

As a continuous variable the values are directly comparable across country borders. However there are no Northern Irish institutions in the lowest and highest categories, and there are also no highest tariff institutions in Wales. As a categorical variable difficulties in cross-country comparison remain within the 5-group breakdown. In the regression models that include entrants only to lower tariff or only to higher tariff institutions, in order to use the same groupings for all UK countries, 'lower tariff' are defined as lowest and low tariff combined; and 'higher tariff' as high and highest tariff combined. Medium tariff institutions are excluded in order to simplify the analysis in relation to institution status and accessibility.

Although imperfect this grouping approach is a way of organising the data to give an aggregate picture. It is not an attempt to pass judgement on the relative value of each group – they serve different purposes and suit the needs of different individuals and groups - but as discussed these differences may matter in terms of equality of opportunities and the relative nature of the positional and investment goods provided by different types of institution.

²⁹ The percentage of entrants into each type by country domicile is provided in Table A4.2.

4.5.2.2 Institutional supply

The extent to which there are institution types to meet demand within each country was raised as a possible factor in mobility in chapter 2, and identified as under-researched in chapter 3. Firstly for an overall picture of supply, the number of places taken by UK and EU entrants in each country HE system was divided by the number of entrants from each country domicile who entered a UK HEI. As subsequent supply measures have been simplified by only including UK entrants, the ratio for UK entrants only in each country system is also provided. Scores below 1 indicate more entrants from that country than places available within the country's HEIs, therefore under-supply for home students. As can be seen in Table 4.5 the only country with a supply issue (based on entry rather than applications data) is Northern Ireland.³⁰

Table 4.5: Number of UK/EU entrants and number of UK entrants within each country system divided by number of entrants in all UK HEIs domiciled in the country - young full-time entrants, 2012

	As ratio of all UK/EU places	As ratio of UK places only
England	1.05	0.99
Scotland	1.29	1.14
Wales	1.2	1.15
Northern Ireland	0.72	0.71

Secondly, the relative supply of places available within each country by institution tariff level groups was calculated by dividing the percentage of UK entrants to each group in each country HE system by the percentage of all places for UK entrants in the whole of the UK³¹. A score of 1 indicates that the percentage of places within that tariff group in that country is the same as the percentage in all the UK; below 1 indicates a lower percentage of places in the country than would be expected if there was the same distribution of places within the country as within the whole of the UK (which can be termed a relative under-supply for the purposes of this analysis); above 1 indicates a higher percentage of places in the country than would be expected if there was the same distribution of all UK places and places within the country (which can be termed a relative over-supply). This measure has important limitations, as it is based on entrants' data and does not measure supply in relation to full demand,

³⁰ The equivalent table for all entrants, young and mature, is provided in Table A4.3.

³¹ E.g. the percentage of UK students who entered Welsh low tariff HEIs divided by the percentage of UK entrants to all UK low tariff HEIs.

including unmet demand which could be identified with applications data. The measure also does not take into account the match between attainment levels of those living in the country and the kinds of HE places available, or the availability of fields of study at each tariff level. The measure is intended to act as a broad indication of supply levels in the form of the distribution of institution types across the UK, to provide context to the findings.

All UK entrants are included in the supply measure, as all UK entrants would be competing for the same places – however this is only a guide as student number controls were removed from entrants with the equivalent of AAB at A level in English HEIs, and RUK entrants were taken out of number controls at Scottish, Welsh and Northern Irish HEIs. In 2012 then this is not as straightforward a measure as may have been the case in previous years, and can only indicate where there might be supply issues that could affect levels of mobility and have an impact on the choices available to immobile applicants and entrants. EU students have been excluded to simplify the measure, although they would be able to take up places available to UK students. The data therefore give a slight underestimation of demand³². Table 4.6 suggests that supply is relatively balanced overall for England, but higher tariff provision appears under-supplied in Wales; lower tariff provision under-supplied and higher tariff provision over-supplied in Scotland; and hugely uneven provision in NI, due to only two universities and two teacher training colleges being classified as HEIs, with the effect of no supply at lowest and highest tariff levels.

Table 4.6: Institution tariff group supply ratio, by national system, young full-time entrants, 2012

	England	Scotland	Wales	Northern Ireland
Lowest	1.07	0.4	1.34	0
Low	1.02	0.58	0.98	1.83
Medium	0.98	1.23	1.29	0.16
High	0.95	1.16	1.04	2.1
Highest	0.98	2.24	0	0

Source: HESA Student Census 2012 / UCAS tariff score.

Equivalent data for English regions is provided in the appendix (Table A4.5), and show a great variety of provision across regions. There are no highest tariff institutions in the North-West and East Midlands, and under-supply of highest tariff places in the South-East, Yorkshire and Humber and the West Midlands. At the other

³² The comparable data for UK and EU students combined is in Table A3.4.

end of the scale, the South-West, the North-East, Yorkshire and Humber and the East Midlands are undersupplied for lower tariff places, according to this measure.

4.5.3 Explanatory variables: Field of study factors

4.5.3.1 Field of study entered

Field of study categorisations in the HESA dataset undergo changes to definitions from time to time. This analysis uses values that allow comparison of up to 19 fields of study, which are also combined into seven broader groupings, as in Table 4.7. The percentage of young full-time UK entrants to UK HEIs in 2012 is also provided. As the number of entrants to 'Other' fields is so low (particularly amongst movers), this category is left out of subsequent analysis.

Table 4.7: Percentage of young full-time UK entrants to each field of study, and field of study groupings, 2012 (column percentages)

Field of study	Percentage of 2012 entrants	Field of study group
Medicine and dentistry	2.2	Medicine and veterinary medicine
Veterinary science	0.2	
Agriculture and related subjects	1	
Subjects allied to medicine	7.6	Subjects allied to medicine
Biological sciences	12	Sciences
Physical sciences	5.5	
Mathematical sciences	2.3	
Computer science	4.5	
Engineering and technology	6	Engineering and technology
Architecture, building and planning	1.8	
Social studies	8.9	Social sciences and law
Law	4.4	
Business and administrative studies	11.9	
Mass communications/documentation	3.1	
Education	4.8	
Languages	6.1	Arts
Historical and philosophical studies	5.4	
Creative arts and design	12.2	
Combined	0.2	Other

The data give the main field of study, although not all students take degrees that fall completely within one field of study. Whether 'field of study' or 'field of study group' is used in analysis depends on the number of entrants from each country of domicile. In the analysis that only includes entrants to either lower or higher tariff institutions, fields of study are grouped further in some cases to achieve a sufficient number of

cases, particularly among movers. This may give less clear results in terms of field of study differentiation but at least allows some field of study analysis in these cases. The low number of cases in some such analyses are because the fields of study generally available in higher and lower tariff institutions can differ, as indicated in the summary for the whole of the UK (Table 4.8).

Table 4.8: Percentage of young full-time UK entrants to lower tariff and to higher tariff institutions, by field of study, 2012 (column percentages)

	Lower tariff institutions (<300 average tariff points)	Higher tariff institutions (>349 average tariff points)
Medicine and dentistry	0	5.9
Veterinary science	0	0.7
Agriculture and related subjects	0.9	0.5
Subjects allied to medicine	7.8	7.5
Biological sciences	13.4	10.6
Physical sciences	3	9.1
Mathematical sciences	0.6	4.7
Computer science	5.9	2.6
Engineering and technology	4.9	8
Architecture, building and planning	1.9	1.1
Social studies	7.6	10.7
Law	4.2	4.8
Business/administrative studies	15.5	6.4
Mass communications/documentation	4.6	0.7
Education	7.6	1.5
Languages	3.3	10.7
Historical and philosophical studies	2.5	9.6
Creative arts and design	16.1	4.5

Further to the context, theory and research discussed in chapters 2 and 3, supply issues within the home country and expected employment outcomes from fields of study are possible motivations in crossing borders. In order to explore this, additional field of study variables have been developed.

4.5.3.2 Field of study supply

A measure of the supply of fields of study was created for use in analysis. The relative supply of places available within fields of study in each country was calculated by dividing the percentage of UK entrants to each field of study in each country system by the percentage of UK entrants to the field in the whole of the UK. Scores below 1 indicate ‘under-supply’ in the country relative to all UK supply, scores above 1 indicate ‘over-supply’. The results for each country are in Table 4.9. This measure, as for the

institutional supply measure, has important limitations, as it is measure supply in relation to unmet demand as well as entrants which could be identified with applications data. It also does not take into account the availability of fields of study at a more detailed level, nor whether fields of study were available in their home country at the tariff level of entrants. It is also unknown how many did not enter HE at all because they were unable to access the field of study in the location or institution they preferred. However, as with institution supply it indicates fields of study for which supply in the home country may be an issue, and may therefore contribute to motivating mobility, and provides exploratory data which could be operationalised with a more sophisticated measure in future research (see chapter 8).

Table 4.9: Field of study supply ratio, by national system - young full-time entrants, 2012

	England	Scotland	Wales	Northern Ireland
Medicine and dentistry	0.95	1.55	0.86	1.27
Veterinary science	1	3	0	0
Agriculture and related subjects	1	0.9	1.1	1.2
Subjects allied to medicine	0.97	1.21	0.74	1.55
Biological sciences	0.98	0.92	1.47	0.69
Physical sciences	0.98	1.09	1.33	0.58
Mathematical sciences	1	0.91	0.83	0.61
Computer science	0.96	1.11	0.96	2.02
Engineering and technology	0.93	1.53	0.92	1.53
Architecture building and planning	0.94	1.11	0.5	2.11
Social studies	1.01	0.94	0.85	1.07
Law	1	0.98	0.95	1.02
Business/administrative studies	1	1.13	0.82	1.1
Mass communications/documentation	1.06	0.55	0.55	1.06
Education	1	0.83	1.35	0.9
Languages	1	0.95	1.11	0.75
Historical and philosophical studies	1	1.04	1.07	0.83
Creative arts and design	1.07	0.6	0.94	0.46

For England scores are all at or very close to 1 due to the size of the English sector. In Wales there is ‘under-supply’ by this definition in a wide range of subjects. In Northern Ireland there is relatively wide variation around 1, so despite overall ‘under-supply’ of places (Table 3.5) there are several fields of study with ‘over-supply’. Around half of the fields of study in Scotland are close to 1, but there are a few fields of study with relatively high ‘over-supply’ and others with relatively high ‘under-supply’. While this provides useful descriptive data, its main purpose is as an interval variable for use in regression modelling.

The equivalent data for English regions are provided in the appendix (Table A4.6). There is a variety of provision across regions, but the two most notable points are that veterinary science is the only field of study with no supply at all in some regions; and creative arts and design is only under-supplied in the northern half of England.

4.5.3.3 *Field of study employment rate*

This refers to the future employment rate related to field of study. In a cost-benefit evaluation of student mobility, the expected future likelihood of employment for fields of study may be a factor for students in relation to the benefits of study against the 'costs' of mobility. It was possible to recode fields of study by employment rate measures. The main options for employment rate were HESA Destinations of Leavers (DLHE) data; the Labour Force Survey data produced by the Office for National Statistics (ONS); and findings from the Futuretrack study³³. The HESA DLHE longitudinal data have been chosen as it is possible to directly map the fields of study in the HESA dataset on to these. These data are based on a sample of graduates three and a half years after graduating and simply cross-tabulate field of study and employment position at the time of the survey³⁴. They do not attempt to control for other factors that may have affected employment outcomes, and are therefore only indicative of employment outcomes.

The options for measures of employment outcomes were rates of unemployment, any employment, or professional level employment by field of study (the latter defined as 'Managers, directors and senior officials', 'Professional occupations' and 'Associated professional and technical occupations')³⁵. The unemployment rate is very low with little variation across fields of study, and the employment rate does not give an indication of quality of employment. As the benefits of HE are claimed to be in the qualitative difference in employment outcomes, the professional employment rate gives the closest approximate measure of additional benefits from gaining a degree.

³³ The data used would give different outcomes. They have different measures of employment as well as different groupings of fields of study. The only consistency across them is that medicine has a high employment and low unemployment rate, and that humanities subjects tend to have a lower employment rate.

³⁴ Some studies that have attempted to account for student characteristics were summarised in chapter 2. I account for student characteristics in the regression models in which this variable is included.

³⁵ This group accounted for 79% of respondents who had studied a full-time first degree and were in employment.

The professional employment rate by field of study for a sample of full-time first-degree graduates from the 2008-09 cohort from all UK countries, who were in employment in November 2012, is provided in Table 4.10.

Table 4.10: Professional employment rate of field of study 2008-09 graduates, 3.5 years after graduation, all UK FT degree graduates, in descending order of rate

Field of study	Percentage of graduates in professional employment
Medicine and dentistry	99.8
Subjects allied to medicine	95.1
Veterinary science	93.1
Engineering and technology	86.2
Mathematical sciences	85.3
Computer science	83.4
Education	83.3
Architecture, building and planning	82.9
Law	81.8
Physical sciences	77.7
Social studies	77.7
Biological sciences	76.2
Languages	74.9
Business and administrative studies	72.4
Creative arts and design	70.2
Historical and philosophical studies	69.8
Mass communications and documentation	69.7
Agriculture and related subjects	62

Source: HESA Destination of Leavers Longitudinal Survey, 2012. N = 62,205 (whole survey).

An interval variable has been created from these data by recoding each field of study by the percentage of professional level employment. The variable is therefore based on a measure of employment outcome, not expected outcomes of students, which limits its explanatory potential. In addition, it does not differentiate by the country in which a graduate was employed, and therefore does not show the potential range of employment rates by location.

4.5.3.4 Field of study earnings rate

In a cost-benefit evaluation of student mobility, the expected future earnings for field of study may be a factor for students in relation to the benefits of study. To create a variable for this, LFS data published by the ONS on average hourly earnings for graduates from each field of study have been used. These graduates are all ages and stages of career (aged 21-64). Unlike the employment outcomes from the DLHE, this does not use the HESA fields of study classifications. The data for the ONS field of

study classifications are provided in the appendix (Table A4.7). For this research, the data have been mapped on to the HESA fields of study (Table 4.11).

Table 4.11: Median hourly earnings of graduates by HESA field of study, in descending amount

Field of study	Median hourly earnings (£)
Medicine and dentistry	21.29
Veterinary science	21.29
Mathematical sciences	18.92
Computer science	18.92
Engineering and technology	18.92
Architecture, building and planning	18.92
Physical sciences	17.74
Business and administrative studies	17.30
Education	16.97
Law	16.95
Social studies	16.33
Agriculture and related subjects	15.83
Biological sciences	15.83
Mass communications and documentation	14.85
Languages	14.85
Subjects allied to medicine	14.65
Historical and philosophical studies	14.63
Creative arts and design	12.06

Source: ONS (2012).

These data have been used to create an interval variable by recoding each field of study by the earnings rate, for use in regression models. As with the employment rate, this measures outcomes rather than expected outcomes, and is aggregated across UK countries and regions.

4.5.4 Control variables

4.5.4.1 Course level

This has been limited to a binary variable, of entering a degree level course (95.8% of young full-time entrants), or entering a sub-degree level course (4.2% of young full-time entrants). Degree entrants would be expected to be more mobile, because as mobility comes with greater costs, then the expected benefit should be higher, and a degree in terms of employment, earnings, and status is likely to have a higher benefit than a sub-degree course. On the other hand, a degree course is longer and is likely to have a higher fee level, so it is possible that the lower cost of a sub-degree course makes the pay-off of mobility sufficient for some students. Given that most of the

cases are degree level students this serves more as a control variable than to explore these opposing propositions.

4.5.4.2 Gender

There is not a clear theoretical basis (in the theories explored in chapter 3) for assuming greater mobility among one sex or another amongst young people. However males and females are most equally represented in high tariff universities (mainly the elite universities in England, identified through analysis of HESA data) and as it is proposed that mobility is more common to these universities, males may be more likely to move – but controlling for institution tariff level could explain this difference. The main difference expected between males and females would be in relation to the fields of study they enter – if there are subjects more associated with mobility that are predominately entered by one gender, this could result in a difference in mobility between genders (e.g. if sciences or engineering are associated with mobility out of a country, males may be more mobile) but in such a case controlling for field of study may explain differences. Gender is included in the models essentially as a control variable rather than to address specific propositions.

4.5.5 Individual level characteristics

4.5.5.1 Social class

In the theoretical literature discussed in chapter 3, social class is operationalised in different ways. Breen and Goldthorpe (1997) drew on the Erikson-Goldthorpe-Portocarero (EGP) class schema, which is also the basis of the National Statistics Socio-economic classification (NS-SEC). This classification defines social class in terms of employment relations, based both on the type of work undertaken and the nature of the employment contract. Broadly speaking the ‘salaried’ are those in a ‘service relationship’, and the ‘working class’ those with a ‘labour contract’. Those with a mix of these contractual relationships are in the intermediate class. The advantages of those in the salariat are in direct financial terms and more indirect security of economic position, stability and prospects (Goldthorpe and McKnight, 2004). Cultural reproduction theory can draw on a conceptualisation of social class that includes cultural resources (e.g. Ball et al., 2002a). An example of the operationalisation of this conceptualisation is that of Savage et al. (2005) who define class in terms of the potential to accumulate and convert assets, resources and capital.

Savage et al. (2005) recognise the importance of occupational position, but argue that the accumulation of resources is not necessarily gained from working and so they encompass cultural and social resources in their conceptualisation, including educational qualifications and skills. The argument for the occupation-based classification is that it allows for analysis to explain class differences in relation to cultural and social resources, which cannot be achieved if they have already been built into the definition of social class (Mills, 2014). There are therefore different ways to conceptualise and measure social class and no consensus on its operationalisation in education research (Archer, 2003b).

In the HESA data, social class of origin of young people is based on the information they provide in their UCAS application form on parental social class (their parent, step-parent or guardian who earns the most, based on current or most recent occupation). This is based only on occupation title so it does not also explicitly seek information on levels of autonomy and responsibility, and therefore can be limited compared to the EGP social class measure. Nonetheless the job description information is assigned by UCAS to a Standard Occupational Classification from which it is further assigned to a classification on the ONS NS-SEC 7-class scale. In my analysis the 4-class version is used: higher managerial and professional; lower managerial and professional; intermediate; working class. The 4-class version was selected as the majority of entrants (and more so, mobile entrants) are from the managerial and professional classes but the participation rates between the higher and lower managerial and professional classes differ. This is then a limited attempt to recognise and analyse by middle class 'fractions' or sub-groups (Savage et al., 2005). 'Intermediate' combines intermediate occupations with small employers and own account workers; 'working class' combines lower supervisory and technical occupations, semi-routine occupations and routine occupations. As noted above, due to the number of missing cases, MI was used to assign a social class of origin for those cases for which this information was not available. The breakdown for country domiciles is in Table 4.12.

Table 4.12: Percentage of young full-time UK entrants from each social class (after multiple imputation) by country of domicile, 2012 (column percentages)

	England	Scotland	Wales	NI	UK
Higher managerial and professional	24.8	28.5	22.2	17.9	24.7
Lower managerial and professional	30.1	30.8	31.3	29.5	30.2
Intermediate	20.3	20.3	21	28.1	20.7
Working class	24.7	20.4	25.5	24.5	24.4

As these data were based on information provided by applicants, they can be subject to mistakes (Kelly and Cook, 2007) and mis-coding (Harrison and Hatt, 2009).

Previous research suggests that the missing data for young entrants is more common for those from disadvantaged neighbourhoods, students of all ages from minority ethnic groups and those studying at sub-degree level; mature students are also more likely in general to have missing data (Harrison and Hatt, 2009). There are limitations on how the social class data are constructed which are likely to under-represent those from less advantaged socio-economic backgrounds, but using MI has sought to improve the quality of the data. Despite the limitations, these data are used by official bodies and numerous researchers, and can indicate if not precisely measure differences and inequalities between those from different occupationally-defined social class backgrounds at the aggregate level. Cultural aspects of social class such as educational qualifications and skills are not included in this definition.

4.5.5.2 Parental education

A variable on whether or not a parent of the student had an HE level qualification is available for young entrants in the dataset. This information is provided by applicants in their UCAS forms. Across all cases, 7.1% were missing and classified as 'unknown' and 14.5% were missing and classified as 'refused'. The percentages of missing cases were particularly high for Northern Irish (6.2% unknown; 32.9% refused) and Welsh students (8.1% unknown, 24.4% refused). MI has been used to estimate values for missing cases (resultant data in Table 4.13). This had the effect of allocating around 4-5% more missing cases to the 'has parent with HE' group than the 'does not have parent with HE' group for Northern Irish and Welsh students. The extent of missing data and the possible effects of the MI estimations are discussed in relation to the findings in chapter 6.

Table 4.13: Percentage of young full-time UK entrants with and without HE qualified parent (after multiple imputation) by country of domicile, 2012 (column percentages)

	England	Scotland	Wales	NI	UK
Has HE qualified parent	53.4	65.3	60.8	59.3	55
No HE qualified parent	46.6	34.7	39.1	40.7	45

As with social class Scotland stands out as having a high percentage of entrants into HEIs from relatively advantaged backgrounds. This is likely explained by the diversion of less advantaged students into sub-degree courses at colleges (Iannelli et al., 2007; Hunter Blackburn et al., 2016) and/or lack of lower tariff HEIs (Hunter Blackburn et al., 2016; and Table 3.6). The parental education measure is simple and does not provide a range of parental education levels, and is an estimation of whether or not a student is ‘first generation’ (in relation to parents rather than any other relatives or previous generations). It is nonetheless a useful variable, in addition to parental social class, as some studies use parental education level as a ‘resources’ or ‘cultural capital’ variable (e.g. Tolsma et al., 2010; van de Werfhorst and Hofstede, 2007), and some studies that have compared parental education and social class have found that parental education explains a greater deal of variance in HE participation than does parental social class (e.g. Davies et al., 2014). Others though favour social class as a measure, particularly those seeking to test relative risk aversion (Becker and Hecken, 2009; Breen and Goldthorpe, 1997; Breen and Jonsson, 2000; Holm and Jaegar, 2008; Jackson et al., 2007; Stocké, 2007; van de Werfhorst et al., 2003).

4.5.5.3 Home area – low HE participation rate

The HESA dataset includes POLAR₂ (Participation of Local Areas, version 2) data for young entrants. This measure classifies small areas or ‘wards’ by the HE participation rates of those aged 18 between 2000 and 2004 who entered HEIs or colleges³⁶ aged 18 or 19 between academic years 2000/01 and 2005/06, to create quintiles. Those in the lowest quintile are defined as a low participation area (HEFCE, 2012). The dataset differentiates between those in the lowest quintile and those in the other quintiles combined, in order to use this measure as a widening participation indicator.

There are two points to note. Firstly, as the quintiles represent 20% of all UK wards, changes in participation in areas in England with its much higher proportion of wards

³⁶ Apart from Welsh FE colleges, representing about 1% of Welsh HE entrants.

can potentially distort the distribution of entrants in quintiles in the smaller countries; within England changes in London and the South-East can have a similar effect on other regions. Secondly, although the construction of POLAR₂ by HEFCE includes HE study in colleges, HESA data only includes entrants to HEIs, so using this as a low participation area indicator for Scotland-domiciled entrants is problematic (HESA website, accessed June 2014). These issues with using the low participation area measure included in the HESA dataset require its use and conclusions drawn from it to be cautious for the DAs.

4.5.5.4 Ethnicity

Ethnic group of entrants are provided, based on self-classification in the UCAS application form, using the coding frame recommended by the ONS for UK-wide data collection. The groupings are:

- White: combines White plus Irish Traveller.
- Black: includes Black or Black British – Caribbean; Black or Black British – African; Other Black background.
- Asian: includes Asian or Asian British – Indian; Asian or Asian British – Pakistani; Asian or Asian British – Bangladeshi; Chinese; Other Asian background.
- Other (including mixed): comprises Mixed – White and Black Caribbean; Mixed – White and Black African; Mixed – White and Asian; Other mixed background; Other ethnic background.

Table 4.14: Percentage of young full-time UK entrants by self-classified ethnic group and country of domicile, 2012 (column percentages)

	England	Scotland	Wales	Northern Ireland
White	74.7	93	92.8	98
Black Caribbean	1.6	-	-	-
Black African	4.5	0.6	0.9	-
Other Black background	0.3	-	-	-
Asian Indian	4.8	0.6	0.7	-
Asian Pakistani	3.9	2.1	0.9	-
Asian Bangladeshi	1.5	-	0.7	-
Chinese	1	0.8	0.7	-
Other Asian background	2.1	0.5	0.6	-
Mixed/Other	5.5	1.8	2.6	0.8

'-' fewer than 52 cases (as described below in reporting requirements section, HESA requires percentages based on fewer than 52 cases to be suppressed).

Once these ethnic groups are further broken down into movers and stayers the cell sizes for individual and even combinations of BME groups amongst movers become very small in some cases, particularly for the devolved administrations. In some of the regression models which are based on a subset of the population (entrants to higher or lower tariff institutions only; entrants from particular regions only), larger groupings have been required even for those from England and Wales. It was therefore necessary to aggregate groups for analytical and ethical (non-disclosure) purposes. The outcome is three groupings used in models as appropriate:

- 7 categories: White; Black; Indian; Pakistani or Bangladeshi; Chinese; Other Asian background; Mixed /Other ethnic group (feasible for England and Wales only).
- 4 categories: White; Black; Asian; Mixed/Other (feasible for England and Wales only).
- 2 categories: White; BME.

It should be noted that where Black students are grouped, this masks HE participation differences that exist between those from Black Caribbean, Black African and Other Black backgrounds; similarly within the Asian group there are notable differences in HE participation patterns between Indian, Chinese, Pakistani, Bangladeshi and Other Asian groups. Those in the White and Mixed/Other groupings are combined in analyses throughout, though this of course means that any differences within these two groups will not be picked up. Even when using the more detailed breakdown for England and Wales, Noden et al. (2014) comment that the ethnic group categories are not satisfactory as “[t]he concept of an ethnic group is primarily based on a sense of group membership, shared cultural practices and heritage” and that for example the Black African group “consists of people with disparate origins who may not have a sense of belonging to the same group” (p352). However, when analysing administrative datasets these limitations cannot be avoided, and it is positive that some between-group ethnicity analysis is possible due to the size of the dataset.

4.5.5.5 School background

Data are provided on the school entrants last attended before entering HE³⁷. The school structure, in England in particular, is complicated. This can create difficulties in categorising school type in a detailed way but can also limit the potential to make comparisons between UK countries. HESA uses just two broad categories – ‘independent schools’ are privately funded fee-paying schools; and ‘state schools’ are non fee-paying schools. ‘State schools’ include grammar schools³⁸ and other selective schools, non-selective schools, sixth form colleges and further education colleges. This will mask differences in HE participation patterns amongst students who attended state schools. The Sutton Trust (2011) found that access to the most elite institutions was much higher for those from selective state schools than non-selective state schools, and close to the level for those from independent schools (also found by Crawford, 2014 and Croxford and Raffe, 2011); and acceptance into elite universities also differed between state school pupils in relation to the affluence of the area. In addition there is evidence specific to Wales that school attended is associated with differing HE participation rates (WISERD, 2015). In Northern Ireland grammar schools within the state sector are common and are associated with differences in outcomes. For example, a greater proportion of year 14 pupils (in which A levels are completed) attended grammar schools (61.7%) than non-grammar schools (38.3%) in 2013-14 (DENI, 2014a).

Differences between independent and state schools will mask the level of disparity between ‘selective’ and ‘non-selective’ state schools, and differences within those broad state school groupings, and within individual schools, in relation to education opportunities and outcomes, as noted in chapter 3. As can be seen in Table 4.15, there is over-representation of independent school pupils among HE entrants compared to school pupils overall, but only really notably for Scotland.

³⁷ The data do not identify those who had previously attended one type of school but completed their post-compulsory schooling in another type of school or college.

³⁸ Schools which offer places based on achieving a required level in entrance examinations.

Table 4.15: Percentage of young full-time UK entrants to HE and of all secondary school pupils who attended independent school, by country of domicile, 2012

	HE entrants	All pupils
England	11.2	10.1
Scotland	11.1	6.6
Wales	4.8	4.1
Northern Ireland	-	0.002

Sources: HESA student census 2012; DfE (2012); Scottish Government (2013b); SCIS (2012); Welsh Government (2015b); DENI (2014b). '-' fewer than 52 cases.

4.5.5.6 Previous attainment

There is a very wide range of qualification types held by entrants to undergraduate courses, and the equivalences between these are complex. To simplify attainment analysis, each case is assigned to a tariff quintile. This uses the tariffs calculated and applied by UCAS for various qualifications converted to quintiles. However, previous research has found (Croxford and Raffe, 2011) that the comparison of tariff applied to qualifications between countries is problematic and may mislead. For example, the tariff applied to Highers compared to A levels may be over-generous which would apply to these data. The effect of potentially over-generous tariff scores assigned to the Welsh Baccalaureate may also create an issue for cross-country comparability, but was not an issue for the 2012 data. Therefore this research uses quintiles that were created separately for each country, and then normalised to improve comparability across countries (Croxford and Raffe, 2014a). For most of the analyses these quintiles are used. For some analysis of field of study entry, the mean of the interval tariff data is used as it more clearly illustrates average tariff level differences to fields of study for students from the same country, but direct comparisons are not made between countries of domicile due to the comparability issue identified. As noted above, there was a sufficient percentage of missing values (particularly for Scotland) on this variable for them to be estimated using MI.

A factor that emerged as relevant to the findings concerns the relationship between ethnicity and prior attainment. It can be noted here that Black, Bangladeshi and Pakistani students were the most concentrated in lower attainment groups, and Chinese students the most concentrated in higher attainment groups (Table 4.16).

Table 4.16: Percentage of UK-domiciled young full-time entrants in attainment quintiles by ethnic group, 2012 (row percentages)

	Lowest	Low	Medium	High	Highest
White	17.6	25.3	20.1	24.1	12.8
Black Caribbean	42.2	29.6	15.1	10	2.7
Black African	36.9	29.3	14.5	15.5	3.8
Other Black background	41.9	29.1	14.3	-	-
Asian Indian	17.8	29.6	11.6	27.7	13.2
Asian Pakistani	25.3	41.3	9.2	19.5	4.6
Asian Bangladeshi	34	33.9	8.5	18.7	4.8
Chinese	10.8	19.1	15.8	28.9	25.4
Other Asian background	24.5	27	13.6	22.6	12.2
Mixed/Other	23.3	25.6	15.6	22.1	13.3

‘-’ suppressed due to cell size fewer than 52 cases in one of the high/highest categories.

4.6 Potential and limitations of the variables

These data can be used to explore student mobility within the context of student choice using the analytical framework, which suggested that cross-border mobility may be explained as a reasoned action, the outcome of a cost-benefit evaluation, influenced by cultural and financial resources, situated in relation to external constraints, opportunities and contexts. The data have been used to analyse mobility in relation to resources and external circumstances, and its costs and benefits or risks. The extent and limitations of this can be summed up as follows.

4.6.1 Resources and circumstances

There are variables in the dataset that provide information on the resources and circumstances of young entrants – social background and biographical characteristics, whether attended state or independent school, educational attainment, the HE participation rate of the home area, and the country/region of domicile. The local availability (within country or region) of HEIs of different types and fields of study has also been explored. However, the more direct financial measures of parental and personal income are not available. This requires therefore that exploration of financial but also cultural resources are based on social class data, parental education data and less directly school type and home area data, which are themselves defined relatively narrowly. The data cannot indicate circumstances that would constrain location choice (e.g. caring or work commitments). They also do not identify what was studied at school, the information available and used when applying to HE, family and social networks which were used to help choose institution, subject and location, and where

students felt they would fit in. Any inferences about wider cultural and social resources such as these must be based on previous research and theory.

4.6.2 Costs and benefits

In terms of 'costs' the data indicate whether entrants moved region or moved country (indicating likely greater financial cost of entering HE due to relocation, travel costs, and fee cost if moving from a low or no fee country to a higher fee country). There are also likely to be cultural or social costs associated with moving away for some students and associated with not moving away for others, but such an interpretation of the data again requires drawing on the wider literature.

'Benefits' can be operationalised firstly as the tariff level of the institution, as in terms of expected future employment and income, entering a high tariff institution might be a benefit that outweighs cost in a way that moving away to attend a lower tariff institution, which is more likely to be available nearer to home, does not. Secondly, benefits can be operationalised as entering a field of study which is associated with higher employment or income chances. Overall, supply and distribution of institution types and fields of study can be explored as a factor related to the benefits of mobility. The ethnic mix of the destination compared to broad home location can also be explored as a potential benefit. However any other potential motivations for or evaluation of risk of moving cannot be analysed with these data.

4.7 Descriptive analysis

Descriptive analysis provides a relatively simple but very informative overview of cross-border mobility, particularly as data are available on the full 2012 UK entrant population. This analysis was in the form of frequencies and cross-tabulations of categorical data; and comparison of means of interval data. It has contributed to addressing all the research questions. Descriptive analyses show the extent of cross-border mobility, the patterns and destinations of mobility and flows between countries, the characteristics of movers compared to stayers in general and in relation to institution tariff levels, fields of study and regional destinations. These analyses are provided separately for each country, and where appropriate for the UK as a whole. Comparative data on inter-regional mobility are also provided, as are data on specific institutions, and on non-UK entrants where this helps address the questions

regarding internal mobility. The analyses focus on young full-time entrants in 2012, however trend data are also provided where this helps to contextualise the 2012 findings. To attempt to explain rather than just describe mobility, inferential analysis is additionally required to ascertain the extent to which each factor analysed affects the chances of moving and whether some factors mediate the effect of other factors.

4.8 Inferential analysis

4.8.1 Logistic regression

Logistic regression has been used extensively in the field of educational transitions, including by those using rational action theory to analyse the chances of making educational transitions based on different individual factors (e.g. Becker and Hecken, 2009; Breen and Jonsson, 2000; Boone and van Houtte, 2013; Davies et al., 2002; Holm and Jaegar, 2008; Holm et al., 2013; Jackson et al., 2007; Iannelli et al., 2011; Raftery and Hout, 1993; Schindler and Reimer 2011; Stocké, 2007; van de Werfhorst and Andersen, 2005; van de Werfhorst and Hofstede, 2007; van de Werfhorst et al., 2003). This approach has also been used in recent studies of student mobility in the UK (Croxford and Raffe, 2014a; Croxford and Raffe, 2014b; Raffe and Croxford, 2013).

Logistic regression modelling is used to model the extent to which each independent variable (IV), or predictor, explains the probabilities expressed in log odds of an individual's chances of having achieved one outcome versus another, holding the other variables constant (Breen and Jonsson, 2000). It achieves this by treating a categorical dependent variable (DV) with discrete outcomes (y) as the observed effect of unobserved propensity (a latent variable, y^*) (Mood, 2010). The outcome is expressed as the natural logarithm of the odds of $y=1$ versus $y=0$. This logarithmic transformation serves to convert a categorical dependent variable into a scaled variable. The logit produces coefficients in the form of log odds (B). The logit model is expressed as:

$$\text{Ln}\left(\frac{P}{1-P}\right) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_k X_k$$

where P is the probability that $y=1$, B_0 is the intercept and $B_1 X_1$ is the log odds of the independent variable X_1 , and so on. The exponential of the log odds ($\text{Exp}B$) gives the odds ratio for an IV and has a value between zero and infinity. For continuous

variables the odds ratio is an estimate of how many times higher the odds of $y=1$ is if X_1 increases by one unit. For categorical variables included in the model, logistic regression modelling analyses the association with the DV of all the values of the variable, compared to one value which acts as the reference category. Direct results are not provided for the reference category. For categorical variables the odds ratio is therefore an estimate of how many times higher the odds of $y=1$ is if X_1 changes from the reference category to another category.

To explore student differences and the situational rationality of the decision to move away from the home country or region, binary logistic regression models have been used. This is because the outcome variable is dichotomous (the chances of moving versus staying). The predictors or IVs that may be assumed from theory and previous research to be influential in whether or not a student is mobile are a mix of categorical and interval variables, and this mix can be accommodated by logistic regression. The dataset is large allowing a sufficient number of cases in each of the values of variables for both movers and stayers, in most cases.

The latent variable is 'the propensity for mobility' (y^*) which underlies the DV 'choice of mobility', of which the observed outcomes are 'stayer'/'did not move' ($y=0$) or 'mover'/'did move' ($y=1$). The reference category for each variable was selected, usually based on the highest number of cases (for nominal variables), so the comparison is between the most common value and the others, or is the highest (social class) or lowest (attainment) for ordinal variables. The reference groups for binary logistic regression models are provided in Table 4.17. For analysis of movement to a wider range of destinations, multinomial regression models were used. The results from multinomial logistic regression are interpreted in a slightly different way to binary logistic regression. In binary regression, all movers are compared to the reference group of stayers. In multinomial regression each of the different outcomes (in terms of movers to each location) are compared separately to the reference group (stayers)³⁹.

The variables included in the model are based on the student differences in mobility that would be expected based on theory and previous research, as recommended

³⁹ In the tables showing the output of multinomial regression models the reference categories are the last rather than first category in most cases.

(Gayle et al., 2009). Also as recommended (Peng and So, 2002; Hosmer et al., 2013), each variable was added to the model in turn initially to identify which variables may be usefully expected to add to the predictive power of the model. For parsimony, due to small cell sizes the low participation area variable was not subsequently included in Scotland-domiciled entrants models; and the school type variable not included in Northern Ireland-domiciled entrants models.

In constructing the final models, it is recommended to add predictors in blocks (also called models), if theoretically sensible, in order to identify change in the predictive power of models as new variables are added (Hosmer et al., 2013). The models in this research all follow a similar construction (Table 4.17). Differences are due to cell sizes – where there was an inadequate number of cases for a value amongst movers, values have been combined where possible. In terms of defining an adequate number of cases per value, there is no agreed minimum. The dataset is very large and so the overall number of cases is not problematic, although the number of movers from Scotland is small compared to the other countries at around 1000. Any values with zero cases amongst either movers or stayers would be problematic (Hosmer et al., 2013). The decision was to set the minimum threshold at 40 cases per value. This is a relatively high threshold but based on viewing the descriptive data, this allowed the inclusion of a large number of variables while preventing the inclusion of very rare cases within the mover sub-group. This applied mainly to BME groups particularly from Scotland and Northern Ireland, and to some fields of study particularly for movers from Scotland. Where values have been grouped to reach 40 cases, these combinations are shown in the regression model tables. The models have been constructed as follows.

Table 4.17: General construction of binary regression models

Model	Variables added
Model 1	<ul style="list-style-type: none"> • Gender – Reference group: Female • Social class– Reference group: Higher managerial and professional class • Parental education – Reference group: Parent has an HE qualification • Ethnicity – Reference group: White • Attainment quintile – Reference group: Lowest attainment quintile
Model 2	<ul style="list-style-type: none"> • School type – Reference group: State school • Participation rate of area - Reference group: Not low participation
Model 3	<ul style="list-style-type: none"> • Field of study entered - Reference group: Business and administrative studies <i>or</i> • Field of study group entered - Reference group: Social sciences and law
Model 4	<ul style="list-style-type: none"> • Institution tariff level – interval variable
Model 5	<ul style="list-style-type: none"> • Field of study supply – interval variable • Field of study employment level – interval variable • Field of study earnings– interval variable

Model 1: It is assumed first of all that students’ resources contribute to shaping their perception of options – of the costs and benefits (or risks) and expected outcomes of options. Basic socio-demographic/biographical variables are therefore included in model 1.

Model 2: Model 2 seeks to further model the influence of circumstances of the student, but in relation to environmental factors (as opposed to biographical or familial factors) that could contribute to the resources which could affect decision-making about HE: school type and HE participation rate of home area. School type is categorised here as ‘environmental’ due to assumptions that the school environment and experience itself may contribute to capacity and propensity to consider universities from a wider geographical sphere, potentially separately to the assumed parental attitudes to education and family resources that are reflected in attendance at independent school. However it is recognised that both the variables in this model can also be considered as measures of socio-economic advantage.

In models 1 and 2, the analysis focuses on the background and situational factors that could constrain or open up choices. Models 3-5 explore how mobility is associated with institutional and field of study outcomes. Although arguably institution and course variables could be added in either order, it is possibly more likely that which field of study is entered affects institutional options, rather than that choice of

institution type precedes field of study choice, so course variables were entered in model 3.

Model 3: Course variables are field of study and level of qualification. The number of fields of study included in each model depends on case numbers. For field of study groups, social sciences and law is the reference group as it is has the highest number of entrants. Where the more detailed field of study breakdown is used, the reference group is business and administrative studies. It is similarly popular to creative arts and design and biological sciences, but was chosen as it is a component subject of the social sciences and law grouping which was used as the reference group in other models.

Model 4: Institution tariff level, in the form of average tariff points of entrants, is added. This has been included as an interval variable to indicate whether in aggregate terms being mobile results in entering a higher tariff institution than staying in the home country, as a possible explanation for mobility.

Model 5: Model 5 includes the additional field of study variables which seek to identify whether the propositions relating to moving to enter a field of study due to lack of supply in the home country, or to achieve future employment or earnings goals, are supported. As the variables used have been recoded from the field of study variable, the original field of study variables are dropped in this model⁴⁰.

It should be noted that the regression models which only include those entering lower or higher tariff institutions do not include 'institution tariff score' (model 4 in the main models) in the predictors as a measure of institution tariff has been accounted for in the selection of cases, and therefore are made up of 4 models rather than 5. Multinomial regression models used a single model with all relevant variables included.

⁴⁰ Tests of multicollinearity between variables included in the models showed the only level above the recommended threshold ($VIF > 10$) (Hosmer et al., 2013) was between field of study and the alternative measures of fields of study. They therefore cannot be used in the same model.

4.8.2 Post-estimation analyses

An odds ratio above 1 indicates a positive association – the variable or value (e.g. attending independent school rather than state school) is associated with increased odds of being a mover; below 1 is a negative association. Choosing to report odds ratios is popular, but contentious because ratios above 1 are stretched and below 1 are compressed, particularly if the number of cases in a particular cell is small (Gayle et al., 2009). The log odds and odds ratios produced by regression modelling can also be problematic to interpret in two ways.

Firstly, as explained by Mood (2010), all effects estimates produced through logistic regression modelling are biased by unobserved heterogeneity, both in relation to omitted variables and to the independent variables that are included in the model. When variables are transformed to the logit, the standard logistic distribution is applied which has a fixed error. As the unexplained variance (error) is fixed, any increase in explained variance when a predictor is added to the model adds on to the fixed unexplained variance, and so the total variance of the DV increases, which means its scale increases. This rescaling can create problems in comparing log odds or odds ratios across models based on different samples or populations. For this reason, separate models for each country/region domicile were run, on the basis that factors related to the place of domicile may have an influence on mobility. However the rescaling can also cause difficulties in comparing odds measures based on the same sample or population as new independent variables are added. Even comparing log odds or odds ratios between models drawn from the same population should only really be in a general sense of identifying whether adding new variables to the model has resulted in a change in direction of association or suggested a large change in the strength of a variable as a predictor. Secondly, log odds and odds ratios even within the same model can be difficult to interpret at an intuitive level. To address both these issues, post-estimation analyses in the form of marginal effects and average marginal effects have been used. These provide results in the form of probabilities.

Transforming log odds firstly into odds and then into probabilities can provide more easily understandable data on the key issue of inequalities in participation through mobility. The probability is calculated as $P(y=1)=\text{odds}/(1+\text{odds})$. As an example, the odds ratio estimates the odds of being a mover compared to a stayer amongst those

who went to independent school compared to state school when other variables are accounted for; probability is a measure of the likelihood of being a mover having been to state school or having been to independent school when other variables are accounted for. Probability has the advantage of being more intuitive, and provides estimates between zero and 1 rather than zero and infinity, with 0.5 indicating equal likelihood of being, in this case, a mover or stayer. Probabilities were estimated from regression model outputs in the form of 'marginal effects'⁴¹ which calculate the probability of being a mover when the independent variable (e.g. social class) changes value. This can be used to answer the question: if there are two otherwise average individuals, but they are from different social class backgrounds, how does the likelihood of being a mover differ depending on which social background they have? Marginal effects were estimated on outputs of regression models for all entrants from each country, and for entrants to both lower and higher tariff institutions from each country, to estimate probabilities of moving for student characteristics indicating socio-economic advantage.

Using marginal effects reduces the effect of the rescaling issue described above. Average marginal effects (AMEs)⁴² can also be used and are argued to be better for comparing models with different populations (Mood, 2010). To estimate AMEs, the binary dependent variable is set to 1 then set to zero for each value of a variable for each observation or case, with the rest of the variables set at their observed values, and the differences in the predicted values for $y=1$ and $y=0$ are averaged across all cases. They give the averaged effect of the variable on mobility across the population and differ to marginal effects in that for categorical variables they estimate probabilities relative to a reference group. AMEs can be used to answer the question: across the population, how does the likelihood of being a mover change when in (for example) a social class other than the higher managerial and professional class? AMEs have been calculated to inform two areas of analysis, where direct comparison has been made between different populations. Firstly to calculate the average effect of social class, as a key indicator of socio-economic advantage, on mobility for students from each country of domicile. These AMEs provide probabilities of being in a social

⁴¹ Using the 'margins x_1 , atmeans' procedure in Stata 14, which sets all other variables at their means, in order to estimate the separate effect of the value on probability of being a mover.

⁴² Using the 'margins, dydx(x_1)' procedure in Stata 14.

class in comparison to being in the higher managerial and professional class, and so provide a measure of relative social inequalities in cross-border mobility. Secondly, AMEs were calculated to compare the probability of moving in relation to the field of study supply, employment and earnings variables for entrants from the same country of domicile but entering different institution groupings.

4.8.3 Interaction effects

As well as analysing each separate variable (the main effects), the effects of interactions between variables were analysed in the form of marginal effects based on regression model outputs from the main models for all entrants from each country. The evidence in chapter 3 suggests that social class and school type; social class and ethnicity; and ethnicity and school type could all combine to affect outcomes (HE outcomes in general, and mobility as a particular facet of HE outcome). School type and attainment, and social class and attainment, would also be expected to interact with each other, and potentially subsequently with mobility. The following interactions were analysed:

- Social class x school type
- Social class x ethnicity
- Ethnicity x school type
- Social class x attainment group
- School type x attainment group

Selected interaction effects for each country of domicile are reported, in the form of marginal effects, where they add to the picture of student characteristics in relation to mobility.

4.8.4 Overview of regression models

The models and post-estimation analyses carried out are summarised in Table 4.18.

Table 4.18: Regression models carried out

Focus of model	Populations for which models were created	Notes on models	Post-estimation analyses
Cross-border movers - all entrants	England-domiciled Scotland-domiciled Wales-domiciled NI-domiciled	Participation rate of home area not included in Scottish model School type not included in NI model All BME groups combined for Scotland and NI Veterinary science not included in Wales and NI models	Marginal effects for social characteristics (excl. gender), attainment, and field of study groups for each country model AMEs for social class, field of study supply, employment and earnings for each country model
Cross-border movers – all entrants – interaction effects: Social class*ethnicity Social class*attainment School type*attainment School type*social class School type*ethnicity	England-domiciled Scotland-domiciled Wales-domiciled NI-domiciled	Not feasible due to cell sizes to run interaction effects involving school type for NI models All BME groups combined in findings reported	Marginal effects for each interaction run
Cross-border movers – entrants to lower tariff institutions	England-domiciled Scotland-domiciled Wales-domiciled NI-domiciled	Institution tariff not included in model, as cases already selected by institution grouping	Marginal effects for social characteristics (excl. gender) and attainment for each country model AMEs for field of study supply, employment and earnings for each country model
Cross-border movers – entrants to higher tariff institutions	England-domiciled Scotland-domiciled Wales-domiciled NI-domiciled	Institution tariff not included in model, as cases already selected by institution grouping	Marginal effects for social characteristics (excl. gender) and attainment for each country model

Focus of model	Populations for which models were created	Notes on models	Post-estimation analyses
			AMEs for field of study supply, employment and earnings for each country model
Cross-border movers by regional destination – to NW/SW/West Midlands or RUK	Wales-domiciled	All BME groups combined	
Cross-border movers by regional destination – NE/NW or RUK	Scotland-domiciled	Ethnicity not included, fields of study grouped and course level not included	
Cross-border movers by country destination – NW England, rest of England or Scotland	NI-domiciled	Ethnicity not included	
Cross-border movers by country destination – Wales or Scotland	England-domiciled	All variables and values included	
Cross-border movers by English region of domicile	South-West domiciled West Midlands domiciled North-West domiciled North-East domiciled London domiciled	All BME groups combined for SW, WM and NW Ethnicity not included for NE Ethnicity 4 group version for London Participation rate of home area not included for London	
Movers by cross-border or inter-regional movement	England-domiciled	All variables and values included	

4.9 Ethical issues

The analysis uses administrative data, and although the data are anonymised, issues of possible disclosure and sensitivity need to be considered. The data include ethnicity of students which is defined as sensitive personal information and possible disclosure is an issue (Administrative Data Liaison Service website, accessed 2016),

however in the dataset used these data cannot be linked to other personal information such as finances and health. But data on individual cases when combined could be disclosive in some cases: members of an ethnic group following a particular movement pattern, or entering a particular field of study in a particular region; and if looking at individual institutions then ethnicity and/or region of domicile of students could be disclosive. In these cases, I have grouped data or excluded data if grouping is not possible or still leaves a very small cell count. In addition, the HESA reporting requirements are followed, as described next.

4.10 Reporting results

HESA reporting requirements are that frequencies cannot be reported in the form of percentages if based on 52 or fewer cases. Averages based on 7 or fewer individuals must not be reported. For both these requirements, grouping of values is used where appropriate and feasible to overcome this. The HESA restrictions on reporting the output based on small numbers of cases does not apply to reporting of inferential analysis. Any values ending in zero, 1 or 2 must be rounded to zero; all other counts must be rounded to the nearest multiple of 5. It is acceptable however to provide findings by named institutions.

Due to the difficulties in interpreting the outputs of regression models, and because there is no ideal method, as discussed above for key findings more than one estimated effect is reported.

- Odds ratios (ExpB) indicate the direction and strength of the association between each predictor and the outcome, when the effect of other predictors is controlled. Odds ratios are included in all regression model tables in the appendices, and reported in the analysis chapters in general terms with regard to direction and strength relative to other variables.
- Marginal effects indicate the predicted probability of social characteristics on mobility when other variables are held at the mean. These are used for within-country analysis.
- Average marginal effects indicate the population-averaged effect of social class and field of study variables when other variables are held at their observed

values. These are used for between-country and between-institution type analyses.

A measure of model fit is also provided, i.e. how well the predictors explain the variance in likelihood of being a mover for the cases included in the analysis. In a linear regression model, in which the outcome being modelled and the predictors are continuous variables, R^2 (the variance of means from the regression line) provides a clear measure of fit. However, in logistic regression modelling, less clear measures of fit are available in the form of pseudo R^2 . There is no agreed best pseudo R^2 measure and they should be used to indicate the extent to which the model explains variance rather than treated as an accurate calculation (Pampel, 2000). Nagelkerke R^2 is reported in the regression tables because it has a maximum of 1, which makes interpretation easier.

4.10.1 Statistical significance

The HESA student census data are being treated as population data, with the population defined as ‘young full-time UK-domiciled entrants to undergraduate courses at UK HEIs in 2012’. It is not a randomly selected sample and therefore statistical testing is not appropriate in the sense of extrapolating the findings from a random sample to a population (Cowger, 1985). Rubin (1985) suggests however that significance testing may still be useful as “we cannot ascertain without significance testing the likelihood that the difference between the sub-populations was due to chance and therefore whether the hypothesis was supported in an explanatory sense” (p519). This would require treating these data as a sub-population in the sense that they only represent the population at one time point, but do not represent all relevant HE entrants at other time points. The purpose of reporting statistical significance in descriptive outputs, and particularly the regression model outputs, would then be to help identify which factors may be the most important in identifying the associations between student characteristics and cross-border mobility, and whether this would more broadly support theoretical analyses. Cowger (1985) however suggests this application of significance testing is one of ‘scientific ritualism’.

The decision has therefore been made not to comment on measures of statistical significance for descriptive or inferential data, but as they may be of interest to those who value statistical testing results in these circumstances, they are included in the

output tables for the regression models and post-estimation analyses. Due to the number of cases in the models, the strength of odds ratio tends to be associated with the level of statistical significance in any case (Pampel, 2000).

4.11 Conclusion

This chapter has described the dataset, variables and types of analysis used to address the research questions. Overall the dataset provides complete data on crucial aspects of this work – where students from each country enter HE and what they study – and a range of variables that map onto most of the key factors identified as potentially important in mobility. There are limitations to the key variables, either because missing cases have had to be imputed, to a varying extent by country of domicile, or because they are a simple measure to represent a more complex issue. However the data are sufficient to provide an indication of the importance of the variables of interest to cross-border mobility, and help to identify the potential implications for the relationship between student cross-border mobility, student differences and inequalities in HE participation, and contextual factors, to substantially add to existing knowledge. The research questions and the relevant analyses undertaken are summarised as follows.

RQ1: What are the patterns of geographical movement for undergraduate HE study in the UK?

This has been explored through descriptive analysis of flows between countries, regions, and from local authority areas, in relation to geographical and institution destinations, and fields of study entered by movers and stayers.

RQ2: How are UK students' social characteristics and educational background associated with geographical mobility?

This has been explored descriptively and through regression modelling for movers out of each country and between regions, in terms of the relationship between mobility and the variables of social class, parental education, ethnicity, school type, home area participation rate, and prior attainment quintile. Comparison is also made between home and all UK student populations within country HE systems.

RQ3: How is mobility associated with institution or field of study entered and how does this differ in relation to student characteristics?

This has been explored through descriptive analysis of institutions, institution tariff levels and fields of study entered by movers and stayers in relation to student characteristics, and through regression modelling of movement amongst entrants to lower and higher tariff institutions. Field of study supply, earnings rate and professional employment levels were also explored as a factor in mobility within regression models, in relation to student characteristics. The domicile of students entering specified institutions in each country are analysed, as are the social characteristics of movers entering two key institutions (Cardiff and Edinburgh universities) to explore the effect of high inflows from England to the highest tariff institutions in Wales and Scotland.

RQ4: How are students' social characteristics associated with the relationship between place of domicile and destination?

This has been explored descriptively and through regression modelling for movers from each country into differing geographical destinations, and movers out of selected English regions, in relation to student characteristics.

Chapter 5, 6 and 7 set out the key findings from the analyses by country in relation to the research questions, and whether the expected findings based on theory and research which underlie the questions are supported. Chapter 5 focuses on patterns of movement (RQ 1), providing the overall picture and context for the analyses on student differences, the focus of RQ2-4. These questions are addressed for students from high outward mobility countries, i.e. Wales and Northern Ireland, in chapter 6; and for students from low outward mobility countries, i.e. Scotland and England, in chapter 7.

Chapter 5: Mobility patterns and destinations

5.1 Introduction

This chapter presents descriptive analysis which addresses RQ₁ concerning the patterns of geographical movement for undergraduate HE study in the UK. It provides an overview of the mobility of young full-time UK-domiciled entrants between countries and regions of the UK in relation to geographical, field of study and institutional destinations. Based on the theories discussed in chapter 3, it is recognised that geographical location, field of study and institution entered are not simply objective locations and outcomes as may be suggested by the term ‘destination’, but that where and what is entered is determined by prior circumstances involved in reaching the point of considering HE as an option. It is also recognised that the offer-making of institutions is an additional factor in the application and acceptance decisions of individuals, and contributes therefore to destination outcomes.

This chapter will describe directions and destinations of inflows and outflows from each country, and from smaller areas within countries (regions or local authority areas); use the data to begin to explore the impact of and reasons for cross-border flows, which will be further discussed in succeeding chapters; and provide the context in which student characteristics related to mobility takes place, which will also be further explored in chapters 6 and 7. Additional material is provided in the Appendix to Chapter 5, and appended tables are referenced in this chapter as A5.x.

5.2 Overview of cross-border mobility

5.2.1 Outflows and inflows

Changes in cross-border flows over time have been indicated in the UCAS data in chapter 2, and in previous research (Croxford and Raffe, 2014a; Raffe and Croxford, 2013; Wakeling and Jeffries, 2013). This section analyses flows using HESA entrants’ data, providing important basic data on mobility. Tables showing the change over time in number of all UK entrants (as opposed to movers only) from each country, and into each country’s HE system are provided in the appendix to this chapter (Tables A5.1 and A5.2). Specific to cross-border mobility, Figure 5.1 and Figure 5.2

provide an overview of inward and outward flows of young full-time entrants to and from each country. The data for these charts are in Table A5.3.

Figure 5.1 shows that as a percentage of entrants, outward flows have been largely unchanged for England since a time preceding legislative devolution. Due to the relative size of the HE sector in England, inflows to the country’s HEIs were a very small percentage of entrants (Figure 5.2), and not much higher numerically than the number of movers-in to Wales in 2010 and 2011 (Table 5.1).

Figure 5.1: Percentage of young full-time entrants who were movers-out by country of domicile – five years of entry

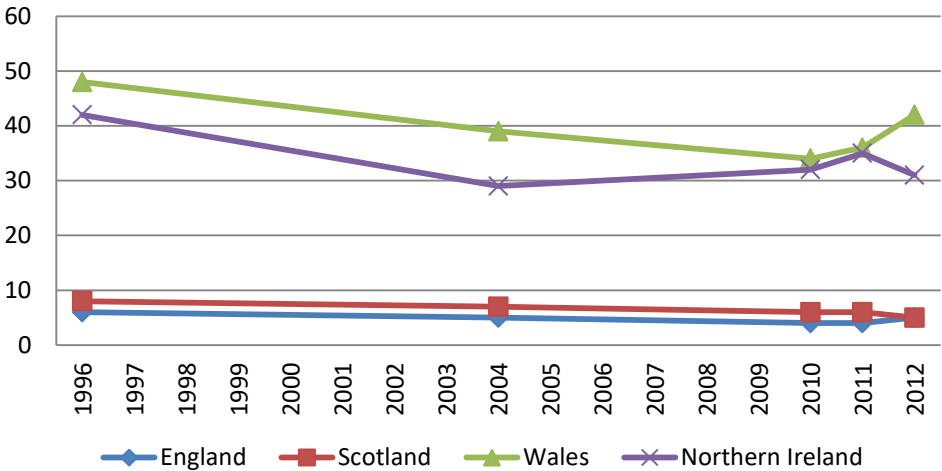
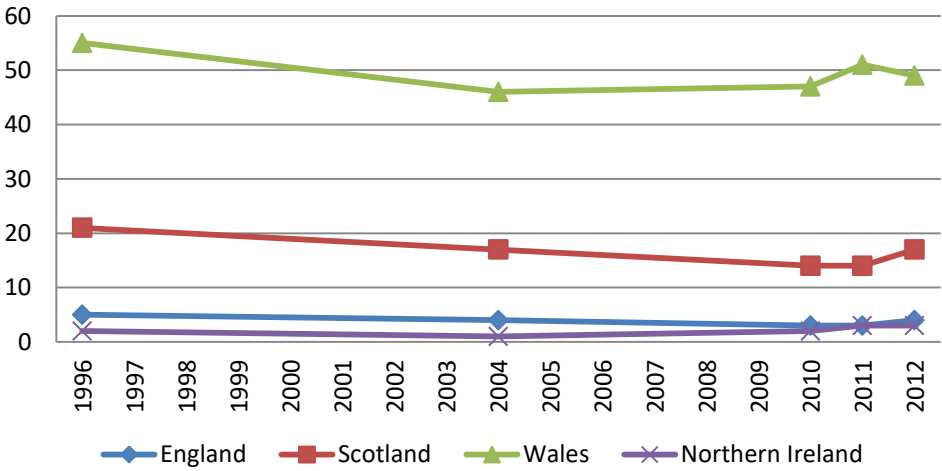


Figure 5.2: Percentage of young full-time entrants who were movers-in by country of study – five years of entry



Outward flow from Scotland has decreased over time (Figure 5.1), during which the difference between the fee level for Scotland-domiciled students studying in Scotland or in the rest of the UK has increased. This may be one explanation for the reduction but it may also relate to other changes in Scottish HE that have encouraged a higher percentage to stay in Scotland (e.g. widening participation initiatives focused on Scottish school pupils, as suggested by Raffe and Croxford, 2013), rather than only a reaction to a disincentive to leave. Despite a strong incentive to stay in Scotland in 2012, when the difference between no fee debt in Scotland and the fee debt for studying elsewhere increased substantially, a small percentage of entrants, representing just over 1000 students (Table 5.1), nonetheless left Scotland to study.

Scotland has experienced much higher levels of inflows than outflows. This increased in 2012 compared to the two previous years (Figure 5.2). This may be due to the change in student number control policy in Scotland in 2012, by which RUK entrants were taken out of the student number cap, allowing universities to recruit RUK entrants to the extent that they were able and willing to do so. This would affect the percentage of entrants in Scotland who were RUK-domiciled, and as identified in Table A5.4, the percentage of all RUK entrants increased by 1 percentage point in 2012 compared to 2011, although as this was the same percentage as in 2010 this argument is not strongly supported.

Table 5.1: Number of movers-out and movers-in of young full-time entrants by country of domicile and country of study – five years of entry

	1996	2004	2010	2011	2012
Movers-out, by					
country of domicile					
England	11550	11305	12195	13560	11680
Scotland	1550	1420	1305	1390	1080
Wales	5815	5715	5360	5570	6100
Northern Ireland	3395	3310	3685	4225	3295
Movers-in, by					
location of HEI					
England	9765	10030	10085	10875	10305
Scotland	5455	4715	4170	4035	4320
Wales	7790	7865	9120	10635	8310
Northern Ireland	90	80	185	250	200

All counts rounded to nearest 0 or 5.

In percentage terms, outflows from Wales and Northern Ireland have over this period been much higher than those from England and Scotland, but there has been

fluctuation in both cases (Figure 5.1), and there may be differing explanations for this. In the case of Wales, as discussed in chapters 2 and 3, changes may be at least partially explained by changes in fee support for stayers and movers. This assumes however firstly that fee levels are important to mobility decisions, and secondly that entrants understand the financial implications of their study decisions, neither of which are strongly supported by research. However the lack of new fee-based disincentives in 2012 may indeed have played a role in Wales having the only increase in outward flow. Inflows into Wales were also high, although they dropped in 2012 compared to 2011 (Figure 5.2). Almost all movement into and out of Wales is with England. One suggestion for reduced inflow to Wales in 2012 is that it was a reaction of England-domiciled students to the increased fees in England, perhaps in the form of fewer deferrals in 2011, trying to cut costs by staying closer to home, or by focusing mobility more on accessing higher tariff universities, either within England, or in Scotland where the number of movers-in increased in 2012 (Table 5.1).

The changes over time for Northern Ireland would appear to relate to other factors. A key characteristic of HE in Northern Ireland as identified in chapter 6 is under-supply of places, necessitating movement for a substantial minority of students. The extent of the under-supply lessened in 2004 when capacity was increased in Northern Ireland, apparently reflected in the reduction in outflow compared to 1996 (Figure 5.1). Outflow subsequently increased, which may relate to greater demand generally or to more students positively choosing to leave Northern Ireland. Between 2004 and 2011 the fee level was the same regardless of whether they stayed in Northern Ireland or left. In 2012 this changed, students staying in Northern Ireland would be liable for the pre-2012 fee level, while those studying elsewhere in UK would be subject to the full higher fee level of the institution entered. This would have created a strong disincentive for leaving Northern Ireland, but with continued supply issues in Northern Ireland, an unavoidable one for many determined to enter HE. There is on the other hand very little inflow into Northern Ireland (Figure 5.2).

Overall, the data in this section show some differences between 2012 entrant patterns and those from the previous two years, suggesting that various policy changes, including changes in fee differentials, may have had some impact. However in comparison with earlier years, the patterns in 2012 fall within the percentage range of

mobility from each country, suggesting that from a recent historical perspective, mobility in 2012 was not a notable outlier, and therefore that policy changes may not be the most important factor in mobility patterns that year. Based on the research on student choice in chapter 3, and earlier findings on fee impacts as noted in chapters 2 and 3, this likely limited impact would be expected.

5.2.2 Internal mobility as source of entrants to country systems

Table 5.2 puts internal cross-border mobility into context. It shows the domicile of all entrants into HE systems. For simplicity only two years are shown – the data for all 5 years are available in the appendix (Table A5.4).

Generally speaking, home and RUK students have constituted a smaller percentage of entrants over time in each system, and the percentage of entrants from the EU and overseas has increased. In particular, overseas students as a percentage of entrants in England are relatively high, as are EU students in Scotland (where they would not be liable for tuition fees). In Wales, RUK students continue to make up a large proportion of entrants, and in Scotland they continue to constitute a higher percentage of entrants than those from either the EU or overseas. In Northern Ireland, the percentage of entrants from RUK has increased, but this may be explained by the decrease over time of entrants from the Republic of Ireland who account for almost all of the EU students. RUK inflows therefore are most important to Wales and Scotland and have most impact on the constitution of the student population in those countries.

Table 5.2: Percentage of young full-time entrants to country HE system by domicile, 2004 and 2012 entrants (column percentages)

	2004	2012	Change
England			
Home	85	81	↓
RUK	4	4	=
EU	3	5	↑
Overseas (non-EU)	7	11	↑
Total (N)	243940	285445	↑
Scotland			
Home	75	68	↓
RUK	16	14	↓
EU	4	11	↑
Overseas (non-EU)	5	8	↑
Total (N)	28770	31385	↑
Wales			
Home	45	44	↓
RUK	48	43	↓
EU	2	4	↑
Overseas (non-EU)	5	8	↑
Total (N)	16470	19130	↑
Northern Ireland			
Home	93	90	↓
RUK	1	3	↑
EU	5	2	↓
Overseas (non-EU)	1	5	↑
Total (N)	8430	8030	↓

5.3 Geographical origins and destinations

Table 5.3 provides more information on directions of flows.

Table 5.3: Percentage of UK domiciled full-time young entrants from country of domicile entering HEIs in each country, 2012 (row percentages)

Country of domicile	Country of study				Total (N)
	England	Scotland	Wales	Northern Ireland	
England	95	1.4	3.3	0.1	242970
Scotland	4.6	95	-	-	22405
Wales	41	0.7	5	-	14585
Northern Ireland	22.7	7.4	1.1	68.8	10555

'-' fewer than 52 cases.

As calculated from the table, 69% of England-domiciled movers went to Welsh HEIs, and 29% to Scottish HEIs. Of Northern Ireland-domiciled movers, 73% went to English HEIs and 24% went to Scottish HEIs. Almost all Scotland and Wales-domiciled movers went to English HEIs. Given the greater scale of England and size of

its sector, it is also possible to look at the regions of England to which the entrants from the three devolved administrations (DAs) moved (Table 5.4).

Table 5.4: Percentage of UK domiciled full-time young entrants from country of domicile entering HEIs in each region, 2012 (column percentages)

Region of study	Country of domicile				UK (N)
	England	Scotland	Wales	Northern Ireland	
North East	5.8	0.8	1	4.1	14790
Yorkshire & Humber	12.1	0.4	2.8	1.8	30085
North West	12.6	0.6	10.1	8.7	33050
East Midlands	10	-	2.7	1.1	24910
West Midlands	10	-	4.3	1	24965
Eastern	6.6	0.4	1.2	1.1	16375
Greater London	15	0.9	3.8	1.9	37385
South East	13.7	0.7	5	1.4	34260
South West	9.5	0.4	10.4	1.6	24895
Scotland	1.4	95	0.7	7.4	25600
Wales	3.3	-	58	1.1	16745
Northern Ireland	0.1	-	-	68.8	7455
Total (N)	242970	22405	14585	10555	290510

¹ fewer than 52 cases.

Again there are different patterns for each country of domicile and a likely different set of explanations in each case. Movement from Wales and Northern Ireland seemed more geographically concentrated than that from Scotland, in both cases to regions with greater geographical proximity to the home country. If there has been generally greater movement into and out of these areas over time this may have created associated networks and social ties. These are factors that can further drive migration to particular areas (Massey et al., 1993). Movement out of Scotland is more spread and may not be explained to the same extent by issues of proximity and any associated social connections or diaspora.

Changes in regional destinations in 2010, 2011 and 2012 were explored (Tables A5.5, A5.6 and A5.7), which show short-term changes which may again indicate an impact of policy change on mobility. The overall decrease in movers-out in 2012 compared to 2011 and 2010 applied to most destination regions. Only the Eastern and South-East regions maintained the same percentage of Scotland-domiciled entrants as in the previous years (and this was explained by entry to Cambridge in the Eastern region and Oxford in the South-East region as will be seen below). The overall increase of

movers-out from Wales in 2012, as a percentage of entrants, was reflected in similar percentages or slight rises in the percentages of entrants to most regions, but more notable was the rise in the percentage of entrants who went to the North-West and South-West (they rose by 1.4 and 1.6 percentage points respectively compared to 2010), showing greater concentration of movers to regions adjacent to Wales. The decrease in movers-out from Northern Ireland in 2012 was reflected in movement to all but the South-West region. It is possible again that these findings reflect a modest impact of the introduction of increased fees, either in terms of movement being more focused on high status institutions (Scottish movers), general reductions in mobility (Northern Irish movers), or shorter distance movement being more common (Welsh movers, although in theory they should not have been affected by the fee increase).

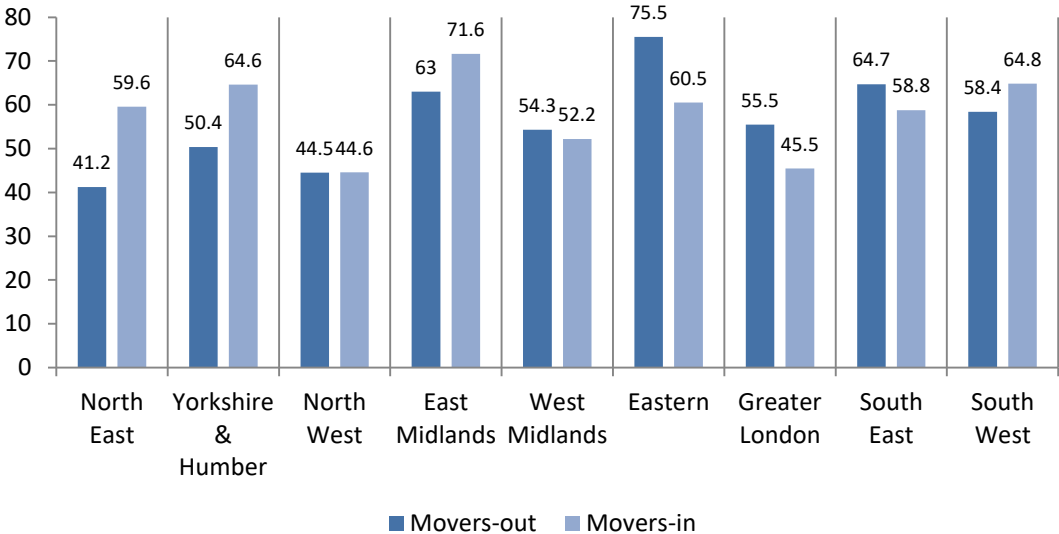
5.4 Regional and local authority domicile

Some previous evidence was noted in chapter 3 of mobility being a little more common to closer than distant cross-border locations. This section explores the relationship between domicile and destination at the more detailed level of regions and local authorities.

5.4.1 Regional inflows and outflows

Patterns of regional movement are provided by data on inflows and outflows for English regions (Figure 5.3).

Figure 5.3: Movers-out as percentage of entrants domiciled in English region and movers in as percentage of entrants to HEI in English region, young full-time UK entrants 2012



Overall, inter-regional movement is more common than inter-country movement. Comparing these data on regional flows with the institutional supply measure in Table A4.5 does not show any clear relationship between for example lack of higher tariff provision and higher levels of outward mobility. The only country close to these regional percentages is Wales. In terms of entrant flows, Wales resembles a region of England rather than a different country.

Also examined was where, as a percentage of all entrants, movers from each region were most likely to enter HE. Detail is provided in the appendix ('Main regional flows'). In all regions the highest percentage of entrants from any one region came from the home region; flows between adjacent regions were more common than movement to non-adjacent regions; and inter-regional movement when looked at in this greater detail was still more common within England than across country borders. From a policy perspective of course, these flows within England do not create funding and policy issues at the government level, as they do for movement across country borders.

As would be expected from the overall low percentage of England-domiciled cross-border movers, the vast majority of entrants from all regions studied in England. The most notable cross-border movement is provided in Table 5.5. Generally this indicates again the greater likelihood of movement being to neighbouring regions.

Table 5.5: Highest flows of cross-border movers among young full-time England-domiciled entrants 2012, region to country flow

Region to country flow			Percentage of entrants
South-West	→	Wales	10
West Midlands	→	Wales	5
South-East	→	Wales	4
North-East	→	Scotland	4
North-West	→	Wales	3
East Midlands	→	Wales	3

5.4.2 Local authority domicile

The percentage of entrants who were cross-border movers by local authority of domicile across the UK as a whole is shown in Figure 5.4. A map for each country of domicile is then provided. The greater concentration of England-domiciled movers living close to borders, particularly the Welsh border, is shown in Figure 5.5. Given

the size of England, more detailed analysis of destination by LA of domicile becomes unwieldy however.

Figure 5.4: Percentage of young full-time 2012 entrants who were cross-border movers, by local authority of domicile

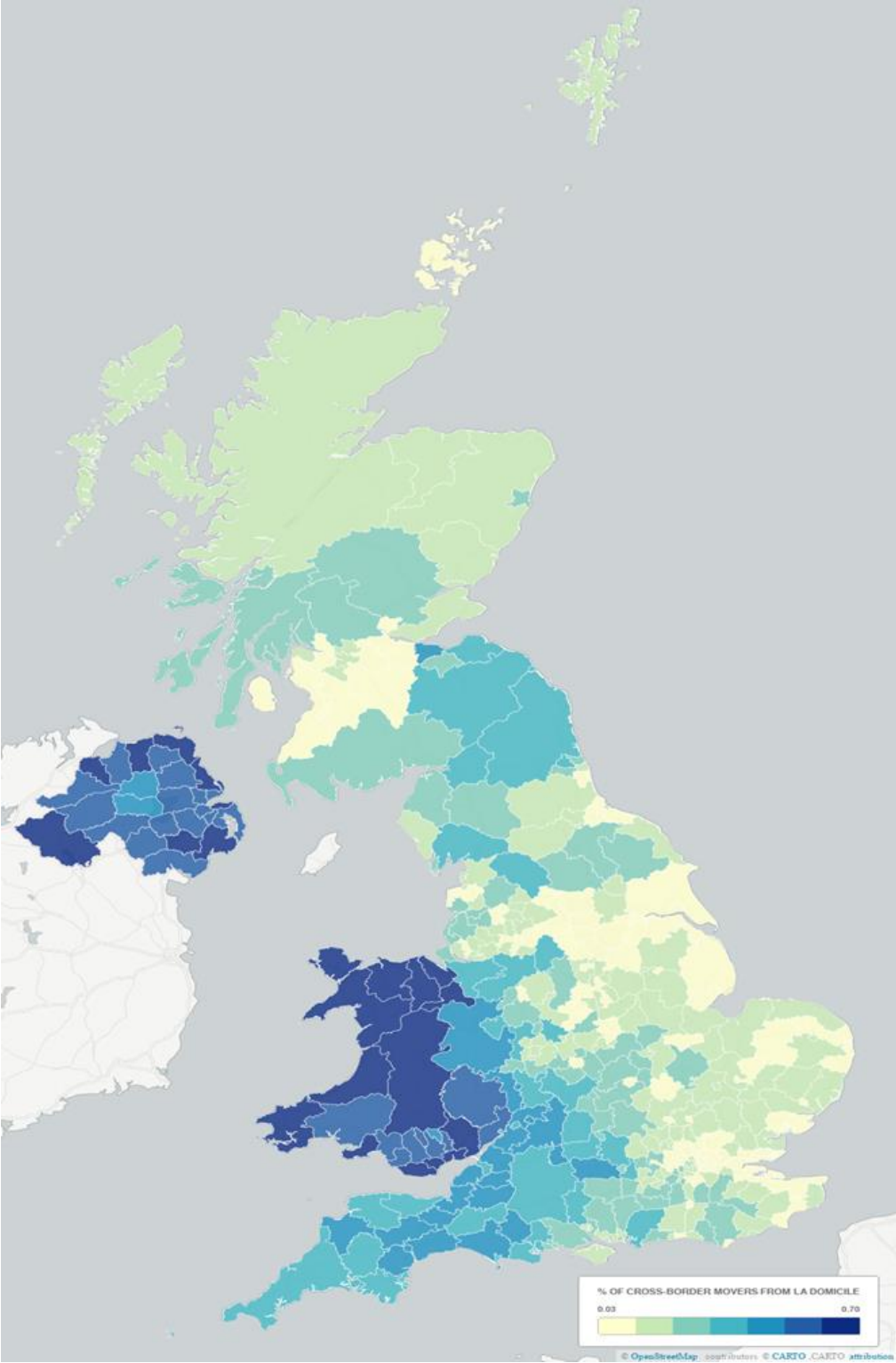
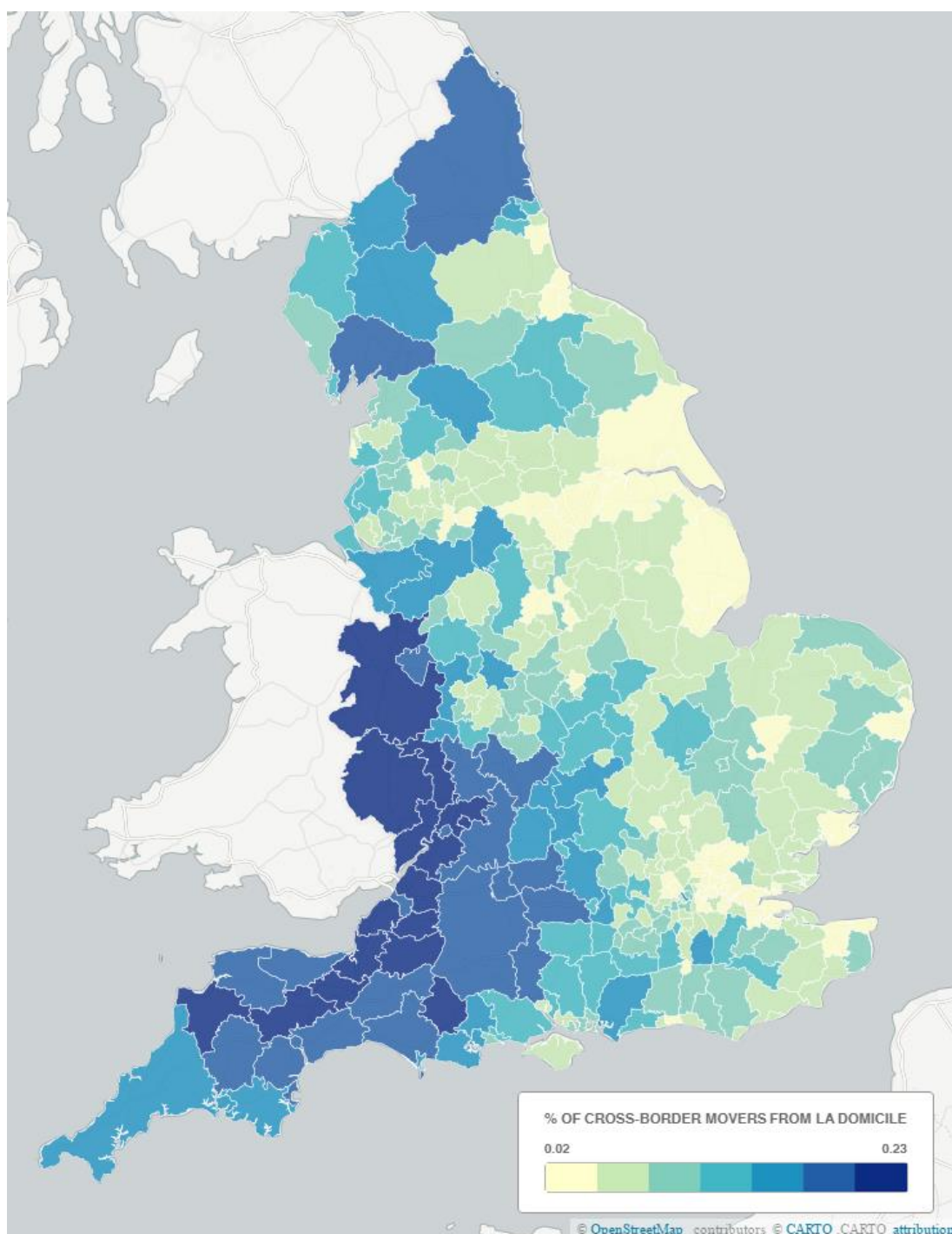


Figure 5.5: Percentage of young full-time 2012 entrants who were cross border movers, by English local authority of domicile



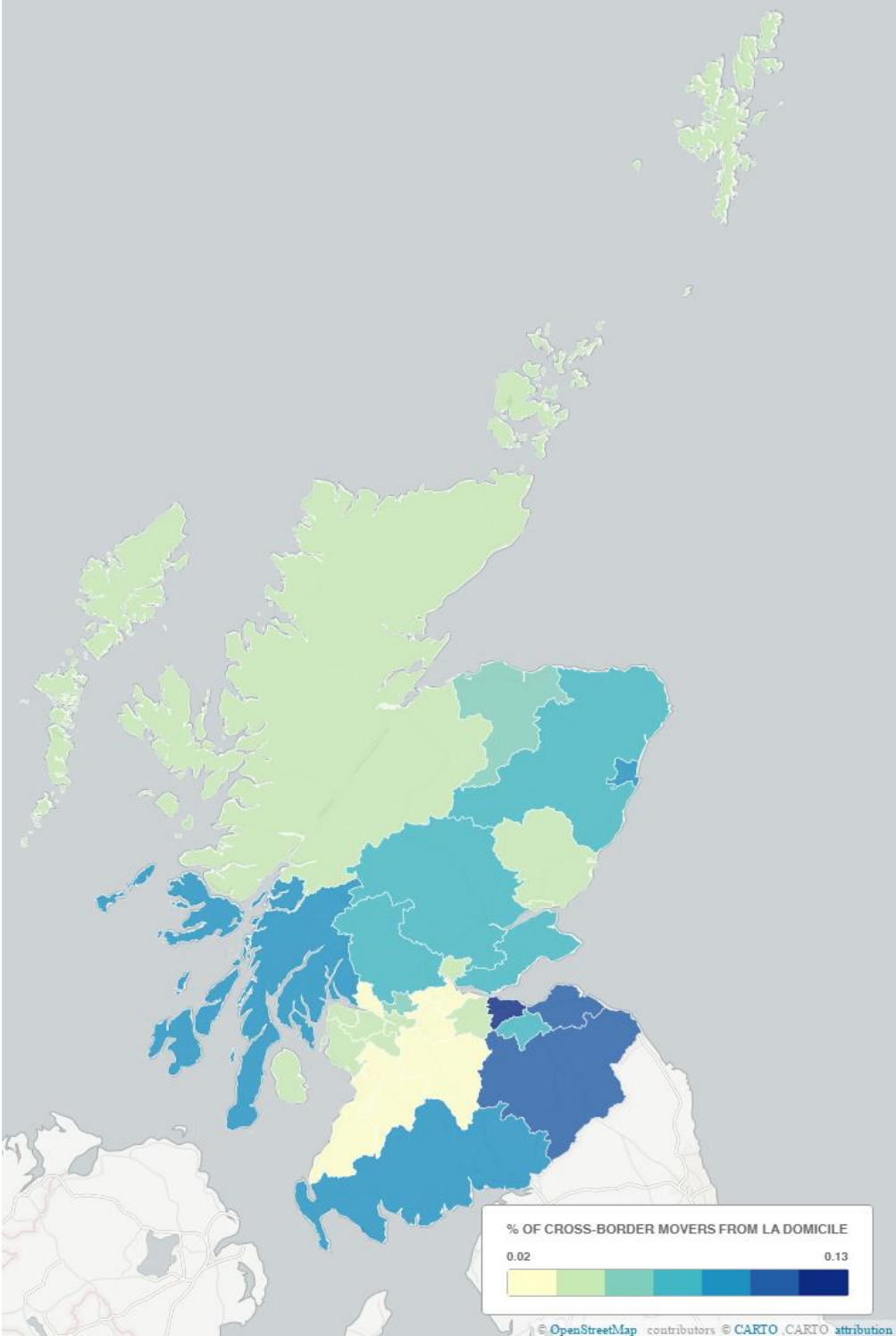
More detailed analysis of movers from Scotland, Wales and Northern Ireland by LA area is more feasible. Analysing data by the LA or council area⁴³ in which entrants

⁴³ Local authority is the term used in Scotland; in Wales and Northern Ireland the term county is often used.

were domiciled before entering HE (Figure 4.6 – Figure 4.8) gives further indications of the role of border proximity in likelihood of being a mover.

5.4.2.1 Scotland

Figure 5.6: Percentage of young full-time 2012 entrants who were cross border movers, by Scottish local authority of domicile

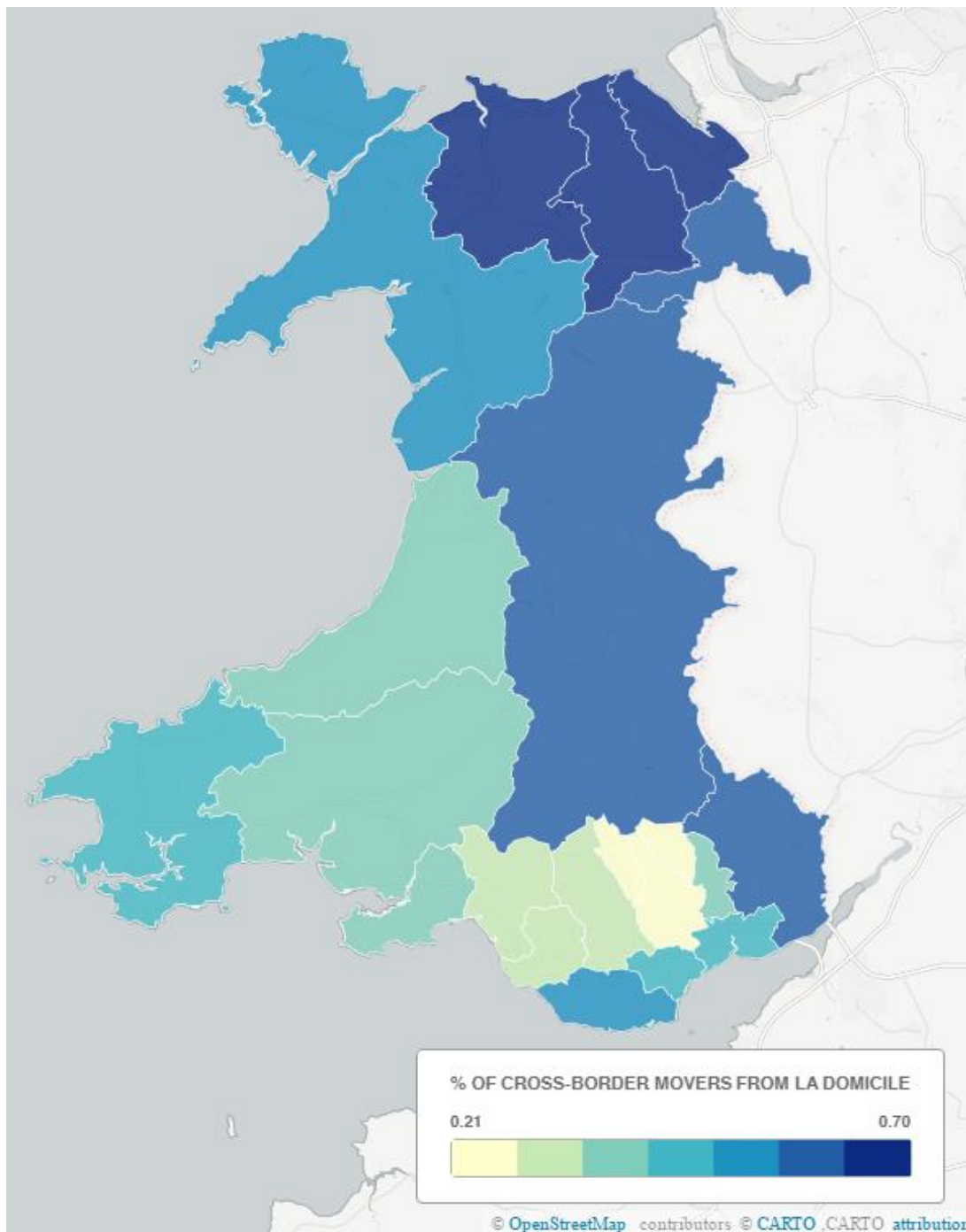


Scottish LAs with the highest percentage of young movers amongst their entrants were City of Edinburgh (12.7% of entrants were movers), Scottish Borders (9.2%), East Lothian (8.8%) and Dumfries and Galloway (7.6%). The latter three are the closest LAs to England, but do not represent large numbers of movers, given the sparser populations there than in the urban parts of Scotland. Nearly a quarter of all movers were from the City of Edinburgh, and as will be seen when student characteristics are explored in chapter 7, the relatively high mobility from there may be explained by the relative socio-economic advantage of entrants, in particular attendance at independent school. Between about 5% and 6% of all entrants from Glasgow, Fife, Aberdeen City, Aberdeenshire, Perth and Kinross also were movers.

The data for 2010 to 2012 entrants combined (which provides a better number of cases for analysis) shows that the English region most frequently entered from the LAs closest to the border was the nearest region. For movers from Edinburgh on the other hand over the three years, the North-East and London were consistently the two more popular regions, but in 2012 there was less concentration in the closest English region – the North-East – than in the previous two years. Unlike movers from the border areas, movers from Edinburgh were likely to enter Russell Group (RG) or higher tariff universities. The institutions entered by movers are explored in more detail below.

5.4.2.2 Wales

Figure 5.7: Percentage of young full-time 2012 entrants who were cross border movers, by Welsh local authority of domicile



Movement was fairly high from across Wales, but movers were actually more common than stayers among young entrants from 6 LAs, identified in Table 5.6. These are located on the border with England, or in the counties close to the border

in North Wales. The counties with the lowest percentages of movers among entrants were all in the south of Wales.

Exploring change from the preceding years, the percentage of entrants who were movers-out was high in 2010 and 2011, but in 2012 the percentage of movers increased, notably so in the cases of Flintshire, Conwy and Denbighshire. As noted above, outward mobility increased generally for Welsh students in 2012 compared to previous years.

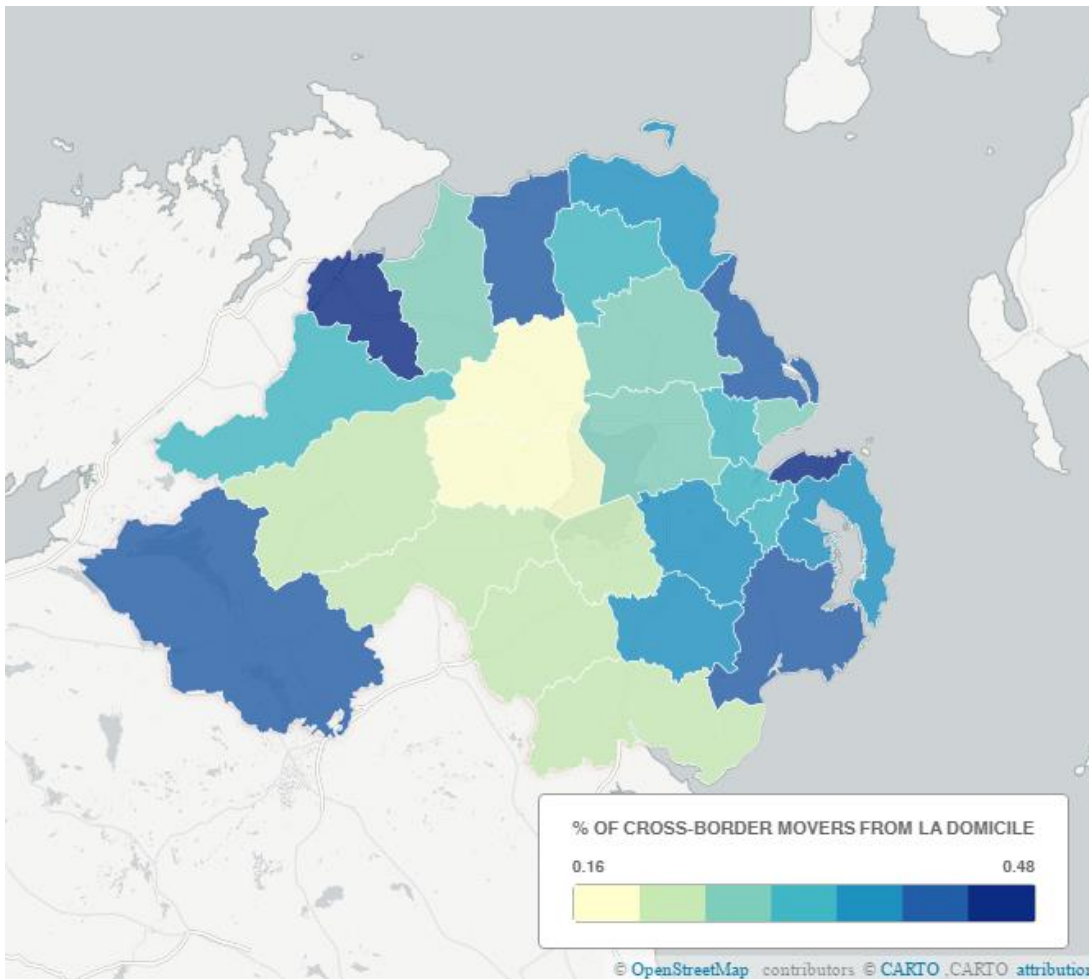
Table 5.6: Welsh LAs with the highest percentage of movers among entrants – percentage of movers in 2010, 2011 and 2012

LA of domicile	2010	2011	2012
Flintshire	65.1	66	70.4
Conwy	61.8	62.6	69.2
Denbighshire	63.6	63.9	68.4
Wrexham	51.6	55.4	58.4
Powys	48.4	52.5	54
Monmouthshire	57.9	56.7	57

LA of origin is strongly associated with the region in which movers enter HEIs. Those from the north of Wales most commonly went to the North-West of England (or Yorkshire and Humber); those from the south of Wales to the South-West of England. Powys runs down much of the length of Wales and movers went mainly to the neighbouring regions of the North-West, West Midlands and South-West. Table A5.8 shows that there has been consistency in the most frequently entered regions over recent years from these LAs, though generally increased levels of movement in 2012. In three of the northern LAs (Flintshire, Denbighshire and Conwy) entry to North-West England HEIs was more common than entry within Wales. There are only two universities in the north of Wales (albeit with some college HE students in North Wales not included in the HESA data), compared to six in the south, which helps to explain the disparity in the movement from the different parts of Wales, as do transport links within Wales (CADARN, 2012). Overall, proximity to the border and accessibility of HEIs, as for Scotland, are clearly factors in whether students from Wales move and where they move to.

5.4.2.3 Northern Ireland

Figure 5.8: Percentage of young full-time 2012 entrants who were cross border movers, by Northern Irish council area of domicile



Mobility out of Northern Ireland from each county ranged from 15.9% to 48.4% of entrants. The relationship between the differing rates of mobility and where the counties are situated is not clear, unlike for Scotland and Wales, perhaps because there is no land border between Northern Ireland and the three Great Britain mainland countries.

Movers from most counties were most likely to go the North-West of England, but in some cases Scotland was a more common destination: from Ards, Ballymena, Banbridge, Carrickfergus, Castlereagh, Coleraine, Larne, North Down. These are mainly located down the east coast of Northern Ireland (Coleraine in the north is an exception), and so relatively close to airports and ferry ports that connect with Scotland. They are also areas in which in the 2011 Census a large majority of residents

identified their 'religion or religion brought up in' as Protestant. HESA data do not provide the religious affiliation of the students who move, but Osborne's (2006) research would suggest that Scotland is perceived as a preferable location to England by (some) Protestant students. Alternatively it may indeed be that the proximity to routes to Scotland was the more important factor; or that Scotland as a destination was more indirectly a result of the relationship between social class, schooling and religious background as noted in chapter 3. The decline in mobility in 2012 compared to 2010 and 2011 affected movers from most Northern Irish counties.

Cross-border mobility from Northern Ireland appears less affected by where in the home country the student comes from. Destinations are also more uniform for students across the country than for Wales and Scotland. This might suggest that where there is no land border, issues about belonging and social ties are more important for determining destination; or that proximity and accessibility are still issues (the North-West and Scotland are the closest to Northern Ireland and the transport links are relatively good) but that it affects students from all of Northern Ireland – rather than differentially by area as for Scotland and Wales.

5.5 Institutions entered

It was proposed that mobility is particularly important as a means of entering high status institutions, and in chapter 3 it was noted that movers are more likely than stayers to enter these (Croxford and Raffe, 2014a, b). However it was also suggested that the types of institutions within a country could be a factor in movement out of that country, with the findings reported in chapter 3 suggesting this could be the case for movers from Wales and Northern Ireland. In addition, a measure of institutional supply created for this research was provided in chapter 4, which suggested that mobility will be necessary for a substantial minority of Northern Irish entrants, and also that it may be necessary for Wales-domiciled entrants to be mobile depending what type of institution they apply to (which may also then relate to the qualification tariff of entrants). On the face of it there is less need for England and Scotland-domiciled entrants to be mobile, but that will mask other factors in accessing the specific institution preferred. These very broad findings fit with the fact there is greater mobility from Wales and Northern Ireland, although mobility might be expected to be greater from Northern Ireland than Wales if supply factors were the

main predictor. Equally the extent of mobility out of England and Scotland that exists may not be expected if institutional supply was the main predictor. The following sections further explore institutional destinations by country of domicile.

5.5.1 Domicile of entrants to institution types

Table 5.7 shows movers and stayers by tariff group of institution entered.

Table 5.7: Institution type entered by young full-time stayers and movers by country of domicile 2012 (row percentages)

Domicile	Stayer/mover	Highest tariff	High tariff	Medium tariff	Low tariff	Lowest tariff	N
England	Stayed in England	11.5	22	18.3	26.7	21.4	231290
	<i>Stayed within region</i>	5.8	15.8	16.9	33.7	27.7	103750
	<i>Moved between regions</i>	16.1	27.1	19.4	21	16.3	127545
	Moved out of England	19	29.3	21.4	18.2	12.2	11680
	<i>to Wales</i>	0	31.8	27.3	23.5	17.4	8100
	<i>to Scotland</i>	65.2	20.1	8.5	5.7	0.6	3395
Scotland	Stayed in Scotland	20.8	27.9	25.1	16.9	9.3	21325
	Moved out of Scotland	30.2	24.7	17.9	14	12.4	1080
Wales	Stayed in Wales	0	16.9	20.7	27.6	34.8	8485
	Moved out of Wales	17.5	24.4	14.8	33.1	10	6100
Northern Ireland	Stayed in Northern Ireland	0	47.8	3.1	49.1	0	7260
	Moved out of Northern Ireland	15.9	26.8	18	28.6	10.5	3295
	<i>to England</i>	13.6	22.4	17.2	33.8	13	2390
	<i>to Scotland</i>	25.6	39.5	20.1	13.3	1.5	780

Movers from all countries were more likely than stayers to enter the highest tariff institutions. Of course for students from Wales and Northern Ireland this was inevitable, but there are further important differences to note between countries of domicile and destination. There was a notable difference in the selectivity of institutions entered by movers from England if they went to Scotland rather than Wales. Comparing Northern Irish movers to England and Scotland, movers to Scotland were more likely to enter medium to higher tariff universities; and movers to

England low and lowest tariff universities. Mobility to less selective institutions from Scotland, Wales and Northern Ireland appears to map on to the potential supply issues in chapter 4 identified for each country, offering at least a partial explanation for this form of mobility.

These data can be compared with regional stayers and movers (Table A5.9). For all regional domiciles, apart from the South-West, movers were more likely than stayers to enter highest tariff group institutions; and apart from the South-East more likely to enter high tariff institutions. The South-West is also unusual in that movers were more likely than stayers to enter lowest tariff institutions, but this appears to be due to lack of such supply in the region. It can be recalled that the South-West region was the highest single origin region of movers into Wales, and 4 of the 9 Welsh HEIs are in the lowest tariff group. For further information and context, the percentages of EU and overseas entrants into different tariff groups within countries of study are provided in Table A5.10.

5.5.2 Frequently entered universities

The most frequently entered institutions were also examined (Table 5.8). This shows the extent to which mobility is related to a specific set of universities, and therefore provides some of the detail below the analysis by tariff group. Ranking of the most commonly entered institutions for 3 years of entry is also provided to show the extent of consistency in popular institution destinations.

Table 5.8: Most frequently entered universities by movers by country of domicile, young full-time entrants, 2012; and ranking by frequency in 2004, 2010 and 2012

Movers' country of domicile	Name of institution	Region/country location	Percentage of movers from country domicile	Ranking		
				2004	2010	2012
England	Cardiff	Wales	22	1	1	1
	Edinburgh	Scotland	13	2	7	2
	Aberystwyth	Wales	11	3	2	3
	Bangor	Wales	10	5	4	4
	Swansea	Wales	8	4	3	5
	Glamorgan	Wales	7	8	5	6
	Cardiff Metropolitan	Wales	6	6	6	7
	St. Andrews	Scotland	4	7	8	8
Scotland	Cambridge	Eastern	7	2	2	1
	Newcastle	North-East	7	1	1	2
	Oxford	South-East	5	3=	5	3
	Northumbria	North-East	-	5	4	4
	Durham	North-East	-	3=	3	5
	Bristol	South-West	-	11	14	6
	Cumbria	North-West	-	8	8	7
	Leeds	Yorks&Humber	-	7	6=	8
	Manchester	North-West	-	6	6=	9
	Kings College London	Greater London	-	18	12	10
	University of the Arts	Greater London	-	24	9	11=
	Imperial College	Greater London	-	15	10	11=
Wales	UWE Bristol	South-West	8	1	1	1
	Chester	North-West	5	6	5	2
	Liverpool John Moores	North-West	4	3=	2	3
	Exeter	South-West	4	7	9	4
	Liverpool	North-West	3	5	3	5
	Manchester Met	North-West	3	8	4	6
	Manchester	North-West	3	2	6	7
	Plymouth	South-West	3	10	7	8
	Bath	South-West	3	9	11	9
	Bristol	South-West	2	3=	8	10
	Birmingham	West Midlands	2	11	10	11
	Reading	South-East	2	12	13	12
	Bath Spa	South-West	2	27	12	13
	Gloucestershire	South-West	2	21	19	14
Northern Ireland	Liverpool John Moores	North-West	10	1	1	1
Ireland	Northumbria	North-East	7	2	2	2
	Dundee	Scotland	5	6	5	3
	Liverpool Hope	North-West	4	3=	7	4
	Newcastle	North-East	4	11=	8=	5
	Liverpool	North-West	4	10	9	6
	Manchester	North-West	3	11=	8=	7
	Glasgow	Scotland	3	3=	3	8
	Heriot-Watt	Scotland	3	9	11	9
	Manchester Met	North-West	3	8	6	10

'-' fewer than 52 cases. UWE Bristol = University of West of England, Bristol.

In addition to the data in this table, numbers of movers from local authorities in Scotland, Wales and Northern Ireland to individual institutions have been examined. The counts are mainly too small to report directly, but broad findings can be commented on. Additional analysis was run on which fields of study movers to those universities were most likely to enter. These further analyses, taken together with those in Table 5.8, can be summarised as follows.

5.5.2.1 England-domiciled movers

England-domiciled cross-border movers entered 29 different HEIs in 2012. Eight of these universities accounted for 80% of movers. Of the six of these eight in Wales, one was a Russell Group (RG) university, 3 others were formerly part of the University of Wales, and 2 were post-92 universities. Cardiff University alone accounted for over a fifth of all English movers. The vast majority of students who went to Scotland went to Edinburgh University, the second most popular destination overall, with only St. Andrews otherwise having a notable number of English entrants. These eight most popular universities for movers have been consistently so, though there has been some ranking position change over the years, most notably in the case of Edinburgh. In all the Welsh universities, sciences were the most common field of study group entered (or equal with arts as most common at Glamorgan). Movers to Edinburgh were more likely to enter arts subjects than other field of study groups, but both arts and sciences were likely at St. Andrews.

5.5.2.2 Scotland-domiciled movers

Scotland-domiciled young full-time entrants who crossed borders entered 122 different HEIs in 2012. The 12 most popular universities accounted for almost half of movers. Oxbridge universities were both in the top 3. The most frequented RUK universities otherwise included 7 other RG universities, with a wide geographical spread around England; 2 Post-92 universities, both of which are located close to Scotland; and one arts university in London. The top five most frequently entered universities were the same in 2010 and 2004, but the order changed a little. Movers were also more likely to enter Oxbridge universities in 2012 compared to 2010 and a little less likely to enter other RG universities. This might suggest that the increased costs of leaving Scotland increased the likelihood of entering universities from which the expected benefits were greatest. Including 2004 data, Newcastle and Cambridge

have consistently been the two most popular universities with movers. Newcastle combines geographical proximity with RG status. Cambridge provides high positional status and a different type of university experience to that which can be accessed in Scotland. However what this institutional analysis does not show is the notable group of Scotland-domiciled movers who entered a wide range of Post-92s in England in very small, often single figure, numbers.

The relative popularity of arts and medicine fields of study with movers accounts for much of the movement to RGs. This contrasts with the relatively popular field amongst movers of creative arts and design, which is more associated with movement to frequently entered lower tariff institutions. Further information on field of study and institution is in the appendix.

5.5.2.3 Wales-domiciled movers

Wales-domiciled cross-border movers entered 146 different HEIs. Around 45% of movers were accounted for by 14 institutions. These included five RG universities, two Other Pre-92 universities and six Post-92 universities, and most of these were in the South-West and North-West regions. The strong geographical factor in mobility evidenced in section 4.4.2 on analysis of LA of domicile is supported in the relation with mobility from specific LAs to the most frequently entered institutions. There is again a lot of consistency in which institutions attract movers to the greatest extent, but a notable variation over time is in the increased mobility to Bath Spa and Gloucestershire universities. Movers to the popular destination of UWE entered a range of field of study groups in notable numbers and without any stand out fields of study. Movers to other HEIs tended to be more clustered in particular field of study groups.

5.5.2.4 Northern Ireland-domiciled movers

The Northern Ireland-domiciled students who crossed borders entered 142 different HEIs. The 10 most popular HEIs entered accounted for nearly half of movers. Four of these were RG universities; two were Pre-92 universities; and four of them were Post-92 universities. Seven were in England, and were a mix of all three types of university; and three of them in Scotland but this included no Post-92s. There is consistency in the institutions on the list but some fluctuation between the years. In terms of English location there were clear patterns. 3 of the universities were in Liverpool, 2 in

Manchester and 2 in Newcastle. Those in Scotland were more spread and were in Dundee, Glasgow and Edinburgh. Social sciences was the most or one of the most frequently entered fields of study for 9 out of 10 of these universities. There were differences otherwise by institution, described further in the appendix.

5.5.3 Inflows into institutions

From Table 5.8, it can be further noted that there are institutions that appear to be particularly affected by RUK inflows. Some of these are specific to one country origin – Cardiff and Edinburgh for movers from England, UWE and Chester for movers from Wales, Oxbridge for movers from Scotland. However there are others that are popular with movers from more than one country: Liverpool John Moores, Liverpool, Manchester, Manchester Metropolitan, Newcastle, Northumbria, all located in cities in the North of England. These are 12 of the universities that appear to be most affected by inward mobility. However this does not translate into high percentages of RUK entrants in all cases and do not account for all the universities with relatively high RUK intakes. Table 4.9 lists all institutions for whom 5% or more of undergraduate full-time young entrants in 2012 were RUK-domiciled.

The range of Scottish universities in the table underlines the relatively high RUK inflow to Scotland, which comes not just from England but also Northern Ireland. All Welsh HEIs are on this list, with Bangor and Aberystwyth attracting very high percentages of RUK entrants, even greater than Cardiff. Like Scottish universities, a range of Welsh universities are serving a UK student population, but to an even greater extent, reflecting the very high inflow into Wales. Also included for comparison is Queens University Belfast. Most RUK students in Northern Ireland go to this university, and even then, despite its high status, it only attracted 4.7% of entrants from RUK. However this still could affect the ability of Northern Irish students to access high tariff provision in their home country, if places for home students are not protected.

Within England, half of the HEIs listed are in the North-West, a popular destination from all UK countries, and most also have high percentages of home students and do not recruit notably from outside the UK. Even among the English institutions in the table, the percentage of RUK entrants is low compared to several Welsh and Scottish

HEIs. England is overall less affected by inward flows than Wales and Scotland, but so are individual universities, because there are so many to share the RUK intake.

Cardiff and Edinburgh are the highest tariff universities in their respective countries, but only a minority of their entrants are home students. Arguably this could have an impact on the availability of 'prestigious' HE for students from these countries, which would affect those least able to be mobile. They also have relatively high percentages of overseas entrants, and these data underline both their national and international positioning as universities. A further perspective on the implications of cross-border flows is their effect on the overall student population within national systems but also within the popular universities, addressed in chapter 7.

It can be further noted that there is only limited overlap between the institutions entered by cross-border movers within the UK, and the institutions that were most frequented by EU and non-EU overseas entrants. Further information on this is provided in the appendix.

Table 5.9: Domicile of entrants to universities which have a relatively high percentage of RUK entrants, organised by descending RUK percentage within country of study (row percentages)

	Home	RUK	EU	Overseas	Total (N)
England					
Harper Adams	82.6	16.3	-	-	575
Liverpool Hope	81.1	16.3	-	-	1110
Liverpool John Moores	81.5	15.5	-	1.8	4105
Chester	81.6	14.8	-	3	2300
West of England Bristol	79.6	11.9	3	5.5	4210
Liverpool	63.2	7.6	1.6	27.6	4315
Northumbria	82.9	6.7	1.7	8.7	4920
Cambridge	74.2	6.5	8.5	10.8	3125
Edge Hill	91.8	6.1	-	-	2610
Cumbria	93.2	5.7	-	-	1465
Reading	75.5	5.5	4.9	14.1	2650
Newcastle-upon-Tyne	73.9	5.3	3.2	17.1	4350
Oxford	79.5	5.1	5.9	9.5	3125
Manchester	67.9	5	5.1	22	6425
Manchester Metropolitan	89.7	4.8	2.5	3	5945
Scotland					
Edinburgh	38	35.9	9.1	17	4540
St. Andrews	24.2	30	7.2	38.6	1650
Heriot-Watt	57.1	18.6	10.9	13.3	1530
Dundee	66.1	18.6	11.1	4.2	1700
Stirling	72.3	17	7.5	-	1330
Aberdeen	63	11.5	21	4.5	2405
Glasgow	66.1	11.2	18.3	4.4	3500
QMU	72	10.9	14.3	-	790
Edinburgh Napier	74	9.7	11.5	4.8	1955
Abertay	80	9.3	9.9	-	950
Wales					
Bangor	30.1	57.9	2.7	9.3	1990
Aberystwyth	29.6	56.8	8	5.6	2370
Cardiff	30	54.9	3.6	11.5	4795
Swansea	45.5	39.25	-	13.2	2310
Cardiff Metropolitan	54.6	35.5	-	7.6	1975
UW Newport	62.7	29.4	-	6.6	820
Glamorgan	61.4	28.9	5.9	3.9	2835
UW Trinity St David	70.5	25.7	-	-	1560
Glyndyr	55.7	23.2	-	19.2	470
Northern Ireland					
Queens University Belfast	87.1	4.7	1.5	6.8	3730

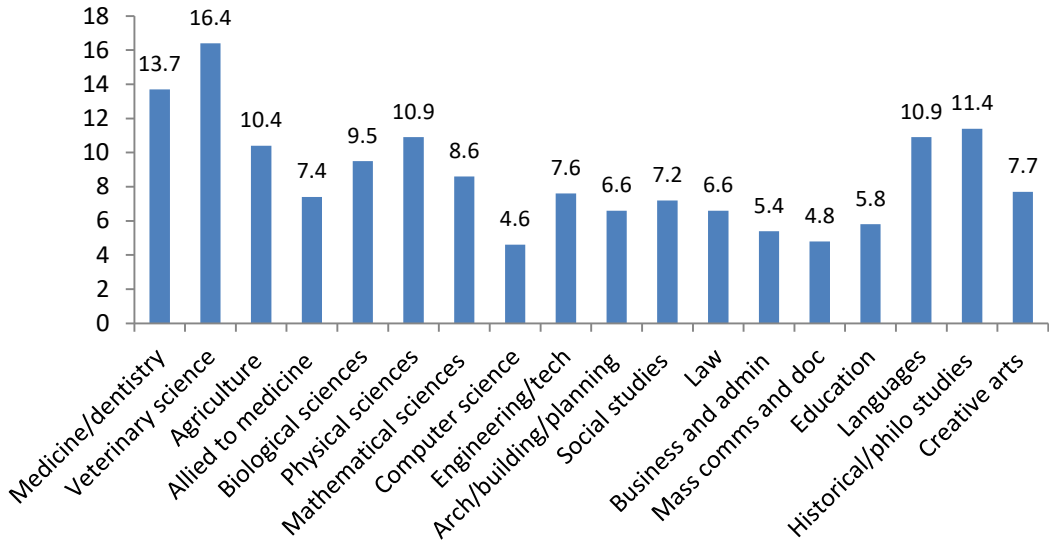
Note: This list excludes specialist arts and music institutions, because in some cases they have small entrant numbers. It should be noted however that these institutions attract high percentages of RUK students. In Scotland RUK entrants to these institutions were 20% and 34.7%; in the North-West they were 10.9% and 14.3%; and in London the percentage of RUK entrants ranged from 6.4% to 13.3%.

5.6 Fields of study

5.6.1 Fields entered

Having identified differing patterns in geographical destinations in relation to country of domicile and institutions in the previous sections, this section considers destinations in terms of field of study entered. Figure 5.9 gives a broad overview, showing the percentage of entrants to each field of study who were cross-border movers. Entrants to medical and veterinary studies were the most likely to be movers, and those entering humanities subjects and physical sciences were also movers to a relatively high extent. A common factor between these fields is that they tend to be available to a greater extent in higher tariff institutions.

Figure 5.9: Percentage of entrants to fields of study who were cross-border movers, young UK full-time entrants 2012



However UK-wide data like these are dominated by students from England. The overall findings on field of study groups entered by movers and stayers from each country domicile are provided in Table A5.11⁴⁴, and for fields of study for each country domicile in Tables A5.12-A5.15. Field of study has been explored in relation to a number of factors, which potentially could explain associations between cross-border mobility and the field of study entered. As described in chapter 4, fields of study have been characterised by the professional employment rate associated with fields of

⁴⁴ For the field of study groups entered by English regional stayers and movers see Table A5.23.

study (Table 4.10); and by average earnings of graduates of the field of study (Table 4.11), both of which may indicate longer term benefits of moving. To explore the possible role of situational factors, that is the availability of fields of study in the home country, they have been explored by supply in each country (and each English region) (Table 4.9 and Table A4.6). In addition, the average tariff points of entrants from and in each country to each field of study have been explored (Tables A5.16 – A5.19), in order to identify whether mobility may be explained in some cases by being able to enter the same field of study at a lower tariff in another country. As noted in chapter 4, there is not even supply of fields of study across institution tariff groupings. The most commonly entered fields of study of movers to lower and higher tariff institutions have therefore also been explored (Table A5.20 and A5.21). This is intended to indicate whether there are differences in the most frequently entered fields of study by movers to higher and lower status institutions, and whether the relationship between field of study and institution type within each HE system could explain mobility. Table A5.22 summarises all measures for each field of study. Combining these descriptive data gives an impression of what in relation to field of study may be motivating mobility, and whether differences between students by country of domicile may be explained by these factors.

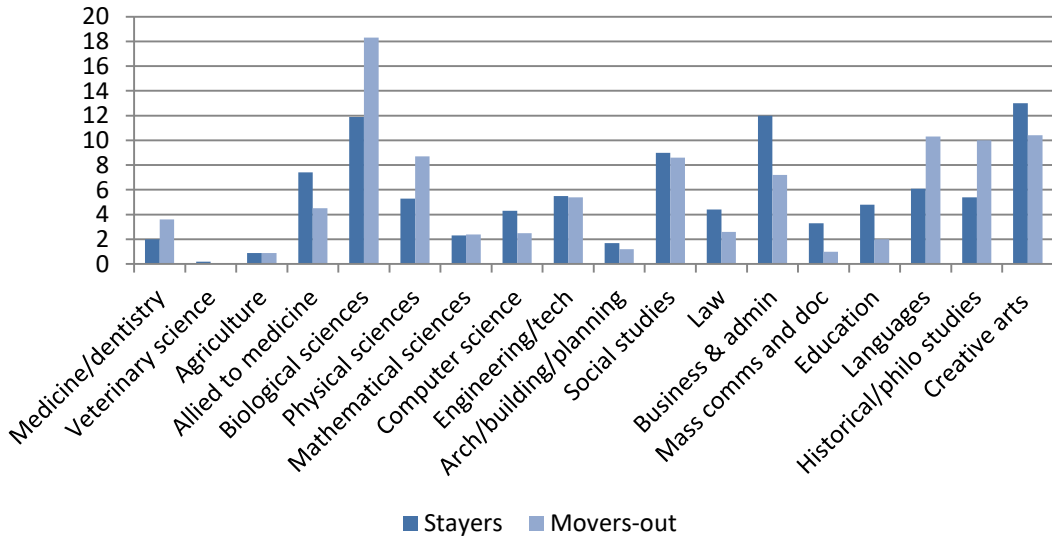
Movers from all countries were more likely than stayers to enter medicine and dentistry, a field of study which is limited in availability, leads to high earnings and employment status, and is available only in high status institutions. By the supply calculation (Table 4.9), it is relatively undersupplied in Wales only, but the degree of competitiveness would explain why cross-border mobility often has to be considered by medical applicants. Therefore even in countries with apparent over-supply (Scotland and Northern Ireland) places are taken by those from elsewhere in the UK potentially necessitating mobility even if the preference would be to stay in the home country. This is also a field of study in which number caps continue to include RUK students, so expansion cannot be used to respond to demand.

Movers from England, Wales and Northern Ireland were more likely than stayers to enter veterinary science, though the numbers of students concerned are very small. This is explained by no supply in Wales and Northern Ireland and relatively high supply in Scotland compared to England (Table 4.9). In this case, although the

benefits of the field of study are similar to those of medicine, the supply level may explain why students from Scotland were more likely to be stayers than movers.

Movers from England were more likely than stayers to enter biological sciences, physical sciences, mathematical sciences, languages, and historical and philosophical studies (Figure 5.10 and Table A5.12).

Figure 5.10: Percentage of stayers and movers entering fields of study, young England-domiciled full-time entrants 2012



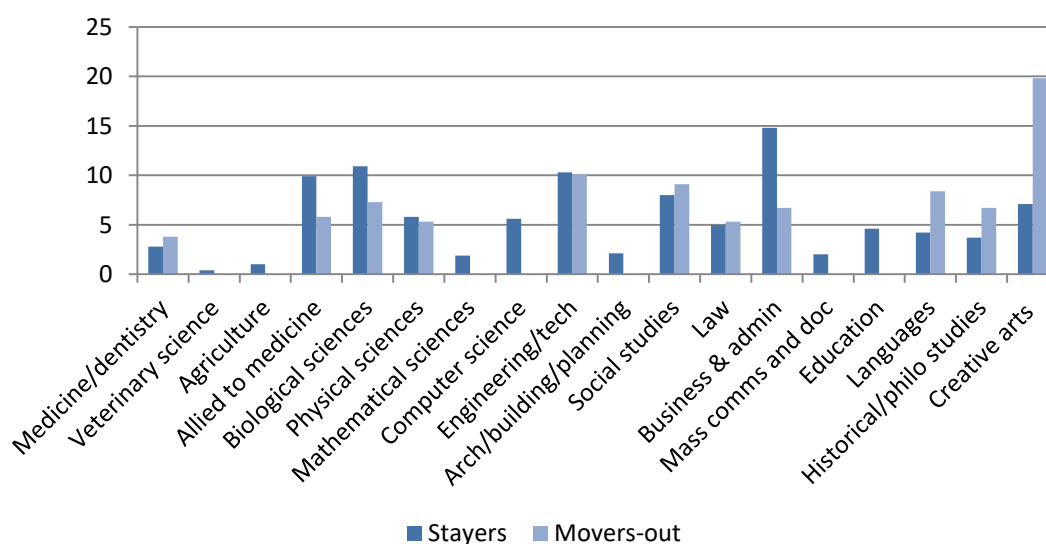
Data in Table A5.12.

The latter four of these are more commonly available, and indeed entered by movers, at higher tariff institutions (Table A5.21). For the arts subjects, this would seem the best explanation for mobility, and therefore that field of study is less the driver than institution type. For mathematical sciences students, relatively high earnings and employment outcomes may be a stronger or additional factor. Movement to enter biological sciences is more commonly associated with lower than higher tariff entry however (Table A5.20 and A5.21). If going to Wales it may then be explained by possibly entering with a lower qualification tariff compared to staying in England (Table A5.16); and due to biological sciences having high supply levels in Wales (Table 4.9).

On the basis of the field of study characteristics explored mobility may have been expected to a wider range of fields of study, despite the relatively balanced supply of

all fields in England. The finding most difficult to explain may be that engineering and technology was not entered relatively more by movers than stayers, as it is associated with high earnings, a high professional employment rate, and higher tariff institutions more than lower tariff institutions (Table 4.8). In addition, there appears to be a slight under-supply in the North-West and South-West regions (Table A4.6) which may have supported greater mobility due to proximity to Wales. However, engineering and technology was on average entered with a lower mean tariff score by English entrants in England than other countries (Table A5.16), which may help explain the relative lack of mobility.

Figure 5.11: Percentage of stayers and movers entering fields of study, young Scotland-domiciled full-time entrants 2012



Data in Table A5.13.

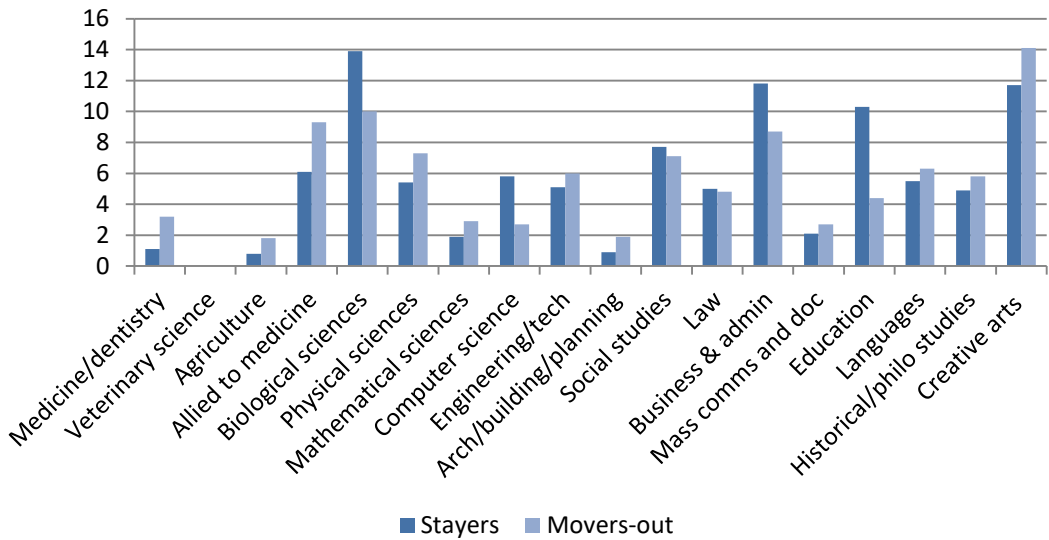
Movers from Scotland were more likely than stayers to enter creative arts and design (Figure 5.11), for which under-supply in Scotland appears to be a factor (Table 4.9), as is also potentially entering with a lower qualification tariff than in Scotland (Table A5.17). It accounts for about 30% of movement to lower tariff institutions, and so the supply issue in Scotland appears to particularly relate to lower tariff provision. Movement to lower tariff rather than higher tariff institutions was also more associated with agriculture and related subjects, and mass communications and documentation. Both of these fields of study accounted for small numbers of students however. The other four fields of study which movers were more likely than stayers to

enter were more commonly entered by movers to higher rather than lower tariff institutions (Table A5.21): mathematical studies, social studies, languages, and historical and philosophical studies. While maths is associated with higher overall outcomes, mobility to these fields of study may be more likely to be explained by the benefits of entering high tariff institutions than due to lack of supply or other expected benefits of the field of study itself.

In terms of what other movement might have been expected based on these measures, education is under-supplied (Table 4.9), however low mobility can be explained by this being a country-specific professional training route. A similar reason, along with apparently reasonable supply in Scotland, may explain low mobility to subjects allied to medicine. If a relationship between field of study and higher tariff institutions is important to explain mobility, then greater mobility may have been expected to enter physical sciences.

Movers from Wales were more likely than stayers to enter a wide range of fields of study (Figure 5.12).

Figure 5.12: Percentage of stayers and movers entering fields of study, young Wales-domiciled full-time entrants 2012



Data in Table A5.14.

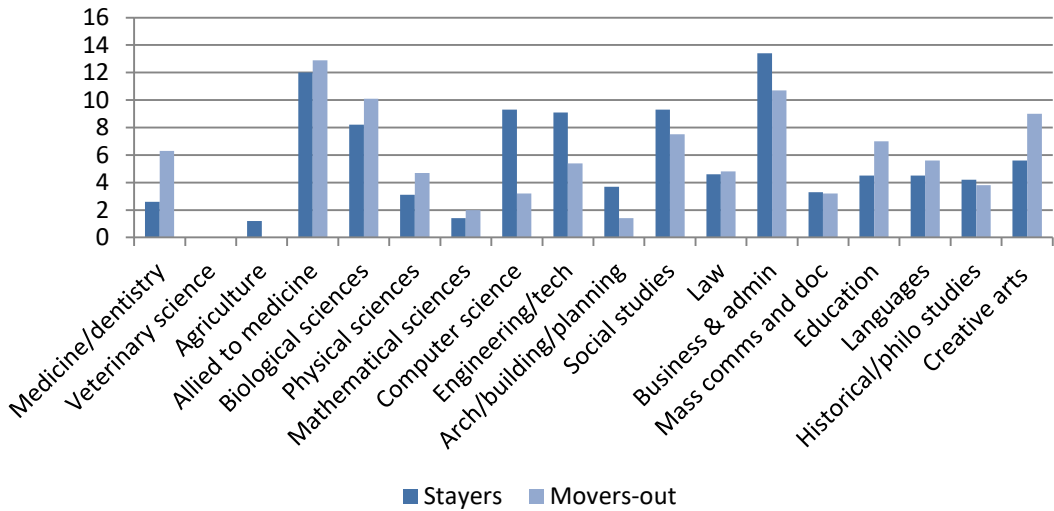
A number of these appear to have relatively low supply in Wales: architecture, building and planning, mass communications and documentation, subjects allied to

medicine, and mathematical sciences (Table 4.9). Only mass communications is not associated with either high earnings rate or high professional employment rate. Movement is also relatively common to agriculture and related subjects, and it is not clear why based on measures of the field of study. There is an English agricultural institution (Harper Adams) close to the Welsh border however. Movers were also more likely than stayers to enter engineering and technology, and there are a range of potential explanations for this based on field of study measures, as noted above. It was more likely to be entered by movers to higher than lower tariff institutions (Table A5.20 and A5.21). Physical sciences were associated with mobility and was the field most frequently entered by movers to higher tariff institutions (Table A5.21). The relatively higher entry to languages and historical and philosophical studies among movers compared to stayers (Table A5.14) may also again be associated with institution prestige.

Based on the measures, social studies may have been expected to be more popular with movers than stayers due to apparent low supply in Wales (Table 4.9), however perhaps the more limited movement is explained by Welsh students entering this field of study at Welsh HEIs with lower average tariff points than those entering at English HEIs (Table A5.18).

Movers from Northern Ireland were also more likely than stayers to enter a wide range of fields of study (Figure 5.13).

Figure 5.13: Percentage of stayers and movers entering fields of study, young NI-domiciled full-time entrants 2012



Data in Table A5.15.

Biological sciences may be entered relatively frequently due to low supply in Northern Ireland. It was entered with a lower average tariff in England than Northern Ireland (Table A5.19), and was more common for movers to lower than higher tariff institutions (Table A5.20 and A5.21). Education was also entered at a lower average tariff in England and was the most frequently entered field for movers to lower tariff institutions (Table A5.20). Movers to lower rather than higher tariff institutions more commonly entered creative arts and design, but nonetheless with higher average tariff points in both England and Scotland than in Northern Ireland (Table A5.19), so low supply seems a better explanation. Physical and mathematical sciences both had low supply (Table 4.9). They also had greater association with high prestige institutions, as did languages. Subjects allied to medicine were entered by movers to both lower and higher tariff institutions, and in this case seems best explained for its employment outcomes (Table 4.10).

The finding that is hardest to explain is that historical and philosophical studies students from Northern Ireland were the only ones more likely to be stayers than movers, despite association with prestige and in this case possible under-supply (Table 4.9).

5.6.2 Fields of study summary

Wales and Northern Ireland had more supply issues and higher overall outward mobility, and the fields of study which movers were more likely than stayers to enter were wider in range, even though within fields in absolute terms stayers usually outnumbered movers. When home country supply does not appear to be an explanatory factor, the potential benefit of being able to enter the field with a lower points tariff in England than in the home country may be a factor. In other cases, such as mobility to enter humanities fields, the potential benefit of entering a field of study which may have prestige due to its association with high tariff institutions may offer an explanation. Movement from England appeared to be explained more by this latter factor, although the potentially lower entry tariff may explain the apparently anomalous movement to enter biological sciences. While much of the movement from Scotland may be explained by entering high prestige fields, there was a second form of mobility that may be explained by supply issues, particularly at a lower tariff level.

Overall there were cases where an explanation of relatively low mobility was not clear based on the field of study measures explored: the greater likelihood of stayers than movers entering engineering and technology in most countries; why movers from Northern Ireland were not more likely to enter historical and philosophical studies; why movers from Scotland were not more likely to enter physical sciences; and why movers from Wales were not accessing higher tariff institutions as social studies students as appeared to be the case for movers from Scotland.

5.7 Overview of mover destinations

5.7.1 England-domiciled entrants

Moving out of England for HE is uncommon. Those young entrants who did leave England mainly went to Wales, and about 30% to Scotland. Movers were more likely to be from local authority areas close to Wales than from elsewhere in England. Movement between regions within England was more common than cross-border movement but was similarly more common to adjacent regions. Movers, both cross-border and inter-regional, were more likely than stayers to enter higher tariff universities. This was the case for most entrants to Scottish HEIs, but this is also

explained by the fifth of all English movers who entered Cardiff University. In 2012 movement to Wales decreased but movement into Scotland increased, as did moving to enter higher tariff institutions. Most likely to be movers were entrants to arts subjects (historical and philosophical studies and languages); medicine and veterinary medicine which was most strongly associated with movement to Scotland; and sciences (most commonly physical sciences) which was most strongly associated with movement to Wales.

The findings indicate differences in mobility to Wales compared to Scotland, in the institution types and fields of study entered. The different supply of institutions in Wales and Scotland is likely to be a factor. However England itself is well supplied for institutions and fields of study. Analysis of characteristics of movers to the two countries will seek to further explain these differences.

5.7.2 Scotland-domiciled entrants

Moving out of Scotland is uncommon for HE entrants, but the most common destinations were high tariff universities spread throughout England. The data also suggest movement was more concentrated in the highest tariff universities in 2012 compared to the two previous years. Movers were more likely than stayers to enter both lowest and highest tariff institutions, and as such there is not one clear type of mover or motivation for moving that can explain the relatively low levels of outward mobility that did exist. Although affecting a small percentage of students overall, movers were more likely than stayers to enter medicine and dentistry. There were more movers-in to Scotland than movers-out from Scotland, and medical studies were one of the areas relatively popular with incomers. Some other field of study entry may be explained by lack of availability within Scotland, particularly creative arts and design, but the descriptive data suggest that institutional reputation may be a stronger factor for the majority of movers. However, it was also the case that a third of movers entered Post-92 universities, and nearly half entered lowest to medium tariff institutions. In absolute terms Edinburgh as LA domicile accounted for nearly a quarter of all movers. Other than that movement out of Scotland was a stronger issue for those for whom universities in England were a relatively close and accessible option and the data suggest that geography was a factor in moving to lower tariff more than to higher tariff institutions. The relationship between mobility to lower

and higher tariff institutions, as well as that between proximity and mobility, will be further explored in relation to student characteristics.

5.7.3 Wales-domiciled entrants

Moving out of Wales is relatively common, and particularly so from areas adjacent to England and in the North of Wales. Almost all movement out is to England. There was a slightly higher concentration of movers to the South-West and North-West regions in 2012, and unlike other countries of domicile an increase in cross-border movement that year compared to the two previous years. Movement was most common, compared to stayers, amongst entrants to two under-supplied fields of study: veterinary science and architecture, building and planning. However, movers were more likely than stayers to enter a wide range of fields of study; and in terms of broader field of study groups were more likely to enter medical studies and arts than other groups.

Wales appears under-supplied for low tariff, but not lowest tariff, institutions. It may be the lack of low tariff institutions that help explain why movers were more likely than stayers to enter lower tariff institutions or Post-92s, as well as higher tariff institutions. Again, there is an indication of at least two different broad types of mobility related to institution type destination, and these differences will be explored further in relation to student characteristics.

5.7.4 Northern Ireland-domiciled entrants

Northern Irish students are relatively mobile and go mainly to England but also Scotland. Overall mobility was more common to the proximal parts of the Great Britain mainland. Reflecting the limited institution supply in Northern Ireland, movers were more likely than stayers to enter highest, medium and lowest tariff institutions. However this differed by country of destination, with higher tariff provision more commonly entered in Scotland and lower to medium tariff provision more common for movers to England. Movers were more likely to enter a Post-92 or medium tariff institution than other type.

Movers were more likely than stayers to enter several fields of study, but most strongly so amongst entrants to medicine and veterinary medicine, and creative arts and design. While those who moved to study medicine and veterinary medicine and

subjects allied to medicine were more likely to go to Scotland than England, those entering arts subjects were more likely to go to England. If under-supply at home was the main driver there may be less difference expected in the sorts of HE entered in each country destination. The different institutional supply within the countries entered may partly explain these differences. Student differences of movers to England and Scotland require further exploration, to help make sense of this difference.

5.8 Conclusion

Overall the findings suggest that the extent of outward mobility follows long term trends but that changes in the conditions created by policy decisions can have modest immediate impact on this. In relation to fee changes, this general finding was noted in relation to the UCAS data in chapter 2 and the findings of Croxford and Raffé (2014b), but changes in the extent of mobility also could be argued to reflect changes in the application of the student number cap.

The findings also suggest there are at least two broad types of mobility. One is related to movement to enter high status institutions, and as argued in chapter 3 could be interpreted as movement for expected positional benefit or investment benefit from the prestige of the institution attended. The second type is mobility to enter lower to medium tariff institutions, and this appears to be explained to a greater extent by tariff level supply issues in the home country than is the case for movement to high tariff institutions. It is also possible that field of study supply is associated with movement to lower tariff institutions. These two types of mobility defined by institutional destination suggest different bases of cost-benefit evaluations. These two broad groupings in relation to higher and lower tariff level are in evidence from all countries, but there appears to be a stronger element of the second group amongst movers from Wales and Northern Ireland. Greater diversity in institution status destinations appears therefore to take place when outward mobility is far more common, but propensity to be mobile can only become action if there are cross-border places available. This is much more likely to be the case at lower than higher tariff institutions.

In addition both location of domicile and location of institution appear to be sources of variation in mobility. The findings overall suggest, as expected, that proximity to a

border and geographical accessibility of cross-border institutions are positively associated with the likelihood of being mobile. This mobility out of Wales and Scotland appears more likely to be to lower tariff institutions; from England into Wales more likely to low to medium tariff institutions; and from Northern Ireland, where there is no direct land border, to lower tariff institutions when to the North-West of England but higher tariff institutions when to Scotland. These findings suggest firstly the importance of social accessibility, that is students with fewer resources identifying these movements as feasible, and secondly that these are potential differences in explanations for mobility in relation to differing geographical destinations.

The descriptive data have been able to answer the research question concerning patterns of mobility. However they have only been able to partly support underlying suggestions that supply in the home country and geographical proximity are factors in mobility, because these suggestions also assume differences in student characteristics in relation to the direction and distance of mobility, i.e. that supply and proximity may differentially affect students in relation to social background. What is required to address the remaining research questions is an examination of student differences in the differing extents and patterns of mobility. This is the purpose of chapters 6 and 7, which address findings for students from Wales and Northern Ireland; and findings for students from Scotland and England.

Chapter 6: Student characteristics and their association with mobility – Wales and Northern Ireland

6.1 Introduction

In the previous chapter patterns of mobility and the relationship between place of domicile and destinations, in terms of location, institution and field of study, were described and discussed. This chapter and the next address the three remaining research questions:

- RQ2: How are students' social characteristics and educational background associated with geographical mobility?
- RQ3: How is mobility associated with institution or field of study entered and how does this differ in relation to student characteristics?
- RQ4: How are students' social characteristics associated with the relationship between place of domicile and destination?

There is previous research evidence on some of the associations between student characteristics and mobility, as discussed in chapter 3, but in this chapter this analysis is further developed and new analysis is undertaken. Firstly, the analysis uses regression models built by drawing on the theory and research discussed in chapter 3 of the thesis, and as described in the data and methods chapter. Secondly, it provides analysis of sub-sets of movers, in relation to place of origin, destination, and institution tariff level entered. Thirdly, interaction effects expressed as marginal effects have been explored, to identify whether relationships between social and educational background in HE outcomes identified in the research literature also play a role in cross-border mobility. In addition, a range of variables on field of study and institution type have been created and more detailed analysis undertaken on these factors than in previous research. Finally, the dataset has been analysed after multiple imputation has been carried out on three variables: social class; whether or not the student has a parent with an HE qualification; and prior attainment group.

This chapter summarises the findings from descriptive analysis (frequencies and cross-tabulations) and from inferential analysis (binary and multinomial logistic regression and marginal effects). For each country domicile, findings are organised

into three sections in line with the three research questions: the characteristics of movers and stayers (RQ₂); how these relate to fields of study and tariff level of institutions (RQ₃); and how these relate to geographical destinations (RQ₄). Collectively they help address the overarching aim of identifying whether and how cross-border mobility contributes to inequalities in HE participation. This chapter focuses on students from the countries from which there are high levels of outward mobility, firstly Wales and then Northern Ireland. It will conclude with a discussion of the similarities and differences between the two countries of domicile. Additional tables are provided in the Appendix to Chapter 6 and appended tables are referenced in this chapter as Table A6.x.

6.2 Wales-domiciled entrants

6.2.1 Student characteristics and cross-border mobility

Addressing RQ₁, Table 6.1 provides an overview of the characteristics of Wales-domiciled stayers and movers. Stayers are classified as those for whom Wales was both the country of domicile and country of study; movers as those whose country of study was England, Scotland or Northern Ireland. As shown in chapter 5, almost all movers went to England. The research aims concern potential inequalities between movers and stayers, and between groups of movers, informed by data on social class, parental education, school type, the HE participation rate of the home area, ethnicity and gender. Grouping based on attainment prior to HE entry serves as an additional measure of potential constraint on HE choices and options.

The descriptive data (Table 6.1) indicate greater levels of socio-economic advantage among movers than stayers, as predicted in relation to theories of status maintenance and cultural reproduction of educational inequalities. Moving was also associated with high attainment, which was also suggested in chapter 3 to be more likely than an association with lower attainment, due both to its relationship with socio-economic advantage and because high attainment opens up a wider range of choices. Nearly half of all BME entrants were movers. BME entrants made up a higher percentage of movers than stayers overall and this was most strongly the case for those from the Mixed/Other ethnic group.

Table 6.1: Wales-domiciled young full-time undergraduate stayers and movers, 2012 entrants (column percentages within characteristics)

	Stayers (%)	Movers (%)	Stayers (N)	Movers (N)
Gender				
Female	54.8	56.8	4650	3460
Male	45.2	43.2	3830	2635
Social class				
Higher managerial and professional	17.9	26.7	1520	1630
Lower managerial and professional	29.7	33	2525	2015
Intermediate	22.1	19.7	1875	1205
Working class	30.2	20.5	2565	1255
Parental education				
Parent with HE qualification	57.3	65.6	4865	4000
No parent with HE qualification	42.7	34.4	3620	2100
Ethnicity				
White	93.6	91.8	7860	5570
Black	1.1	1.1	85	70
Asian	3.4	3.7	290	225
Mixed/ Other	2.0	3.4	170	205
<i>All BME</i>	6.4	8.2	540	500
Attainment				
Highest quintile	13	27.4	1105	1670
High quintile	15.9	20.2	1345	1235
Medium quintile	19.9	19.6	1690	1200
Low quintile	25.7	20	2185	1220
Lowest quintile	25.4	12.7	2155	775
Home area				
Not low participation area	86.8	91.2	7305	5520
Low participation area	13.2	8.8	1110	535
School type				
State school	97.9	91.4	7950	5405
Independent school	2.1	8.6	170	510
Total	58.2	41.8	8485	6100

Note: the N total within each characteristic grouping will not necessarily equal the total movers, due to rounding of numbers following multiple imputation for some variables, and missing data for other variables where the missing data equal less than 5% of cases. Counts have been further rounded to the nearest 0 or 5. Due to low counts of either movers or stayers in specific ethnic groups, combined ethnic groups for Black and Asian entrants are shown.

To explore the extent to which these factors may contribute to explaining student mobility patterns, binary logistic regression was undertaken. Table A6.1 shows the findings for entrants from Wales. There are five models within the regression model, as described in chapter 4. Model 1 included five variables to represent characteristics and background factors that are expected to affect opportunities and perceptions of realistic options: gender, social class, ethnicity, parental education, and attainment. Model 2 further included environment factors that are not directly biographical or familial that would be expected to contribute to the constraints which could affect decision-making about HE: school type and HE participation rate of home area. Next,

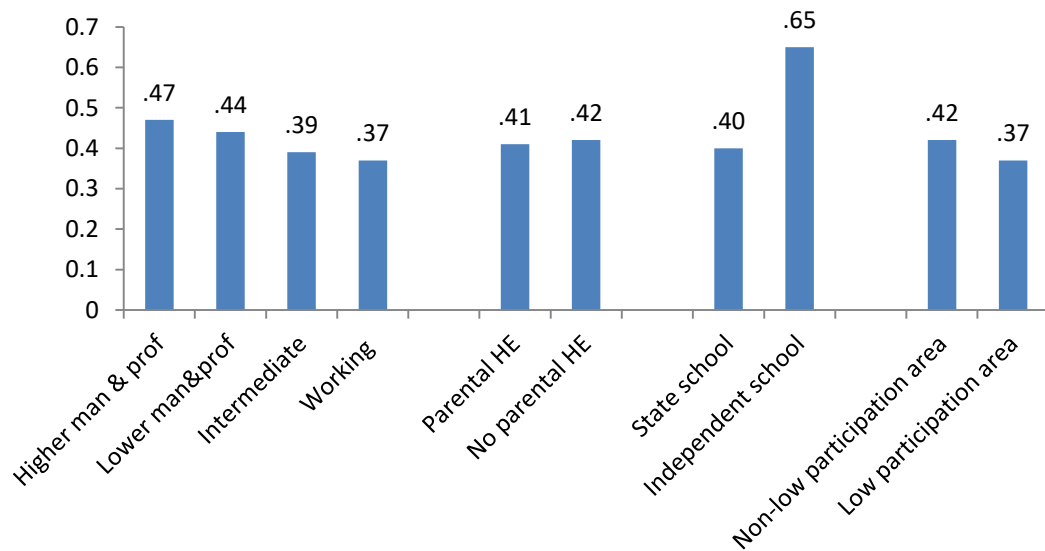
destination variables were added: in Model 3 the course entered was added, and in Model 4 the average tariff score of the institution entered, to explore the relationship of mobility with fields of study and institution status when background factors are accounted for. Model 4 therefore included all main effects. Model 5 explored possible explanatory factors for the motivation to be mobile, in the form of alternative field of study measures - of relative supply, and earnings and professional employment rates of graduates - which required the removal of the fields of study themselves from the model due to multicollinearity.

Focusing on student characteristics, in models 1 to 4 the findings suggest that as social class advantage increased so did the odds of being a mover. This effect was found after accounting for the other characteristics including those of prior attainment and parental education which are strongly linked with social class of origin. In models 1 and 2, having a parent with an HE qualification was positively but marginally associated with moving, but this association was not evident once destination variables were accounted for in models 3 and 4. Parental education levels did not appear to have an effect on mobility separate to the field of study and status of institution entered. Based on the theoretical discussion and previous research, a stronger effect of parental education level as a form of cultural resource influencing mobility would have been expected. It should be noted there was a high percentage of missing data for this variable which was imputed. To identify whether this finding may be distorted by the missing data, regression models were also run with the original data excluding missing cases, and with the original data with the missing data categories ('unknown' and 'refused') included. In both cases the odds ratio for those with no parental HE were very similar to that found using the imputed data, which provides some reassurance for the representativeness of the finding. The odds of moving for BME groups was higher than that for White students, except for Pakistani or Bangladeshi entrants. This was a strong positive association, as indicated in the descriptive data. These background factors, including attainment, had weak explanatory power overall (Nagelkerke $R^2 = 0.09$ for model 1).

In model 2 (Table A6.1), having attended an independent school was strongly and positively associated with the likelihood of moving as was coming from a non-low participation area. The school type and area type had an effect over and above the

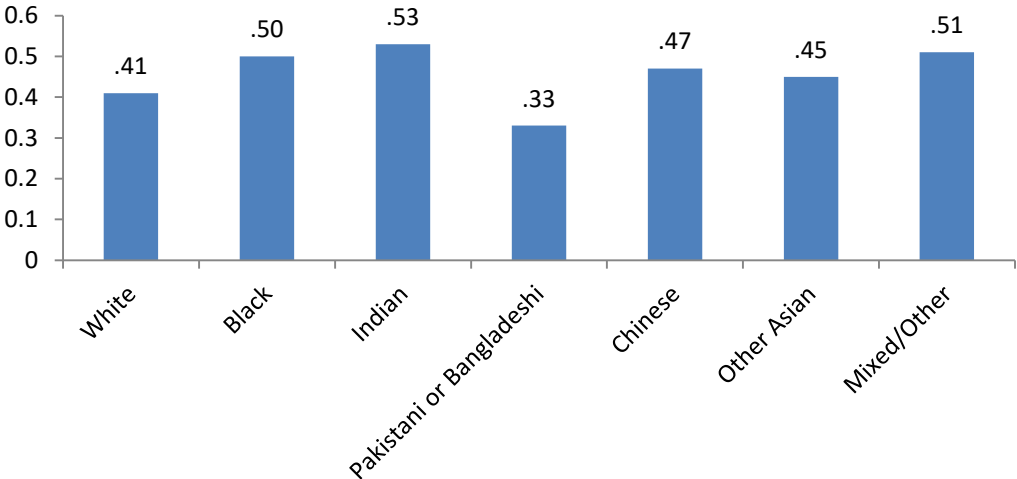
effect of prior attainment, social class, gender or ethnicity. Nagelkerke R^2 is 0.11, suggesting a slight improvement in model fit when these variables were added. Probabilities of cross-border mobility in the form of marginal effects were estimated from model 4, and illustrate the estimated effect of student characteristic factors on likelihood of being a cross-border mover when other factors were held at their means. They show how being in different categories in relation to social class, parental education, school type and participation rate of home area affect the probability of an otherwise (hypothesised) average individual being a mover (Figure 6.1) and in relation to ethnicity (Figure 6.2).

Figure 6.1: Probability (marginal effect) of being a mover by social characteristics, estimated from logistic regression model (model 4) for Wales-domiciled 2012 young full-time entrants



Data in Table A6.2. Other variables controlled in the model: gender, ethnicity, field of study entered, course level entered, average tariff points of institution entered. N=14383.

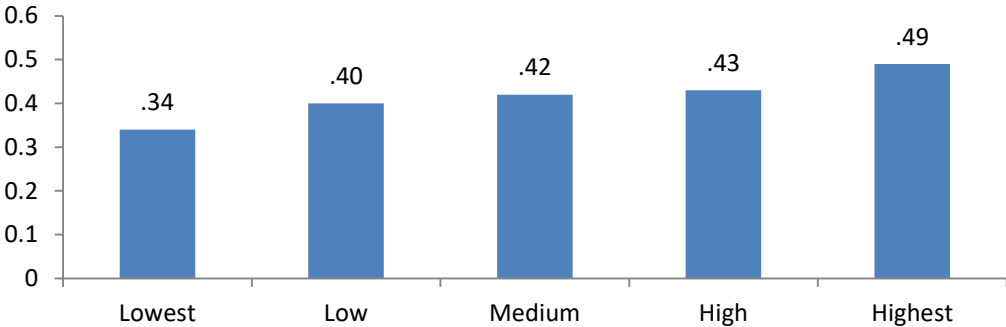
Figure 6.2: Probability (marginal effect) of being a mover by ethnic group, estimated from logistic regression model (model 4) for Wales–domiciled 2012 young full-time entrants



Data in Table A6.2. Other variables controlled in the model: social class, parental education, school type, home area participation rate, field of study entered, course level entered, average tariff points of institution entered. N=14383.

In all the models, mobility was more likely for high attainers than low attainers. After controlling for other variables including course and tariff score of institution entered, those in the highest attainment group had almost 50% probability of being a mover compared to only 34% of those in the lowest attainment group (Figure 6.3).

Figure 6.3: Probability (marginal effect) of being a mover by attainment group, estimated from logistic regression model (model 4) for Wales–domiciled 2012 young full-time entrants

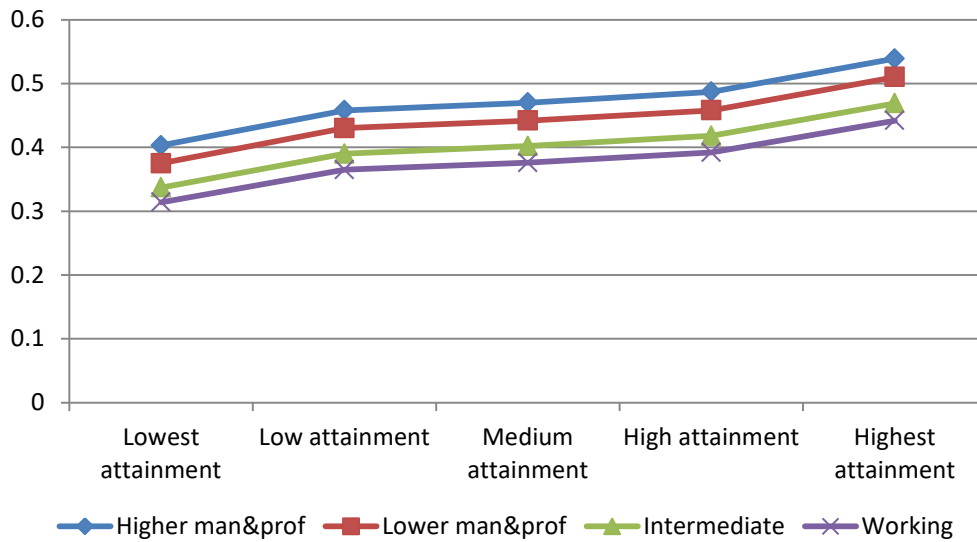


Data in Table A6.2. Other variables controlled in the model: gender, social class, ethnicity, parental education, school type, home area participation rate, field of study entered, course level entered, average tariff points of institution entered. N=14383.

Changes in odds ratios of attainment variables from model 3 to model 4 suggest that the relationship between prior attainment level of the student and moving was explained in part by the institution tariff level entered, as was the association between

school type and moving. This was particularly strongly the case for the highest attainment group variable. An exploration of the interaction between social class background and attainment group, in the form of marginal effects (Figure 6.5) shows a higher probability of moving amongst highest attainers than other attainment groups within all social class groups.

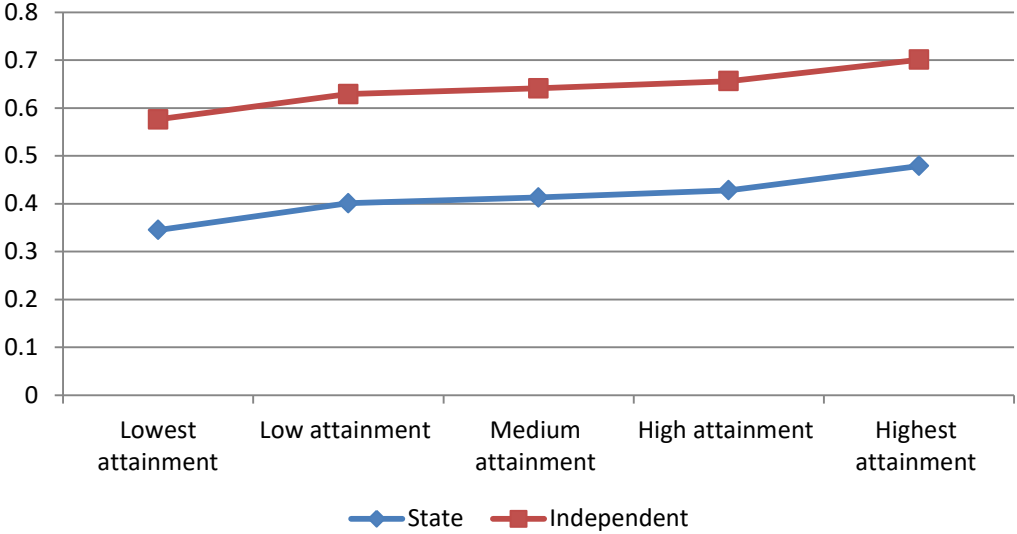
Figure 6.4: Probability (marginal effect) of being a mover by interaction between social class and attainment group, estimated from logistic regression model (model 4) for Wales-domiciled 2012 young full-time entrants



Data in Table A6.3. N=14383.

The interaction between school type and attainment group, in the form of marginal effects (Figure 6.5) shows a higher probability of moving for all attainment groups if they went to independent school rather than state school. It also suggests a very slightly smaller difference in probability of moving amongst those in the highest attainment group in relation to school background than those in other attainment groups. These findings suggest that for students from privileged education backgrounds with the potential to enter the highest tariff universities in England, then mobility was used to access prestigious institutions not available in Wales and the benefits that would be expected to be gained from this.

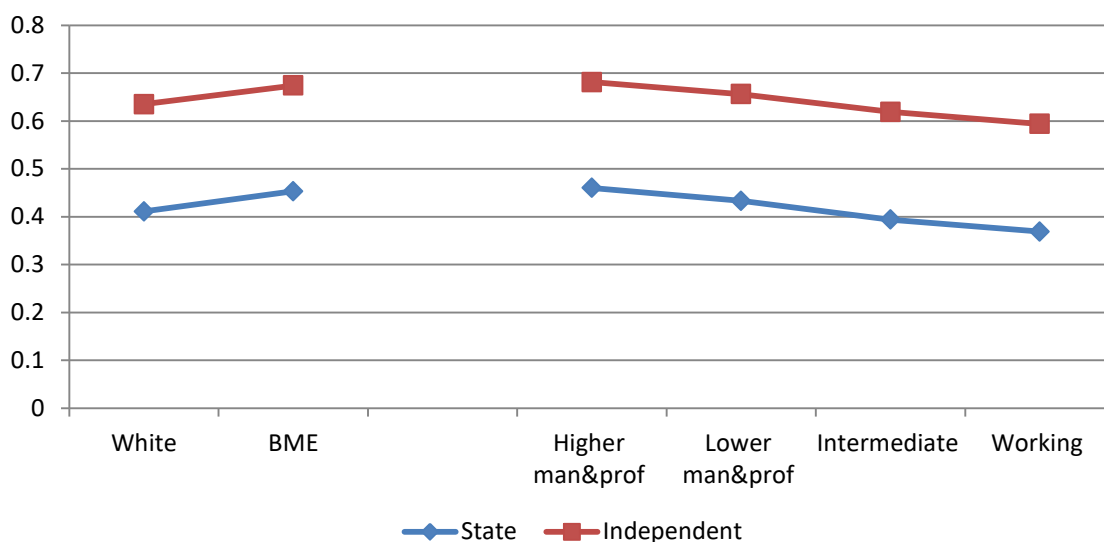
Figure 6.5: Probability (marginal effect) of being a mover by interaction between school type and attainment group, estimated from logistic regression model (model 4) for Wales-domiciled 2012 young full-time entrants



Data in Table A6.4. N=14383.

In similar terms, other interaction effect analyses for movers from Wales showed a higher probability of moving for all social class and ethnic groups if they had been to independent rather than state school. For example working class students who had been to independent school were more likely to be movers than higher managerial and professional class students who had been to state school (Figure 6.6); and White independent school students were more likely to be movers than all BME group state school students (BME groups shown collectively in Figure 6.6). However the patterns of probability differences between groups within each school type were the same. These findings indicate the importance of school-type effect on mobility.

Figure 6.6: Probability (marginal effect) of being a mover by interaction between school type and ethnic group and school type and social class, estimated from logistic regression model (model 4) for Wales-domiciled 2012 young full-time entrants



Data in Table A5.5. N=14383.

Overall cross-border mobility was positively associated with class and school measures of advantage, and with being from most BME groups rather than White. Supporting what was found in chapter 3 in relation to wider research (Connor et al., 2001; Shiner and Noden, 2015), this was not the case for Pakistani and Bangladeshi students. These findings largely support theoretical predictions, although the reason for relatively high mobility of BME students requires further explanation, and the parental education finding is unexpected. These characteristics are explored in relation to other factors in the following sections.

6.2.2 Fields of study, institution types and student differences

This section addresses RQ3, and focuses firstly on student differences in field of study in relation to mobility, and then on institution types.

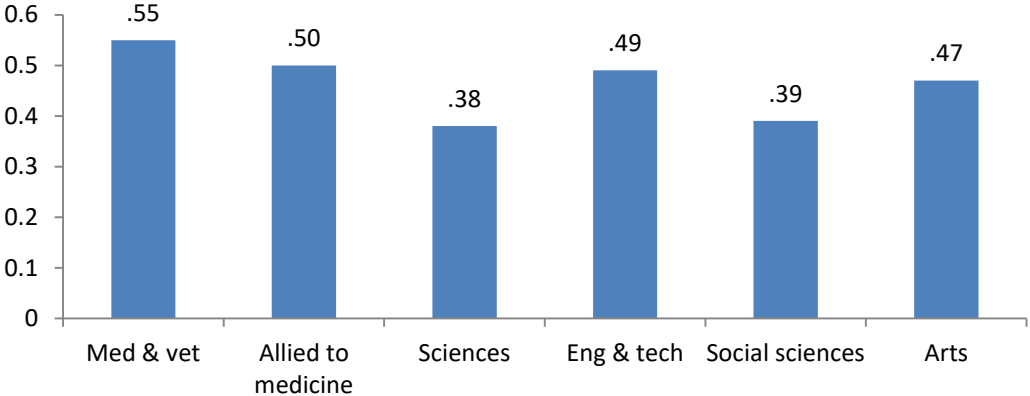
6.2.2.1 Fields of study

There are three perspectives from which field of study entered are of interest. Firstly, whether movers are more concentrated in fields of study which may suggest they are gaining advantages over stayers, in relation to expected future employment, earnings or status. Secondly, whether moving is driven by lack of supply within fields of study in the home country. This could be an inequality issue if the realistic choices for those

without the capacity to be mobile are reduced due to lack of accessible supply. Thirdly, whether less advantaged students are more likely to enter fields of study as movers that are expected to provide clearer employment opportunities, while more advantaged students enter more ‘academic’ subjects to a greater degree. As suggested in chapter 3, the costs of mobility are greater for less socio-economically advantaged students, who may require the expected employment benefits of their field of study to be explicit, whether based on realistic expectations or not.

In the previous chapter, it was identified that movers from Wales were more likely than stayers to enter most field of study groups, with the exception of sciences. The probability of moving associated with each field of study group, based on model 4 of the regression model (Table A6.1) when other factors were accounted for, is shown in Figure 6.7.

Figure 6.7: Probability (marginal effect) of mobility by field of study entered, estimated from regression model (model 4) for Wales-domiciled 2012 young full-time entrants



Other variables controlled: gender, social class, ethnicity, parental education, attainment group, school type, whether from low participation area, course level, tariff score of institution entered. N=14383.

Under-supplied fields of study in Wales were identified in chapter 4 as architecture, building and planning, mass communications and documentation, subjects allied to medicine, medicine and dentistry, mathematical sciences, social studies, and no supply at all in veterinary science. Of these fields, those entering medicine and veterinary medicine and subjects allied to medicine had the highest probability of being a mover, and may gain advantage from professional training for fields of work with relatively high employment levels, and particularly so as these are categorised as

under-supplied fields of study in Wales. The concern is whether using mobility to access these fields is being used disproportionately by the more socio-economically advantaged. The descriptive breakdown of movers and stayers by socio-economic characteristics was analysed to identify whether this might be the case. There were only two differences to note. Firstly, only state school entrants were more likely to enter subjects allied to medicine (SAM) as movers (9.5% of movers but 5.9% of stayers, compared to 7.5% and 7.6% for independent school movers and stayers). It is possible that those who went to state school have greater difficulty accessing this field within Wales, compared to those from independent school, and mobility potentially helped overcome inequalities in participation. Secondly, stayers and movers who entered selected subject areas were compared, to represent subjects provided more often in higher than lower tariff institutions (physical sciences, languages, historical and philosophical studies) and subjects which are more vocational or creative (creative arts and design, education) (Table 5.2).

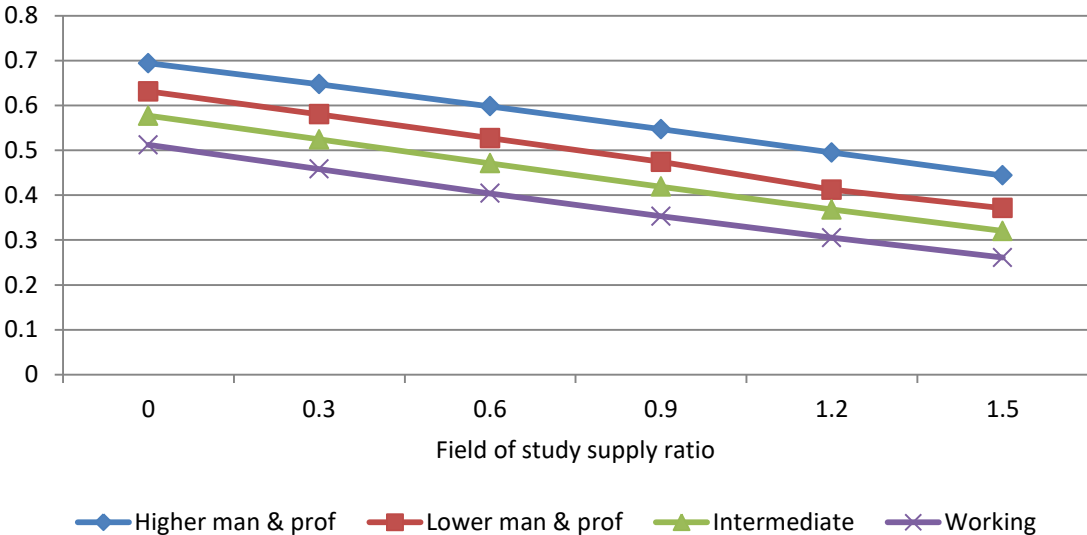
Table 6.2: Percentage of Wales-domiciled young full-time undergraduate stayers and movers entering selected fields of study by social class, 2012 entrants (column percentages)

	Higher man & professional		Lower man & professional		Intermediate		Working	
	Stayer	Mover	Stayer	Mover	Stayer	Mover	Stayer	Mover
Selective								
Physical sciences	6.1	8.8	5.4	7.6	5.2	7.2	5.1	5
Languages	5.6	7	5.7	7.4	5.7	5.6	5	4.3
Historical/philo studies	5	6.6	5.1	6.5	4.7	5	4.6	4.4
Creative/vocational								
Creative arts and design	9.1	11.4	12.3	14.9	11.7	13.9	12.5	16.6
Education	9.5	3.3	9.6	4.5	10.5	4.2	11.5	5.9

The only differences of note were within the more academic or selective subjects. This suggests that mobility may exacerbate class differences in field of study entered, in that working class entrants were less likely to enter the selective subjects as movers than stayers, in contrast to those from the managerial and professional classes (Table 6.2). This may indicate some differences in the cost-benefit evaluation of moving undertaken by those from different class backgrounds, but this did not appear to be a strong factor in mobility out of Wales.

Fields of study were also explored by alternative measures to help explain why certain fields of study were more associated with moving. Included was a measure of supply of field of study in the home country, as described in chapter 3 and discussed for all entrants in chapter 4. Further measures were the professional employment rate of graduates from the fields of study (based on HESA Destinations of Leavers data), and the median hourly earnings rate of graduates from the fields of study (based on Labour Force Survey data). The relationship between moving and alternative field of study measures was explored in the binary logistic regression model (model 5, Table A6.1). An increase in supply of the field of study entered was negatively associated with moving, so under-supply in Wales was associated with moving, as was an increase in earnings for the field of study entered. To further explore whether socio-economic advantage increased the use of mobility to access under-supplied fields, the interaction between these variables on the probability of being a mover was examined. As the marginal effects (Figure 6.8) indicated the same class distribution across supply levels there was not a stronger class effect on mobility in relation to entering potentially under-supplied subjects than over-supplied ones.

Figure 6.8: Probability (marginal effect) of mobility by interaction between social class and field of study supply ratio, estimated from logistic regression model (model 5) for Wales-domiciled 2012 young full-time entrants



N=14383.

There was no relationship between the professional employment rate of the field of study entered and the odds of moving. The descriptive and inferential findings combined suggest that field of study differences were not strong between Welsh movers and stayers in relation to their social characteristics, and that the most notable effect of field of study in mobility was in relation to supply issues. Mobility appears therefore to reproduce participation patterns in relation to social background, but can bring benefit in terms of accessing preferred fields of study to those able to move.

6.2.2.2 *Institution types*

This section further addresses RQ₃ concerning student differences in institution type entered and mobility. Mobility to higher and lower tariff universities based on average tariff score was explored, and as described in chapter 4, UCAS tariff scores of entrants to each institution up to 2012 were used. The tariff scores have been used as an interval variable and also as a categorical variable. The status of institutions, in this case measured by average tariff score of entrants, is important in relation to the potential reasons for cross-border mobility, as entering a higher tariff level of institution as a mover may be a benefit that can be offset against the costs of mobility. It is also important in relation to exploring inequality in mobility. Amongst all UK HE entrants, those entering higher tariff institutions are on aggregate more socio-economically advantaged than are those entering lower tariff institutions. Based on the discussion in chapter 3, if mobility serves to exacerbate inequalities three things may be expected. Firstly, the association between mobility and entering higher tariff institutions should be stronger than that associated with entering lower tariff institutions. Secondly, movers would be expected to enter an institution with a relatively higher average tariff than stayers. Thirdly, moving to higher tariff institutions would be more concentrated among socio-economically advantaged groups than among stayers entering similar status institutions.

Firstly in relation to the association of mobility with entry to higher tariff institutions, in chapter 5 it was identified that although movers from Wales were more likely than stayers to enter highest and high tariff institutions, they were also more likely than stayers to enter low (but not lowest) tariff institutions. As noted in chapter 4, there appears to be under-supply of places in Wales specifically at institutions in the 'low

tariff group, and those able to move may have benefitted, compared to similarly qualified stayers, from the greater opportunities to enter HEIs at a tariff level matching their qualifications. This suggests mobility as a reasoned action with regard to the individual's circumstances and the wider context. However it can be further noted that combining entrants to lowest and low tariff groups ('lower tariff'), and to high and highest tariff groups ('higher tariff') (Table A6.6), shows that mobility was very common among entrants to higher tariff institutions (64.1% of entrants were movers) but less so amongst entrants to lower tariff institutions (33.2% were movers), potentially because of the strong supply of institutions in the 'lowest tariff' category. It can be noted that findings in relation to lower tariff institutions are therefore complicated by the differences of provision within this combined group and may look different if only the lowest tariff category was employed in these analyses.

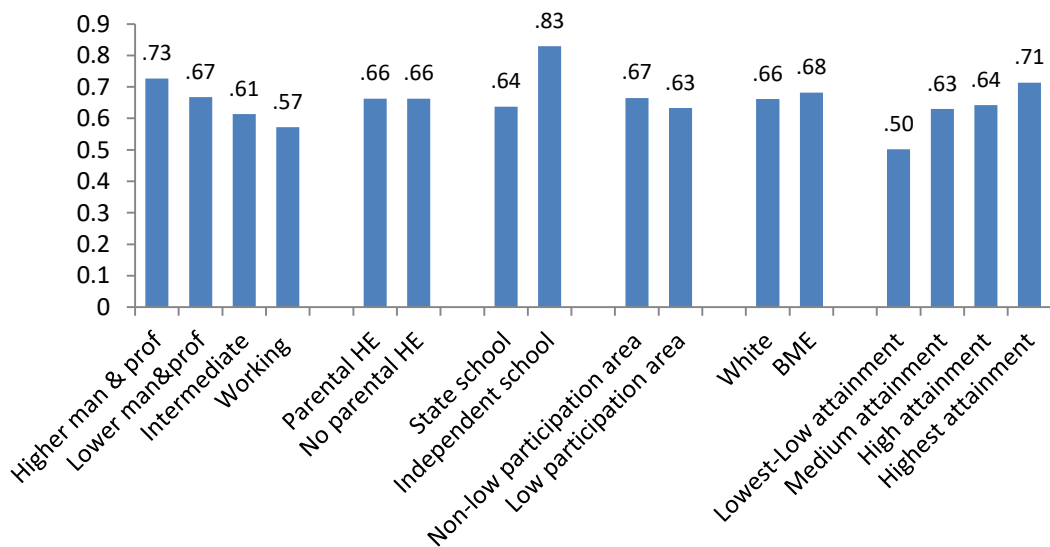
Secondly, with regard to movers entering an institution with a relatively higher average tariff than stayers, it can be noted that the inclusion of institution tariff score in the regression model for movers out of Wales (model 4, Table A6.1) showed a positive association with moving. Nagelkerke R^2 was 0.18, compared to 0.15 for model 3 in which it was not included, suggesting a slight improvement in model fit when the institution tariff variable was added.

The third suggestion was that moving to higher tariff institutions would be more concentrated among socio-economically advantaged groups than among stayers entering similar status institutions. Table A6.6 shows descriptive data for the combined entrants to lower tariff and to higher tariff institutions, and the breakdown of stayers and movers to each institution grouping. The data show that among entrants to both, movers were relatively more socio-economically advantaged than stayers in class, parental education and schooling terms. They were doing so across a range of attainment levels at both types of institution, although unsurprisingly most concentrated in the lower and medium attainment levels at lower tariff institutions and higher attainment levels at higher tariff institutions.

Regression models comparing movers and stayers among entrants to higher and lower tariff institutions were additionally carried out to explore the important factors in moving to each type (Tables A6.7 and A6.8). Based on these models, probabilities of moving in the form of marginal effects for social characteristics were estimated

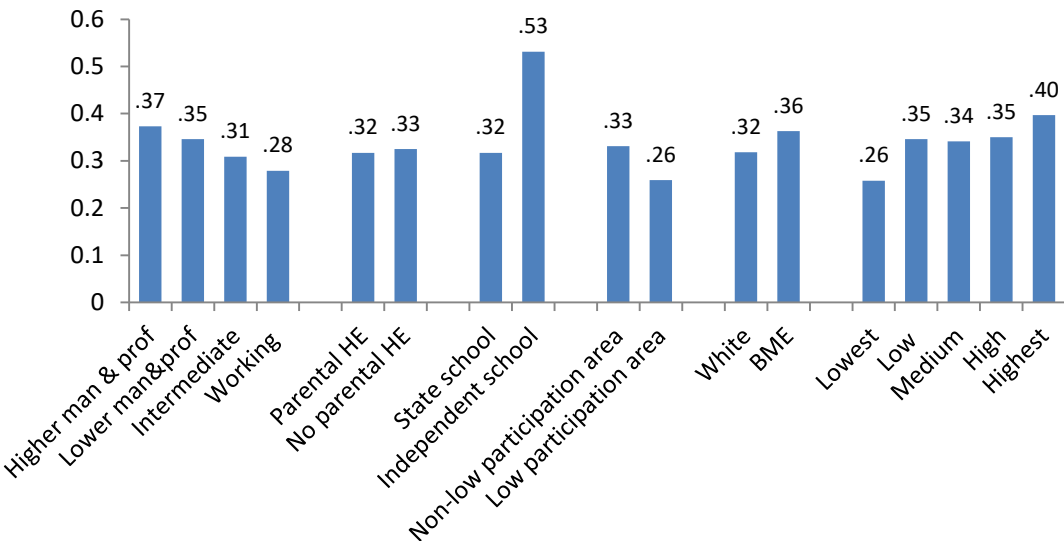
(Figure 6.9 and Figure 6.10), which show as noted that the probability of moving was higher for those entering higher tariff than lower tariff institutions, but confirms the relative advantage of movers to both to be similar. However, first generation students were a little more likely to be movers than stayers if entering lower tariff but not higher tariff institutions. Perhaps surprising is that even among entrants to lower tariff institutions, those in the highest attainment groups were more likely to be movers than those in other attainment groups.

Figure 6.9: Probability (marginal effect) of being a mover by social characteristics, estimated from logistic regression model (model 3) for Wales–domiciled 2012 young full-time entrants to higher tariff institutions



Data in Table A6.9. Other variables controlled in model: gender, whether from low participation area, field of study entered. N=3726.

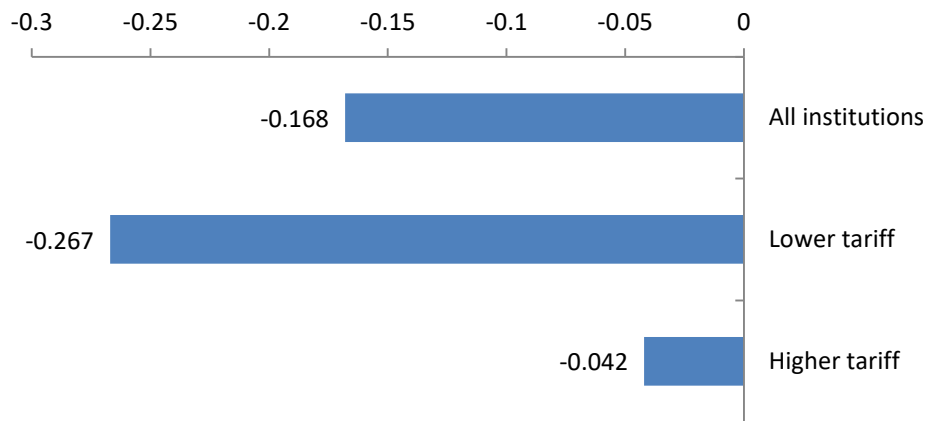
Figure 6.10: Probability (marginal effect) of being a mover by social characteristics, estimated from logistic regression model (model 3) for Wales–domiciled 2012 young full-time entrants to lower tariff institutions



Data in Table A6.10. Other variables controlled in model: gender, whether from low participation area, field of study entered. N=7448.

The effect on mobility of the supply ratio of the field of study entered was analysed in the form of average marginal effects, to show the effect of this measure separate from other factors in the model. This shows the population-averaged effect of the field of study supply measure on the probability of mobility when other factors in the model were held at their observed value (Figure 6.11). Amongst entrants to both types of institution (and all types of institution) under-supply of fields of study entered may be a factor in mobility, however this was only a strong finding for movers to lower tariff institutions.

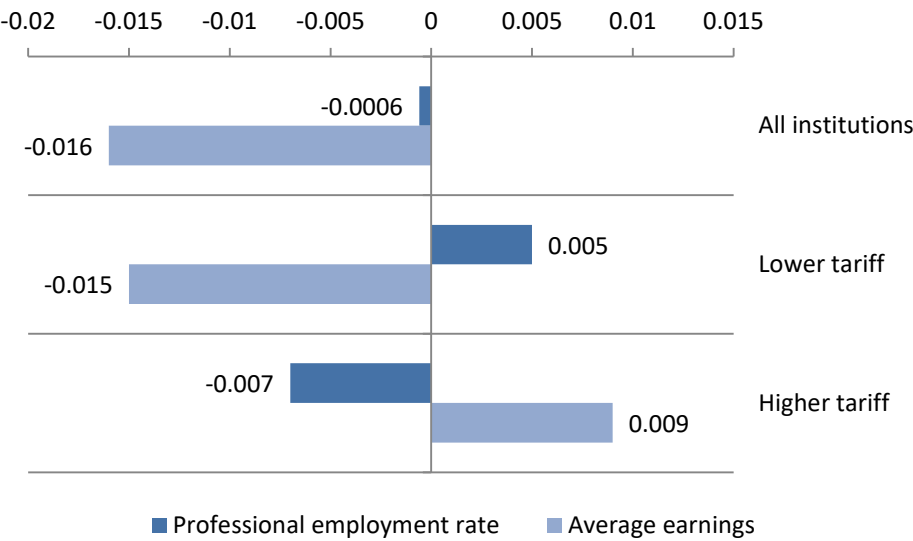
Figure 6.11: Average marginal effect of field of study supply ratio on probability of being a mover, Wales-domiciled 2012 young full-time entrants to institution tariff groupings



Effects estimated from model 4 of the regression model for all entrants and model 3 of the models for entrants to lower or higher tariff institutions, which controlled for all factors apart from field of study entered itself.

The relationship between mobility and field of study employment and earnings variables have also been estimated from the regression models as probabilities in the form of average marginal effects (Figure 6.12). Although a very weak effect, professional employment rate of the field of study was positively associated with moving to lower tariff institutions but negatively associated with moving to higher tariff institutions, and the reverse was found in relation to field of study earnings. These findings suggest that the field of study in terms of supply (strongly) and potentially perceptions of employability (weakly) were more important drivers for movement to lower tariff than higher tariff institutions. This aligns with the proposition that the employability benefit that the student may expect from entering a particular field of study would be more important to those entering lower than higher tariff institutions.

Figure 6.12: Average marginal effect of professional employment and average earnings of the field of study entered on probability of being a mover, Wales-domiciled 2012 young full-time entrants to institution tariff groupings



Effects estimated from model 4 of the regression model for all entrants and model 3 of the models for entrants to lower or higher tariff institutions, which controlled for all factors apart from field of study entered itself.

The analysis in this section has identified that at the aggregate level movers broadly speaking ‘benefit’ from moving in the sense of entering a higher tariff level of institution. The findings also suggest that field of study supply as a motivation for mobility may be a source of difference between student groups in relation to the selectivity of the institution they enter. The patterns of differences in student characteristics between movers to different types of institution are not strong, though some of the probability differences are, and suggest in relation to both types that cross-border mobility contributes to inequalities in participation.

6.2.3 Geographical destinations and student differences in mobility

To address RQ4 student differences in relation to destinations and in particular their proximity to the home country were explored. This is of interest because when considering the potential of student mobility to reproduce or potentially mitigate inequalities in participation, issues of both physical and social distance appear important in the research literature. Those with fewer financial and cultural resources if mobile may be more likely to move to locations to which they have some connection, which is an established pathway for those with similar backgrounds or

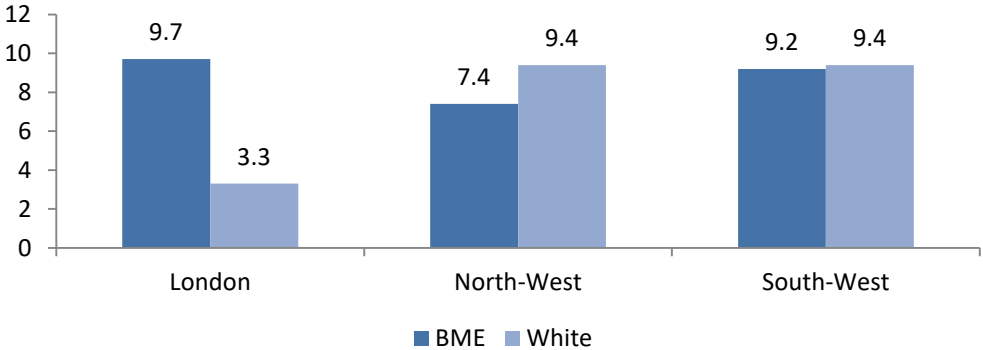
which remains relatively close to home. These factors may reduce the financial and social costs of mobility. Those with greater financial and cultural resources may be willing and able to move longer distances, particularly to access high status institutions. For Wales-domiciled students, the relationship between home location and destination showed strong patterns in chapter 5, which reflects the strong differences in HE provision between North and South Wales. Movement was most common out of North Wales, where there is limited HEI provision overall and at lower tariff levels (although some limited college HE provision not included in these data), and movement from there was most common to the North-West of England (and to Post-92 universities there). Examining descriptively the characteristics of movers and the English region in which they entered HE (Table A6.11), those who went to HEIs in North-West England were more likely, compared to movers to other regions, to be from an intermediate or working class background, to be first generation students, to be lower attainers, and were less likely to have gone to an independent school. Those who went to the West Midlands, another neighbouring region, were also relatively likely to be from an intermediate or working class background. This supports the notion that proximity and accessibility are more important in the mobility of less socio-economically advantaged students, although the movement to South-West England, predominantly from the South of Wales, does not provide the same support. This may be explained by the relative over-supply of lower tariff provision in South Wales, reducing the need for mobility to lower tariff institutions, which is one of the ways in which it differs to North Wales. This finding may also be due to relatively high tariff levels of institutions in South-West England (Table A4.5).

Multinomial logistic regression was undertaken to further explore this issue (Table A6.12). The analysis compared movers to regions bordering Wales (North-West, South-West and West Midlands) to stayers; and movers to the rest of the UK to stayers. Overall, mobility to longer distance HEIs appeared to be associated with a slightly higher average tariff level than that to shorter distance HEIs, compared to stayers. The effect of being in the managerial and professional class or going to independent school was a little stronger for longer distance movers than shorter distance movers, compared to stayers. But the broad characteristics of movers

compared to stayers were the same for both, although there were differences in odds of mobility to each in relation to fields of study entered.

In terms of ethnicity and English regional destinations, the five entry years included in the dataset were combined to create reasonable cell sizes (Figure 6.13). BME movers unlike White movers were most likely to go to London, and to a notably greater extent.

Figure 6.13: Percentage of Wales-domiciled young full-time BME entrants and White entrants entering selected English regions - 1996, 2004, 2010, 2011 and 2012 combined



This supports what has been found in previous research, that BME students are more likely to move to regions or institutions with a diverse ethnic population. It can also be noted that the groups most likely to go to London were Indian, Other Asian and Chinese entrants, who tended to be higher attainers than those in other ethnic groups (Table 3.16) and this may be an additional factor in movement to institutions in London.

6.2.4 Summary: Movers from Wales

Movers appeared to be relatively socio-economically advantaged, and an association of cross-border mobility with higher attainment was found. However having an HE qualified parent was not associated with moving in the regression model when other factors were accounted for. As parental higher education was a proxy for cultural resources which would be expected to support mobility, this finding was not predicted. If representative, it could be that mobility itself is a more normalised route for young people from a range of backgrounds which makes parental education as a form of cultural resource less important for encouraging and enabling mobility. Overall the evidence suggests that movers are likely to seek to enter a higher tariff

university than they can in Wales, and this could be explained by concern for institutional reputation and gaining positional goods (Brown, 2013; Hirsch, 1977); a consumption motivation focused on the HE experience as predicted by cultural reproduction theory (e.g. Holdsworth, 2009); and/or an investment motivation concerned with longer term outcomes (suggested by all the theoretical perspectives). Mobility is not entirely explained by students' prior attainment level, which suggests there are secondary or 'choice' effects in play (Jackson, 2013a). There was also a class association with moving to different institution types, which reproduced wider differences in HE participation.

Descriptively only entrants to higher tariff universities were more likely to be movers if in the higher professional and managerial class. However, when field of study entered was accounted for in the regression models, in relative terms movers to lower tariff institutions also had a higher probability of being from the higher managerial and professional class than from other classes. This suggests that even though entry to lower tariff institutions was more associated with lower socio-economic advantage than was entry to higher tariff institutions, the more advantaged students among this group were more likely to be mobile. The extent of differentiation expected was not found between movers to lower and higher tariff institutions. However, students with the characteristics representing lower socio-economic advantage appeared less likely to move to regions further from Wales, suggesting that longer distance movement is more important for the relatively privileged and high attaining, and/or those seeking to enter higher tariff universities, as found for example by Holdsworth (2009) amongst English students. This may also be explained by the geographical spread of high tariff institutions. Nonetheless, social characteristic differences in relation to distance of HEI from Wales do not appear strong based on regression modelling. The findings may reflect the extent of mobility from Wales, perhaps making it a more normalised route for a range of students (Ball et al., 2002a), and therefore that mobility is not driven strongly by particular sub-groups of students, but it is likely exacerbated by issues of under-supply in relation to some tariff levels and fields of study, and accessibility of HEIs across the border. The history of HE provision and flows, the distribution of places and field of study, and geography all play their part. Crossing the border is not then a simple economic calculation.

In relation to ethnicity as a factor, those from all BME groups apart from the Pakistani and Bangladeshi group were more likely than White entrants to be movers and the difference, and likelihood of moving, was strongest for Chinese and Mixed/Other ethnic group entrants. For these two groups this propensity to be mobile may be related to higher overall attainment levels. BME movers as a whole however were less likely to enter a higher tariff university than was the case for White movers.

Regression modelling suggests that where there were differences between White and BME entrants these were not explained by the other variables in the model. It was proposed in chapter 3 that little difference may be expected between White and BME students once other factors were controlled, but this has not been supported by the findings. This suggests that differences between ethnic groups are due to factors that cannot be measured with this model, which as discussed in chapter 3 may reflect family influence and cultural factors on HE choice (e.g. Noden et al., 2014), and the possibility of moving to an area of greater ethnic mix (e.g. Connor et al., 2004; Reay et al., 2001; Shiner and Noden, 2015).

6.3 Northern Ireland-domiciled entrants

6.3.1 Student characteristics and cross-border mobility

To address RQ2, firstly descriptive data on stayers and movers are provided in Table 6.3. These data suggest inequalities in mobility in that movers were more likely than stayers to be from the higher managerial and professional class. However there was little difference between movers and stayers in relation to having a parent with an HE qualification nor in relation to the HE participation rate of the home area. There were very few BME students from Northern Ireland, but nearly half of them were movers. As there are so few independent school pupils in Northern Ireland it has not been possible to analyse patterns by school type. As noted in chapter 4 the differences between those who went to grammar and non-grammar schools would have been interesting to compare, and has been found previously to be associated with differing rates of mobility (McGregor et al., 2002).

Table 6.3: NI-domiciled young full-time undergraduate stayers and movers, 2012 entrants (column percentages within characteristics)

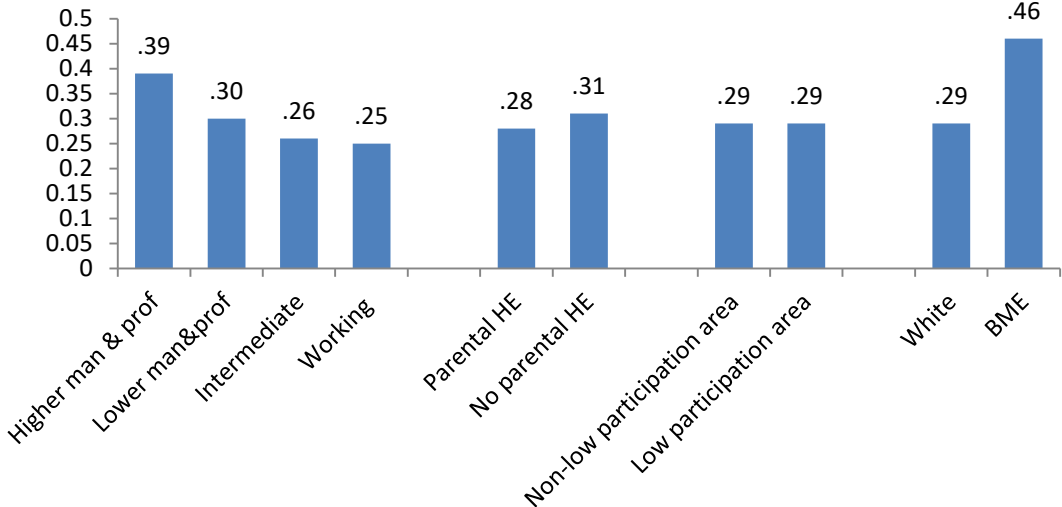
	Stayers (%)	Movers (%)	Stayers (N)	Movers (N)
Gender				
Female	55.1	59.1	4000	1945
Male	44.9	40.1	3260	1350
Social class				
Higher managerial and professional	14.6	24	1060	791
Lower managerial and professional	29.5	29.2	2145	963
Intermediate	29.6	25.2	2145	830
Working class	26.3	21.6	1910	710
Parental education				
Parent with HE qualification	58.9	60.3	4275	1985
No parent with HE qualification	41.1	39.7	2985	1310
Ethnicity				
White	98.4	96.9	7135	3185
All BME	1.6	3.1	115	100
Attainment				
Highest quintile	17.8	24.4	1290	805
High quintile	24.5	18.5	1775	610
Medium quintile	20.9	13.8	1520	455
Low quintile	20.5	17.7	1490	585
Lowest quintile	16.3	25.6	1185	845
Home area				
Not low participation area	93.3	93.8	6720	3065
Low participation area	6.7	6.2	480	200
Total	68.8	31.2	7260	3295

Note: the N total within each characteristic grouping will not necessarily equal the total movers, due to rounding of counts following multiple imputation for some variables, and missing data for other variables where the missing data equal less than 5% of cases. Counts have been further rounded to the nearest 0 or 5.

To explore the extent to which these factors may interact in relation to student mobility, binary logistic regression was undertaken (Table A6.13). The findings are summarised as marginal effects in Figure 6.14, and differ from the descriptive data in three ways. Firstly, across all models, once other background factors were accounted for, the probability of mobility increased the higher the social class. Secondly, being a first generation entrant was positively associated with moving. This would not be predicted. As for Wales, this could reflect the high percentage of cases that had to be imputed for this variable for Northern Irish students. However as for Wales running the regression model with the original data excluding missing cases, and with the original data including missing cases, the same positive association between being 'first generation' and the probability of moving was found. Also as for Wales, the 'unknown' and 'refused' missing data groups were negatively associated with mobility (strongly so in the case of the 'refused' group), and so it is possible that if some of

these cases were incorrectly assigned through the MI procedure to the ‘parental HE’ group this may have contributed to the higher relative association of the ‘no parental HE’ group with mobility. But if indeed representative, the finding could reflect the effect of either real under-supply of places or the commonality of moving out of Northern Ireland overcoming the potential lack of HE knowledge of parents. Nagelkerke R² was 0.06 for model 1, indicating that social background factors alone had weak explanatory power.

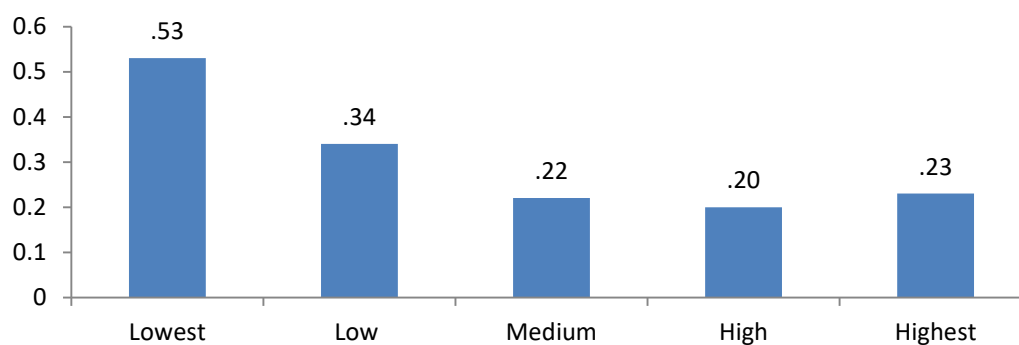
Figure 6.14: Probability (marginal effect) of being a mover by social characteristics, estimated from logistic regression model (model 4) for NI-domiciled 2012 young full-time entrants



Data in Table A6.14. Other variables controlled in the model: gender, field of study entered, course level entered, average tariff points of institution entered. N=10553.

The third difference between descriptive and inferential findings was that descriptively those in the lowest tariff quintile were the most likely to be movers, followed by those in the highest tariff quintile (a U shape) (Table 6.3). However this was not the case when institution tariff level was included in the model (model 4, shown in Figure 6.15), at which point it appears that those in the lowest attainment quintile were yet more strongly likely to be movers than those in other quintiles.

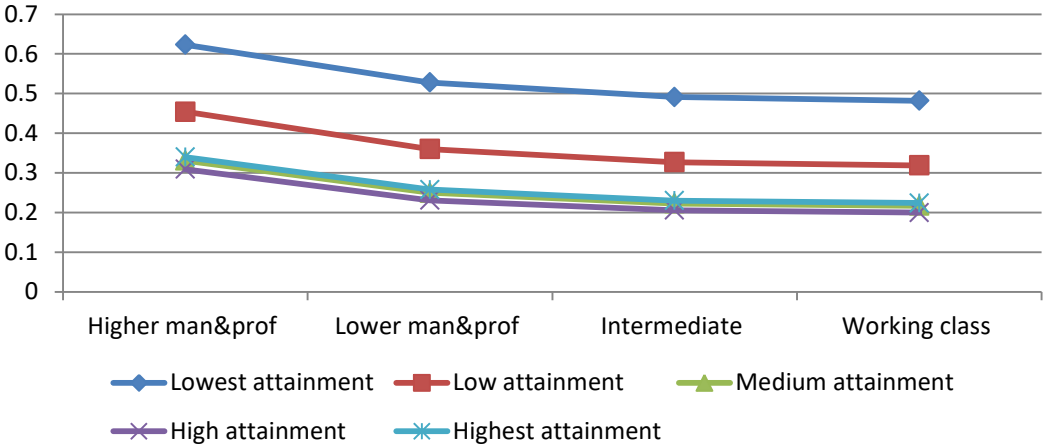
Figure 6.15: Probability (marginal effect) of being a mover by attainment group, estimated from logistic regression model (model 4) for NI-domiciled 2012 young full-time entrants



Data in Table A6.14. Other variables controlled in the model: gender, social class, ethnicity, parental education, home area participation rate, field of study entered, course level entered, average tariff points of institution entered. N=10553.

To further explore the lowest attainment group, the interaction effect between social class background and attainment group was analysed (in the form of marginal effects, Figure 6.16). This shows that those in the lowest attainment group no matter their social class were more likely to be movers than entrants in other class and attainment group combinations. Working and intermediate class entrants in the lowest attainment group were therefore more likely to be movers than managerial and professional class entrants in the low to highest attainment groups, despite mobility being more likely overall for managerial and professional class entrants. These findings suggest that those specifically in the lowest attainment group had the greatest difficulty obtaining a place within Northern Ireland. This is likely to reflect the institutional supply issues noted in chapter 4 and the institutional destinations identified in chapter 5.

Figure 6.16: Probability (marginal effect) of being a mover by interaction between attainment group and social class, estimated from logistic regression model (model 4) for Northern Ireland-domiciled 2012 young full-time entrants



Data in Table A6.15. N=10553.

Overall, there was mixed evidence on the relationship between moving and socio-economic advantage. Propositions based on the notions of using mobility for status maintenance or upward mobility, and mobility being more likely when a young person has the familial, cultural and financial resources to encourage and support it, were only clearly supported by the social class data. There was clearer evidence on the higher association with mobility for BME students and those in the lowest attainment group. The former may be explained by the lack of ethnic diversity in Northern Ireland. The latter would not be expected in a cost-benefit evaluation that did not take into account the availability of HE in the home country. These findings suggest a situational rationality for mobility that takes into account individual and external circumstances, rather than a straightforward economic rationality.

6.3.2 Fields of study, institution types and student differences

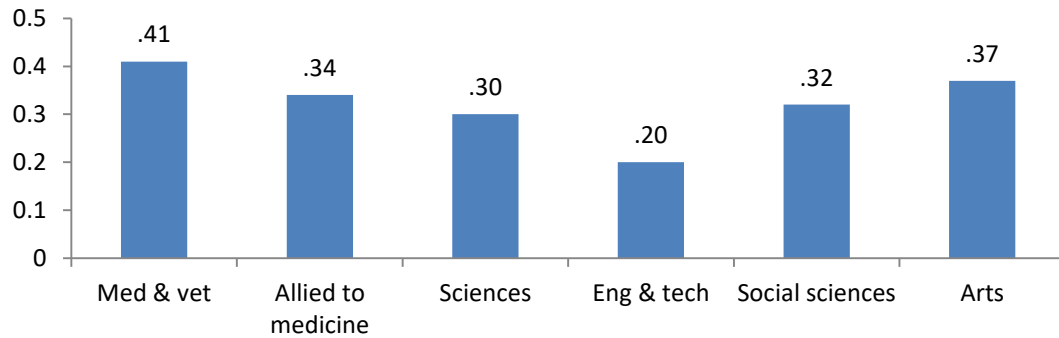
This section addresses RQ3, and again focuses firstly on student differences in field of study in relation to mobility, and then on institution types.

6.3.2.1 Fields of study

As identified in chapter 5, movers were more likely than stayers to enter medical subjects, subjects allied to medicine, humanities subjects, most sciences, education, and creative arts and design. Having controlled for the other factors in the regression model, the probability of moving associated with field of study groups is shown in

Figure 6.17. There is much similarity with the findings for Welsh students, but the low probability of mobility of engineering and technology entrants was specific to Northern Irish students. This is potentially explained by the supply measure in chapter 4 which suggested this was an over-supplied field in Northern Ireland.

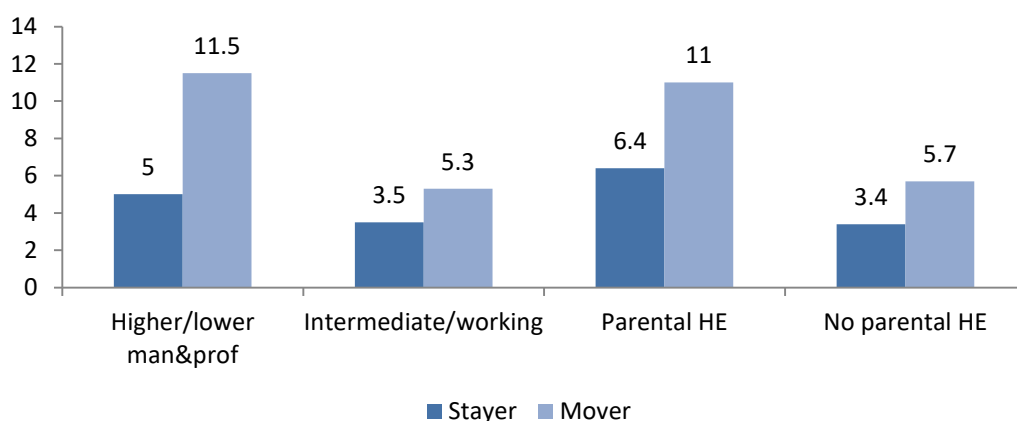
Figure 6.17: Probability (marginal effect) of mobility by field of study entered, estimated from regression model (model 4) for NI-domiciled 2012 young full-time entrants



Other variables controlled: gender, social class, ethnicity, parental education, attainment group, whether from low participation area, course level, tariff score of institution entered. N=10553.

An issue suggested to be important in examining the role of mobility in inequalities is whether mobility is increasing inequalities in field of study access, in relation to expected future employment, earnings or status, or lack of supply. This was analysed firstly in relation to the social class of movers and stayers to field of study groups, and selected fields of study, using descriptive data. There were few notable findings. As can be seen in Figure 6.18 being a mover notably increased the likelihood of entering medical subjects, but this was stronger for managerial and professional class students than for intermediate and working class students, as it was for those with an HE qualified parent compared to first generation students. Medical subjects have potential benefits on all measures, and these data suggest that socio-economically advantaged students are better placed than those less advantaged to use mobility as a means of accessing these fields and gaining those benefits.

Figure 6.18: Percentage of stayers and movers who entered medicine and veterinary medicine, by class groups and parental education, NI-domiciled 2012 young full-time entrants

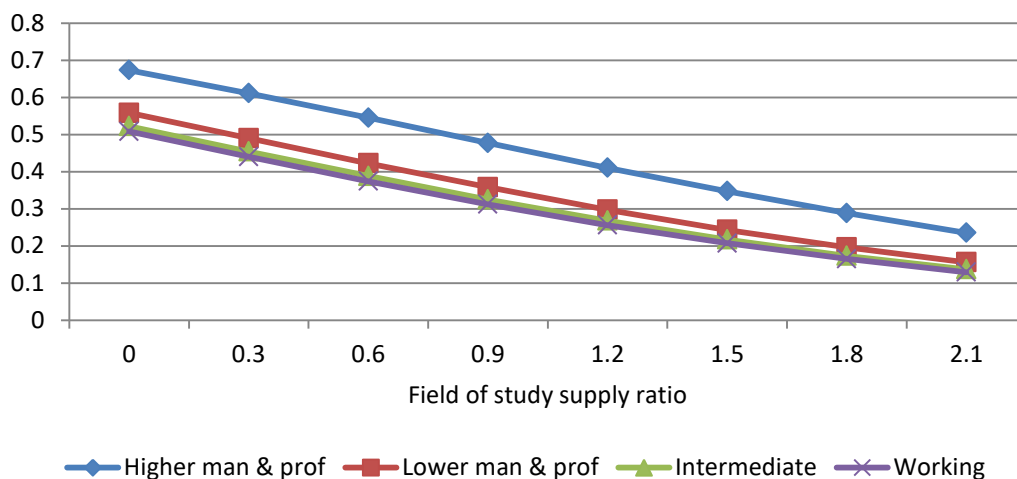


The other notable difference was that intermediate and working class movers were slightly more likely than stayers to enter social sciences and law, but movers from middle class backgrounds were less likely than stayers to do so. This was the field of study group associated most strongly with the popular Post-92 university destinations, as identified in chapter 5. This class difference was particularly the case in relation to ‘vocational’ subjects of business and administrative studies and education, as well as subjects allied to medicine, suggesting that the employability associated with the field was a factor for mobile lower class entrants. Model 5 of the regression model for all Northern Irish entrants (Table A6.13), identified that an increase in professional employment level of the field of study entered was associated with slightly increased odds of moving, reflecting these findings. This would support the proposition of moving being a reasoned action with regard to expected future benefits gained from HE study. However an increase in earnings associated with field of study entered was associated with slightly decreased odds of moving. This is likely due to the relatively low mobility to engineering and technology and sciences, but would not be predictable without taking into account possible supply issues within Northern Ireland affecting the extent of mobility within these fields. However the employment rate and earnings findings were not strong. Nagelkerke R^2 is 0.15 for model 5, slightly higher than the models that did not include field of study.

Model 5 of the main regression model also included the measure of field of study supply to help explain mobility. An increase in field of study supply was associated with decreased odds of moving, and therefore under-supply in Northern Ireland of

the field of study entered appeared overall to be a factor in mobility as would be predicted. In the descriptive data the fields of study with low supply in Northern Ireland (according to the measure in chapter 4) did not generally show any class distribution difference between movers and stayers within fields, and do not therefore indicate that those with more socio-economic advantages were using mobility to overcome supply issues to a greater extent than less advantaged students. Explored as an interaction effect however, there was a stronger class difference between the higher managerial and professional class and other classes in under-supplied fields than over-supplied fields (Figure 6.19), suggesting that more well-resourced students may have been taking slightly more advantage of mobility to respond to this contextual factor.

Figure 6.19: Probability (marginal effect) of mobility by interaction between social class and field of study supply ratio, estimated from regression model (model 5) for NI-domiciled 2012 young full-time entrants



N=10553.

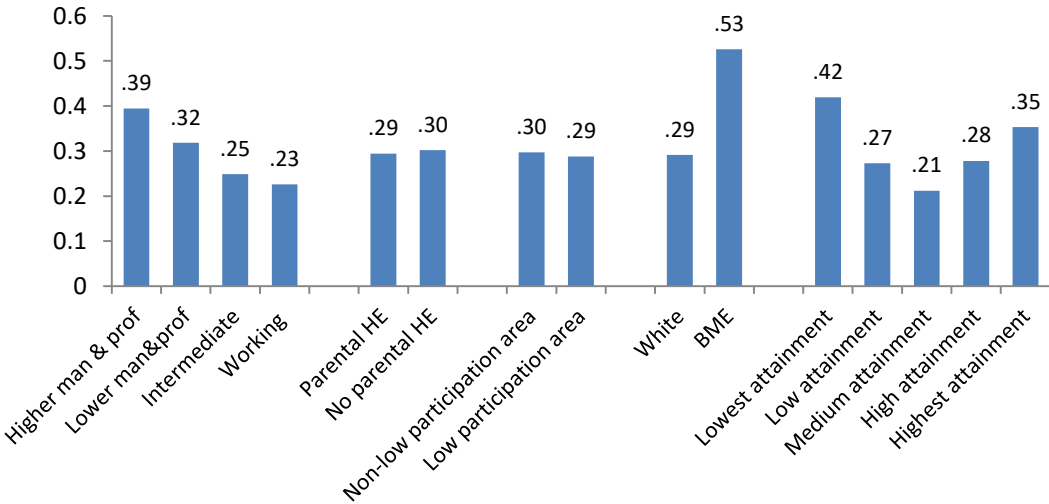
6.3.2.2 Institution types

Further addressing RQ3, institution tariff level was added to the regression model in model 4 and positively associated with the odds of moving, with one tariff point increasing the odds of moving by 0.1%. Nagelkerke R² is 0.16, suggesting a slight improvement in model fit when institution tariff was added.

Mobility to higher and lower tariff universities was also explored to identify student differences within entrant groups categorised by the broad institution tariff level they

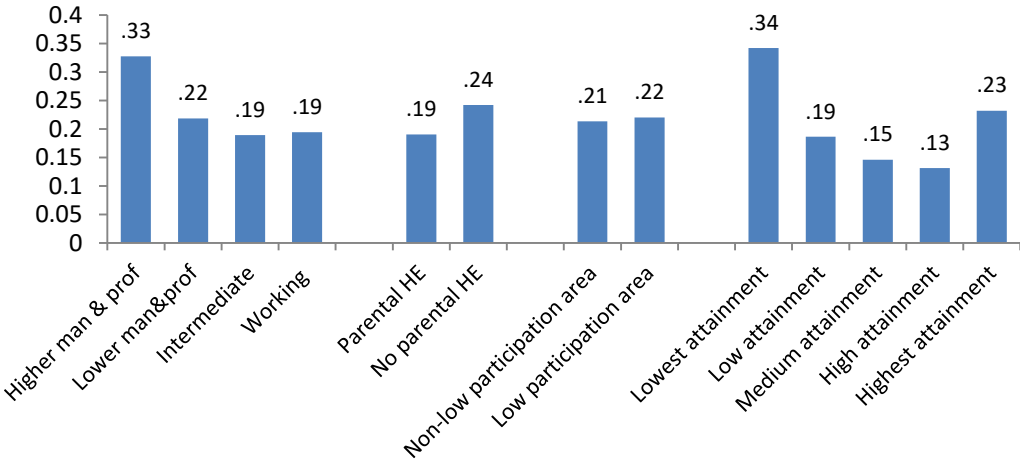
entered, in the form of descriptive data (Table A6.16), and regression modelling comparing movers and stayers among entrants to higher and lower tariff institutions (Tables A6.17 and A6.18). The marginal effects (Figure 6.20 and Figure 6.21) estimated from the regression models illustrate the findings. For the lower tariff findings, probabilities by ethnicity are not shown due to small cell sizes.

Figure 6.20: Probability (marginal effect) of being a mover by social characteristics, estimated from logistic regression model (model 3) for NI-domiciled 2012 young full-time entrants to higher tariff institutions



Data in Table A6.19. Other variables controlled in model: gender, field of study entered. N=4231.

Figure 6.21: Probability (marginal effect) of being a mover by social characteristics, estimated from logistic regression model (model 3) for NI-domiciled entrants 2012 young full-time entrants to lower tariff institutions



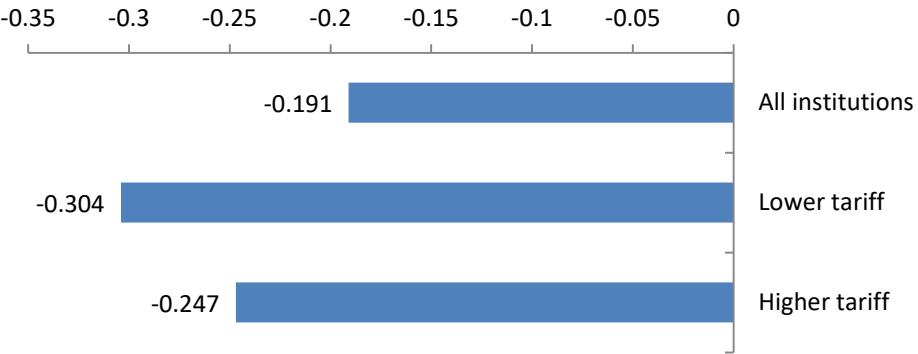
Data in Table A6.20. Other variables controlled in model: gender, ethnicity, field of study entered. N=4587.

The marginal effects show that across all student characteristic groups, mobility was more likely for those entering higher tariff institutions than lower tariff institutions. This suggests an overall role of mobility in supporting participation in higher status or more selective HE. There was stronger class differentiation, below the higher managerial and professional class, amongst movers to higher tariff institutions, and they further differed to movers to lower tariff institutions in slightly higher likelihood of moving if they were from a non-low participation area, and less differentiation in probability of moving by parental education. The overall finding in the main regression model that parental HE was negatively associated with mobility therefore appears to be explained by movers to lower rather than higher tariff institutions. Overall, comparing the two entrant groups, the more socio-economically advantaged therefore appear to have more resources for mobility not just generally, but more so where that mobility is to higher tariff institutions, reflecting wider inequalities in HE participation.

The lack of both lower and higher tariff institutions in Northern Ireland may be reflected in the descriptive finding (Table A6.16) that among entrants to both institution types it was only those in lowest and highest attainment groups who were more likely to be movers than stayers. In probability terms, these groups had the highest likelihood of moving, but once other factors were accounted for, even amongst those entering higher tariff institutions it was those in the lowest attainment group with the greatest probability of moving (Figure 6.20). This suggests again that the lack of lower tariff institutions in Northern Ireland may limit the home country options available for those in the lowest attainment group, and that mobility may be necessary for many in this group. However although these contextual factors affect mobility, the most socio-economically advantaged also seem better placed to respond to lack of lower tariff places.

The average marginal effects of field of study supply are in Figure 6.22 and indicate that supply issues may have been more important in mobility to lower than higher tariff institutions. This was also the pattern for students from Wales but the effects were stronger for students from Northern Ireland.

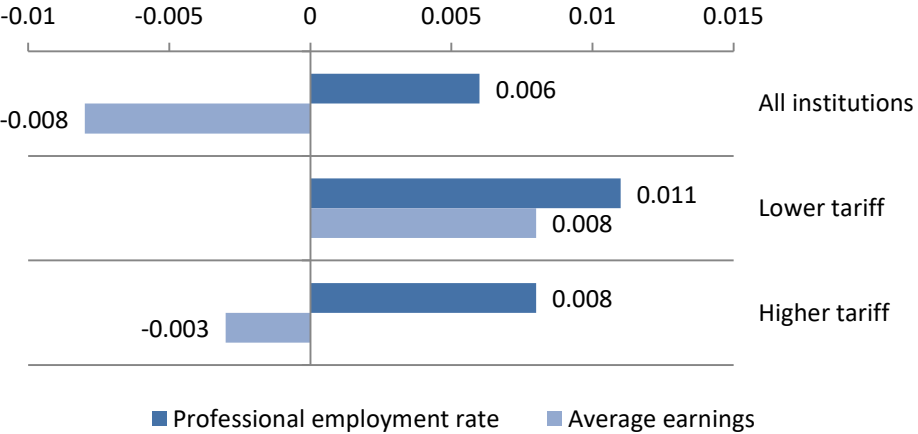
Figure 6.22: Average marginal effect of field of study supply ratio on probability of being a mover, NI-domiciled 2012 young full-time entrants to institution tariff groupings



Effects estimated from model 4 of the regression model for all entrants and model 3 of the models for entrants to lower or higher tariff institutions, which controlled for all factors apart from field of study entered itself. The AME for ‘all institutions’ is lower than those for lower and higher tariff institutions due to higher levels of mobility of entrants to medium tariff institutions to some fields relatively oversupplied in Northern Ireland.

The relationships between the probability of moving and the other field of study factors are shown in the form of average marginal effects (Figure 6.23).

Figure 6.23: Average marginal effect of professional employment and average earnings of the field of study entered on probability of being a mover, NI-domiciled 2012 young full-time entrants to institution tariff groupings



Effects estimated from model 4 of the regression model for all entrants and model 3 of the models for entrants to lower or higher tariff institutions, which controlled for all factors apart from field of study entered itself.

At this broad level, after controlling for all variables, the only small difference was that only those who entered lower tariff institutions appeared to enter fields of study

with higher median earnings, as movers rather than stayers. There was a positive association between mobility and the professional employment rate of the field of study for both groups. Although the latter findings may indicate that a lack of overall supply may motivate entrants to all types of institution to be mobile to improve expected employment outcomes, the lack of relationship with the earnings variable for movers to higher tariff institutions is less easy to explain. However because Northern Ireland has so few institutions, findings in relation to institution type are strongly affected by lack of supply and the necessity for many students to move.

6.3.3 Geographical destinations and student differences in mobility

In relation to RQ4, analysis of student differences in relation to destinations was carried out. In chapter 5 it was shown that students from Northern Ireland went to both England and Scotland, and within England went more frequently to the North-West than to other regions. Descriptive data show that middle class entrants predominated in most English regional destinations and in Scotland (Table A6.21). However those who went to the North-West, and the Midlands, were more likely to be intermediate or working class than middle class. This was the same finding as for movers from Wales to these regions of England. These were also the only regional destinations to which Northern Irish entrants were more likely to be lower attainers than medium-highest attainers. Around half of movers to the North-West were also first generation students, higher than to any other region. Table 6.4 summarises the key differences. The North-West as closest region of England is the most popular with movers but the findings also suggest that it is more socially as well as geographically accessible for Northern Irish students.

Table 6.4: Percentage of movers from Northern Ireland to HEIs in the North-West region, the rest of England and Scotland, selected characteristics, young full-time entrants 2012

	North-West	Rest of England	Scotland
Social class			
Higher managerial and professional	21.4	25.8	24.7
Lower managerial and professional	22.8	31	33.6
Intermediate	26.3	25	23.5
Working class	29.6	18.2	18.2
Parental education			
Parental HE	50.8	63.2	65.3
No parental HE	49.2	36.8	34.7
Attainment group			
Lowest	30.2	22.9	23.3
Low	22.5	15.3	16.5
Medium	16.9	12.8	12.4
High	17.3	17.1	22.8
Highest	13	31.9	24.9
Total (N)	920	1470	780

Home area and ethnicity excluded due to low numbers of entrants from low participation areas and BME groups entering Scottish HEIs.

To further explore the variation in student characteristics in relation to destination a multinomial regression model was run, in which movers to each of the North-West, the rest of England, and Scotland were compared to stayers (Table A6.22). In class terms, having accounted for other factors, mobility to the rest of England appeared to be the most strongly associated with socio-economic advantage, and mobility to the North-West the least, as indicated in the descriptive data. There is support in this evidence therefore that moving to proximal locations was associated with having fewer socio-economic advantages. However for all groups of movers, including those to the North-West, being from a higher managerial and professional class background was most strongly associated with moving compared to staying in Northern Ireland. Mobility to the rest of England as well as the North-West was positively associated with being a first generation student when other factors were accounted for. There was little difference between movers to Scotland and stayers on this measure.

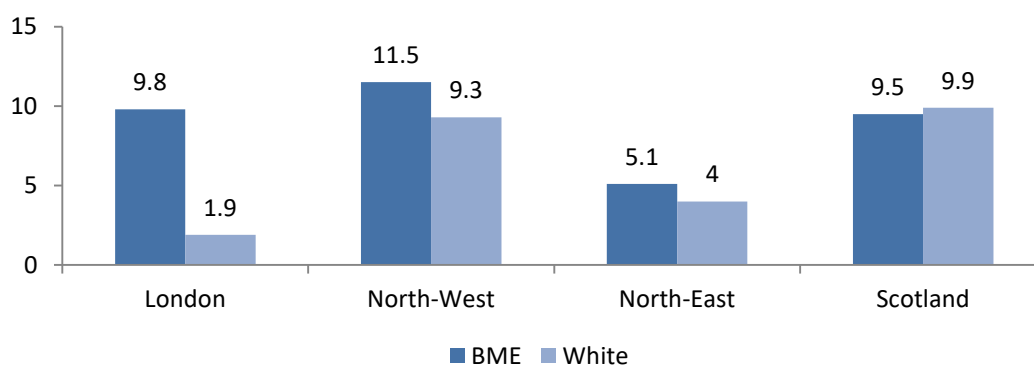
Compared to stayers, mobility to both Scotland and the rest of England was positively associated with an increase in the institution average tariff score, however mobility to the North-West was not. This reflects the popularity of lower tariff institutions in the North-West for students from Northern Ireland. Being in the lowest or low attainment group increased the odds of being a mover to both countries compared to being in the highest attainment group, but this was very strongly the case for movers

to Scotland. This finding is a little surprising given the high tariff level overall of Scottish institutions (chapter 4) and that there was less lower tariff entry of Northern Irish students in Scotland than in England (chapter 5). It does however reflect the findings of the regression model for entrants to all higher tariff institutions (Figure 6.20). As has been the case in other regression models, the attainment group findings seen in the descriptive data do not have the same relationship with moving when social background factors and institution tariff level are accounted for.

The regression model (Table A6.22) shows different odds ratios in mobility in relation to field of study amongst movers to Scotland and the North-West and those to the rest of England. This suggests that the fields of study entered may affect where students move to, and perhaps how far from Northern Ireland. Examining this point using descriptive data, movers to the rest of England were far more likely than the other groups of movers to enter creative arts and design, and to enter this at medium to lower tariff institutions. It may also be that students who are willing and able to move further from Northern Ireland have the resources that increase their propensity to enter arts subjects which may not have the clearest future employment benefits, with this potentially offset by entering a higher tariff institution. In support of this, movers to both the rest of England and Scotland were more likely than movers to the North-West to enter languages and historical and philosophical studies, and did so most frequently at higher tariff (particularly highest tariff) institutions.

In terms of ethnicity and geographical destinations, with all years of data combined, Figure 6.24 shows the relatively high popularity of London with BME compared to White entrants. This may support what has been found in previous research (in chapter 3), that for some BME students mobility is to regions or institutions with a diverse ethnic population.

Figure 6.24: Percentage of NI-domiciled young full-time BME and White entrants to the most popular regional destinations of movers – 1996, 2004, 2010, 2011 and 2012 combined



6.3.4 Summary: Movers from Northern Ireland

Cross-border mobility is a necessity for a large minority of students from Northern Ireland, but nonetheless undertaken proportionally more by those from the higher managerial and professional classes. Based on previous research summarised in chapter 3 this may link to religious affiliation (Osborne, 2006; Osborne et al., 2008), but it is also the case that moving is a costly business for Northern Irish students, and so this may also reflect the role of financial resources in mobility, or indeed be explained to some extent by a status maintenance motivation as proposed by both RRA and cultural reproduction theory.

However, those without a parent with an HE qualification were more likely to be movers than stayers, more so amongst movers to England than Scotland. This would not be predicted based on theories of status maintenance nor on the basis of the expected role of cultural capital in mobility, but as noted about 40% of parental HE data for Northern Irish entrants was missing and so a large amount of the data were imputed. However if the data provide a representative picture, the lack of HE supply in Northern Ireland compared to other countries may reflect that there are more reluctant movers which may necessitate mobility for a wider group of students with varied backgrounds, as Osborne (2006) found in his earlier study. It may also indicate that because Northern Ireland is a small country and outward mobility is common, many young people know of others who have gone away to study, making it a more 'normalised' route to follow even without parental experience to draw on. This could create a 'culture of migration' (Massey et al., 1993) and explain why it may be considered an option by a wide range of students. The greater lack of HE places

within Northern Ireland before the increase in places implemented in 2004 may also mean there are fewer graduates among the parents' generation, especially given the percentage of students who have previously left Northern Ireland to study not all of whom will have returned (there may be support for the proposition that this is reflected in the parental education finding in that Northern Ireland has a lower percentage of graduates in its adult population than other UK countries according to ONS (2013)).

It was also the case that those in the lowest attainment group were the most likely to move suggesting that mobility was more necessary for lower attainers. Overall, the benefits of moving appear to relate to accessing institution types unavailable in Northern Ireland; to accessing under-supplied fields of study, and to a limited extent fields of study with higher professional employment rates; and to accessing higher average tariff institutions, although only if moving further than the North-West of England. Movers to the North-West on the other hand, who made up about a third of all movers, were less advantaged than those moving elsewhere. This suggests that when movement is to a relatively close region with a strong history as a popular destination with students, then mobility is less dependent on socio-economic resources or possibly less affected by the identity concerns associated with longer distance mobility that otherwise may affect those with relatively few resources (Clayton et al., 2001; Reay et al., 2001).

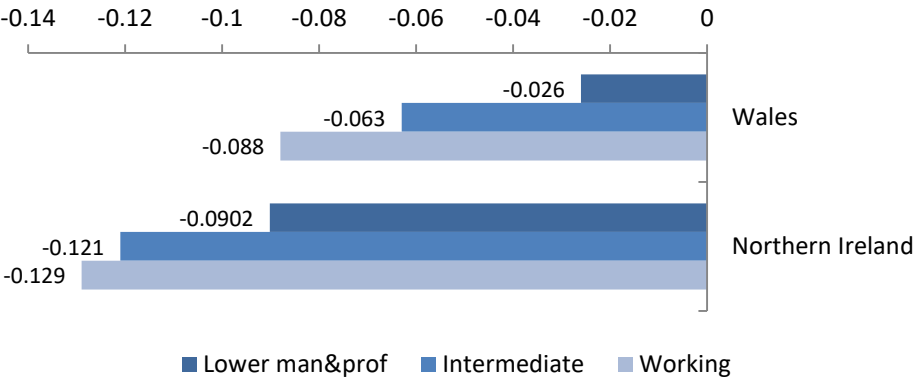
BME entrants were more likely than White entrants to be movers. This may reflect the lack of diversity within Northern Ireland compared to England, and/or for some students a desire to access a higher tariff university that may not be available in the home country. The numbers of students from Northern Ireland within BME groups are however tiny and it is problematic to break these down further.

6.4 Conclusion: comparing the characteristics of movers from Wales and Northern Ireland

This chapter has provided findings on student differences in mobility for the two countries with high levels of outward mobility. What are the commonalities and differences between them? From both countries, the descriptive data showed that a higher percentage of movers were from the lower than higher managerial and

professional class. But odds ratios and marginal effects estimated from regression modelling, and therefore accounting for other background factors and the field of study and institution tariff level entered, showed that cross-border mobility compared to staying in the home country was more likely the higher the socio-economic position indicated by parental social class. The class associations with mobility found through regression models on students from each country domicile are summarised in Figure 6.25, which shows the average marginal effect - that is the population averaged probability separate from other factors in the model - on cross-border mobility by country of domicile of being in a social class group (compared to the reference group of higher managerial and professional class). Using average marginal effects increases the direct comparability of the models, however they are nonetheless based on different overall percentages of movers among the entrant population and on slightly differently specified models. The pattern of findings for both countries shows the positive association between class advantages and mobility, and suggests that being in the higher managerial and professional class had a stronger relative effect on likelihood of mobility for students from Northern Ireland than from Wales.

Figure 6.25: Average marginal effect of social class on mobility, in comparison to higher managerial and professional class, by country of domicile (Wales and Northern Ireland), estimated from logistic regression models for all young 2012 full-time entrants



N Wales=14383; N Northern Ireland=10553.

Northern Ireland has too few places for Northern Irish students, while Wales has a high percentage of English students in its institutions. In 2012 this did not however prevent Welsh students from accessing places restricted to Welsh and EU entrants. Supply issues in Wales were an issue though in relation to institution types and some

fields of study. Outward mobility from Northern Ireland and Wales may be beneficial therefore not just to access prestigious universities and courses, but to access HE at lower tariff levels, preferred fields of study, and in the case of Northern Ireland to access HE at all. It is concerning therefore that amongst the entrant population as a whole the analysis indicates class inequality in cross-border mobility. The theoretical perspectives in chapter 3 provide a number of explanations for the relationship between social class advantage and mobility, both for why mobility may be more common and what purposes it may serve. These perspectives of course all seek to provide explanations for social inequalities in HE participation, and the findings suggest that cross-border mobility, even from countries where this is a relatively normalised route and concerns a wide range of students, contributes to the reproduction of those inequalities.

However the analyses of odds ratios and marginal effects showed a different picture for students from Wales and in particular Northern Ireland, in relation to the effect of being a first generation student or not. For students from Wales and Northern Ireland, the findings suggest that those whose parents did not have an HE qualification were more likely to move. This suggests that the social class and parental education variables are measuring different aspects of socio-economic advantage. It may be that where there is a more widely established history of outward mobility, as is the case for both these countries, direct familial knowledge and encouragement is less important than wider class-based resources in encouraging or facilitating mobility. What was also identified as important for Wales-domiciled students, which could not be measured for Northern Ireland-domiciled students, was the effect of attending independent school on mobility. This appeared to have a separate effect to social class and attainment, suggesting a school-type effect in HE choices described for example by Ball et al. (2002a) in relation to what and where to study and encouraging a wider geography of choice.

Prior attainment group is an important control in these models, as attainment level would be expected to play a strong part in entering institutions of varying tariff level. However after controlling for other background factors and the course entered, the entrants most likely to be movers were not always those from an attainment group that clearly matched the institution tariff group entered. Although very few entrants

with low or lowest attainment were likely to enter higher tariff institutions nor move to do so, being in a low attainment group and entering a higher tariff institution increased the probability of moving compared to being in higher attaining groups for entrants from Northern Ireland. This suggests that a small percentage of students with relatively low attainment may be taking advantage of mobility to access higher tariff institutions than they could in their home country; and/or that movers were entering courses that had less high entry levels than the average for the institution (but still with the effect of entering a higher tariff institution). However this may have been expected also for movers from Wales due to the limited high tariff provision there. In this case though those in the highest attainment group were more likely to be movers. This suggests a basic supply issue of higher tariff places explaining mobility to a greater extent than a case of using mobility to gain advantage from a lower attainment position.

However for movers from Wales, even amongst entrants to lower tariff institutions, those in the highest attainment group were more likely to be movers. This is a surprising finding. It suggests an issue with provision for highest tariff entrants, but rather than moving to high tariff institutions in all cases, they moved to lower tariff institutions too. This may be because they entered preferred fields of study in this way, which were perhaps only available to a limited extent at high tariff institutions. Whereas for students from Northern Ireland, a lack of suitable provision at lower entry tariffs appeared to be a factor in moving to enter lower tariff institutions.

For students from Wales and Northern Ireland, under-supply of fields of study was associated with mobility, and was suggested to apply to a wide range of fields of study in chapter 5. It was proposed that those with fewer resources would be more concerned with field of study than institution benefits, and indeed concerned with accessing HE at all if places were unavailable in the home country. It was suggested that this would help explain why students move to enter lower tariff institutions. Mobility to lower tariff institutions did appear to be better explained by the field of study supply measure than did mobility to higher tariff institutions.

The findings suggested that only those from Northern Ireland may have entered fields of study as movers which lead to higher professional employment levels. However, amongst entrants to lower tariff institutions there was a positive association between

moving and the employment level of field of study entered for movers from Wales and Northern Ireland. For movers from Wales there was a positive association with field of study earnings rate amongst entrants to higher tariff institutions; for movers from Northern Ireland this was the case amongst entrants to lower tariff institutions. This may reflect similarities and differences in motivations for mobility from these countries, but may more simply reflect differences in the fields of study entered to a relatively greater extent by movers than stayers from the two countries. As discussed in detail in chapter 5, there can be a range of explanations for mobility to specific fields of study from each country. It is possible however that concerns about future employability, not just enjoyment of the field of study, are reflected in these findings, particularly amongst entrants to lower tariff institutions as some of the wider research on subject choice would suggest (e.g Archer, 2003b; Connor et al., 2001; Purcell et al., 2008).

From both countries being BME was associated with higher levels of mobility than being White, and accounted for nearly half of all BME students from each country. For students from Wales it was possible to identify some differences between ethnic groups in propensity to be mobile, and differences in relation to some institutional and regional destinations, connected potentially to differing attainment levels. BME movers from the two countries differed in their likelihood of moving to the North-West region, where there a range of city-based institutions, as only those from Northern Ireland were more likely than White movers to go there. What was identified in both cases was the much greater likelihood of BME students than White students moving to London, by far more ethnically diverse than their home countries, which may provide a further partial explanation for differing rates of mobility between these broad groups of students. This would support the notion of cross-border mobility as reasoned action based on an individual's circumstances and external factors, but as noted in chapter 3 (e.g. Connor et al., 2004; Shiner and Noden, 2015) this can only explain part of the HE choice for some BME students.

There was evidence that the proximity of home area to the border and/or proximity of the destination to the country of domicile can make cross-border mobility not just physically but socially accessible. In both cases, this appears to explain some of the high levels of mobility to the North-West of England. Cross-border mobility

potentially served as an important route for socio-economically advantaged students accessing preferred and often high status forms of HE. But relatively accessible provision, including lower tariff provision, also appeared important to students who were less advantaged but may have had difficulty accessing appropriate provision in their home country.

Cross-border mobility was not then confined to the most socio-economically advantaged. For those entering lower tariff institutions or geographically closer institutions, who in descriptive terms were more likely to be from non-middle class or lower SES backgrounds, mobility arguably served an investment purpose in that it allowed access to HE at a level that they were qualified for. It may have been the difference between entering HE or not, or entering a preferred subject or not. In that sense it can be a benefit to the student, as long as the benefit is not lost through lack of opportunity in the labour market (Brown, 2000). But even these benefits may have been less than for those entering more prestigious subjects and institutions. So relative to other outcomes for students who enter lower tariff institutions, cross-border mobility may provide benefits, but not so strongly relative to other student groups who are moving to enter higher tariff provision. In this sense mobility from Wales and Northern Ireland can contribute to the reproduction of inequalities.

Having focused on countries with high outward mobility, the next chapter reports findings on student differences in outward mobility from Scotland and England.

Chapter 7: Student characteristics and their association with mobility – Scotland and England

7.1 Introduction

This chapter follows the same structure as chapter 6, reporting findings for students from Scotland and England. These countries both have low levels of outward mobility, and therefore the role of student characteristics in cross-border mobility may differ to those of high outward mobility countries. Firstly for each of the countries, the chapter will address three research questions:

- RQ2: How are students' social characteristics and educational background associated with geographical mobility?
- RQ3: How is mobility associated with institutional or field of study entered and how does this differ in relation to student characteristics?
- RQ4: How are students' social characteristics associated with the relationship between place of domicile and destination?

The findings from descriptive analysis and regression modelling are both reported, and the models follow the same pattern as for Wales and Northern Ireland, and as described in chapter 4. The findings for England further include data on regional movers and on the effect of flows from England into Wales and Scotland on the characteristics of the student populations in those countries. The chapter will conclude with a discussion of the similarities and differences between the two countries of domicile. Additional tables are provided in the appendix to chapter 7, and referenced as A7.x in this chapter.

7.2 Scotland-domiciled entrants

7.2.1 Student characteristics and cross-border mobility

RQ2 concerns the relationship between students' background and cross-border mobility. As noted in chapter 4, students from Scotland are more likely than students from the other UK countries to have characteristics associated with socio-economic advantage. Table 7.1 shows that in descriptive terms Scotland-domiciled movers as a sub-set of these students were also a socio-economically advantaged group in terms of social class, parental education and school background, more strongly so than movers

from Wales and Northern Ireland. There were too few movers from areas with low HE participation to report (and this variable is left out of subsequent analyses).

Table 7.1: Scotland-domiciled young full-time undergraduate stayers and movers, 2012 entrants (column percentages within characteristics)

	Stayers (%)	Movers (%)	Stayers (N)	Movers (N)
Gender				
Female	56.5	54.8	12040	595
Male	43.5	45.2	9285	490
Social class				
Higher managerial and professional	27.4	44.2	5850	480
Lower managerial and professional	30.7	29.7	6540	320
Intermediate	20.7	15.2	4405	165
Working class	21.2	10.9	4525	120
Parental education				
Parent with HE qualification	64.5	81.3	13760	880
No parent with HE qualification	34.6	19.7	7560	200
Ethnicity				
White	93.7	88.9	19880	950
Black	0.6	-	130	-
Asian	3.9	-	830	-
Mixed/Other	1.7	-	355	-
<i>All BME</i>	<i>6.3</i>	<i>11.1</i>	<i>1345</i>	<i>120</i>
Attainment				
Highest quintile	16.3	28.9	3475	310
High quintile	19.5	14.3	4150	155
Medium quintile	20.1	15.3	4280	165
Low quintile	21.4	15.4	4555	165
Lowest quintile	22.8	26.2	4865	285
Home area				
Not low participation area	96.8	-	20310	1035
Low participation area	3.2	-	665	-
School type				
State school	90.8	49.3	18730	485
Independent school	9.2	50.7	1910	500
Total	95.2	4.8	21325	1080

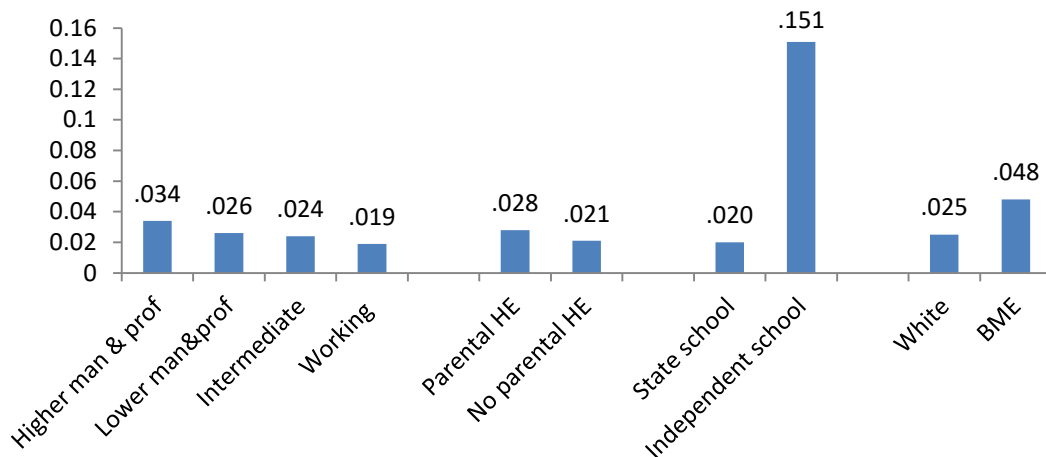
¹ fewer than 52 cases. 'Not low participation area' movers omitted due to small number of cases in 'low participation area' group.

Note: the N total within each characteristic grouping will not necessarily equal the total movers, due to rounding of counts following multiple imputation for some variables, and missing data for other variables where the missing data equal less than 5% of cases. Counts have been further rounded to the nearest 0 or 5.

In terms of inferential analysis, Table A7.1 provides the findings for the binary logistic regression model for entrants from Scotland in 2012. Across the models, the association of social characteristics with mobility supported those found in the descriptive analysis, and their direction of association did not change as new variables were added. Probabilities in the form of marginal effects, estimated from model 4, are

provided in Figure 7.1. This firstly shows the very different scale of probabilities of moving compared to entrants from Wales and Northern Ireland due to low outward mobility, and less scope for differentiation between characteristic groups in the probability of moving. The findings do nonetheless illustrate that mobility out of Scotland was positively associated with socio-economic advantage, and that the difference between a probability of 3.4% for entrants from higher managerial and professional backgrounds and 1.9% for entrants from working class backgrounds when only 5% of all entrants are movers represents a notable level of difference. By far the strongest separate effect was that of a student having attended independent school, for whom the probability of being a mover is estimated at 15% compared to only 2% for students from state schools. Nagelkerke R² increased from 0.05 in model 1 to 0.17 in model 2 when the school type variable was added, reflecting the strength of the school type association with moving. This effect is separate to that of social class, attainment or parental education, and as such suggests that independent schools in Scotland are positively encouraging, preparing pupils for and/or ensuring knowledge of HE options in England. This school-type effect may also be picking up the impact of family wealth on cross-border mobility, if this is not accounted for by parental social class.

Figure 7.1: Probability (marginal effect) of being a mover by social characteristics, estimated from logistic regression model (model 4) for Scotland-domiciled 2012 young full-time entrants

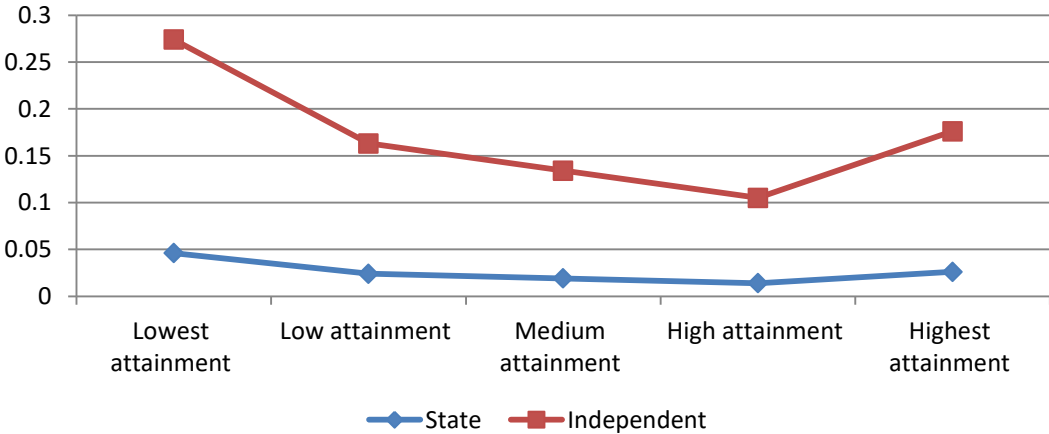


Data in Table A7.2. Other variables controlled in the model: gender, field of study entered, course level entered, average tariff points of institution entered. N=21541.

In model 1 of the regression model (Table A7.1), being in the highest prior attainment group was positively associated with moving, compared to being in the lowest

attainment group. This changed to a negative association in model 2 when school type was added, demonstrating that the higher chances of moving of high attainers were explained in part by their attendance at independent schools. An exploration of marginal effects of the interactions between variables showed the probability of moving was higher across all attainment groups who attended independent school compared to those who attended state school (Figure 7.2).

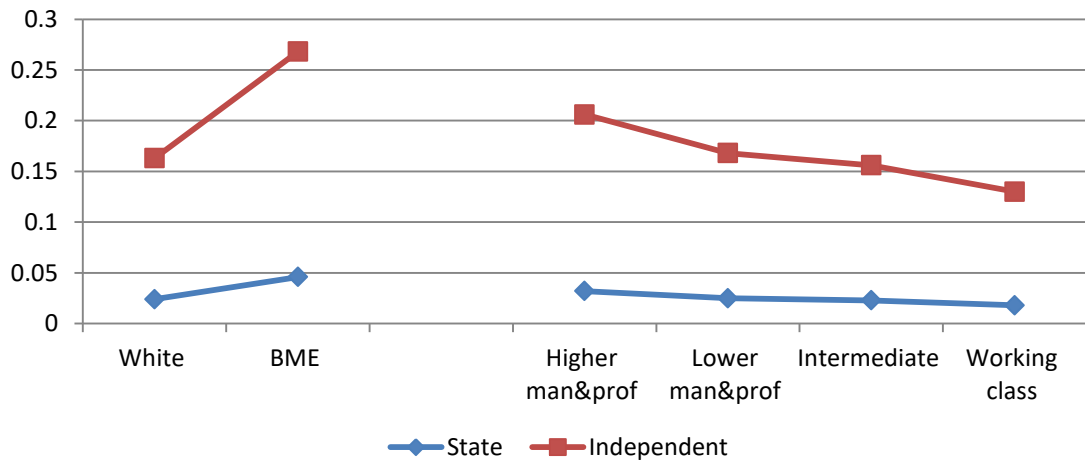
Figure 7.2: Probability (marginal effect) of mobility by interaction between school type and prior attainment group, estimated from logistic regression model (model 5) for Scotland-domiciled 2012 young full-time entrants



Data in Table A7.3. N=21541.

Furthermore the much higher probability of moving by entrants who had been to independent rather than state school was found across ethnic and social class groups (Figure 7.3). For example, although concerning only small numbers of students, those from an intermediate or working class background were much more likely to be movers if they had been to independent school than state school; and more likely to be movers than managerial and professional class students who had been to state school. These findings therefore further suggest the importance of school-type effects on mobility compared to other background factors, although school-type effects do not even out all background differences.

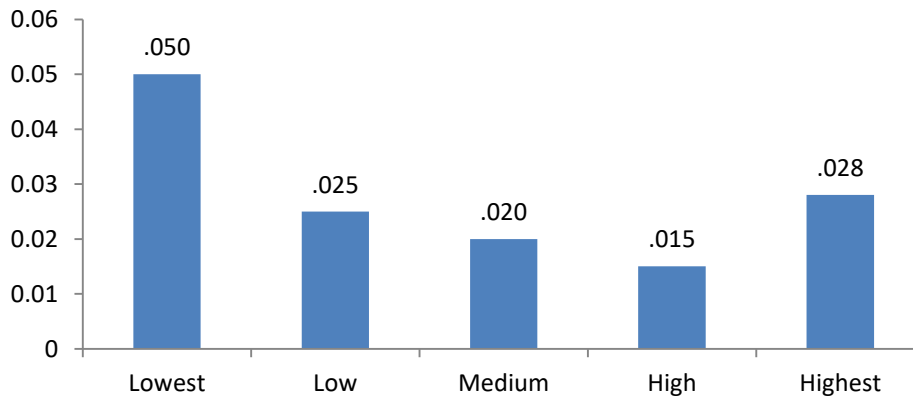
Figure 7.3: Probability (marginal effect) on mobility of the interaction between school type and ethnic and social class groups, estimated from model 4 of the logistic regression model for all Scotland-domiciled 2012 young full-time entrants



Data in Table A7.4. N=21541.

The probability of moving associated with each attainment group estimated from model 4, which included course and tariff level of institution entered, is shown in Figure 7.4. The greater probability of moving of those in the lowest attainment group is not an expected finding on the face of it.

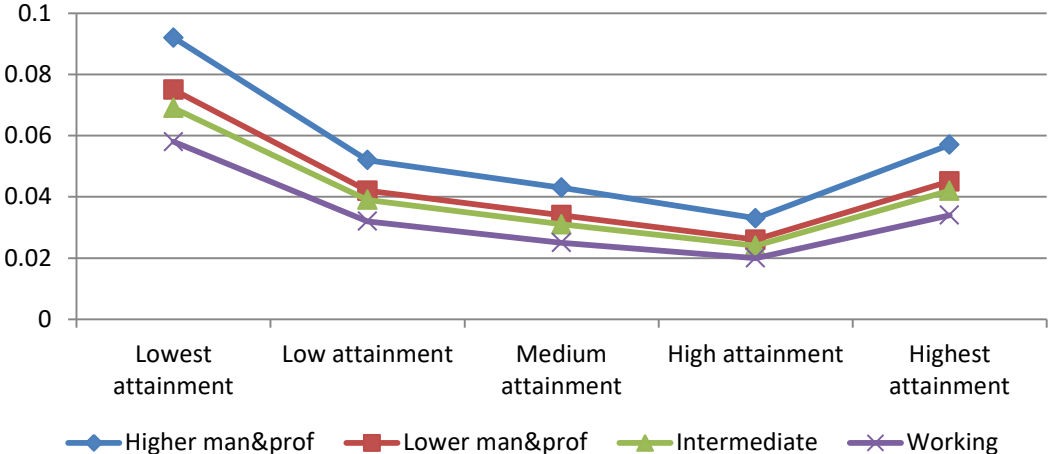
Figure 7.4: Probability (marginal effect) of being a mover by attainment group, estimated from logistic regression model (model 4) for Scotland-domiciled 2012 young full-time entrants



Data in Table A7.2. Other variables controlled in the model: gender, social class, ethnicity, parental education, school type, field of study entered, course level entered, average tariff points of institution entered. N=21541.

In addition to the relationship between school type and attainment noted above, exploration of interaction effects show that this pattern of attainment in relation to probability of mobility is also seen across social class groups (Figure 7.5).

Figure 7.5: Probability (marginal effect) on mobility of the interaction between social class and attainment group, estimated from model 4 of the logistic regression model for all Scotland-domiciled 2012 young full-time entrants



Data in Table A7.5. N=21541.

Those in the lowest attainment group, no matter their social class group, were more likely to be movers than those in other attainment groups. But those in the higher managerial and professional class group were more likely to be movers than other classes within each attainment group, particularly in the lowest and highest attainment group. The propensity for higher attainers to be mobile may be explained by the motivation to enter high tariff institutions. That of low attainers may be due to relatively low supply of lower tariff provision, but the more socio-economically advantaged appeared to be take relatively more advantage of mobility in response to this contextual factor. This point is considered further in the institution findings section, but it can be noted that the diversion of lower attainers to HE in colleges rather than HEIs may affect the relative socio-economic advantage level of entrants to lower tariff HEIs, and potentially helps explain this finding.

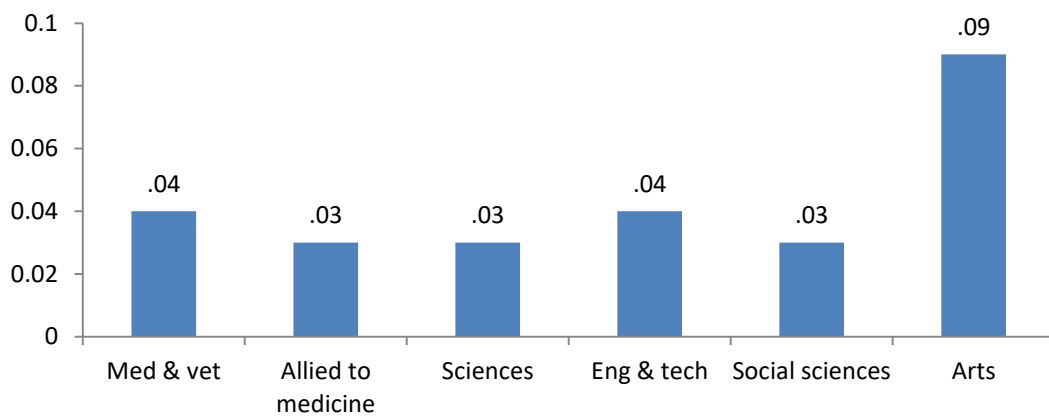
7.2.2 Fields of study, institution types and student differences

This section concerns RQ3, and focuses firstly on student differences in field of study in relation to mobility, and then on institution types.

7.2.2.1 Fields of study

This section addresses whether the potential benefits of entering fields of study by moving may be greater for those already more socio-economically advantaged. Movers from Scotland, as reported in chapter 5, were more likely than stayers to enter medicine and arts fields of study. Fields of study were included in the main regression model (Table A7.1). Having controlled for background factors and institution tariff score, the probability of moving in relation to each field of study group is illustrated in Figure 7.6.

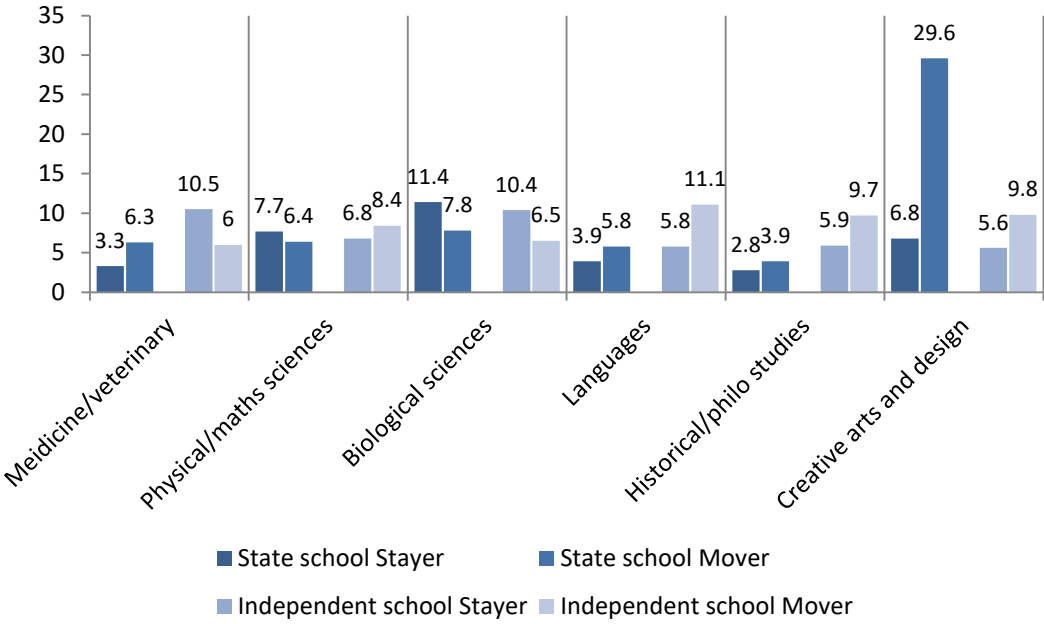
Figure 7.6 Probability (predictive margin) of mobility by field of study entered, estimated from logistic regression model (model 4) for Scotland-domicile 2012 young full-time entrants



Other variables controlled: gender, social class, ethnicity, parental education, attainment group, school type, course level, tariff score of institution entered. N=21541.

The greater propensity to move to study medical subjects was no longer evident after controlling for other factors, but remained in relation to arts subjects. However, as entrants to medicine and veterinary medicine would arguably be gaining in terms of the prestige of the field of study and its high subsequent employment and earnings rates, student differences in mobility were explored. It does not appear to be the case that movers entering medical subjects were more socio-economically advantaged than stayers as the class differences in entering this field were similar for stayers and movers. Those who went to independent school were actually less likely to enter medicine and veterinary medicine as movers than stayers as seen in Figure 7.7, in which entrants for 2010, 2011 and 2012 were combined to achieve a sufficient number of cases given the low intakes to this field of study. It is possible then that mobility by some state school entrants helped reduce inequalities in access to this selective and high status field of study.

Figure 7.7: Percentage of Scotland-domiciled stayers and movers from state schools and independent schools who entered selected fields of study, young full-time entrants 2010-2012



Data in Table A6.6.

As noted in chapter 4 the supply issues within Scotland in most fields of study did not appear problematic but where there was under-supply it was most strongly in mass communications and documentation, creative arts and design, and education. Movers to these subjects may then be gaining in relation to accessing under-supplied fields of study, however only creative arts and design had a high number of movers. State school movers were much more likely than stayers to enter this field and this was more strongly the case than for independent school movers compared to stayers (Figure 7.7). Additionally as noted in chapter 5 movers to lower tariff institutions were more likely to enter this field than movers to higher tariff institutions.

Creative arts and design is a field of study that can be very hard to enter in very high tariff institutions, but also available at a variety of tariff level institutions. It can therefore account for movers from a variety of backgrounds. However it is also only available at a limited number of institutions. Mobility to enter creative arts and design may be a reasoned action to gain access to a preferred field of study, rather than to maintain or increase status, and this could explain why movers were relatively more likely to be from state school and entering lower tariff institutions, compared to independent school and higher tariff institutions.

The findings further indicate that independent school movers were more concentrated than stayers in fields of study that could be considered 'academic' or 'selective' (physical and mathematical sciences, languages, historical and philosophical studies), and this was more strongly the case than for state school movers compared to stayers (Figure 7.7). These fields of study were more commonly entered by movers to higher than lower tariff institutions. Overall, these findings suggest some differences in the purpose and cost-benefit evaluation of moving in relation to school background.

The relationship between moving and alternative field of study measures was also explored in the binary logistic regression model for all movers (model 5, Table A7.1). Subject supply within the home country was very weakly negatively associated with moving – an increase in supply in Scotland was associated with lower odds of moving. This reflects partly that supply issues in fields of study did not appear to be strong, but also may reflect the motivations for moving by what was overall a relatively advantaged group of students potentially driven more by institution than field of study preference. The professional employment rate of the field of study entered had no association with moving, while there was a negative association with the earnings associated with the field of study entered. If this is not explained by the limitations of this measure that have been identified previously then it may be evidence of more advantaged students being less likely than less advantaged students to expect to depend on educational credentials alone to secure well-paid future employment, as suggested in chapter 3 (e.g. Brown, 2013).

7.2.2.2 Institution types

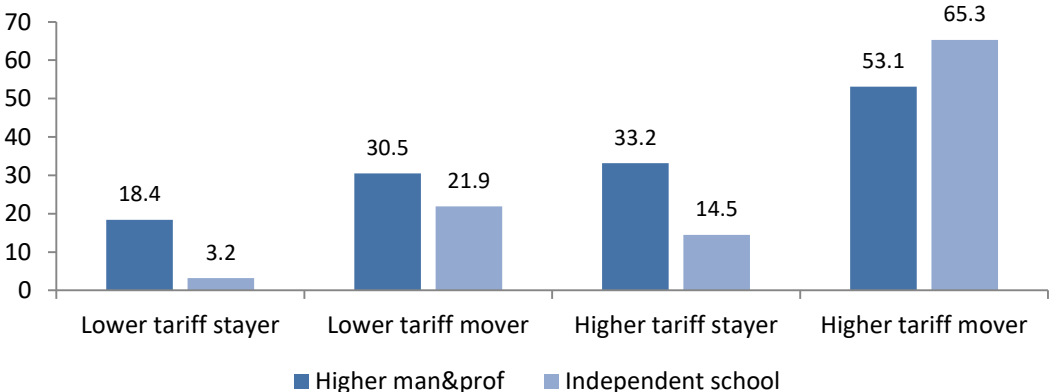
Further addressing RQ3, the relationship between student characteristics, mobility and institution type entered was examined. There are three key issues. Firstly the association between mobility and entering higher tariff institutions would be expected to be stronger than that associated with entering lower tariff institutions. It was shown in chapter 5 that movers were in fact more likely than stayers to enter both high and lowest tariff institutions (in the five-group classification of institution tariff levels). In the case of the lowest tariff group, this may reflect supply issues within Scotland at lower tariff levels (potentially due to the extent of college HE provision, as

noted in chapter 4). As for movers from Wales and Northern Ireland, this contextual factor may explain the benefit of mobility for movers within this group.

Secondly, movers would be expected to enter a relatively higher tariff institution than stayers. Institution tariff score was included as an interval variable in regression models for movers-out of Scotland, added in model 4 (Table A6.1) after the range of social characteristics, and field of study, had been accounted for, and was positively associated with being a mover. Overall institution tariff level appeared to interact with field of study entered (reflected in changes to odds ratios for fields of study in model 4 compared to model 3), suggesting that the institution tariff level entered explains some of the fields of study differences between movers and stayers.

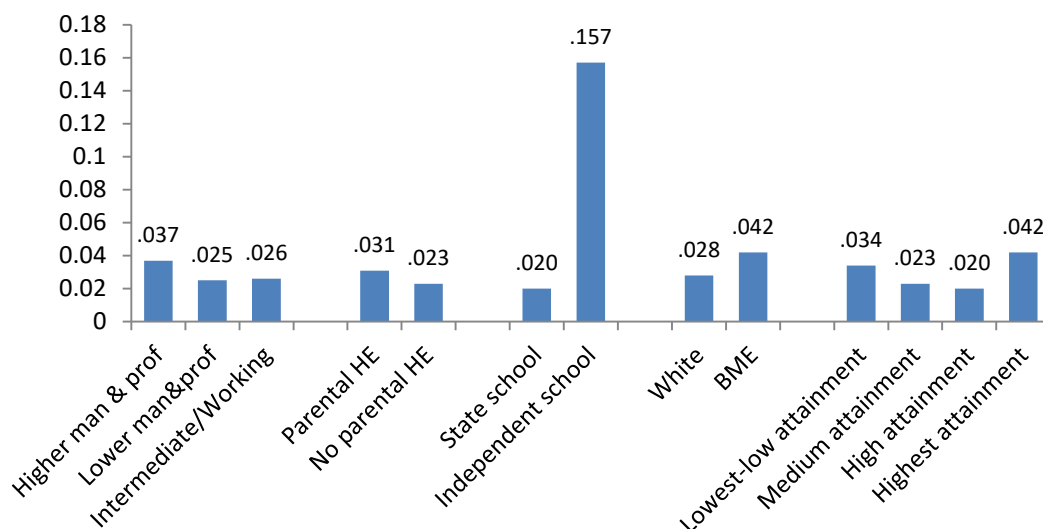
The third issue relevant to institutions is that moving to higher tariff institutions could be expected to be more concentrated among socio-economically advantaged groups than stayers entering similar status institutions. Table A7.7 provides descriptive data on the characteristics of movers and stayers amongst entrants to lower and higher tariff institutions. Mobility overall was more common among higher tariff institution entrants (5.5% of entrants) than among lower tariff institution entrants (4.9% of entrants), and as expected movers and stayers were relatively more advantaged if entering higher rather than lower tariff institutions. Scottish movers to higher tariff institutions were a particularly privileged group, as is shown in Figure 7.8 in relation to being from a higher managerial and professional class or independent school background. But these data also show that movers to lower tariff institutions were more privileged than equivalent stayers.

Figure 7.8: Percentage of stayers and movers entering lower and higher tariff institutions from higher managerial and professional class or independent school background



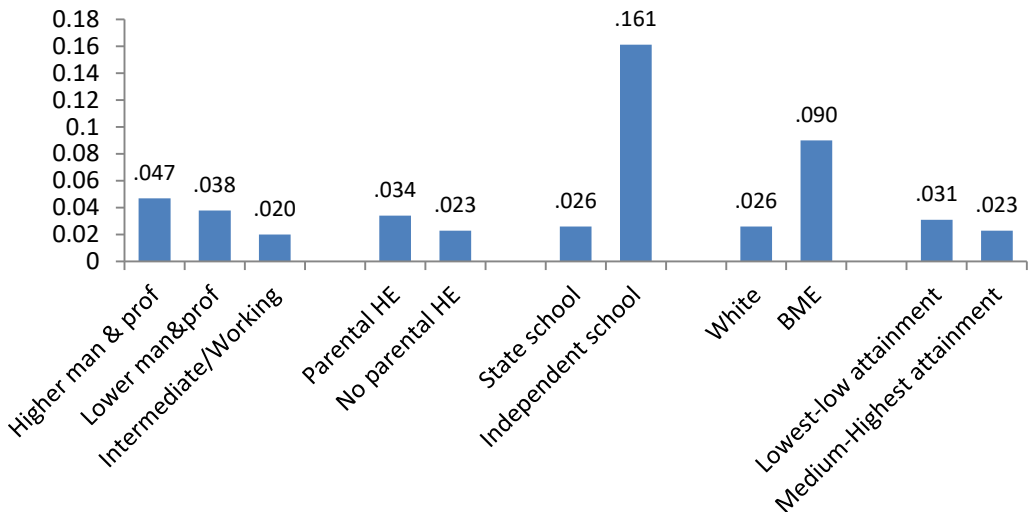
Regression models were also created for movers to lower and to higher tariff institutions, to explore the factors associated with mobility for entrants to each type (Tables A7.8 and A7.9). Based on model 3, in which background factors and course entered were controlled, the probability of moving by characteristic was calculated in the form of marginal effects (Figure 7.9 and Figure 7.10). As mobility to both institution tariff groups was positively associated with measures of higher socio-economic advantage, this suggests that the differentiation in mobility was less to do with the tariff level of the institution entered than the role of cultural and financial resources in supporting mobility. Movers to both types of institution were also more likely to be BME than White. The difference was stronger amongst entrants to lower tariff institutions, but this represented a low number of BME students. The data also show the more surprising finding that being in the lowest attainment group increased the probability of moving for entrants to higher as well as lower tariff institutions. For entrants to higher tariff institutions this effect was on a very small percentage of entrants, but for these few students mobility may have been used to access a higher tariff institution than was feasible in Scotland.

Figure 7.9: Probability (marginal effect) of being a mover by social characteristics, estimated from logistic regression model (model 3) for Scotland-domiciled 2012 young full-time entrants to higher tariff institutions



Data in Table 7.10. Other variables controlled in model: gender, field of study entered. N=10604.

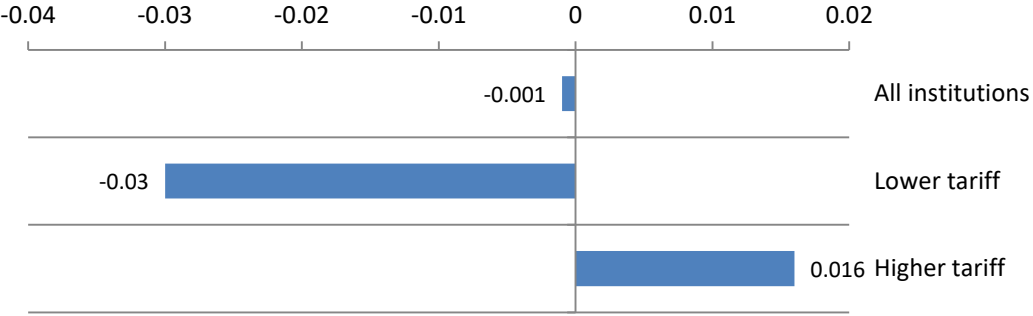
Figure 7.10: Probability (marginal effect) of being a mover by social characteristics, estimated from logistic regression model (model 3) for Scotland-domiciled 2012 young full-time entrants to lower tariff institutions



Data in Table A7.11. Other variables controlled in model: gender, field of study entered. N=5294.

The probability of mobility to institution groupings in relation to the home supply of the field of study entered is shown in the form of average marginal effects in Figure 7.11. When supply increased, there was an increase in likelihood of mobility amongst those entering higher tariff institutions, and a decrease amongst those entering lower tariff institutions. These findings suggest that movers to higher tariff institutions may have been less driven by supply issues, and more by a motivation to enter a higher tariff institution outside Scotland.

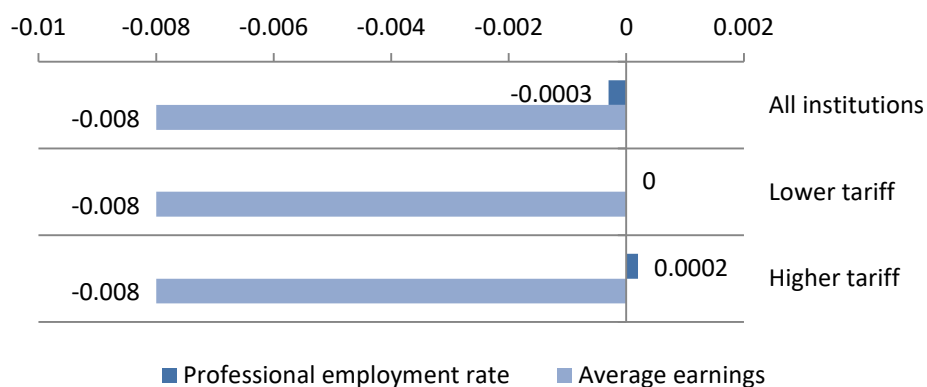
Figure 7.11: Average marginal effect of field of study supply ratio on probability of being a mover, Scotland-domiciled 2012 young full-time entrants to institution tariff groupings



Effects estimated from model 4 of the regression model for all entrants and model 3 of the models for entrants to lower or higher tariff institutions, which controlled for all factors apart from field of study entered itself.

Figure 7.12 suggests very little association between the probability of being mobile and the employment and earnings measures of fields of study entered. There was almost no relationship with the employment rate measure and amongst neither institution tariff group was mobility, compared to staying in Scotland, positively associated with entering fields of study with relatively higher earnings rates. This reflects the relatively high mobility identified in chapter 5 to humanities subjects amongst those moving to enter higher tariff institutions, which are fields of study with low overall professional employment and earnings rates. Again, those moving to higher tariff institutions in particular, due to the status of the institution itself and/or because they have other social advantages they can draw on, may not necessarily need to use their degree subject to increase chances of employment (e.g. Brown, 2013).

Figure 7.12: Average marginal effect of professional employment and average earnings of the field of study entered on probability of being a mover, Scotland-domiciled 2012 young full-time entrants to institution tariff groupings



Effects estimated from model 4 of the regression model for all entrants and model 3 of the models for entrants to lower or higher tariff institutions, which controlled for all factors apart from field of study entered itself.

7.2.3 Geographical destinations and student differences in mobility

In chapter 5 it was seen that there were not the notable patterns of proximal cross-border movement as there were for Wales. The areas close to the English border are sparsely populated, and England is less accessible to students from Scotland as a whole. Student differences with regard to region of HEI entered were explored, but once the data were broken down by regional destination, cell sizes in many cases fell below 52. For movers from Scotland, given the relatively small number of movers

overall compared to other countries, descriptive and inferential analysis by geographical destination has been limited to exploring whether the distance moved from Scotland might relate to characteristics of movers, by comparing movers to the North-East/North-West of England with movers to elsewhere in England. Descriptively those moving to the north of England were a little less socio-economically advantaged than those moving to elsewhere in England (Table 7.2).

Table 7.2: Percentage of Scotland-domiciled movers to the North-East and North-West of England, and to the rest of England by selected characteristics

	North of England	Rest of England
Social class		
Higher managerial and professional	42.5	45.4
Lower managerial and professional	29.8	29.9
Intermediate and working class	27.7	24.6
Parental education		
Parental HE	78	82.6
No parental HE	22	17.4
School type		
State school	50.7	47.8
Independent school	49.3	52.2
Attainment group		
Lowest	27.8	24.4
Highest	20.3	33.8
Total (N)	300	730

'-' fewer than 52 cases.

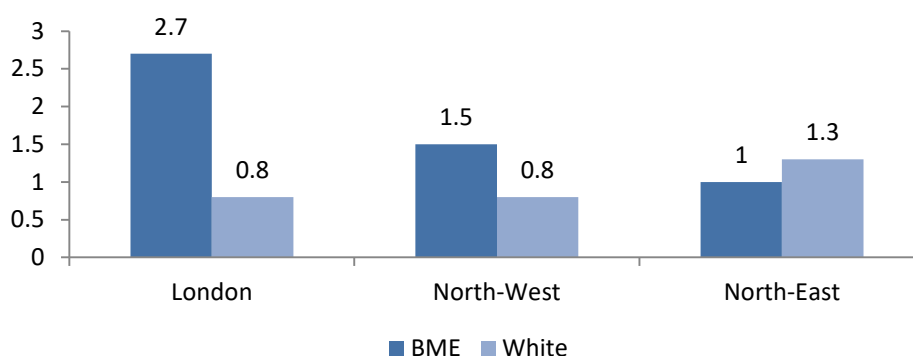
The descriptive data in

Table 7.2 were confirmed by multinomial logistic regression modelling with the reference group of 'stayers' and two outcomes 'entered an HEI in North-East or North-West England' or 'entered an HEI in another part of the UK outside of Scotland' (Table A7.12). The findings show a negative association between institution tariff score and mobility to the north of England but a positive association with longer distance mobility. This is explained in part by the relative scarcity of high tariff institutions and so more dispersed locations. It may also reflect a willingness and ability to move further from home among the types of students most likely to be higher tariff university entrants. The findings therefore provide some weak evidence for more socio-economically advantaged students having the resources to support longer distance movement, and for physical and social distance being a stronger constraint to less advantaged movers. Being in the lowest attainment group was however strongly associated with longer distance mobility, contradicting the

descriptive data. An explanation for this is not clear, but it is possible that in some cases a lack of home country supply may have made moving to long distance HEIs sufficiently beneficial to outweigh costs. The findings indicate however that there was not a great difference between these two sets of movers, and proximity of destination was not an important issue for movers from Scotland. But it may also indicate that in the case of Scotland measuring proximity in this way is not a very effective measure due to the distance of most of Scotland from the physical border with England, and because there are few HEIs close to the Scottish border on the English side in contrast to the situation close to the Welsh border.

The second issue of geographical destination is whether there was a relationship between ethnic group and where students study, for which entry years were combined (Figure 7.13). This will not take into account differences in the wider HE provision and policy context that was in place in those years, but provides an indication of whether there might be a relationship between ethnicity and destinations.

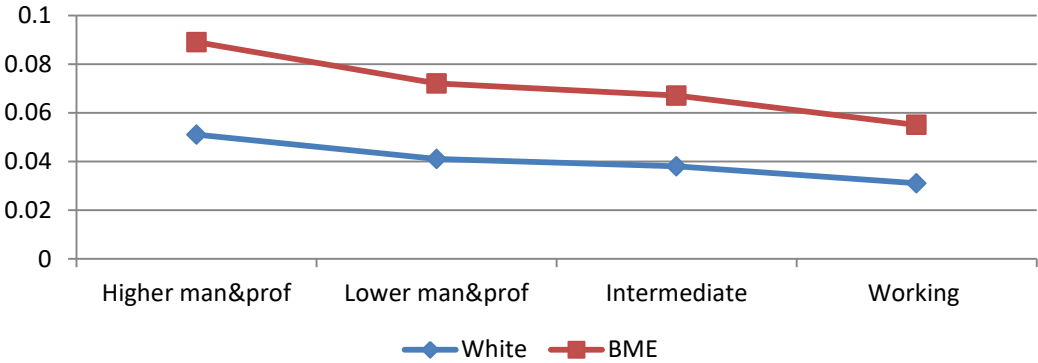
Figure 7.13: Percentage of Scotland-domiciled young full-time BME entrants and White entrants entering selected English regions - 1996, 2004, 2010, 2011 and 2012 combined



BME entrants were more likely than White entrants to go to London HEIs notably and to North-West HEIs. White movers went to the North-East more frequently than to other regions. Regression modelling (Table A7.1 and Figure 6.1) showed that BME students were twice as likely as White students to be movers - some of the effect of ethnicity was therefore independent of other social characteristics, educational background and destinations. This is further illustrated for example by the interaction between ethnicity and social class showing that the probability of being BME and a

mover was greater across all class groups (Figure 7.14), although less strong within the working class than other class groups.

Figure 7.14: Probability (marginal effect) on mobility of the interaction between ethnicity and social class, estimated on model 4 of the regression model for all Scotland-domiciled 2012 young full-time entrants



Data in Table A6.13. N=21541.

It was suggested in chapter 3 that differences in outcomes for BME and White entrants could have been explained by attainment level and the type of institution being entered. The effect of ethnicity independent of these, and the differences in regional destinations of White and BME movers suggest instead that the proposition in chapter 3 related to moving to study in places with greater ethnic diversity than the home country may be supported - the costs of mobility would be offset by these benefits and possible perception of greater probability of success due to greater expectations of fitting in.

7.2.4 Summary: Movers from Scotland

The strongest finding was that the estimated probability of moving for those who went to independent school was much higher than for those who went to state school, and this was not explained by their social class, parental HE experience, ethnicity, attainment level or destinations. There appears then to be a school-type effect on mobility out of Scotland independent of these other factors, which could be explained in part by school practices and information, advice and guidance. This is supported by the findings of Reay and colleagues (e.g. Reay et al., 2001) that school influence of HE choice can include consideration of a wider geography of choice. This school-type effect may also reflect greater family financial and cultural resources not

captured by the social background factors included in the regression modelling, as proposed to be factors in HE choice in both relative risk aversion and cultural reproduction theories. In addition, students who attend independent schools often have the opportunity to study for A levels rather than Highers, which may overcome issues with recognition of Scottish qualifications at English universities, and smooth the transition into HE study intended to follow A levels rather than Highers. The quality of the data was not sufficient to explore the relationship between taking A levels and mobility in relation to school type but independent school pupils taking this option are already operating in a UK-wide horizon of action by strengthening the option of mobility. This may again contribute to the strength of the independent school effect.

The social characteristics associated with moving suggest that mobility not just reproduced patterns of advantage in HE participation, but also exacerbated them. This supports the proposition, based on relative risk aversion and cultural reproduction theory, that mobility is more common for socio-economically advantaged students, due to a positive cost-benefit evaluation and higher expectations of probability of success, supported by financial and cultural resources. However there were also Scotland-domiciled movers who entered lower tariff universities in England. Descriptively, this group were more likely than movers in the higher tariff institution group to have been to state school and were also more evenly distributed across class groups. Nonetheless, even amongst movers to lower tariff institutions, higher socio-economic advantage was in evidence. There was a positive association between mobility and being in the lowest attainment group, which may indicate alongside the institution supply findings in chapter 4, that lower attainers seeking to enter HEIs can have difficulty accessing institutions or courses (particularly creative arts and design) in their home country, but those with more resources are better able to respond to those supply issues by leaving Scotland.

It was found that the greater propensity of BME students to be mobile held across social class groups, school type and attainment groups. The mobility of BME entrants also differed in some ways to that of White entrants, at the aggregate level, in terms of the most common regional destinations and institutions compared to White movers. BME entrants to both lower and higher tariff institutions had a higher probability

than White entrants of being movers, but this was more strongly the case amongst entrants to lower tariff institutions. This also suggests that mobility may not be strongly for positional purposes amongst BME movers collectively. Having to combine BME students however hides differences between BME groups (for example, at the aggregate level Chinese movers in particular, but also Indian and White movers, entered institutions with a very high average tariff level), but there needs to be caution with findings for BME students due to small counts.

The findings in the main support what was proposed on the basis of the theoretical perspectives discussed in chapter 3, but have underlined the role of contextual factors in seeking to explain mobility as reasoned action for less predictable findings, notably in relation to mobility to lower tariff institutions.

7.3 England-domiciled students

7.3.1 Student characteristics and cross-border mobility

This section addresses RQ2. Descriptive data (Table 7.3) show that movers were overall more socio-economically advantaged than stayers. All models of the binary regression model for all entrants from England (Table A7.14) show a positive association between social class and moving, but that once other factors were controlled, the differences between social classes were not great. The social class effect was not as strong as may have been predicted on the basis of either a relative risk aversion or cultural reproduction theory of student mobility, although the class, parental education, school and home area participation rate findings all indicate that the probability of moving was stronger for these measures of socio-economic advantage. These findings are illustrated in the form of marginal effects of social characteristics in Figure 7.15.

Table 7.3: England-domiciled young full-time undergraduate stayers and movers, 2012 entrants (column percentages within characteristics)

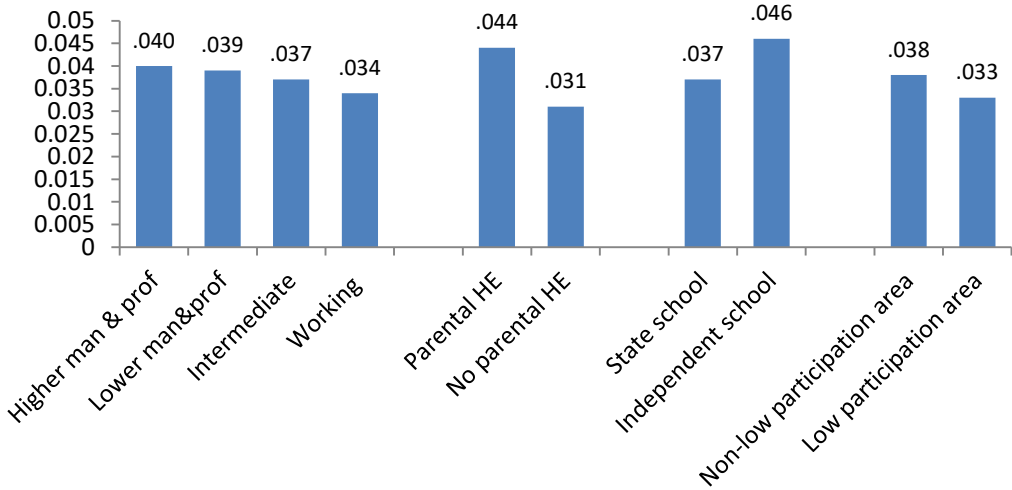
	Stayers (%)	Movers (%)	Stayers (N)	Movers (N)
Gender				
Female	54.2	52.6	125310	6140
Male	45.8	47.4	105980	5540
Social class				
Higher managerial and professional	23.8	32	55055	3735
Lower managerial and professional	29.6	33.1	68485	3865
Intermediate	20.6	18	47750	2095
Working class	25.9	16.7	60005	1980
Parental education				
Parent with HE qualification	52.7	67.2	121990	7845
No parent with HE qualification	47.3	32.8	109300	3830
Ethnicity				
White	74.0	89.2	170085	10330
Black Caribbean	1.6		3785	
Black African	4.7	2.2	10715	255
Other Black Background	0.3		745	
Asian Indian	4.9	2.2	11300	255
Asian Pakistani	4.1	0.7	9400	80
Asian Bangladeshi	1.6		3705	
Chinese	1.0	0.7	2320	80
Other Asian Background	2.1	1.0	4875	120
Mixed / Other	5.6	3.9	12905	455
<i>All BME</i>	<i>26.0</i>	<i>10.8</i>	<i>10330</i>	<i>1245</i>
Attainment				
Highest quintile	19.9	23.3	45880	2720
High quintile	20	21.8	46135	2545
Medium quintile	21.2	21.3	49090	2480
Low quintile	18.5	17.9	42790	2100
Lowest quintile	20.5	15.7	47395	1835
Home area				
Not low participation area	87.9	91.7	201110	10620
Low participation area	12.1	8.3	27565	955
School type				
State school	89.3	80.4	198425	9100
Independent school	10.7	19.6	23860	2220
Total	95.2	4.8	231290	11680

Note: the N total within each characteristic grouping will not necessarily equal the total movers, due to rounding of counts following multiple imputation for some variables, and missing data for other variables where the missing data equal less than 5% of cases. Counts have been further rounded to the nearest 0 or 5.

Regression modelling also confirmed that BME entrants were less likely than White entrants to be movers (particularly the case for Pakistani, Bangladeshi, Black and Indian entrants) (Figure 7.16). Apart from lower mobility among Pakistani and Bangladeshi entrants than those from other ethnic groups (e.g. Clayton et al., 2009; Shiner and Noden, 2015), these differences in ethnicity would not be expected and will

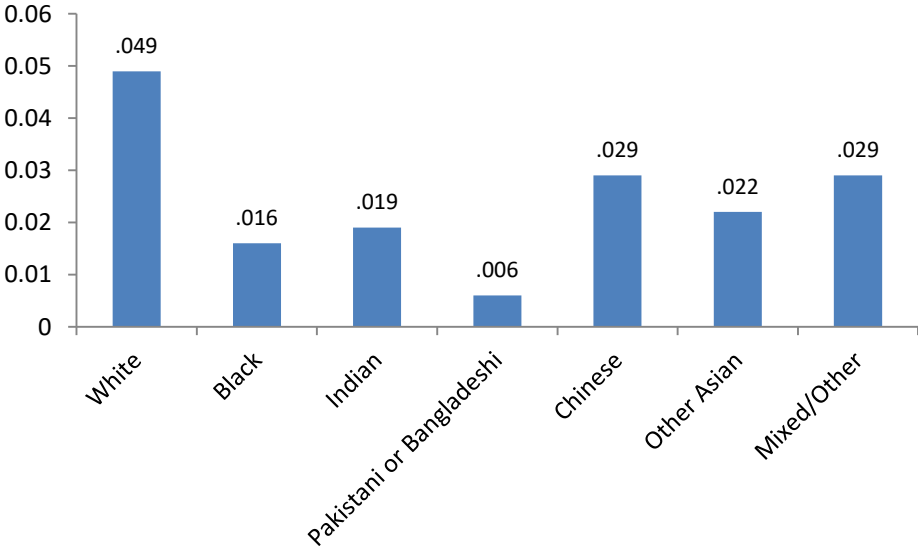
require further exploration later in this section. Nagelkerke R² only reaches 0.07 in model 4, so the explanatory power of the model is weak.

Figure 7.15: Probability (marginal effect) of being a mover by social characteristics, estimated from logistic regression model (model 4) for England-domiciled 2012 young full-time entrants



Data in Table A7.15. Other variables controlled in the model: gender, ethnicity, field of study entered, course level entered, average tariff points of institution entered. N=230397.

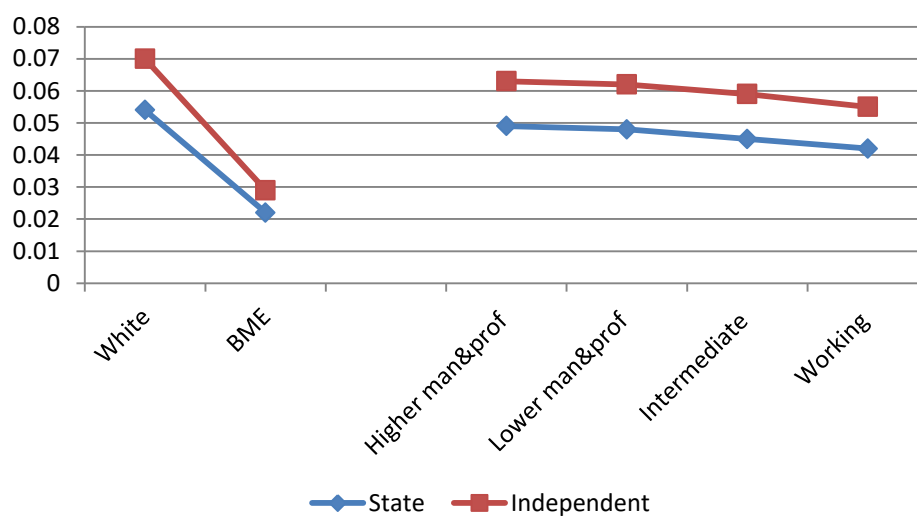
Figure 7.16: Probability (marginal effect) of being a mover by ethnic group, estimated from logistic regression model (model 4) for England-domiciled 2012 young full-time entrants



Data in Table A7.15. Other variables controlled in the model: social class, parental education, school type, home area participation rate, field of study entered, course level entered, average tariff points of institution entered. N=230397.

Having been to independent school again was associated with a higher probability of moving than was having been to state school. As for Scotland, this school-type effect was in evidence across ethnic groups, apart from the Pakistani and Bangladeshi group who had a similar low probability of moving whether they had been to either school type (data not shown due to small counts). However White students who had been to state school were more likely to be movers than students from all BME groups that had been to independent school (Figure 7.17). The school-type effect also applied across all social class groups (Figure 7.17).

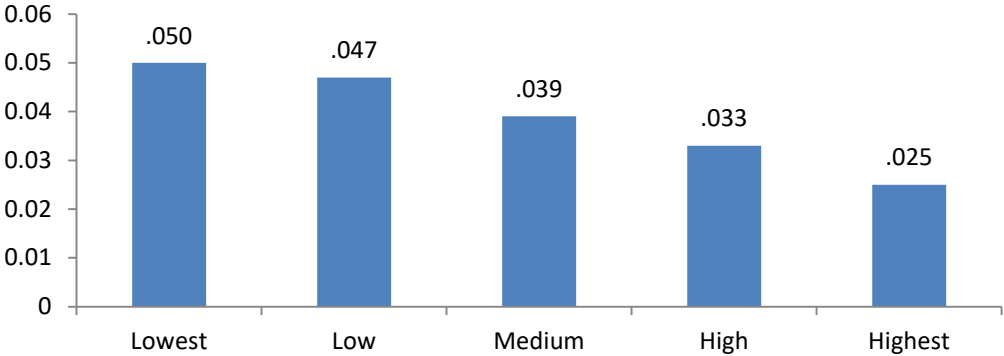
Figure 7.17: Probability (marginal effect) on mobility of the interaction between school type and ethnicity and social class groups, estimated from model 4 of the logistic regression model for all England-domiciled 2012 young full-time entrants



Data in Table A7.16. N=230397.

Having controlled for the factors of field of study and institution tariff points (models 3 and 4, Table A7.14), those from the lowest and low attainment groups had the highest probability of moving and those from the highest attainment group the lowest probability (Figure 7.18).

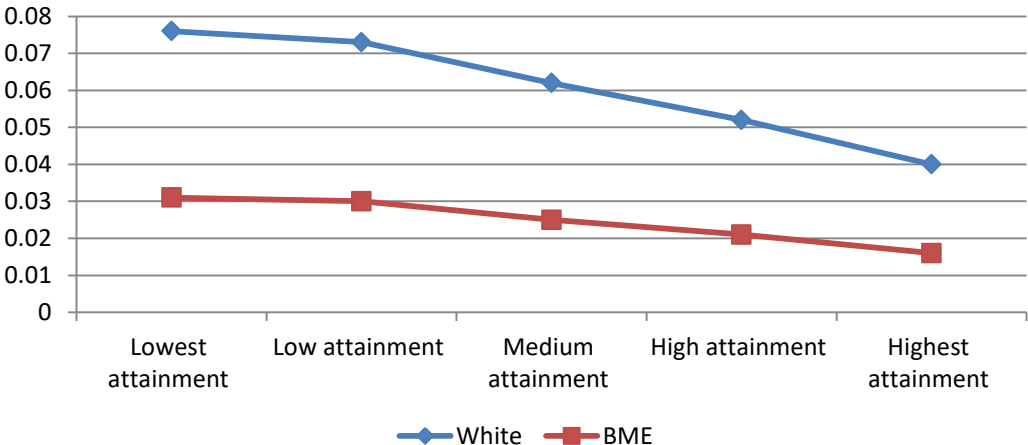
Figure 7.18: Probability (marginal effect) of being a mover by attainment group, estimated from logistic regression model (model 4) for England-domiciled 2012 young full-time entrants



Data in Table A7.15. Other variables controlled in the model: gender, social class, ethnicity, parental education, school type, home area participation rate, field of study entered, course level entered, average tariff points of institution entered. N=230397.

The descriptive finding was that moving was more common for those with high attainment, but the reasons for this appeared to be explained by other factors in the model. Firstly it can be noted that the difference in probability of mobility between White and BME entrants was smaller amongst high than low attainers (Figure 7.19), suggesting that provision within England was more available or preferable to high attainers, but particularly for BME students. The differences between BME students by attainment group were however much less than the differences between White students by attainment group, showing the overall low propensity of BME students to leave England.

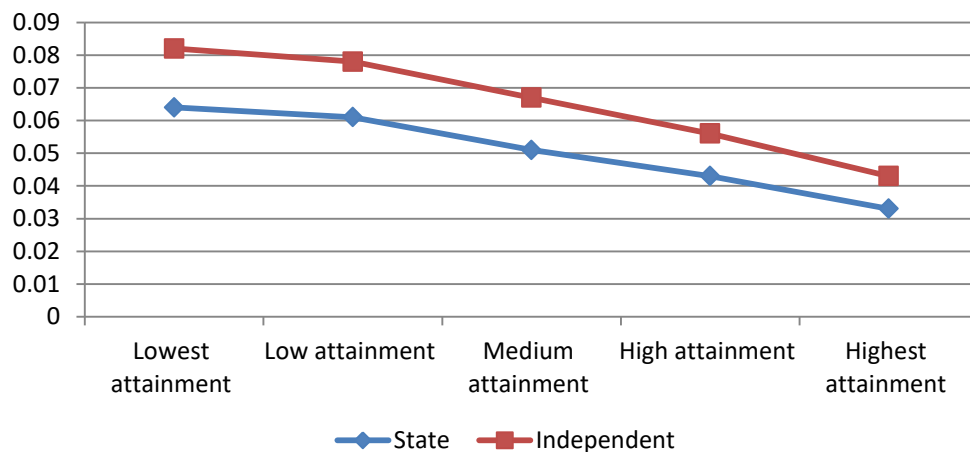
Figure 7.19: Probability (marginal effect) on mobility of the interaction between ethnicity and attainment groups, estimated from model 4 of the logistic regression model for all England-domiciled 2012 young full-time entrants



Data in Table A7.17. N=230397.

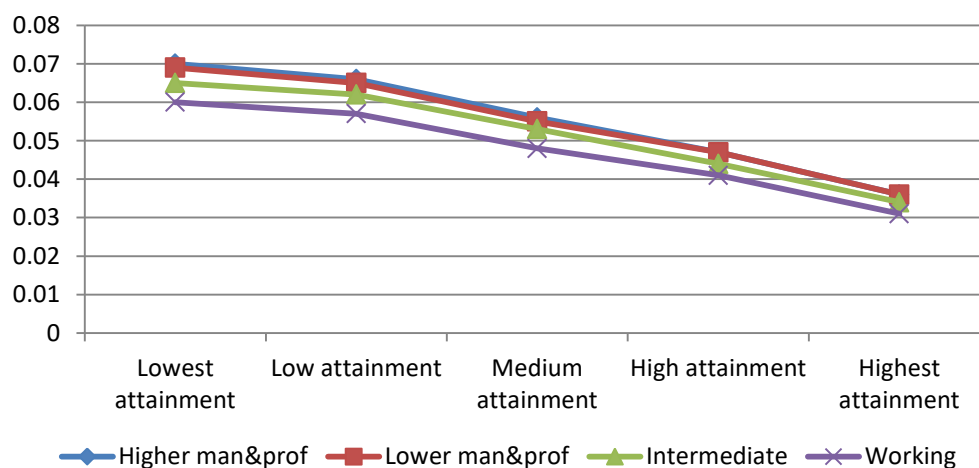
Exploring the interaction between attainment group and school attended (Figure 7.20) shows that high attaining students, no matter their school background, were less likely to leave England than those in lower attainment groups who had been to state school. Those in all social class groups were also least likely to be movers if in the highest attainment group (Figure 7.21). These findings again suggest that the likelihood of entry and preferences of high attainers were likely to be oriented towards high status institutions located in England.

Figure 7.20: Probability (marginal effect) on mobility of the interaction between school type and attainment groups, estimated from model 4 of the logistic regression model for all England-domiciled 2012 young full-time entrants



Data in Table A7.18. N=230397.

Figure 7.21: Probability (marginal effect) on mobility of the interaction between social class and attainment groups, estimated on model 4 from the logistic regression model for all England-domiciled 2012 young full-time entrants



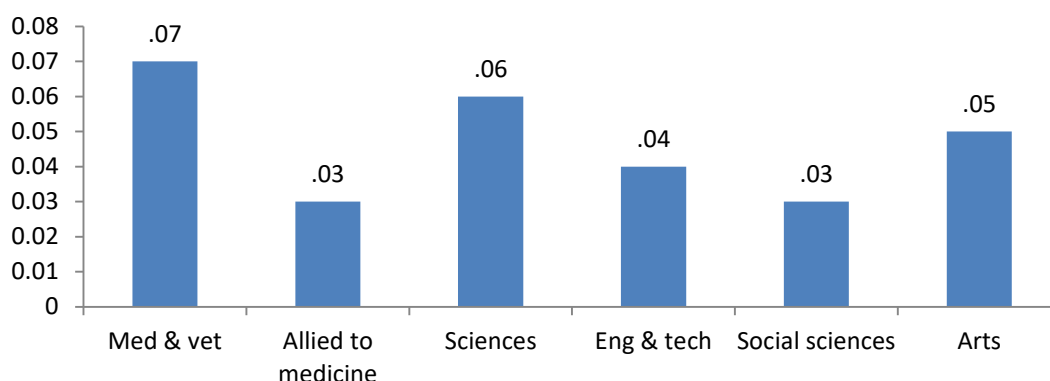
Data in Table A7.19. N=230397.

7.3.2 Fields of study, institution types and student differences

7.3.2.1 Fields of study

Having controlled for other factors in the regression model for all entrants, the probability of being a mover in association with field of study group entered was highest for medicine and veterinary medicine, sciences, and arts fields (Figure 7.22). As identified in chapter 5 the arts fields in this case were more strongly humanities rather than creative arts subjects.

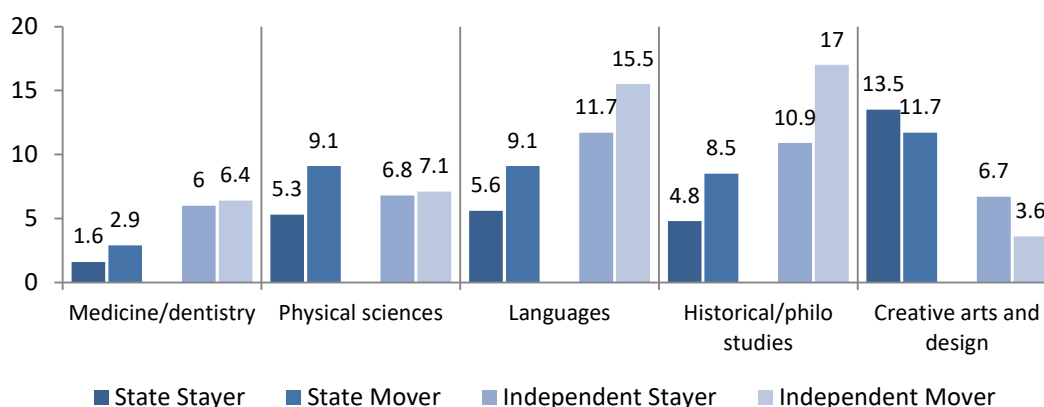
Figure 7.22: Probability (marginal effect) of mobility by field of study entered, estimated from logistic regression model (model 4) for England-domiciled 2012 young full-time entrants



Other variables controlled: gender, social class, ethnicity, parental education, attainment group, school type, whether from low participation area, course level, tariff score of institution entered. N=230397.

To help address RQ₃, evidence was sought on whether the potential benefits of entering fields of study by moving were greater for those already more advantaged. Descriptive analysis suggests that differences in entering field of study groups in relation to social class and parental education were reproduced rather than exacerbated among movers. However, analysis by school type (Figure 7.23) suggests that those who went to a state school were more likely to enter medicine and dentistry or physics as a mover than a stayer, while those who went to independent school were similarly likely to do so as stayers or movers.

Figure 7.23: Percentage of movers and stayers from state and independent schools who entered selected fields of study, England-domiciled young full-time entrants 2012



These fields are associated with high status institutions and good employment outcomes, and it is possible some state school entrants used mobility to mitigate inequalities in access. Nonetheless those who went to independent school retained the much higher likelihood of entering medicine and dentistry. State and independent school movers were both more likely than respective stayers to study languages, and historical and philosophical studies, but these were more commonly entered by independent school entrants overall suggesting again reproduction rather than exacerbation of differences. Entrants from both types of school were less likely to enter creative arts and design as movers than stayers, and movers from England differed from movers from Scotland in this respect.

Table 7.4: Percentage of stayers and movers from ethnic groups who entered selected field of study groups, England-domiciled young full-time entrants 2010-12 (column percentages)

	White		Black		Asian		Mixed/Other	
	Stayer	Mover	Stayer	Mover	Stayer	Mover	Stayer	Mover
Medicine/veterinary	3	4.4	1.2	-	4.4	15	2.9	6.7
Sciences	23.9	31.1	22.4	25.8	25	25.2	22.5	27.2
Engineering/tech	7	6.3	8.7	16	9.3	14.8	8.1	8.1

Data for all field of study groups in Table A7.20.

For England it was possible to analyse differences within and between ethnic groups in relation to field of study entered, but it was necessary nonetheless to combine ethnic groups and years of entry. Combining 2010, 2011 and 2012 data to achieve higher cell sizes, Table 7.4 shows that amongst Asian entrants, moving was more strongly associated with studying medicine and veterinary science than it was for White and Mixed/Other entrants (and for Black entrants but the cell size of movers is too small to report). Movers were more likely than stayers to enter sciences, though only marginally so in the case of Asian students. Asian and Black movers were more likely than stayers to enter engineering and technology. There is a suggestion here that some Asian students in particular may be mobile in order to enter degrees that directly prepare for high level professional occupations. This fits with broader research findings reported in chapter 4 that BME applicants may give more importance than White applicants to employment and earnings in HE subject choice (Connor et al., 2004; Shiner and Noden, 2015). This may have an effect on being mobile to access these fields of study if emphasis is given to entering a particular subject no matter where it is located.

Finally in relation to field of study, in model 5 of the regression model for all entrants (Table A7.14), the professional employment rate of field of study entered was negatively associated with mobility; while entering a field of study with higher average earnings was positively associated with mobility. This reflects the relatively high likelihood of movers entering medical, physical and mathematical sciences fields, which are associated with high earnings, but also being relatively likely to enter fields with lower professional employment rates such as languages and historical studies. Field of study supply was overall identified as associated with mobility for

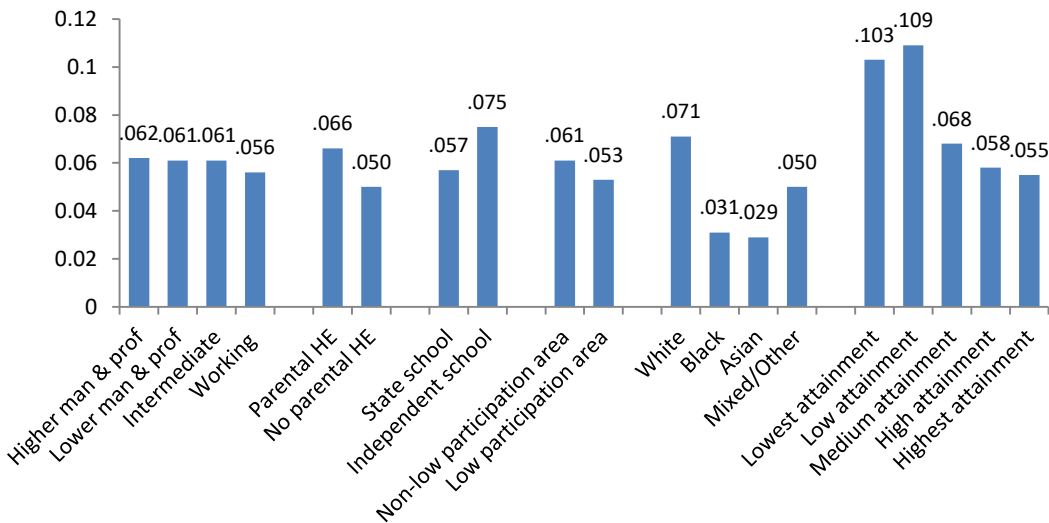
movers from the three smaller countries, but this was not analysed for movers from England as the field of study supply measures generally had a ratio close to 1.

7.3.2.2 Institution types

As for the other country domiciles, the regression model for all entrants (model 4, Table A7.14) showed a positive association between institution tariff points and moving after having controlled for other factors. In addition as identified in chapter 5, movers from England were more likely to enter high tariff institutions than any other tariff group. However this masks large differences between movement to Scotland, to which the majority of movers entered highest tariff institutions, and to Wales to which movers entered a range of institutions from lowest to high tariff group. There was not a straightforward relationship between moving and gaining the benefits of higher tariff institutions for students from England just as there was not for the other country domiciles.

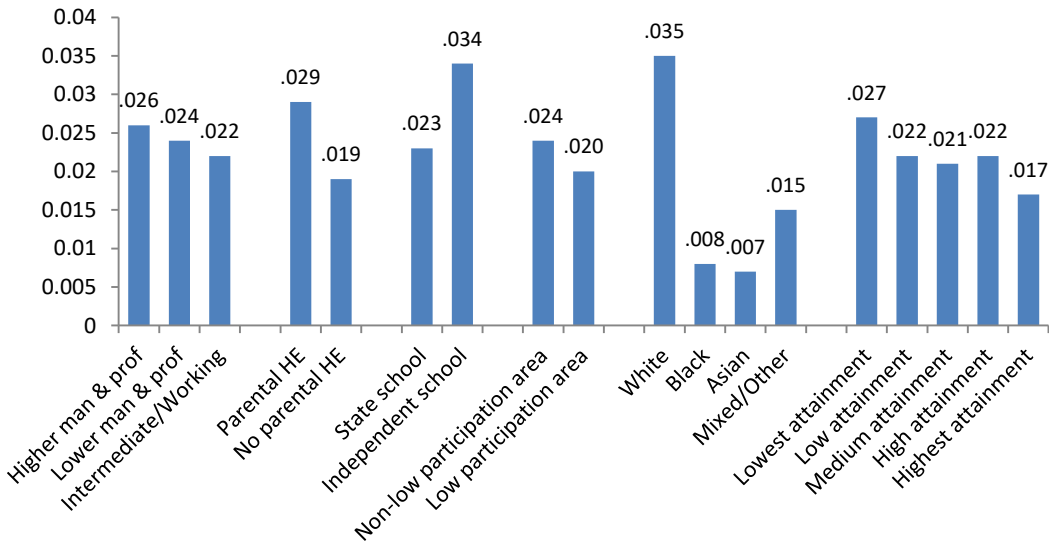
Whether those moving to enter higher tariff institutions were more socio-economically advantaged than both higher tariff institution stayers, and those moving to enter lower tariff institutions, was also explored descriptively (Table A7.21) and through regression modelling (Tables A7.22 and A7.23). Mobility was much more common among entrants to higher tariff institutions (6.8% of entrants were movers) than lower tariff institutions (3.1% of entrants), and in descriptive terms entrants to higher tariff institutions as movers and stayers were more advantaged on the range of socio-economic measures. However as can be seen in the marginal effects based on regression modelling for the two groups of entrants in Figure 7.24 and Figure 7.25 the probability of being a mover in both cases was higher for the more socio-economically advantaged, and for White students. It can also be seen, as was the case for movers from Northern Ireland, that the probability of moving to higher tariff institutions was surprisingly greater for lower than higher attainers.

Figure 7.24: Probability (marginal effect) of being a mover by social characteristics, estimated from logistic regression model (model 3) for England-domiciled 2012 young full-time entrants to higher tariff institutions



Data in Table A7.24. Other variables controlled in model: gender, field of study entered. N=80443.

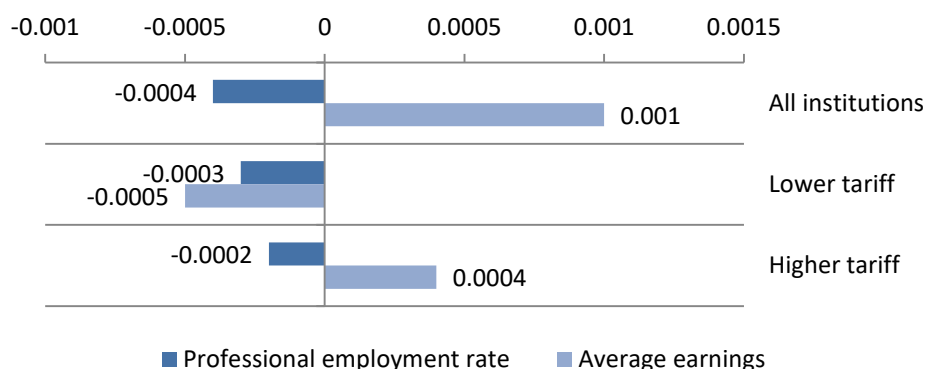
Figure 7.25: Probability (marginal effect) of being a mover by social characteristics, estimated from logistic regression model (model 3) for England-domiciled 2012 young full-time entrants to lower tariff institutions



Data in Table A7.25. Other variables controlled in model: gender, field of study entered. N=106193.

The findings for field of study variables are summarised below (Figure 7.26). The effects were almost non-existent, making it difficult to identify clear messages about the motivation from mobility from these findings.

Figure 7.26: Average marginal effect of professional employment and average earnings of the field of study entered on probability of being a mover, England-domiciled 2012 young full-time entrants to institution tariff groupings



Effects estimated from model 4 of the regression model for all entrants and model 3 of the models for entrants to lower or higher tariff institutions, which controlled for all factors apart from field of study entered itself.

7.3.3 Region of domicile and factors in mobility

Exploring the characteristics of movers from all of England may give a less clear picture of student differences in cross-border mobility than for the other countries because of the size of the country and the potential for, and existence of, high levels of inter-regional movement – there is more possibility to move some distance from home within the country and to enter a range of institution types in different areas. Cross-border movement out of English regions has been analysed to help identify whether the region students lived in was associated with differences in mobility out of the country. These analyses address RQs 2 to 4 for regional mover groups. Inter-regional movement within England has also been analysed and is discussed in the following section.

Five regions of domicile were selected to explore as they all appeared to have an important role in terms of sending or receiving movers, as identified in the analysis of mobility patterns in chapter 5. The South-West and West Midlands were strong receivers of movers-in and senders of movers-out, as well as being adjacent to the Welsh border; the North-West and North-East were both important receivers of movers-in but not senders, despite being adjacent to borders (the North-West is adjacent to land and sea borders with all three smaller countries; the North-East borders Scotland); and Greater London was a fairly strong receiver and sender, but

without border proximity. Movers from the North-West and Greater London moved to both Wales and Scotland in relatively high numbers. Movers from the South-West and West Midlands mainly went to Wales and those from the North-East mainly went to Scotland. Descriptive tables compare movers to Wales and Scotland from these regions (Tables A7.26 to A7.30). Cross-border mobility from these regions was further explored using binary regression models (Tables A7.31 to A7.35). The dependent variable was 'entered an HEI in England (including the home region)' or 'entered an HEI in other country of the UK'.

The regression model outputs (A7.31 and A7.32), and also descriptive data (A7.26 and A7.27) for the South-West and West Midlands from which movers were likely to go to Wales, show class differences in mobility were very small. The South-West and West Midlands differed also from the other three regions as there was almost no home area HE participation rate effect on odds of moving, while mobility from the South-West also differed to that from the other regions in that there was no school-type effect. Along with the relatively high levels of cross-border movement, the findings support the suggestion that for those living adjacent to a border, crossing that border can be a convenient, accepted way of accessing an appropriate course in an appropriate institution type, but not one that involves high costs for less advantaged students, and so social background has limited association with moving. Other than school-type effect, the differences between the regions appear to be in relation to fields of study: movement from the South-West was most positively associated with entering sciences compared to social sciences and law, but this was not the case for mobility from the West Midlands. Furthermore there was a strongly negative effect of being BME compared to White for movers from the West Midlands but only a moderate negative association with being BME for mobility from the South-West. The West Midlands as region of domicile has a relatively high percentage of BME entrants, which supports again the notion of mobility being less likely for BME students from more to less ethnically diverse areas (in this case, Wales).

The regression model for entrants from the North-West (Table A7.33) suggests that movers were a relatively advantaged group compared to those who stayed in England, though this masks descriptive differences between movers to Wales and Scotland (Table A7.28). Mobility from the North-East (Table A7.34), like that from the North-

West, was positively associated with social class and independent schooling, compared to staying. But being in the highest attainment group was not associated with mobility, which would suggest that high tariff English universities were preferred over Edinburgh and St. Andrews universities. Moving from the North-East to Scotland is not however very common. Indeed the North-East has the lowest outflow to other regions in England of all the English regions, a relatively high percentage of working class entrants, and relatively high percentages of entrants who live in the family home as students (analysis of HESA data). A selective set of entrants therefore make up the mover group. Low levels of cross-border mobility may reflect more of a sense of historical 'difference' to Scotland, which potentially has been exacerbated by the sense of difference created more recently by HE funding differences between the countries (and more recently still, after the timeline for these data, by the prominence of the independence question in Scotland). There is some limited evidence for this in Minty (2014). Movement from the North-East and the North-West reflect the more advantaged nature of cross-border movers overall and particularly to Scotland, and differ to the South-West and West Midlands in this regard.

Entrants from London did not live close to a border (though London has a great number of transport links to all of the UK) and there is a large number and variety of HEIs within London, including good provision of medical and arts courses. These are all factors which suggest a large degree of cross-border mobility may not be expected, so any cross-border mobility might be expected to bring notable benefits, and be for those with the most resources. The latter point was only partially supported as the regression model suggests little social class effect when comparing the managerial and professional classes, but a negative effect of being working class compared to higher managerial and professional class (Table A7.35). Mobility was however positively associated with having been to independent school and moderately so with having an HE qualified parent. These findings however, as do those for movers from the North-West, mask differences between movers to Wales and Scotland. Movers to Scotland were much more highly privileged on these measures in descriptive terms than were movers to Wales (Table A7.30).

The findings from the five regions suggest that cross-border mobility was associated with entering a higher tariff institution, on average, than stayers did, but not

associated with the highest attainers. Entering medical subjects (compared to social sciences and law) was positively associated with moving from the North-West, North-East and London, but the South-West and West Midlands differed, as they did in relation to lack of class differences. Alongside the lack of school-type effect on mobility from the South-West, this may reflect the fact that mobility is more common, a more established pathway from the South-West, and so differences to stayers were less strong than is the case for regions from which movement was a relatively uncommon phenomenon.

7.3.4 Geographical destinations and student differences in mobility

7.3.4.1 Comparing movers across country and region borders

To address RQ4, firstly moving region compared to moving country for study was analysed. A descriptive overview of the characteristics of those who entered an HEI in their home region and those who entered one in a different region or country is provided in Table A7.36, recognising as stated in chapter 4 that this will mask instances both of staying (among commuters crossing a regional border) and moving (at a more local level within the region). As with cross-border movers only, regional movers were more often middle class than regional stayers, more likely to have an HE qualified parent, to be from a non-low participation area and to have been to independent school. They were more likely to be higher than lower attainers, before other factors are accounted for. Movers were also less likely to be BME than were stayers. However the exception to this is that Black African entrants were more likely to be movers than stayers.

A multinomial regression model compared movers who entered an HEI in a different region within England, and movers who entered in a different country, to the reference group of those who stayed in the home region (Table A7.37). For both types of mover, moving was associated with measures of higher socio-economic advantage, in social class, parental education and school terms, but the relationship between mobility and having been to independent school appeared slightly stronger for those moving country than region. Whether moving region or country, moving was positively associated with institution tariff, but the tariff was only slightly higher. There were two differences in direction of association between the two types of movers. Firstly being Black, as indicated in the descriptive data, was positively

associated with regional mobility but negatively so with cross-border mobility. However, White entrants still had higher odds of being regional movers than stayers compared to most BME groups. The second difference was in the likelihood of entrants to medicine and veterinary medicine being movers rather than stayers: those moving country were more associated with entering medical subjects than arts subjects, but those moving region were not.

Moving country was much less common than moving region, but the findings indicate it was not strongly more associated with higher socio-economic advantage than was inter-regional mobility. This suggests that a wider conceptualisation of mobility away from the home area that includes mobility within the home country is associated with socio-economic advantage, as suggested in previous research within England (e.g. Dearden et al., 2011; Holdsworth, 2009). Black entrants however used regional mobility to a greater extent than country mobility, and having identified the institutions Black regional movers commonly entered, their movement was most common to institutions with relatively high percentages of BME entrants, suggesting that concern with ethnic mix in the institution may be a factor in mobility. This point also helps explain the overall limited mobility out of England to the other much less ethnically diverse UK countries.

7.3.4.2 Comparing movers to Wales and Scotland

A further means of addressing RQ4 is to compare England-domiciled movers, from all regions, to Wales and Scotland through regression modelling. Multinomial regression compared the reference group of stayers with movers to Wales and movers to Scotland (Table A7.38). In both cases, having accounted for other background factors and field of study and institution tariff entered, being from a working class background and a first generation student decreased the odds of being a mover. However as indicated in descriptive findings (Table A7.39), the nature of the mobility into each country did differ, with somewhat higher attainment, more privileged schooling, and entering higher tariff institutions stronger amongst movers to Scotland shown in the regression model. There was almost no association in the regression model between the odds of mobility to Wales and an increase in institution tariff score, which reflects the data that show that moving to Wales was to a mix of institution types.

The patterns of cross-border flows were explored in chapter 5. Reflecting the low inflow as a percentage of students to both England and Northern Ireland, the impact of inflows on the overall student population in these countries was very slight (as can be seen in Tables A7.40 and A7.41). However for Wales and Scotland flows went in both directions, mainly with England, and differences in student characteristics amongst movers to each have been identified in this section. The final issue concerning England-domiciled students which will be analysed is the impact of inflows from England on Wales and Scotland. The concern is whether these flows have an impact on the composition of student populations and how this might affect students.

7.3.5 The impact of inflows on Wales

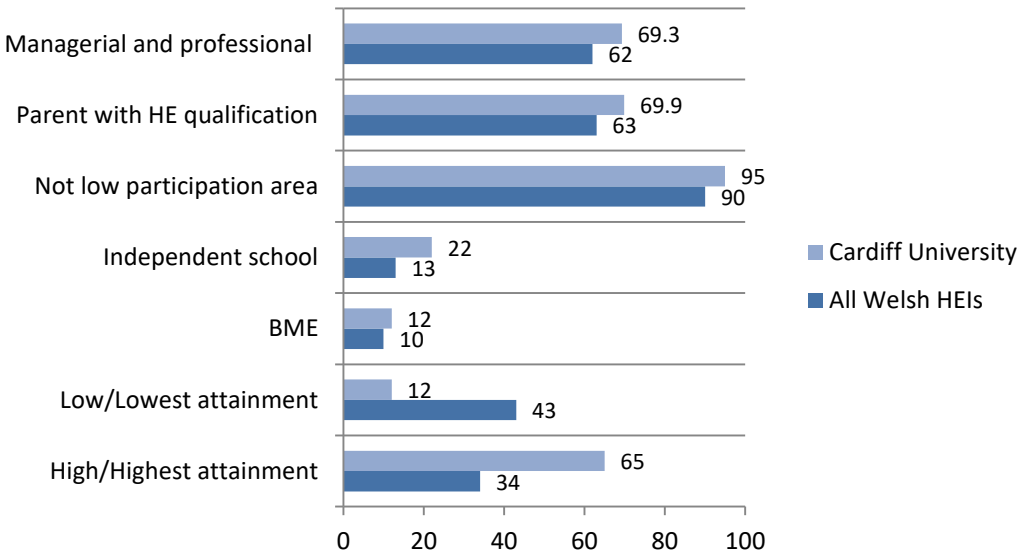
Table 7.5 illustrates the effect of flows by providing a breakdown for Wales-domiciled entrants, England-domiciled entrants, and all UK-domiciled entrants combined at Welsh HEIs. In summary, the effect of England-domiciled movers-in (combined with the effect of Welsh movers-out) was to make the students at Welsh HEIs more male, more middle class, more likely to have an HE qualified parent, more educationally advantaged, and less likely to be from a low participation area. The impact of flows with England on the student population may be perceived from an equalities perspective as negative. However UK students as a whole were more ethnically diverse than Welsh stayers and this may be perceived as a positive. The combined UK students compared to Welsh stayers also had lower attainment levels. This may be because there is no highest tariff institution in Wales, and students from England in the higher attainment groups would be more likely to stay in England or go to Scotland rather than Wales. However if movers-in are more frequently lower attainers than are stayers, this may squeeze the places available for home students at non-high entry tariffs. However this is less of an issue when the student number cap excludes RUK students, as was the case in 2012.

Table 7.5: Percentage of Wales-domiciled, England-domiciled and all UK-domiciled entrants at Welsh HEIs by characteristics, young full-time entrants 2012 (column percentages within characteristics)

	Wales domiciled	England domiciled	All UK domiciled
Gender			
Female	54.8	50.2	52.7
Male	45.2	49.8	47.3
Social class			
Managerial and professional	47.6	61.7	54.5
Intermediate and working	52.4	38.3	45.5
Parental education			
Parent with HE qualification	57.3	63.2	60.3
No parent with HE qualification	42.7	36.8	39.7
Ethnicity			
White	93.6	89.7	91.7
BME	6.4	10.3	8.3
Attainment group			
Highest and high quintiles	58.2	34.2	47.1
Medium quintile	19.9	23.1	21.4
Lowest and low quintiles	28.9	34.2	31.4
School type			
State school	97.9	87.4	92.7
Independent school	2.1	12.6	7.3
Home area			
Non-low participation area	86.8	90.5	88.7
Low participation area	13.2	9.5	11.3
Total (N)	8485	8100	16795

It was suggested in chapter 5 that the impact of flows to Cardiff University may affect the accessibility of high tariff provision within Wales for Welsh students. Figure 7.27 summarises the characteristics of England-domiciled entrants to all Welsh HEIs, and entrants only to Cardiff University which attracts about a fifth of all English movers, and as shown in chapter 5 for which over half of 2012 entrants were RUK-domiciled. Compared to all movers into Wales those entering Cardiff were more likely to be socio-economically advantaged. As would be expected, they were also more likely to be in higher attainment groups. The inflow of socio-economically advantaged students into Cardiff has the potential to make the highest status Welsh university less accessible to Welsh students who are high attaining but do not have the capacity or propensity to leave Wales, if places are not protected or expansion is not feasible.

Figure 7.27: Percentage of England-domiciled young full-time 2012 entrants who were movers-in to all Welsh HEIs and to Cardiff University, by selected social characteristics



7.3.6 The impact of inflows on Scotland

An overview of characteristics of Scotland-domiciled, England-domiciled, Northern Ireland-domiciled and all UK-domiciled entrants combined at Scottish HEIs is provided in Table 7.6. Movers-out from Scotland have been identified as privileged compared to stayers but they only made up a small percentage of Scottish students, and movers-in from England outnumbered movers-out from Scotland by about 3 to 1. Movers-in from England were also more privileged than stayers, as can be seen in Table 7.6, although not as strongly so as Scottish movers-out (Table 7.1). Movers-in from Northern Ireland were similar to Scottish stayers in class and parental education terms. The result of these inflows and outflows is that the UK student population in Scottish HEIs was slightly more middle class and slightly less working class compared to just the Scottish student population; students were a little more likely to have an HE qualified parent; more likely to have been to independent school; and the student population was very marginally more ethnically diverse. However, although on aggregate movers-in from England were high attainers, those from Northern Ireland were not, and the result was that the combined UK entrants were lower attainers overall than the Scotland-domiciled stayers.

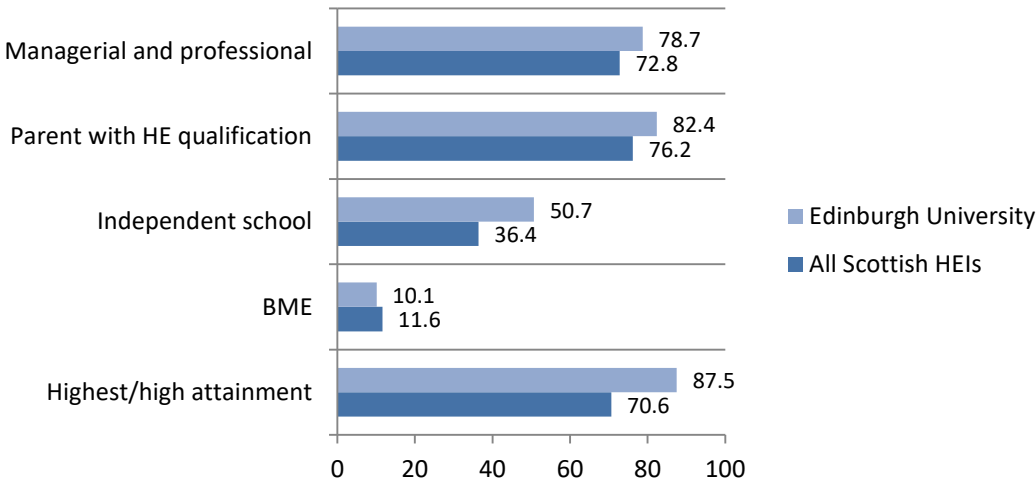
Table 7.6: Percentage of Scotland-domiciled, England-domiciled, NI-domiciled and all UK-domiciled entrants at Scottish HEIs by characteristics, young full-time entrants 2012 (Column percentages within characteristics)

	Scotland domiciled	England domiciled	NI domiciled	All UK domiciled
Gender				
Female	56.5	57.9	61.9	56.8
Male	43.5	42.1	38.1	43.2
Social class				
Managerial and professional	58.1	72.8	58.2	60.1
Intermediate and working	41.9	27.2	41.8	39.9
Parental education				
Parent with HE qualification	64.5	76.2	65.3	66.2
No parent with HE qualification	35.5	23.8	34.7	33.8
Ethnicity				
White	93.7	88.4	-	93.1
BME	6.3	11.6	-	6.9
Attainment group				
Highest and high quintiles	44.2	70.6	47.7	39.8
Medium quintile	20.1	16.1	12.4	19.3
Lowest and low quintiles	35.8	13.2	39.8	40.8
School type				
State school	90.8	63.6	-	87.4
Independent school	9.2	36.4	-	12.6
Total (N)	21325	3395	780	25645

-/- fewer than 52 cases.

England-domiciled movers to Scotland were not only more advantaged in class, school and parental education terms than were Scottish stayers, but over 70% of them entered ancient universities. They were overall a privileged group accessing high tariff institutions. The most commonly entered institution was Edinburgh University. Figure 7.28 compares movers-in from England to all Scottish HEIs, and to Edinburgh University. Those who entered Edinburgh were more advantaged on class, parental education and schooling measures than were all movers-in from England combined. Over half were from independent school, which compares with 11% of all England-domiciled entrants in this category (chapter 4). Although not shown, movers-in to St. Andrews University had a similar profile to those entering Edinburgh, but greater concentration in the higher attainment groups.

Figure 7.28: Percentage of England-domiciled young full-time 2012 entrants who were movers-in to all Scottish HEIs and to Edinburgh University, by selected social characteristics



The extent of cross-border movement of entrants living in Edinburgh (identified in chapter 5), and the high percentage of movers-in who entered Edinburgh University indicate that flows between Scotland and England were explained to a notable extent by flows between Edinburgh and England. These flows were unbalanced however just as they were for Scotland and England as a whole - the number of students from England entering Edinburgh University were nearly 6 times the number of entrants leaving Edinburgh to enter any English university. Those coming in from other UK countries tend to be highly socio-economically advantaged and although in 2012 they did not take places that could have been allocated to home and EU students, there is the potential for the student experience to be affected, positively or negatively, by practices that accommodate advantaged students or by interactions with students who tend to be more privileged than the Scottish entrants. The findings suggest that mobility between Scotland and England does reproduce inequalities in HE participation, and may be being used as a means for advantaged young people to gain positional advantage, by entering high tariff universities. However this may be stronger for movers from England to Scotland than for movers from Scotland to England.

7.3.7 Summary: Movers from England

Overall, cross-border mobility from England was associated with measures of socio-economic advantage, but more so in relation to parental education and schooling

than social class differences. However there were number of important differentiations within the mover group, as was the case for the other countries. In the case of England the differences between movers to Wales and Scotland show that moving to Scotland was more strongly associated with being from a privileged background and with being a high attainer entering high tariff institutions. Previous research using applications data (Croxford and Raffe, 2013) has identified the possibility of moving to Scotland in some cases serving as a fall-back option for high attaining students, which may be supported with these data, although with entry data it is not possible to differentiate the more reluctant and determined movers to Scotland. Drawing on RRA, cultural reproduction perspectives, effectively maintained inequality and positional competition, the theory that mobility is a means for those with more resources to maintain their advantages also seems to be supported by these findings.

However moving to Wales was different. Cardiff University was the most popular mover destination overall and the movers from England who went to Cardiff were relatively socio-economically advantaged, fitting with the broad theory of choices intended to achieve status maintenance. However mobility was also to a greater range of institution tariff levels and from a more mixed group of students than was moving to Scotland. Proximity to the Welsh border combined with limited lower tariff provision in the home region may be a factor in facilitating mobility from a more egalitarian student group as suggested for movers from the South-West. However similar conditions but proximity to the Scottish border did not lead to the same effect in the North-East. Although 4% of North-East entrants went to Scottish HEIs they were nonetheless relatively advantaged compared to stayers. In this case, a lower overall propensity for moving may have had an effect on the characteristics of movers, or the perception of the border with Scotland may have been stronger than the perception of the border with Wales for those living closer to that country. Certainly historically the border with Wales has been porous for students (Rees and Taylor, 2006) which may contribute to a greater sense of accessibility continually being reinforced. By comparing cross-border with regional mobility within England it has been identified that the differences in relation to student background may also be factors for within-country mobility, so cross-border mobility may have been so limited not because it required substantially greater resources than other location

options but simply because it was less necessary as a means to accessing preferred institutions and courses. Context and circumstances matter in explaining patterns of mobility.

There is support also within these findings for ethnicity being a factor in mobility in relation to the ethnic diversity of destinations. Again, for students for whom this was an important factor in choice, this could be achieved within the home country if not necessarily the home region to a greater extent than for students from the smaller countries, and for some Black students regional mobility appeared to be used for this purpose. There is also some evidence that for Asian students in particular entering a field of study with high professional status may have been a benefit to mobility that outweighed costs.

7.4 Conclusion: comparing the characteristics of movers from Scotland and England

This chapter has provided key findings on the characteristics of movers from the two UK countries with low levels of outward student mobility. Overall the descriptive findings for both indicate that study mobility was relatively more concentrated at higher levels of socio-economic advantage. This was more strongly the case than for the high outward mobility countries, as the summary descriptive data in Table 7.7 show in relation to a higher managerial and professional class background and having been to independent school.

Comparing just England and Scotland, in descriptive terms movers from Scotland were much more likely to have higher levels of socio-economic advantage. This reflects the overall data on entrants in chapter 4 which showed that those from Scotland were more likely than those from the other countries to be advantaged on measures of class, parental education and school type attended. However when only those English students who moved to Scotland were analysed, they were more similar to Scottish movers-out, as 73% were from the managerial and professional classes, 36% had been to independent school, and 76% had an HE qualified parent. Movers from England were similar to those from Wales in the percentage who were from low participation areas and also those who were first generation students, and this was the case also when just examining those who went to Wales.

Table 7.7: Characteristics of movers from each country – percentage of young full-time entrants in 2012 who were movers (and percentage of stayers in each characteristic group in brackets)

	England	Scotland	Wales	Northern Ireland	UK Total
Higher managerial and professional class	32 (24)	44 (27)	27 (18)	24 (15)	30 (24)
Lower managerial and professional class	33 (30)	30 (31)	33 (30)	29 (30)	32 (30)
Intermediate class	18 (21)	15 (21)	20 (22)	25 (30)	20 (21)
Working Class	17 (26)	11 (21)	21 (30)	22 (26)	18 (26)
Has HE qualified parent	67 (53)	81 (65)	66 (57)	60 (59)	66 (54)
Went to independent school	20 (11)	51 (9)	9 (2)	-	15 (10)
From low participation HE area	8 (12)	-	9 (13)	6 (7)	8 (11)
BME	10.8 (26)	11.1 (6.3)	8.2 (6.4)	3.1 (1.6)	8.7 (23)
Total movers (N)	11680	1080	6100	3295	22150

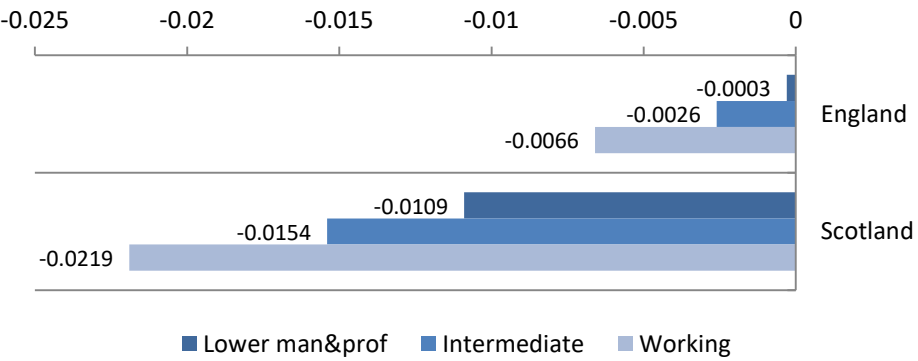
' - ' fewer than 52 movers. Column percentages.

It can be concluded that there was more concentration of relatively advantaged movers from the countries where mobility was an uncommon decision or path. The smaller percentage of students who were movers from Scotland and England may explain this, but that requires an explanation for the low extent of mobility. For Scottish movers this can be explained by a historical tendency to stay in the home country making this the more normalised route for most students. Scotland has a distinct education system, it has high status universities and specialist institutions (although the subjectively defined highest status universities are located in Oxford, Cambridge and London), under-supply of provision is not a strong issue, and moving out is a costly option. Low outward mobility from England can be explained by the size and diversity of the sector within England. However mobility was more common to Wales than Scotland, and this may be explained by the number of students living in proximity to Wales compared to Scotland, and potentially a less strong perception of a 'border' between England and Wales. There are also few high tariff places in Wales compared to Scotland, making Scotland a better first choice and contingency option for high attainers, whereas for movers to Wales there may be a particular issue with accessing courses in the sciences, as well as less low tariff provision locally.

To account for relationships between the variables, regression modelling was undertaken. Figure 7.29 summarises the social class findings by comparing the

probability of moving of each social class group compared to the higher managerial and professional class in the form of average marginal effects. The probability differences are small but unlike Wales and Northern Ireland this is based on a very low overall likelihood of mobility. The patterns of findings are very similar for the two countries (though based on slightly differently specified models), and as for Wales and Northern Ireland the overall pattern is one which shows cross-border mobility associated to a greater degree with higher social class advantages.

Figure 7.29: Average marginal effect of social class on mobility, in comparison to higher managerial and professional class, by country of domicile (England and Scotland), estimated from logistic regression models for all young 2012 full-time entrants



N England=230397; N Scotland=21541.

Identified in this chapter also was that the effect of having been to independent school was particularly strong for Scotland. However, neither the differences between non fee-paying schools, nor greater variety of types of independent school, are picked up by the school type variable for England, whereas the school variable for Scotland is more (but not entirely) representative of the differences in selectivity of schools. The extent of availability of preferred HE provision in Scotland may additionally have driven mobility amongst those who had more privileged schooling. It can be noted however that the independent school effect for students from England was still stronger than the parental education and social class effect. These findings support a positional motivation for moving, and a status maintenance motivation, but also support the hypothesis that moving is more expected and established as part of the transition to HE (and adulthood) amongst those who have had an advantaged education. For both countries, this appeared to apply across social classes and ethnic groups.

Being first generation was slightly negatively associated with mobility from Scotland and England, which supports the idea that having parents with HE experience makes moving more likely. According to the theories and research in chapter 2, this could be due to greater knowledge of the HE system, and/or because students are seeking to gain the same educational status as their parent(s). The parental education measure appeared to better explain mobility from England than did the social class measure. For those from England, student mobility may be more affected by family knowledge and experience of HE, than it is for those from other countries. An explanation for this is that those in the smaller countries may be more aware of HEIs in England than those from England are aware of HEIs in other countries, because of the dominance of the English HE sector. Potentially then familial HE experience contributes to England-domiciled applicants' awareness of HEIs in Scotland, Wales and Northern Ireland.

Amongst entrants to higher tariff institutions, movers from Scotland, unlike those from England, were more likely to be in the highest attainment group than other attainment groups. On the face of it, there are few concerns in terms of overall supply of higher tariff provision in Scotland (identified in chapter 4), but that does not mean that places were available in all fields of study for those with the matching entry qualifications. As 37% of the mobile students in this attainment group entered Oxford or Cambridge universities, at least some of this mobility may be explained as a means to access a form of higher education not available in Scotland that was expected to bring very high experiential and positional benefits. In contrast, for those from England being in a low attainment group and entering a higher tariff institution increased the probability of moving compared to being in higher attaining groups (as was the case for Northern Ireland). As suggested for Northern Irish movers, a small percentage of students with relatively low attainment may be taking advantage of mobility to access higher tariff institutions than they could in their home country. For students from both countries, there was little association found between probability of moving and the average employment and earnings rates of the field of study entered.

The other notable difference between mobility from Scotland and England was the propensity for BME students to be cross-border movers. The explanation does not

appear to lie in the tariff level of the institution entered, nor have strong differences between BME movers and stayers in field of study entered been identified. The effect of being in the working class reduced ethnic differences for Scottish students as did being in the highest attainment group for English students. The greater extent of mobility to London, and the North-West, than was the case for White students supports the notion however that for some BME students in Scotland mobility to more ethnically diverse parts of the UK may have been a factor in moving to England. Within England, a similar effect in relation to ethnically diverse institutions appeared to motivate mobility between regions for some Black students in particular.

Directly comparing the output for all four countries is problematic due to the greatly different extent of mobility out of the countries, and so direct comparisons of marginal effects have been restricted to the social class measure and to comparing within the grouping of high and low overall outward mobility. What can be noted from the analyses presented across chapters 6 and 7, is that for all countries cross-border mobility was positively associated with indicators of socio-economic advantage as identified through regression modelling and marginal effects. Exceptions to this overall finding was the positive association with being a 'first generation' student with mobility from Northern Ireland, and the relatively limited association of higher social class with mobility from England. The findings for all countries also indicated higher levels of socio-economic advantage among movers to further rather than closer geographical locations. There was also for all countries a greater propensity to be mobile among those entering higher than lower tariff institutions, with most measures of higher socio-economic advantage increasing the probability of moving to both. These findings collectively can be argued to suggest the influence on mobility of higher financial and cultural resources in relation to social background, in response to the type and availability of provision in the home country. Overall, cross-border mobility can be argued to contribute to inequalities in higher education participation, but the findings were more complex than would be predicted by a reproduction of inequalities explanation alone. The discussion chapter will summarise the findings in relation to the research questions and to the theories in chapter 3, which have been indicated throughout the analysis chapters. It will also consider the policy implications of the findings, and the conceptual contribution of the research.

Chapter 8: Discussion

8.1 Introduction

The overarching aim of this research was to examine student differences in cross-border mobility within the UK for two purposes. Firstly the research aimed to identify whether student differences in relation to this action indicate that it contributes to wider well-evidenced inequalities in HE participation, and if so whether this differs between UK countries. Secondly to identify whether these student differences between and within countries may be explained by HE sectoral and policy conditions in their country of domicile, and whether these contribute to inequalities of opportunity or outcome. Following discussion of the different HE sectors within the UK, the policy perspectives and influence of devolution, and theoretical perspectives and research evidence on educational transitions, the reproduction of inequalities in HE participation and factors in student choice, four research questions concerning student and country differences in mobility were posed. Quantitative analysis was used to identify patterns and relationships in background and destinations for the 2012 young full-time entrants' population. The findings as applied to these research questions have been discussed in chapters 5-7.

In terms of the research aims, socio-economic advantage is more strongly associated with moving country than staying within the country and with moving to higher tariff institutions relative to staying, suggesting that it does contribute to inequalities in HE participation. However there are important differences between student groups, as well as in relation to which country or region students move to, and in relation to country of domicile, which do not all support a reproduction of inequalities perspective, but which do raise issues in relation to the effect of country-level sectoral and policy factors on individual action and the costs of that action. To summarise the key empirical findings, the research has identified:

- notable patterns of study mobility related to geography;
- complexities in the relationship of cross-border mobility with student characteristics and educational background, and differing potential motivations for mobility to explain these relationships. Importantly mobility

does not concern only the socio-economically advantaged. There were also differences in the propensity for cross-border mobility between ethnic groups;

- a positive relationship between institution tariff level and moving, and commonly entered institutions from each country, but as was the case with student characteristics in general a greater complexity in the institutional destinations of mobility, including mobility to lower tariff institutions, than these overarching findings would suggest;
- a variation by country of domicile in the relationship between fields of study and mobility. There were cases of student characteristic differences in accessing fields being higher amongst movers than stayers, but also examples of these differences being reproduced or reduced as an outcome of mobility. The potential effect of field of study under-supply in the home country was identified for mobility from Northern Ireland and Wales;
- proximity to a border increased the likelihood of being a mover, and more proximal mobility was associated with lower levels of socio-economic advantage, which may be further influenced by the accessibility of institutions and institution types in the home country.

This chapter will further discuss what has been learned from this research, its applications and its limitations. A summary of the empirical contribution of the research is discussed, firstly in terms of new analysis, and secondly through overviewing the findings in relation to the research questions. The contribution of the research in terms of its applications to policy issues, and the implications for the notion of a UK social citizenship, are addressed. The conceptual contribution of the research is discussed. Limitations of this study and areas for future research are then addressed before a final conclusion.

8.2 New analysis contributed by this research

Previous research on cross-border mobility of young undergraduates in the UK was summarised in chapter 3. Some of the analysis in my research has served to reinforce those earlier findings, in terms of the overall association of cross-border mobility with higher social class; that mobility is associated more with entering higher rather than lower tariff institutions at a UK-wide level, but that moving to lower tariff institutions is more common for Welsh and Northern Irish movers; and that only from the DAs

are BME students relatively more likely to be cross-border movers than stayers. My study has developed and added to previous research (Croxford and Raffe, 2014a, 2014b) which employed regression modelling to analyse cross-border mobility, by developing regression models based on the theories in chapter 3, including better quality data on key variables because missing cases had been accounted for, and including a parental education measure, more detailed variables on ethnicity (for students from England and Wales), on fields of study, and accounting for a measure of tariff level of institution entered.

The great majority of the descriptive and inferential analysis was new. The analysis moved beyond the overarching relationship between measures of socio-economic advantage and cross-border mobility into sub-groups of movers. Destinations in terms of institutions have been analysed in much more detail, through analysis of individual institutions, a new categorisation of institution types intended to improve comparability across countries, and separate analysis of those entering lower and higher tariff institutions. An effort has also been made to better understand what role field of study may play in mobility.

Although previous research has shown that movers from Northern Ireland most commonly go to the north of England and Scotland (e.g. Osborne, 2006), new analysis has been undertaken on the student differences in relation to these differing destinations and to the rest of England. Analysis on student differences in relation to destinations was furthermore carried out for students from all countries, which has received little prior attention. In addition student differences in mobility were identified in relation to selected English regions of domicile, and comparison between inter-regional and cross-border movers carried out on more recent data than in previous research, with the new variables in the regression model outlined above. These analyses have helped identify the importance of place of origin and destination to help explain differences in mobility in relation to students' resources and circumstances. The research has identified different types of cross-border mobility for students from the same country and between students from different countries, and offered potential explanations for these. In doing so, the research has identified more nuances in the relationship between background and cross-border mobility than in previous research.

8.3 Summary of findings

This section summarises the findings in relation to the four empirical research questions.

8.3.1 RQ1: What are the patterns of geographical mobility for undergraduate HE study in the UK?

Students who had been living close to a border on the Great Britain mainland were more likely to be movers than those living further away. From all countries mobility has been relatively focused on a small group of institutions which was largely consistent in 2004, 2010 and 2012. The main differences between countries were in the specific institutions and types of institutions their students predominantly entered and the extent to which the mobility from the country was focused on particular regional and country destinations.

From Northern Ireland this mobility was particularly strong to the North-West of England and Scotland, and mobility to these relatively closer and more established destination locations more likely to entail entering lower tariff institutions, compared to those who moved further afield and did not follow the more common pathways. From Wales, students entered a mix of institution types and this was more likely in the nearest region of England to where they lived. Geography, history, and physical accessibility combine to explain mobility patterns. Institution supply within Northern Ireland, and Wales to a lesser extent, further contribute to the explanation. From Scotland, there was less concentration of destinations in relation to place, with patterns of mobility explained better by institution type entered. From England mobility patterns were defined more strongly by place of domicile for movement to Wales and by institution type entered for movement to Scotland.

Movers from all countries were using mobility in ways specific to that country. The findings therefore support previous research and cultural reproduction theory (e.g. Ball et al., 2002a) which would suggest mobility is affected by physical location, and also suggests the importance of established pathways and traditions of mobility out of countries, identified for example in the work of Osborne (2006) and Cairns et al. (2012) on Northern Irish students. This analysis further suggests that these factors may be stronger than indicated in previous broader analyses and that they affect

countries with overall high outward mobility differently to those with overall low outward mobility, findings which were then explained further by addressing the remaining research questions.

8.3.2 RQ2: How are students' social characteristics and educational background associated with mobility?

The findings overall support the proposition that students with high levels of socio-economic advantage as measured by parental social class and school type attended are more likely to be cross-border movers, which reflects the overall findings from previous research on student mobility in the UK (Belfield and Morris, 1999; Croxford and Raffe, 2014a, b; Faggian et al., 2007a, b; Gibbons and Vignoles, 2009; Holdsworth, 2006, 2009; Raffe and Croxford, 2013; Wakeling and Jeffries, 2013). This suggests that socio-economically advantaged students have a greater propensity to be mobile as resources more likely available to the middle classes, which could be financial, social or cultural, are important for being mobile. The findings also support the idea that longer distance movement is seen as part of the experience of going to university more strongly for those from managerial and professional class backgrounds than working class backgrounds and those who went to independent rather than state schools (e.g. Davies et al., 2008; Holdsworth, 2009).

It can also be noted that compared to social class and parental education, the school-type effect on cross-border mobility was particularly strong. This finding suggests that school-type effect is a factor not just explained by social class or attainment, and this could indicate the influence of practical actions of schools in terms of information, advice or guidance, on what, where and how to apply (Davies et al., 2008; Donnelly and Evans, 2016; Purcell et al., 2008; Sutton Trust and BIS, 2012), and with knowledge perhaps of a wider geography of choice than in many state schools (Ball et al., 2002a,b). School-type effect may also be in the form of pupils accessing the type of subjects and extra-curricular activities that are more acceptable to higher tariff institutions (Boliver, 2013; Iannelli, 2013) and since higher tariff institutions are relatively rare and spread out, attending them is more likely to require mobility. School-type effect may also be explained in part by the qualifications their pupils take which may put constraints on mobility (taking country-specific qualifications in

Scotland and Wales) or increase the likely success of applications to England (independent school pupils in Scotland taking A levels).

Those who went to independent school may also be those whose parents are particularly concerned with positional benefits of HE in the longer term (Brown, 2013), as choosing an independent school arguably was itself a means of gaining such benefits; they may have higher incomes; and also social networks that could encourage mobility directly or indirectly (Ball et al., 2002a). As has been suggested the effect of this may be to make what is studied less important than gaining a degree from an acceptable status of university in order to gain a desired employment status (e.g. Lucas, 2001). Where this could interact with mobility is in focusing on the type of university rather than being concerned with where it is located, i.e. having a wider horizon of action (Reay et al., 2001) and the knowledge and resources to support longer distance movement if required. It should also be noted that going to a selective school may be an even stronger factor than it appears in the data, as these data combine selective non fee-paying schools with non-selective state schools. This would be particularly the case for England (Crawford, 2014; Sutton Trust, 2011); and if Northern Irish grammar schools could be separated from other schools a school-type effect may exist (McGregor et al., 2002) that it has not been possible to identify with these data.

The outcome of mobility amongst the socio-economically advantaged is to reproduce, and in some cases exacerbate, inequalities in HE participation. Being both 'better off' in these terms and mobile can provide an added advantage and is more likely to result in positive returns to HE, particularly the positional benefits of attending a high status institution. As HE expands, then those positional goods have been argued to become more important to securing high quality employment and social outcomes (Brown, 2000, 2013; Goldthorpe, 2010). However, not all mobility was associated with socio-economic advantage. Mobility was not associated with a parent having an HE qualification for Northern Irish students, and there was no difference in its association with the parental HE measure for Welsh students. There was overall a mix of students in relation to parental social class, parental education, and school type who were crossing borders. Not all mobility could be explained as reproducing socio-economic inequalities in HE participation. However the analysis undertaken in

relation to RQ3 and RQ4 helps to explain the complexity of the findings in relation to the more general terms of the theories.

In terms of ethnicity, it was proposed in chapter 2 (drawing on broader findings of Shiner and Noden, 2015) that among BME students propensity to be mobile would largely be influenced by attainment, schooling and class background, as it would be among White students. However BME students from the smaller countries had a higher probability of being a mover than did White entrants after these other factors were accounted for. There was a separate ethnicity effect. Nonetheless some of the analysis, showing differences in destinations and differing extents of mobility among ethnic groups with differing overall attainment levels, suggests that the aggregate findings for BME students mask differences in the propensity and capacity of cross-border mobility between BME groups.

It was also proposed that where propensity to be mobile may differ between BME and White students, is that BME movers are more likely to enter regions/universities with ethnic mix similar or greater to their region of domicile, rather than to enter those with less ethnic mix than the home region. This is a cultural factor that could form part of reasoned action, but is not really addressed in relative risk aversion which focuses on social class. It builds on the idea that for minority groups (which in HE includes working class students as well as BME students) 'fitting in', or at least 'not standing out', is important, but for different ways than for majority group students (Archer and Hutchings, 2000; Ball et al., 2002a; Shiner and Noden, 2015). There is evidence for this in terms of the propensity to be cross-border movers into England rather than out of it, into London to a greater extent than White students, and for regional outward mobility to be relatively common only for Black students often to institutions with high percentages of BME students. This is an equalities issue if it is constraining the choice of BME groups, in the sense that parts of the UK or specific institutions may be being ruled out despite the educational and experiential benefits they have the potential to provide.

8.3.3 RQ3: How is mobility associated with institution or field of study entered and how does this differ in relation to student characteristics?

For all countries, having accounted for background and course variables, movers overall entered a higher tariff level institution than stayers. This was a small effect in relation to one tariff point, but in relation to 100 tariff points, or even 10 tariff points, it was a notable effect. This supports the proposition that the type of institution entered by movers is, overall, one that is expected to bring some pay-off, but potentially alternatively that lack of lower tariff provision in the home country leads to entering cross-border institutions with a higher average tariff level than do stayers. Mobility was not however only to higher tariff institutions, and it was found that patterns of mobility by institution tariff group appeared to fit the institutional supply measure as calculated for this research.

Mobility appeared to be more common to some of the less widely available and therefore more selective fields of study, and this appeared to account more for movers out of England and Scotland for which neither mobility nor overall supply issues were strong. There was not strong evidence that those with more advantages were using mobility to *further* gain in expected benefits of particular fields of study. Indeed for students from Scotland and England moving to enter medicine appeared to mitigate school background differences. However there were a few cases where mobility may have maintained (reproduced) or increased the strength of (exacerbated) a social class or school-type difference in field of study entered. For students from Wales, class differences in entry to 'academic' subjects appear to be exacerbated by cross-border mobility, while for students from Northern Ireland this appeared to be the case in relation to both social class and parental education background for those entering medicine. For students from Scotland, school-type differences exacerbated access to traditional 'academic' subjects. For students from England, school background differences in relation to humanities subjects were reproduced. These cases of potential increase or maintenance of social background association with higher prestige fields of study is a means by which mobility may reproduce inequalities between the most advantaged and those less advantaged, as suggested by effectively maintained inequality and positional competition.

The models did not provide clear evidence that moving was undertaken with the aim of better future employment and earnings, however there were notable limitations with the measures used. It is not known from these data what kind of information, expectations and calculations prospective students did use in course choice. Moving is relatively common to medicine and dentistry, which scores highly on both employment level and earnings measures, but the other fields with relatively high levels of mobility were creative arts and design, agriculture, mass communications, languages, historical and philosophical studies which do not score highly on these measures. More important considerations for students may be wanting to study a subject that they enjoy. However this may apply more to the most privileged (Archer and Hutchings, 2000; Connor et al., 2001; Goldthorpe, 2010). Those with resources (financial, cultural and social) to feel they are likely to get opportunities after graduation despite making less employment-focused choices, can take the risk of entering a field of study because they enjoy it, motivated more by consumption than investment goals (Goldthorpe, 2010). It is an argument that applies more clearly to those who enter these fields of study at non-elite universities. Combined with study at a high status university, entering a traditional academic subject suggests a combination of positional and consumption motive, with the institution rather than subject being the source of expected increased opportunity (Lucas, 2001). Those from other social groups may benefit by following this approach, but they need the qualification levels, the capacity to be mobile, the support and the belief that they would belong in those institutions. The risks of a 'non-vocational' subject may be too great for those without the resources to mitigate the risk (Archer and Hutchings, 2000) (even if assumptions about increased employability from 'vocational' studies may be wrong). Because moving was more common for higher class entrants, this may explain why a stronger association between the employment and earnings field of study measures and mobility was not found. Within each DA and tariff group model, the association between the supply variable and mobility was certainly much stronger than that of field of study employment and earnings rates, and seemed to be a stronger factor in mobility to lower than higher tariff institutions. The potential effect of field of study under-supply in the home country was identified particularly for mobility from Northern Ireland and Wales.

8.3.4 RQ4: How are students' social characteristics associated with the relationship between place of domicile and destination?

Cross-border mobility was more common for those living closer to borders, but there was evidence that proximity can make cross-border mobility not just physically but socially accessible. This was because of the less strong relationship between socio-economic advantage and cross-border mobility for movers from Northern Ireland and Wales into the North-West of England and to a lesser extent the Midlands, and from movers from South-West England and the West Midlands into Wales. There was also some weaker evidence of this in relation to movers from Scotland to the north of England. However there was also evidence that suggested that proximity was not the only relevant contextual factor in this more proximal cross-border mobility, but that the supply of institution places in the home region and that of the destination location could affect the extent of mobility and the characteristics of movers. There is therefore a broader point to make that the costs of mobility, both social and financial, are lower for those living close to borders and this encourages greater social diversity of movers. However this may particularly be the case if moving from a location with relative under-provision of lower tariff institutions to an area with a higher provision of lower tariff institutions, as suggested by the mobility from the South-West of England to Wales and from Northern Ireland to the North-West of England. In terms of comparing countries, the issues identified above about the greater normality and historical precedence of moving from some countries compared to others are relevant, but contextual factors in the country of domicile, as discussed in chapter 2, also affect the relationship between locations and student characteristics in cross-border mobility.

8.4 Cross-border flows and HE inequalities: the role of and implications for policy

The research findings can be applied to government policy in the UK and to practice in UK institutions (most directly to student recruitment). For governments their relevance is in the role of inward and outward cross-border mobility in delivering their policy priorities for HE, which include assuring national and international reputation and attractiveness, addressing funding issues, and providing sufficient HE opportunities for students. The findings have been used to inform policy debate to

date in briefing papers for the ESRC fellowship project on higher education and the Scottish independence referendum (Riddell et al., 2014; Whittaker, 2014) and referenced in Scottish Parliament committee evidence (Raffe, 2014); and in an evidence paper submitted to the review of higher education in Wales (Whittaker, 2015a). Research findings have also been disseminated in the context of UK policy issues in a book chapter (Whittaker et al., 2015). The focus of the policy discussion in this section of the thesis is the impact of differences in policy conditions on students and changes to policy that may address these issues. The issues concerning the effect of student finance policies, the implications of student funding policy options available to governments and the financial treatment of movers-in are discussed. This is followed by the implications of the social diversity of movers for widening participation issues. Factors that could change the availability and accessibility of places are discussed; and finally the implications of the ethnicity findings are considered. The concern throughout is to relate these matters to the research findings and the extent to which policies differentially affect students in relation to place of domicile and social background, and therefore inform the debate on social citizenship in post-devolution UK.

8.4.1 The differential effect of student finance policies

The different approaches of the DAs change the conditions of HE participation for students depending on where they live in combination with where they study. The current Welsh Government approach of subsidising fees for movers seems to have the clearest sense of duty, compared to those of other governments, to support students into and through HE even if they leave the country. The closer historical relationship with England, than is the case for Scotland and Northern Ireland, may be a factor in this different perspective. In HE terms, this has been noted in relation to the idea of an 'England and Wales' sector (Rees and Instance, 1997), the slower development of Wales' devolved powers for HE compared to Scotland (Gallacher and Raffe, 2011), as well of course in the commonality of flows between the countries over the long term. The Scottish and Northern Irish governments on the other hand have to differing extents protected home students in relation to fee debt if they stay in the country to study, but they have not done the same for those who leave. In Scotland, as stayers are more socially diverse, and account for about 95% of Scottish entrants, it is a choice that can be justified from an equalities perspective. Against that argument is

that this research has found that there is social diversity amongst movers-out and BME students may be particularly affected by the high price paid for leaving Scotland. The Northern Irish approach is even more problematic from an equalities perspective, because the effect of the under-supply of places in Northern Ireland on mobility extends to a wide body of students including BME students, and also those from intermediate and working class backgrounds, those in the lowest attainment group, mainly going to Post-92s in England, and less concentrated in 'prestigious' subjects. In descriptive terms this applies to a greater extent to Northern Irish students than those from the other countries. If the principle of improving equality of opportunity was important then some way of reducing the burden on those who have to leave the country would be right. This particularly applies to Northern Ireland, but in reality under current devolution arrangements there are no clear solutions to the overall position of disadvantage created for many Northern Irish students.

There is a further effect of the countries' different fees policies. Additional financial costs for movers from England and Wales are not great. Therefore the more socio-economically advantaged movers from these countries may be the ones benefitting most strongly from mobility, where it allows access to a higher status university (or field of study) compared to staying in the home country. Socio-economically advantaged movers from Scotland and Northern Ireland pay a bigger price for their mobility, in terms of fee debt, compared to staying in their home country. If the benefits for middle class movers from Scotland and Northern Ireland are mitigated by these costs, there is greater fairness in the cost-benefit ratio for movers and stayers from these countries, than is the case for similarly advantaged movers compared to stayers from England and Wales. As moving entails greater fee debt for students from Northern Ireland and Scotland, do students who move still sufficiently benefit for it to be worthwhile? For those accessing higher tariff universities than they could at home, potentially yes, and if it was a case of moving or not entering HE at all, then also potentially yes. However the benefit may be greatest for those entering higher tariff universities. If so, because the cost-benefit evaluation has changed, due to a combination of UK Government policy and the DA government response to it, the long term effects of mobility may favour those from more advantaged backgrounds.

In summary, the portability of fee loans and student support enables mobility. However being a cross-border student may entail increased fee costs and living costs. The policies of the DAs, combined with provision they fund within the country, create between- and within-country differences for students, and do not offer additional support to less socio-economically advantaged students. It can be argued then that unless student funding includes additional means-tested support to help with likely increased costs of crossing borders, then its portability is more helpful to the already better off. Without this targeted support the reproduction of inequalities is aided by policy. This would be a predictable consequence of policies, but only if the characteristics of the mover group are taken into consideration. Furthermore, within each of the DAs, governments are concerned with inflows and outflows to their country, rather than comparing the conditions for students who move in and out of their country with those who move in and out of other countries. So in most cases inequalities between countries, generated by policies within countries, would seem to be an unintended consequence of the territorial approach of governments.

8.4.2 The implications of policy options for funding mobile students

The research findings better inform arguments on financial support for movers from Scotland and Northern Ireland. Firstly, although movers may be more likely to be middle class and (if from Scotland) to have been to independent school, this is not the case for all movers. Those in the lowest attainment groups, and movers to lower tariff universities, also form part of the mover group, and these were (descriptively) a more mixed group in terms of their backgrounds than those who entered higher tariff institutions. To follow the Welsh approach of providing fee support to movers would be expensive for Scotland as the policy of no-fees for home study accounts for a large share of the HE budget and limits the affordability of other forms of funding. But there may be scope for differentiation within this policy given that there is diversity within the mover group. Partial means-tested fee support for movers may therefore be a compromise though administratively burdensome. An argument in Scotland against improved funding for movers, but which also could be applied to a slightly lesser extent in Wales, would be that in principle there are HE places available in the home country to compete for, and so there is equality of opportunity. However it is an argument that overlooks potential supply issues in some fields of study and tariff levels. In Northern Ireland, budget constraints have led to the burden of changes

being placed on students, and the possible solutions to this – increasing places in Northern Ireland or providing financial support for the increased fees faced by movers – would require substantial savings to be made in other parts of the Northern Ireland budget. Even means-tested support would be costly as a relatively large percentage of intermediate and working class (and possibly lower earning middle class) students are movers.

For the DAs, subsidising the fees of movers raises the concern that the flow of funding is out of the country, although it is a contentious position to take (Hunter Blackburn, 2015a). This is only the current policy of the Welsh Government, but either for the purposes of reducing spend as DA budgets continue to shrink, or to re-prioritise HE spend within Wales, the current fee support arrangement may not continue. The current policy however benefits a mix of students, most often middle class and high attainers, but also movers into Post-92 provision in England from a range of social backgrounds. A loss of financial support would affect movers from all over Wales but most strongly those in North Wales who are more likely to be ‘non-traditional’ students. Means-testing of support may be a compromise solution if current arrangements end.

There is also an argument for the value in encouraging students from all the DAs to attend the most appropriate universities wherever they may be, if the needs of students and the potential benefits for students are made the priority issue, a position only currently supported in Welsh policy. Whether the benefit in the form of graduates is ever returned to the country in some form is risky, but a fairly high percentage of students who move to study do currently return to their home country (HESA, 2013). The benefit of having students from the smaller countries more widely represented in the UK could also be a benefit to those countries, but hard to evidence.

On the other side of student funding policies is the treatment of movers-in. All the DAs have sought to manage budgets and indirectly protect the financial support for home students with the help of high student fees for RUK students. This policy appears discriminatory to some (e.g. Scottish Affairs Committee, 2014; Minty, 2014), but the findings question this for two reasons. Firstly because this differential treatment reflects the unequal power relations in the devolution arrangements and in the distribution of populations in the UK, and resulted directly from policy decisions

made by the UK Government which have consequences, apparently unconsidered, for all the DAs. Secondly, this perception can be questioned by the evidence on the relatively privileged nature of movers-in to the DAs which suggests that the disparity in the arrangements affect more advantaged students to a greater extent than disadvantaged ones. This is particularly the case for students who move to Scotland. Would more disadvantaged, less well-resourced, students move to Scotland if there was not a fee disparity with Scottish students, or indeed if it meant taking on no fee debt rather than high fee debt? Students were not crossing the border into Scotland in large numbers (as a high percentage of English entrants) before the high fees applied. It was believed at the time of the 2014 independence referendum that it would not be possible to charge fees to English students unless the Scottish Government policy of no-fees for home (and by extension EU) students was changed. Such a change may have led to higher inflows, but would those who were less well-resourced even under those circumstances feel capable of crossing the border? Would the financial change overcome established pathways? It seemed likely that, at least in the beginning of such arrangements, it would be those already better placed to be mobile who would take advantage of the financial benefit of mobility, as could be explained for example by the notion of effectively maintained inequality (Lucas, 2001). However, this was not tested, and assumed membership of the EU of Scotland and England. One or both of those factors can be expected to change in the next few years, leaving open the possibility that higher fees could be charged to RUK students, and possibly EU students, than Scottish students in the event of independence.

From the perspective of England meanwhile, outflows have little impact, although in absolute terms there are far more movers-out from England than from other countries. Medium to low attainers moved to Wales particularly if living close to Wales, but high attaining students moved to both Scotland and Wales. This does not constitute impact in terms of 'brain drain' from England as most of the highest tariff universities are in England and they attract students from other UK countries. Even for students who do not study in England, working in England subsequently is a common outcome (though within England loss of graduates to London is an issue for many regions). It also does not additionally cost the UK Government as students from England are required to take on high fee debt wherever they study and the government has not taken steps to lessen the impact of this for stayers, let alone

movers. UK Government policy has affected students and institutions throughout the UK, without in the short term at least the government experiencing the negative consequences or being required to shape its approach in response to decisions taken elsewhere, as has been the case for the DAs.

8.4.3 Social diversity and the role of mobility in widening participation

In social citizenship terms, policies and interventions intended to wider participation in HE of under-represented groups can be classed as an attempt to reduce the 'legitimate inequalities' (Marshall, 1950) created by social and economic differences in society. Widening participation (WP) continues to be a particular concern for all governments and the research findings inform this issue. It has been confirmed that there are students in the WP group who are crossing borders for study. Others in this group could benefit from mobility but may be prevented from doing so for a range of reasons associated with the evaluation of risks influenced by resources, including financial ones. It was noted in chapter 2, that knowledge of the characteristics of students going in and out of the country could more accurately reflect the extent to which WP is being achieved (Whittaker et al., 2015). There are six points which these findings raise that indicate the complexity of the effect of flows on WP.

Firstly, the effect of inflows to Wales and Scotland suggest that WP indicators based only on home students may overstate the recruitment of WP students by institutions in those countries. Secondly, WP activities tend to be focused within territorial limits, such as through university-school partnerships and college-university articulation arrangements, which may constrain the HE options for participating potential students to those located within their home country, putting an unintended restriction on the kinds of participation that WP students can undertake (Raffe and Croxford, 2013; WISERD, 2015).

Thirdly, if a reduction in outward cross-border mobility affects the availability of places in the home country, then those from less advantaged backgrounds are more likely to miss out, as would be suggested by maximally maintained inequality (Raftery and Hout, 1993). So although mobility is contributing to reproducing inequality that benefits the most privileged, it may help to make HE a realistic option for more

people by freeing up places for immobile students (whether immobile by choice or due to constraints). This is likely to be important for students in Wales due to uneven provision and the high inflows from England, but particularly important for students in Northern Ireland. Supply issues in Northern Ireland mean mobility is an important tool for students, if they are determined to enter HE. The extent of mobility particularly amongst those who, if they were from other countries, would be expected to be more constrained in movement, supports Osborne's (2006) finding that moving out of Northern Ireland can be a reluctant choice. The descriptive data suggest that this is the case to a greater extent than for students from other countries. It is a further concern that the more class-advantaged appeared to take more advantage of mobility to access relatively under-supplied fields of study. But as a means of helping students access HE at all, cross-border mobility has the potential to help support the objectives of the Northern Irish government (in terms of HE participation in general or WP). However, in all three DAs, government budget reductions have since 2012 resulted in the number of places being held level or decreasing. Reduced opportunities in the home country mean that the benefits for immobile students of others leaving the country will become more important, and any reduction in cross-border mobility in combination with a reduction in the student number cap would be a threat to WP of home students. Changes in provision both in the home country and in England on real opportunities for students and their potential to help or hinder the lessening of inequalities show the effects both of a territorial funding and policy system and of the inter-dependencies between countries of the UK.

Fourthly, it was seen that inflows have little impact on the English HE system as a whole, but are relevant to a few universities. Those which have lower tariff entry requirements in particular appear to be supporting WP from countries outside of England and helping make up a shortfall of places in some cases, and benefitting themselves from the recruitment of students who have to pay full fees. Cross-border mobility does not however strongly help any WP aims in England, since students in WP categories are less likely to be movers, and England attracts similar students (mainly from Wales and Northern Ireland) to those it loses. Overall the flows of students and the findings in the analysis suggest that cross-border mobility can be helpful for WP of students, particularly from Northern Ireland and Wales, even if it associated overall with socio-economic advantage and even if it confuses the data on

WP indicators. In a single UK HE system, or a devolved one in which all governments worked collectively, that participation would of course be on the same financial terms for all students. In the UK's devolved system that is not the case.

Fifthly, the findings indicate that independent school entrants seem best placed to make the most of mobility for their future gain. The fact that independent schooling exists, and as discussed in chapter 3 that state schooling has lower attainment levels overall and less focus on getting its pupils into HE, affects later education transitions. State schools (collectively) cannot give the same focus to preparation for HE as they serve a much wider range of pupils. Seeking to raise attainment levels of more pupils from all backgrounds would make more people qualified for HE, and for the HE that is likely to give the most returns, but would also rely on expansion of the HE system. And that expansion may be accompanied by credential inflation - of level and grade of qualification required to enter graduate jobs but also the expectation for additional hard and soft currencies - unless there was a growth in graduate jobs (Brown, 2000, 2013). There is already evidence of credential inflation in the UK in relation to expansion that has taken place in terms of increased percentages of graduates in non-graduate jobs (Elias and Purcell, 2011; ONS, 2013). Without graduate job growth, greater equality in HE participation, including more students having the resources to consider a range of options because of increased capacity to be mobile, would require downward as well as upward social mobility.

Finally, widening participation issues concern the differences in opportunity and outcome in relation to social and educational background but tangential to this is the effect of mobility on outcomes of those within the middle classes (Whittaker et al., 2015), an issue raised theoretically in terms of effectively maintained inequality and positional competition. It is possible that where spatial mobility is concentrated among the privileged, defined in terms of social class, parental education and school type (as particularly the case for Scottish movers and English movers to Scotland) this contributes to differentiation between middle class students, in that stayers may be more likely than movers to maintain their status rather than achieve upward mobility (among those not already at the highest levels of advantage). Such an impact of policy would appear to be unintentional as the focus is on HE increasing the prospects of individuals.

In this section it has been identified that the devolved system of the UK complicates attempts within each country to achieve greater equality in relation to the opportunities to access HE, which can be conceived as one aspect of social citizenship. Being part of a UK-wide sector dominated by England and a single nation-state in which moving across borders is not technically constrained can help WP aims of the smaller countries, but at financial and possibly social cost to students, and amongst the relatively privileged, potential status cost to those who do not move. For some WP students the territorial focus of WP activity may limit their mobility options. However amongst young people classed as being in the WP group, if mobility is required to access HE it will according to the theoretical perspectives continue to be perceived as unfeasible or undesirable to some, indicating its limitations as a means of reducing inequalities in participation.

8.4.4 Policy changes that could affect the availability and accessibility of places

This section considers changes that can be expected to have some influence on cross-border mobility, and consideration of whether a change in the application of the student number cap or applications process could affect who is mobile and the effects of mobility. Firstly, in Wales the fee subsidy for movers may end. If this occurred, but student needs as opposed to government or institution needs remained somewhat of a priority, means-testing of it may be a compromise solution, as suggested above. If this resulted in more students trying to stay in Wales, and past data suggest it could have a moderate such effect, this would potentially squeeze places further for those less willing and able to leave Wales, unless accompanied by a reduction of students from England. This in turn may happen as result of expansion in English HEIs, particularly in lower tariff universities as the cap on student numbers was removed in England in 2015 and lower tariff universities would be those most expected to notably expand. This could reduce the need for English students to move to Wales. In that case, lower tariff universities in Wales may need to recruit more home students in order to maintain their viability. However in the first year of the end of student number control in England, it was Pre-92s more than Post-92s that expanded their intakes (McCaig, 2016), and so it is not easy to predict how individual institutions will respond over time. Further complicating predictions of the impact of expansion is the

projected fall throughout the UK in the number of 18 year olds until the early 2020s (HEPI, 2014).

In addition to the possible effect on flows of the removal of the student number cap in England, an issue that may affect availability of places within the UK countries is the 'leave' result in the EU referendum. This can be expected to affect the future treatment of EU students, potentially increasing the number of places for home students, but also potentially reducing the recruitment of EU students which may affect the viability of institutions. This is unlikely to lead to much difference in the availability of places and affordability of student support within Northern Ireland, but would do so in Scotland and Wales.

Despite the policy focus on fees and the concern in this policy discussion about the differential impact of fees policies on students, the data as well the theoretical perspectives and wider research evidence indicate that the effect of financial factors on whether to move for most students would be limited. This suggests that, in the devolved system that exists, focusing on provision and support in the home country is a better approach to address inequality. HE provision could be boosted in the areas where students are most likely to cross borders and where there is limited provision. There have been attempts to do this in the south of Scotland (Scottish Government, 2011); regional provision in Wales including in North Wales is under review (HEFCW, 2010, 2016a); while in Northern Ireland the problem is recognised (DENI, 2012). But in none of these areas is the issue likely to be resolved to a great degree – there is not funding to do so, without removing funding from elsewhere in the system. At higher tariff levels, expansion would in any case be seen as problematic by universities as it reduces their elite status. It could also only really be achieved by expanding existing high tariff provision, as HE is not a market in a true sense in which new providers can compete in status terms because status is built on reputation and tradition more than quality per se (Marginson, 2013). Expansion also comes at considerable cost to the DAs, and would need to include ring-fenced provision for home (and at least for now, EU) students. These are all issues that the DAs contend with, as they seek to meet their priorities for HE and appropriately allocate places without destabilising the sector or individual institutions. There will remain limits to the places available, within regions, countries and across the UK, and particularly so in higher tariff

universities, although these limits may loosen as any changes to the status of EU students takes effect.

In relation to other policy options that could affect availability of places, an issue raised in chapter 2 and further discussed in chapter 3, was that of the likely different perceptions of risks and potential benefits of entering particular fields of study, which may in some cases provide a motivation for mobility. The findings provided some evidence that amongst movers, compared to stayers, there are greater social background differences in entry to high status fields such as medicine, traditional arts and humanities subjects and some sciences (mathematical and physical). In other cases the social background differences between movers and stayers are the same. From a policy perspective if there was concern about intermediate and working class students, and state school students, being able to enter high status or restricted fields of study, given that they are less likely to have the capacity or propensity to move country in order to increase their chances of doing so, what would be the options? One approach would be to make it more difficult to apply to HEIs in other countries by requiring separate national applications processes, though based on previous research (e.g. Ball et al., 2002a; Purcell et al., 2008) socio-economically advantaged students would arguably be most likely to get the support from school and possibly family to deal with a more complicated applications process. Another approach would be putting limits on students from other countries entering restricted fields of study. This may benefit stayers from all backgrounds especially if accompanied by focused widening participation activity. It may also negatively affect the most advantaged students from other countries of the UK by reducing their options to be mobile to gain access to the subject. These outcomes would potentially slightly level the playing field. However, it may also simply leave the class complexion of entrants to these fields unchanged but accounted for mainly by home students rather than all UK students. Another policy approach could be to encourage more provision of 'academic' or 'traditional' subjects and take-up of these subjects at school among those from a range of backgrounds (Iannelli, 2015). For some potential students greater support for mobility in addition to this may help overcome capacity (if not propensity) issues.

There are therefore known changes that will affect the extent of provision in the home country and in comparison to other parts of the UK, which could in turn affect flows, and changes in flows may have an impact on who is affected by cross-border mobility (both amongst the mobile and immobile students). There are also policy options other than student finance that could be used to influence cross-border flows, but these changes do not appear to be under consideration at this time. Increasing funded places for home students is considered unaffordable currently. The effect of changes to applications and limiting RUK recruitment may be to create new rules to the game to which the socio-economically advantaged are better positioned to tactically respond (Brown, 2013), but in any case these changes are unlikely to be implemented because there is still a UK-wide sector in many respects despite the differences in conditions and power between the four countries.

8.4.5 Implications of the ethnicity findings

BME students are more likely than White students to leave their home country to study. The findings suggest that BME groups may use mobility as a tool to gain HE participation benefits. Moving is most likely when they have other advantages, such as the higher probability of mobility for those who attended independent rather than state school, just as was the case for White students. Middle class or independently-schooled BME students may be more likely than other BME students to feel that they would fit in at higher tariff universities (Shiner and Noden, 2015). Overcoming the wider inequalities in ethnic participation in HE would require a sense that all university types are a welcoming place for students from all ethnicities, and that they are sufficiently diverse that ethnicity does not have to be in the foreground for students. That means avoiding discrimination in admissions, but also requires universities to face up to this issue of which there has not been evidence amongst the most elite institutions (Boliver, 2014). However, since elite universities have a large international student body, they would be in a strong position to emphasise the diversity of their institutions in nationality terms at least, even if there is a lack of ethnic diversity amongst the UK students. If the institution is located in an ethnically diverse place, this could be another factor to emphasise.

However if ethnic mix of the location in which institutions are sited is an issue this is not an HE issue nor one that can be readily changed. The importance of ethnic

diversity is only suggested to be a factor for some BME students, but for whatever the reason for higher mobility propensity, the student funding policies of Scotland and Northern Ireland which ensure higher fee debt for movers than stayers disproportionately affect BME students. This will include students from a range of socio-economic backgrounds, as is the case for White movers.

8.4.6 Policy implications: conclusion

The policy focus of governments on cross-border mobility has not been on the range of broader issues of equalities in HE participation in relation to social and ethnic background identified in this research, nor on who moves and the effect of policies on them. Rather, as discussed in chapter 2, the DAs have concerns about managing the extent of cross-border flows, and one of the key policies which has been linked by devolved governments to managing cross-border mobility is that of differential tuition fees and fee loans. The impact of country differences in fees and student support have been discussed by others in relation to the issue of a UK-wide social citizenship (Jeffrey, 2009; Keating, 2009; Raffe, 2013a, b; Trench, 2009). If UK-wide consistency in student financial support and service provision was deemed important, then a UK Government could reduce fee levels in England, making it less costly for DAs to support students who leave their country. The Welsh Government, with its current policy, would be the immediate beneficiaries of that. Students across the UK, both stayers and movers, would also benefit. The UK Government could argue the opposite – that to support a UK-wide social citizenship the DAs should create greater fairness across the UK by adopting their more market-driven approach. However as discussed in relation to the issues created by devolution in chapter 2, this would be perceived as the dominant partner trying to impose its different political philosophy on the DAs and would illustrate the uneven power issues in the UK. The argument would therefore be unlikely to be made in any serious attempt to change DA policy, and if it were it would be resisted by current administrations. However the situation that exists in the UK already puts the DAs under pressure to follow the UK's lead, and they all do so to some extent while trying to maintain some differences and points of principle.

Collectively the findings suggest that the prospective students who are most concerned with being able to access cross-border institutions are: those who are

seeking to enter a field of study at a tariff level that matches their attainment and is difficult to access in the home country; those who live relatively close to cross-border institutions; those who live in an area where mobility of some form is required due to lack of accessibility of HEIs; those who are seeking to enter very high tariff institutions unavailable at home; and those who would rather study in a location which is different to, or simply far from, their home area. In all of these categories there is a mix of students, but the last two most strongly concern the most socio-economically advantaged. Having policy conditions in which mobility is possible does also benefit those from less advantaged backgrounds, and if it was made harder but without increasing supply closer to those students in the home country, then there is a set of less privileged students who would lose out. They are the ones most likely to be affected by further increases in fee differences, loss of portability of fee loan or living support, or reduced availability of places in the home country, as they would be least likely to have the resources to mitigate the increased costs and risks of moving. Any failures of policy to prevent or mitigate against these costs and risks makes cross-border mobility a more beneficial and feasible proposition for the more advantaged than the less advantaged, and may have a negative impact on the role of cross-border mobility in increasing access for WP groups. Across the UK as a whole these effects vary by where students live, as a consequence of the territorial frame of reference which works against a UK-wide social citizenship.

8.5 The conceptual contribution of the research

A common social citizenship, in the sense of equal conditions of access, opportunity and financial support for HE across the UK, does not exist across the four countries. Equal conditions of financial support also do not apply for the residents of Scotland and Northern Ireland if they leave the country compared to if they stay. England-domiciled students are exposed to high debt whether they stay or move. Those qualified for and wishing to enter HE are affected both by financial support for students and the provision of the HE service within their home country and in comparison to other countries of the UK. The effect could be to close off real or perceived opportunities, or create costs for mobility that have the potential to outweigh benefits. Theories of educational transitions and reproduction of educational inequalities have been used to conceptualise the cost-benefit or risk evaluation of cross-border mobility as an HE choice in relation to measures of socio-

economic advantage, ethnicity and attainment; and in relation to contextual factors. These contextual factors, drawing on the theoretical perspectives, were suggested to affect potential students' perceptions of opportunities and constraints, and of feasible and desirable options, in association with their own circumstances and resources. The question here is whether these theories have helped to understand the relationship between resources and contextual factors, and the extent to which they might inform the broader issues of a (lack of) UK-wide social citizenship in relation to HE.

In chapter 3, it was noted that in rational action theory and cultural reproduction theory, HE participation and the nature of that participation has been theorised to carry differing risks for students in relation to their social background. This is argued to be because students' background and circumstances determine the resources that a student has, and these resources influence the evaluation of costs and benefits of different types of HE participation, in terms of what and where to study. Students' backgrounds also influence what they view as the purpose or goal of HE for them. The theories recognised that choice is influenced by the interaction between circumstances and structural factors on the one hand and students' resources associated with social position and characteristics on the other. There are some previous examples of student mobility research in the UK drawing on a cultural reproduction perspective (Ball et al., 2002a; Cairns et al., 2012; Holdsworth, 2009; Tindal et al., 2015), though only to a limited extent in relation to cross-border mobility specifically (Cairns et al, 2012; Tindal et al., 2015), but not for mobility between all countries of the UK, and not as far as I am aware in relation to the tenets of relative risk aversion. The research adds to wider findings on educational inequalities in relation to these theoretical explanations.

A key purpose of these theories is to explain persistent inequalities in educational participation. Relative risk aversion (RRA) explains this as the consequence of a cost-benefit evaluation intended to maintain class status; cultural reproduction perspectives explain this as a consequence of cultural factors on perceptions of options but again with a concern for making choices that fit with social position, as well as with ethnicity and place of domicile. The cultural factors perspective provided a set of possible additional explanations, beyond that of status maintenance or upward mobility associated with social class, for cross-border mobility amongst the

more socio-economically advantaged, those from a family with HE experience, and those who went to an independent school. These explanations were based on the notion of cultural, social and financial resources associated with these aspects of students' backgrounds and the means by which these resources could support both propensity and capacity to be mobile. Effectively maintained inequality and positional competition suggest that middle class young people and their families use their already advantaged position to try to achieve differentiation from others in the same class. At an aggregate level the findings do generally support the propositions for why cross-border mobility would be expected to be stronger for the most advantaged and would contribute to reproduction of inequality. Those most able to afford the costs, financial and social, were most likely to move. Cross-border mobility may allow position and investment goals to be met to achieve distinction.

The findings further indicated that background factors other than attainment helped explain the extent and patterns of mobility, which arguably show that there were secondary (choice) as well as primary (performance) effects on mobility, as attainment did not explain all social class differences (Boudon, 1974; Jackson, 2013a). The change in the association between attainment and mobility when field of study and institution tariff were accounted for in regression models, also suggests that choice was affected not just by students' social positions and educational backgrounds, but also by external constraints and opportunities. This was further suggested by the low value of the pseudo R^2 when only social characteristics were included in the models, but which increased with the addition of field of study and institution tariff variables.

There were further important findings that could not be explained by the reproduction of inequalities, status maintenance, seeking distinction, nor a normal biography influenced by cultural factors described in the theories. The more advantaged, in class, parental education or school terms, may have been expected to make greater gains both compared to stayers in the same social groups and students from other groups, in relation to accessing high premium or status fields of study. There was not a strong difference between movers and stayers from different classes, parental education backgrounds and school types in relation to entering these fields, suggesting inequalities in participation in high status fields of study were reproduced

more than exacerbated through mobility. There were a few exceptions to this, but the lack of strength in these findings overall may reflect partly a lack of differentiation between fields of study in the categorisations used, particularly in popular fields like biological sciences and business and administrative studies, masking differences in relation to entering higher prestige subjects within these groupings; and partly the difficulty of ascribing motivation to field of study entry based on broad measures. It may also reflect that institution type was more important as a means of gaining expected benefit from the HE experience, which mobility could help more advantaged students to achieve.

The theories may also not have expected such social background differences as were found in relation to destinations of students from the same country: those between English movers to Wales and Scotland; Northern Irish movers to the North-West, the rest of England and Scotland; Welsh movers to the North-West, South-West and elsewhere. Cultural and financial resources that support mobility may be expected to support movement to a range of destinations, and the differences may have been expected more between mobility and staying in the home country, than between different geographical destinations of mobility. However this is where the findings have indicated that the circumstances, constraints and resources of the young person's life which affect their perception of what is feasible, cannot be separated from external factors, in this case HE provision in the home location and destination location. Together these affect choice and action. The theories would also not have indicated the extent of cross-border mobility among those with fewer measures of socio-economic advantage, nor the extent of mobility to lower tariff institutions. Again, contextual factors have suggested possible explanations for these findings.

Where the explanations of reproduction of inequalities did not apply, findings could therefore only be interpreted in conjunction with contextual factors. However the notions of reasoned action, cost-benefit evaluation, and the relationship between risks and resources in rational action theory (RAT) could help explain these inter-relationships and therefore the concepts of RAT, taken more broadly, have explanatory potential. It was suggested for example that using RRA to explain mobility amongst those from non-middle class backgrounds would require a cost-benefit evaluation based on the potential for upward mobility through entering HE.

As it was expected that this could be achieved by entering most types of HE, moving a distance from home would not be a reasoned action unless linked to supply issues that may drive cross-border mobility. The measure of field of study supply, and the relationship between patterns of mobility and the extent of supply of HE at different entry levels in home countries, suggests some support for this proposition.

Based on the cultural reproduction perspective mobility amongst those without the characteristics of socio-economic advantage was harder to explain, but the perspective would suggest why there could be less social as well as financial cost for those living close to borders to cross them; that those from working class backgrounds may be more likely to choose 'vocational' rather than 'academic' or 'selective' fields of study which if difficult to access locally could explain mobility; and why some BME students may cross borders to go to London and other ethnically mixed locations and institutions to a greater extent than White students. Place was identified as important in the cultural perspectives, particularly in relation to its influence on one's sense of identity and belonging and concerns about fitting in away from the home area and this can also help explain lower relative mobility of less socio-economically advantaged students. Less clear in the literature included was the role of accessibility of opportunities in relation to place but the findings suggest this may be important for students particularly from less advantaged backgrounds who cross borders. The concepts of cultural perspectives therefore have helped provide reasonable explanations for the findings that did not show an association between mobility and socio-economic advantage, even though these findings did not all support the main proposition on cultural reproduction.

Altogether the findings support the description of cross-border mobility as a reasoned action based on an evaluation of costs and benefits, influenced both by the students' financial and cultural resources, and by external constraints and opportunities. This includes a relationship between mobility and socio-economic advantage on aggregate, but more diversity in the movers and the types of movers than a simple reproduction of inequalities perspective would suggest. The theoretical perspectives were helpful for identifying variables to include in the analysis, and they were helpful in the broader concepts they proposed to explain differences in action in relation to social background. These variable factors however mean cross-border mobility cannot be

explained in the same way for all students. From the point of deciding to apply, HE participation is not something that happens unthinkingly. Even accepting that socialisation and the implicit value placed on HE by family or school is important in whether someone applies to and enters HE, there are still a series of explicit actions and decisions that need to be taken– it is not an automatic outcome of socialisation or tradition, even if those have a role along the way. Entry to HE therefore takes place at the end of a long educational, familial, social road, and is enabled, diverted or blocked by structural factors along the way. In this sense, the argument is that being mobile to study is a rational action. However it is a situated rationality, not a form of economic rational choice as is the assumption underlying much market-driven HE policy.

The situated nature of mobility as a rational action includes policy and sectoral conditions. The direct influence of policy conditions, concerning financial factors at least, may not be evident from the analysis, but as discussed these factors affect the cost-benefit evaluation or risk for those who move. Even if they do not over-ride other factors on whether to move, student finance policies have a more punitive effect on those with fewer socio-economic resources, because they increase the relative cost side of the evaluation. The differences identified in the different types of mobility, and the possible explanations for them, were explained in part by differences in sectoral conditions, and therefore in relation to issues concerning equality of access and the extent of service provision. It is possible therefore to connect the empirical findings, and the theoretical perspectives underpinning them, with the issues of differing treatment of HE as a social citizenship issue and the effect of differing conditions on the opportunities and choices of individuals, social groups, and geographically defined groups, which have become stronger since devolution. Firstly, if cross-border mobility only concerned the most advantaged that would suggest these students more than others see themselves as belonging in the whole of the UK. The more advantaged may have the confidence and knowledge to operate in a UK-wide horizon of action, through which they may gain positional and investment benefits, and potentially create further differentiation between themselves and stayers. However even these students are affected by the limits to a UK-wide social citizenship, as some advantaged students are gaining from mobility at less additional cost than others depending on their country of domicile. However secondly, cross-border mobility affects a wider student body which raises additional perspectives on the effects of

unequal financial provision and differing provision of service. Some students are driven more by circumstance than choice due to lack of places at their attainment level or their preferred field of study, or because cross-border institutions are more geographically accessible than those in the home country. They are potentially not gaining the same kinds of positional and investment benefits from that mobility as the most advantaged movers, unless these drivers are combined with entering very selective institutions and fields of study. Where this is not the case the costs of that mobility, which for some country domiciles is greater financially compared to staying, becomes problematic where it affects less advantaged students. Those less advantaged students may have already overcome cultural constraints to be mobile and taken on higher risks relative to their resources, and then additionally pay a high relative cost for doing so for riskier benefits.

The conceptual relationship between the theories of educational transitions and the notion of social citizenship has therefore worked in both directions in this research. Firstly, differences in policy and HE provision within countries have helped explain findings that were not explained by student differences alone, and showed the importance of understanding these differences in relation to external context. Secondly, the concepts and language of theories of student differences at educational transition points and in evidence on student choice can help to explain how policy conditions can have unequal effects on individuals in relation to their social characteristics. These contextual factors can over-ride limitations on mobility predicted by individual attributes alone, but potentially at a cost to the student. Together, these two directions of the conceptual relationship indicate the importance of treating social class background, or financial or cultural resources, as explanations for differing outcomes that operate in conjunction with situational and external factors, rather than in isolation from them. In doing so better sense can be made of country-level as well as student-level differences that may contribute to HE inequalities.

8.6 Study limitations and future research possibilities

The limitations in the data used were discussed in chapter 4. However it is worth reiterating some of these points in light of the analysis and findings. Social class data have been important to this analysis but their accuracy is affected by the limited and

second-hand information they are based on, as well as the incompleteness of the data. They were also limited by lack of income data. This however is an issue for all analyses based on these data, including official statistics. The parental education data also were limited by being missing in many cases, and only differentiated between two levels of parental education achieved. There may be analytical benefits in its relative simplicity, but as a proxy for cultural resources and information resources it was of course limited. The school-type distinction was also limited. It is likely that a more varied measure of selective school for example would have identified a stronger school effect on mobility, for England and Northern Ireland at least. The home area HE participation rate is a limited measure again for representing potential socio-economic disadvantage and problematic for many parts of the UK, but also an official measure and not an issue limited to this research. The solution to these issues would be linking HESA data to more detailed research or Census data. This may be possible as a more complex future research project. In this research, despite the limitations of these measures associations were still found with mobility. If data were more likely to be missing for those from less advantaged backgrounds, then the findings may underestimate the impact of these socio-economic factors on mobility. Of course an attempt has been to reduce these problems with the use of multiple imputation.

An important limitation is that of not being able to directly measure motivations that lead to the HEI and course eventually entered. That would require a qualitative study, which could provide in-depth evidence for a small number of areas of domicile or student groups of interest, such as students in the WP category who choose to move, high attaining students who move, or those living in areas close to borders. The findings do not provide much clarity on whether students may be making decisions based on expectations of outcomes of HE options. More detailed measures on outcomes from different fields of study in relation to employment location could provide useful detail on expected longer term outcomes of choices, but the decision was made to undertake this initial exploration using simple measures. Future research could overcome these limitations by linking the HESA student census data used in this study with HESA data on qualifications obtained and destinations of leavers. The purpose of this research would be to identify whether there are differences in outcomes for movers and stayers, in relation to their social characteristics, the institution or institution tariff level entered, field of study entered,

and in relation to their original country/region of domicile; and specifically whether the outcomes for movers were more positive than for comparable stayers, and therefore whether the benefits suggest the costs were worthwhile.

In this research it has not been possible to directly measure choice determined by whether or not institutions make offers to applicants. The supply measure would have been stronger if it had been based on applicants and unmet demand, but even in its current form it has suggested this is an issue that affects mobility and this would be worth exploring in more detail. It would therefore be beneficial to build on the earlier research of Raffe and Croxford (2013) and undertake analyses on mobility using a supply and demand measure at both institution tariff and field of study level that takes into account unsuccessful applicants. There would be a number of potential supply variables at level of country of domicile or smaller region of domicile: the ratio of successful to unsuccessful applicants within each institution tariff group and field of study for use in descriptive analysis and converted to a single continuous variable for regression modelling; the ratio of successful to unsuccessful applicants from each country who were stayers and the ratio of successful to unsuccessful applicants who were movers, both for descriptive analysis. This could be based on the year of entry under analysis, or compared with and if necessary averaged across years to account for any unusual recruitment patterns that year. Analyses using these measures would identify whether the relationship between field of study supply and cross-border mobility continues to be found to be stronger to lower than higher tariff institutions, or whether there are different effects of under-supply in the home country to those found in my research.

The data are based on 2012 entrants. Although these were the most current data at the time the research started, they are now a few years old. This is common for research on HE and particularly that which draws on secondary analysis of quantitative data. Insofar as contributing to the wider body of research this is not necessarily a strong concern, but in relation to the most up-to-date policy and institutional issues it may weaken its direct usefulness. 2012 was a year of changes in HE, and their impact over a longer period on student motivations for study and the choices will be an important area of research. But there have been further changes since, notably the ending of the student number cap in England in 2015-16, which may have an impact on cross-border

mobility, as raised in the discussion above. There has also been lack of growth in the student number cap in the DAs (UCAS, 2015) related to HE budget reductions throughout the UK. An important event which took place as the final writing on this thesis occurred, as referenced at various points in this chapter, was that of the referendum vote to leave the EU. As noted this may change the treatment of EU students in financial terms, free up home student funded places and affect recruitment of EU students. But there may also be wider consequences for the constitution of the UK, which may redefine much of the internal cross-border mobility as international cross-border mobility. There will also be wider, currently unknown, effects that will directly and indirectly affect HE provision and student choice. On the basis of what is known and the assumption of the continued existence of the current UK, the messages from the research however have a longer term resonance. For one thing, changes in cross-border mobility are unlikely to change largely year-on-year. The UCAS acceptance data in chapter 2 indicate this in terms of overall percentages of entrants. Instead change is more incremental, although of course exceptional developments may change this pattern. Secondly a number of issues have not changed in the last few years – devolution arrangements are still in place, as are fee differences, and there have not been large changes in types of HE provision and number of institutions. However it is recognised that future analysis of 2015 entrants' data could show some differences to the 2012 analysis, potentially particularly in relation to Wales-England flows.

The research also was restricted to studying mobility in relation to relatively large geographical areas, and did not examine home postcode data or the more precise distance between home and institution. The limitation of including only cross-border movement, and some English inter-regional movement for comparison, was due to the particular interest in the UK policy context and country differences, and the focus on exploring cross-border mobility in more detail than has previously been undertaken. However the findings suggest, as has the more limited previous qualitative research on student mobility, that in some cases cross-border mobility may mean less to students in terms of 'a country border will be crossed' than in terms of 'how far from home and how accessible is the institution', as may be identified in a differently focused and qualitative study. However further quantitative analysis that compared areas within countries in relation to cross-border mobility and in-country

mobility would also be possible and useful. Such research would show for example whether the distance and accessibility of cross-border institutions was less than that of within-country institutions, and therefore whether cross-border mobility was a less difficult or risky option than staying in the home country. Where this is the case, cross-border mobility may be less associated with socio-economic advantage. This would provide evidence on whether students from less advantaged backgrounds are too limited in their home-country options and therefore whether a lack of financial support for cross-border mobility would contribute to unequal outcomes. This research would be particularly useful in Wales, through comparisons of students from the north and south of the country because of the differences in HE provision but also social differences between these two parts of Wales, and the physical accessibility issues between them; and potentially in relation to regions within Scotland and Northern Ireland.

The research also had limits in terms of the detail of field of study entered; and in terms of the sub-sets of students examined. Future research could focus on these finer details. For example, the analysis of probabilities of mobility for students with combinations of social characteristics and field of study entered could identify whether there are student groups in any countries that are finding it particularly difficult to access appropriate or preferred opportunities in their home country. More attention could also be given to the interaction of gender with ethnicity, attainment, field of study and institution type entered. This may identify whether exploring gender differences in this way identifies any important issues affecting equality of opportunity and the impact of sectoral conditions on driving mobility, that are not evident through including it as a variable in regression modelling.

It had also been the intention to include analysis of mature students in the thesis but this did not happen for reasons of data, theory and research literature. There were no indicators that provided proxies for socio-economic background and resources, apart from a measure of whether they received fee support, and no information on educational background including prior attainment. The lack of data on student characteristics did not allow the application of theoretical perspectives that focus on socio-economic inequalities. The lack of detailed social data available on mature students is a wider concern that limits the analysis that is available on this important

section of the HE student population. However the analysis that was undertaken suggests differences compared to younger students in relation to the propensity to be mobile, the relationship of mobility with entering vocational subjects, the institutions entered, the extent of mobility to enter sub-degree provision, and ethnic differences in mobility. The findings and the differentiations with young people varied by country of domicile. The research questions that this raises are whether these differences suggest a different cost-benefit analysis or different purposes for mobility, and do sectoral and policy conditions (e.g. more limited student support than for young students; more difficulty accessing places in home institutions) affect mobility in ways that suggest particular social citizenship issues for mature students. Such research would draw on policy and access issues specific to mature students, and wider literature on the factors and risks both for HE participation for mature students and spatial mobility specific to adults beyond the teenage years. It would almost certainly require multiple years of data in order to analyse by age group: those in their 20s who are in the 'high mobility' years of life (Finney, 2011; Halfacree et al., 1992), and those who are older.

Much of the focus has been on 'status' and the benefits that accrue from attending a few universities with high rankings and reputations. There is evidence, noted in chapter 2, which suggests that graduating from these universities brings some additional benefits separate to background factors. These background factors concern attainment directly, and the factors that affect attainment more indirectly, i.e. the range of primary effects. However, entry to high status institutions is arguably not sufficiently diverse to identify how much it can level out outcomes in relation to social background. The focus has been on status because of its associations with higher income and employment outcomes, and the messaging from those institutions, in the media, and from governments, that they represent the 'best' in terms of HE. This affects perceptions, and drawing on the theoretical perspectives and research literature, it has been argued that in terms of making choices about HE these perceptions of the options matter. The concern is that the effect of differing perceptions and differing outcomes in relation to HE undertaken, is that class differences are reinforced and social mobility is not enabled. However it is important to reiterate that such perceptions and outcomes do not mean that other forms of HE have little value. There are benefits to HE for students who attend the many other

institutions, in terms of the experience, the learning, and the increased employment chances, even if not all will enter graduate level employment (Purcell et al., 2012). What the research has also identified is that the recognition or expectations of benefit from entering HE in the non-elite institutions is likely to explain a large amount of cross-border mobility, just as it explains much of the overall participation in lower to medium tariff institutions. Again, further qualitative research could help explore this. Finally it should be acknowledged that the pseudo R^2 measure shows there remained a large amount of unexplained variance in the models after all variables were included. There are factors affecting the propensity to be mobile not captured by these data. This may reflect the limitations of some measures used as discussed, but also may be explained by factors such as family or personal wealth, the offer-making decisions of institutions, the marketing and recruitment approaches used by institutions, subjects studied at school/college, transport links, personal contacts and social networks, caring responsibilities, disability, and chance encounters. Improved modelling that took account of these variables where they are available and can be operationalised may better explain the student differences in cross-border mobility which have not been captured in the models in my research.

8.7 Conclusion

The aim of this research was to undertake cross-county comparisons within the UK in relation to cross-border mobility in order to inform understanding of, and raise issues in relation to, social inequalities between students, and the role and effect in this of policy and sectoral conditions associated with where they live. It has identified aggregate patterns and sought to understand these in the context of previous related research and theories on the reproduction of social inequalities in education transitions and outcomes, and in the context of the UK policy and HE sectoral landscape. Analysis of this aspect of HE participation from a social inequalities perspective helps us better understand the flows that exist and contributes to the wider issue of understanding student differences in HE. It also allows the relationship between these student-level factors and external factors of differing sectoral and policy conditions to be explored. The findings reinforce wider concerns about the unequal forms of social citizenship across the UK. Cross-border mobility for study is a route to participation used by around 7% of students, and forms a major role in HE

participation for students from Wales and Northern Ireland. Although it is positively associated overall with socio-economic advantage, there is under-recognised social diversity in this mobility, as enabling policy conditions also benefit those from less socio-economically advantaged backgrounds who are able to take advantage of them. Nonetheless for students from all countries taking the cross-border route is not feasible for all, in terms of the social and financial resources and constraints that inform a type of cost-benefit evaluation or student 'choice'. The balance of perceived risk and opportunity differs in relation to measures of socio-economic advantage, as well as in relation to the accessibility of HE options within and across borders. Equality of opportunity and of outcomes, in relation to accessing and attaining HE, would however arguably require that opportunities for cross-border study be accessible to all groups of students. This does not mean that the most valuable HE experiences necessarily require mobility, but that mobility can serve as an additional resource and should in principle be a feasible option for all students. This may be particularly important as HE budgets reduce, which are already leading to government-funded places and fee caps within the DAs becoming constrained for potential students living in those countries, while the attempt to open up HE as a market in England is increasing the places available there. Cross-border mobility into England may become a more important means of accessing HE at all, however it will in many cases, based on current arrangements, increase the debt of the student. As funding policies for mobile students do not recognise social diversity, the effect is that they have an unequal impact on students in relation to their socio-economic resources. Although it has been argued that finances are just one aspect of decision-making about cross-border mobility, it is one of the areas that governments can directly affect. The realities of the role and powers of the different jurisdictions however mean that the DAs in particular can only seek to apply principles of equality to residents of their countries, a point relevant to widening participation aims that seek to reduce inequalities in participation, as well as broader funding and capacity issues.

Cross-border mobility appears to follow established pathways for those from similar regions, or social class or school background, just as overall patterns of participation in relation to social background only narrow slowly over time. These pathways of course can be subject to change, but as HE opportunities and the conditions for

participation change within and between countries such alterations in patterns of mobility in association with social background may be only incremental. Severe tests of this relative continuity have either been avoided to date (the vote against independence in Scotland in 2014) or have yet to take full effect (the removal of the student number cap in England; the UK leaving the EU). There will however continue to be students in all countries without the propensity and capacity to be mobile despite any changes to recruitment practices and funding – positively choosing to stay nearer their home location, or being constrained by circumstance. Others meanwhile will be mobile not willingly but in order to access appropriate HE opportunities unavailable in the home country. It is the effects of policies and accessibility of HE, within their country, and in comparison to other parts of the UK, on these groups of students that should be the main focus of concern and attention both in further policy development and in future research.

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Appendix to Chapter 3

Table A3. 1: Nature, scale and location of studies referenced in the literature review

	Large scale survey	Medium scale survey	Secondary analysis – research data	Secondary analysis – administrative data	Qualitative	Country
Archer, 2003; Archer and Hutchings, 2000; Archer and Leathwood, 2003; Gilchrist et al, 2003; Hutchings, 2003; Leathwood and Hutchings, 2003					x	England (London)
Ball et al, 2002a, b		x			x	England (London)
Belfield and Morris, 1999	x					All
Boliver, 2013				x		England
Bond et al, 2008, 2010		x			x	Scotland, England
Briggs, 2006		x				Scotland
Brooks and Waters, 2011					x	England
Brooks and Waters, 2013		x			x	All
Bruce, 2012				x		All
Callender and Jackson, 2008	x					England, Wales, Scotland
Chowdry et al, 2010				x		England
Christie and Munro, 2003					x	Scotland
Clayton et al, 2009	x				x	England
Connor et al, 2001	x	x				England, Wales
Connor et al, 2004	x	x			x	England
Crawford, 2014				x		England
Croxford and Raffe, 2013				x		All
Croxford and Raffe, 2014a, b				x		All
Davies et al, 2008	x				x	England (Midlands)

	Large scale survey	Medium scale survey	Secondary analysis – research data	Secondary analysis – administrative data	Qualitative	Country
Davies et al, 2014	x			x		England
Davison et al, 2014	x					All
Dearden et al, 2011				x		England, Wales, NI
Delavande and Zafar, 2013			x			All
Faggian et al, 2006, 2007a, b				x		England, Wales, Scotland
Findlay et al, 2011	x				x	England
Finney, 2011				x		England, Wales, Scotland
Fitz et al, 2005	x			x	x	Wales
Forsyth and Furlong, 2003		x			x	Scotland
Gibbons and Vignoles, 2009				x		England
Hemsley-Brown, 2015	x					All
Hinton, 2011					x	Wales
Hoare and Corver, 2010				x		All
Holdsworth, 2006, 2009	x		x	x	x	England
Hopkins et al, 2006					x	Scotland (1 town in south)
Iannelli, 2007				x		Scotland, England, Wales
Iannelli, 2013			x			England, Wales, Scotland
Jackson, 2013			x			England
Jerrim, 2008			x	x		England, Wales
King et al, 2013	x					England (2 counties)
Mangan et al, 2010	x					England (2 urban areas)
McGregor et al, 2002			x			NI
McLelland and Gandy, 2011				x		All
Minty, 2014, 2015					x	Scotland, England (North)
Moogan and Baron, 2003		x				England (North-West)

	Large scale survey	Medium scale survey	Secondary analysis – research data	Secondary analysis – administrative data	Qualitative	Country
Moogan, 2011					x	England (1 school)
Mosca and Wright, 2010				x		All
Noden, Shiner and Modood 2014; Shiner and Noden, 2015				x		England, Wales, Scotland
Osborne et al, 2008		x				NI
Osborne, 2001				x		NI
Osborne, 2006			x	x	x	NI
Pollak, 2012				x	x	NI
Pugsley, 1998					x	Wales (Cardiff)
Purcell et al, 2006	x					Scotland
Purcell et al, 2008	x					All
Purcell et al, 2012	x					All
Raffe and Croxford, 2013				x		All
Ramsden, 2010				x		All
Rees and Taylor, 2006				x		Wales
Shiner and Modood, 2002				x		All
Smith, 2007					x	England (1 area in North)
Sutton Trust and BIS, 2012	x			x	x	England
Tindal et al, 2015				x	x	Scotland
Trench, 2008				x		All
Wakeling and Jeffries, 2013				x		All
Wilkins et al, 2012	x					England
Winterton and Irwin, 2012					x	England (1 area, 10 schools)
WISERD, 2015				x		Wales

Definitions: Large scale survey = primary survey >1000 respondents; Medium scale survey = primary survey <1000 respondents; Qualitative = interviews and/or focus groups; Country = country in which the research was carried out and from where respondents were drawn

Appendix to Chapter 4

Background to HESA dataset

The dataset was provided for use for the ESRC-funded Senior Fellowship “Higher education in Scotland, the devolution settlement and the referendum on independence”, awarded to Prof Sheila Riddell (University of Edinburgh). The dataset was analysed by Dr Linda Croxford and Prof David Raffe for their project on cross-border mobility carried out under the auspices of the Fellowship. The contract with HESA further permitted the use of the dataset for this PhD created in association with the Fellowship. The dataset was cleaned and checked by Dr Croxford, and some of the variables used in the analysis for this research were defined and recoded by Dr Croxford for use in their project.

HESA is not responsible for any analysis or conclusions drawn from the analysis.

Alternative data sources

Other data sources have been used in research related to student movement:

- Finney (2011) used the 2001 Census Individual Sample of Anonymised Records to model whether young adults had migrated or not, some of whom were students. Although appropriate for analysing migration, Census data would not allow analysis relevant to student choice.
- Gibbons and Vignoles (2009) explored the relationship between access to institutions and distance from institutions by linking England’s Pupil Level Annual Census to HESA data and then to institutional characteristics (2001 RAE data) and neighbourhood characteristics (2001 Census data). This was a very complex approach that allowed a range of variables to be explored in relation to moving to enter HE. It cannot though be replicated for all countries of the UK and without that cannot help explore cross-border movement directly.

Other data sources exist that might be useful for studying student movement:

- The Labour Force Survey has been used in studies on the effect of tuition fees and student support on participation (e.g. Dearden et al., 2011), because data on parental earnings (a proxy for parental income), date of birth of young participants, and identifying those living in the family home in the year before entry to HE were all necessary to calculate fee effects and student support eligibility (they found the British Household Panel Survey to have inadequate

sample sizes). It has also been used to explore HE participation as current students can be identified through the education and training section of the LFS (e.g. Egerton, 2000); and to explore earnings returns to HE qualifications (e.g. Walker and Zhu, 2011). These examples do not concern student movement, but the LFS would be an option for this as it includes data on institution and subject studied, which UK country the highest education qualification was achieved in, as well as background, household and area variables. As the LFS concerns labour market participation the data are however most suited to exploring graduate migration (e.g. Bristow et al., 2011), rather than current students. However much graduate migration analysis uses HESA Destinations of Leavers data (e.g. Belfield and Morris, 1999; Faggian et al., 2006, 2007; Hoare and Corver, 2010; Mosca and Wright, 2010). The main potential downside of LFS data is that it is a sample, and though it has a sample size and representation that allows a great deal of analysis, within the main sample the student sample will be smaller, and does not identify when students started their HE course, so analysis by a year-entry cohort is problematic (though assumptions can be made about the likely time period in which students started their study).

- Another (future) option would be to link Understanding Society data with HESA data, though this was not possible before 2015 (within the study period but too late for completing the work of the PhD), which would provide more data on parental background, family composition, income, housing, prior aspirations and expectations, parental attitudes to education, school attainment, and residential mobility of the family. As well as covering a wider range of variables for young entrants, it might be particularly useful for finding out more about mature students. Without the link to HESA data however there would be a lack of detail on HE participation.
- Other studies on participation, student choice or student mobility that have been primarily quantitative in approach have used primary survey data (e.g. Bond et al., 2010; Briggs, 2006; Cairns et al., 2012; Callender and Jackson, 2008; Davies et al., 2008; Fitz et al., 2005; Forsyth and Furlong, 2003; Holdsworth, 2006; King et al., 2011; Mangan et al., 2010; Purcell et al., 2008; Stocke, 2007; Tolsma et al., 2010).

Multiple imputation

The variables selected for inclusion in generating the imputations were:

- Gender
- Social class
- Ethnic group
- Parental HE
- School type (whether went to state or independent school)
- Area type (from area with low HE participation or not)

- Attainment quintile (was converted from ordinal to interval to cut down on parameters)
- UK country of domicile
- National system of HE
- Institution average tariff score
- Type of HEI
- RUK (whether country mover or not)
- Mover (whether England-domicile student was country/regional mover or not)
- Field of study (7 categories)

Four interaction terms were also included as they had been identified in the literature as potentially important:

- Social class*school type
- Ethnicity*school type
- Social class*field of study
- Ethnicity*field of study

Regional movers and stayers

Bailey (2013) has analysed postcode data from the HESA dataset to identify different types of migrant across *county* borders and found that amongst the full student population at UK HEIs in 2010-11, 21% were registered at an HEI in a different county to their term-time address, suggesting that they commuted or distance learned. About a quarter of these students studied at London HEIs, and about 5% of all commuting students resided in counties surrounding London and entered London HEIs. These more local migrations will show up as movers in the regional analysis, though no relocation has taken place. About 6% of students at HEIs in Lancashire resided in another county, mostly Merseyside and Greater Manchester, although they would still show up as North-West stayers. Bailey also found that 41% of students moved to live and study in a different county, which is similar to the average of those who have different domicile regions and HEI regions (see chapter 5). However, only 25% of students were local at a county level, much lower than those who were local at a regional level. This suggests that analysis of regional stayers therefore needs to be more cautious in its conclusions than analysis of inter-regional movers, as within-region movement will not be picked up and so stayers may be overstated. When the

analysis is changed to a smaller geography area, i.e. local authority level, student migrants only reduce a little, to 37%.

Institution types

The common breakdown into four types for the whole of the UK:

- Russell Group universities - a self-organised and defined group of 24 universities, generally perceived as the most elite universities in the UK due to their high admissions requirements, selectivity, relative research-intensiveness, and to some degree their placing in various university ranking lists (particularly those that put emphasis on research quality and output).
- Other Pre-92 institutions – HEIs created before the binary divide was removed in 1992, but excluding Russell Group universities. Generally these are perceived as somewhat less elite but well-regarded institutions with varied strengths, still with relatively high admissions requirements, and usually with importance still placed on the research role. There are universities within this group which might consider themselves part of the most elite set of institutions but are not members of the Russell Group (e.g. St. Andrews and Bath).
- Post-92 institutions – include institutions which existed before the removal of the 1992 binary divide but were not recognised universities previously, and others established after the binary divide. Generally these are perceived as the most accessible institutions due to lower admissions requirements, a greater emphasis on providing access to those who are or have been under-represented in higher education and often a relatively local or regional focus to recruitment. There is often more focus on teaching and on preparation for employment than on research.
- Other HEIs – these are institutions which are not universities and are often smaller and more specialised institutions, for example in the creative arts or land-based studies. In many cases, they will be selective and relatively difficult to access but also are likely to serve education needs that cannot be met at other types of institution.

For Scottish HEIs, alternative groupings are often used:

- Ancient universities – the four original universities of Scotland, which overall have the highest admissions requirements and selectivity and therefore form the elite institutions in Scotland. Two of these are Russell Group members and so are picked up in the most elite category when analysing UK as a whole.
- Other Pre-92s – the remaining universities that pre-date the removal of the binary divide.

- Post-92s – those created after the removal of the binary divide, of which some existed previously, others were established after 1992.
- Other HEIs – small specialist institutions.

Institution tariff level

An option for categorising HEIs by average tariff level of entrants was to use the Sutton Trust's classification of institutions. They have identified a most elite 13 and a most elite 30, those with the highest average rankings in surveys published by The Times, Daily Telegraph, Sunday Times and Financial Times in 2000, and which have also been used by the Independent Commission on Fees in their analyses (2013). The elite 13 includes one non-Russell Group university (St. Andrews). This was extended to a top 30 in 2011. However this only groups institutions at the high tariff end, and does not provide classifications for the rest of the HEIs, and so does not fit the needs of this research.

A further institutional classification that could be used for comparison is that produced as part of the Futuretrack research which classified HEIs by the average tariff level required for entry (Purcell et al., 2009). This created six categories of institution. However, they date from 2009 and so not all universities in existence in 2012 would be included, and they separate out specialist institutions from the main tariff groups, which again does not quite meet the needs of the research. Croxford and Raffe (2013) have also explored institutional stratification using six indicators based on applications and offers. Only one of these – the average qualification level of entrants - would be possible to explore using the HESA data.

Table A4. 1: Categorisation of HEIs by average UCAS tariff score of entrants as calculated in 2013

Lowest (<275)	Low (275 – 299)	Medium (300-349)	High (350-450)	Highest (>450)
Buckingham	Coventry	Kent	Lancaster	Cambridge
Sunderland	Huddersfield	University of the Arts	Loughborough	Oxford
Cardiff Metropolitan	Chester	Robert Gordon	Surrey	London School of Economics
West London	UWE Bristol	Brunel	Leicester	St Andrews
Derby	Falmouth	Lincoln	Heriot-Watt	Warwick
Edge Hill	Gloucestershire	Oxford Brookes	City	University College London
Anglia Ruskin	Birmingham City	Essex	Southampton	Durham
Northampton	Chichester	Keele	UEA	Bath
Greenwich	Bangor	Bournemouth	Reading	Exeter
Middlesex	Brighton	Northumbria	Nottingham	Imperial
Staffordshire	Central Lancashire	Plymouth	Aston	Glasgow
St Marys Twickenham	Edinburgh Napier	Goldsmiths	Sussex	Edinburgh
Newman	Hertfordshire	Stirling	SOAS	York
Cumbria	Portsmouth	Hull	Birmingham	Bristol
Bedfordshire	Teesside	Bath Spa	Newcastle	Kings College
London South Bank	Glamorgan	Queen Margaret	Strathclyde	Courtauld Institute
Canterbury Christ Church	Salford	Nottingham Trent	Queen Mary	Royal Veterinary College
Glyndwr	De Montfort	Aberystwyth	Leeds	
West of Scotland	Winchester	Sheffield Hallam	Aberdeen	
Roehampton	Ulster	Swansea	Royal Holloway	
Trinity St David	Bradford	Glasgow Caledonian	Cardiff	
Newport	Westminster	Central School of Speech and Drama	Manchester	
Leeds Met	Kingston	Drama	Sheffield	
Leeds Trinity	Liverpool John Moores	Royal Academy of Music	Dundee	
UC Suffolk	Worcester	Royal College of Music	Liverpool	
East London	York St John	Royal Conservatoire	Queens Belfast	
Bucks New	Manchester Metropolitan	Trinity Laban	Guildhall School of Music and	

Lowest (<275)	Low (275 – 299)	Medium (300-349)	High (350-450)	Highest (>450)
Southampton Solent	Abertay	Rose Bruford	Drama	
London Metropolitan	SRUC	Royal Northern College of	St Marys UC Belfast	
Bolton	Norwich UC of the Arts	Music	Glasgow School of Art	
St Mark and St John	Royal Agricultural College	Harper Adams	St Georges Medical School	
Writtle College	Ravensbourne	Arts UC Bournemouth	<i>Leeds College of Art</i>	
UC Birmingham	<i>Uni Highlands and Islands</i>	Liverpool Institute of		
University for the Creative Arts	<i>Liverpool Hope</i>	Performing Arts		
Bishop Grosseteste		Stranmillis UC		
<i>Wolverhampton</i>		Leeds College of Music		
<i>Birkbeck</i>		Heythrop College		
<i>Institute of Education</i>				
N=38	N = 34	N=34	N = 31	N = 17

- Sources: The Guardian and Complete University Guide university rankings 2013.
- Notes: Italicised HEIs not available in 2013 rankings. UHI and Leeds College of Art are based on tariffs in 2015 rankings which also match the most common entry tariff quintile in the HESA data. Wolverhampton, Liverpool Hope, Birkbeck and Institute of Education were also not in 2015 rankings – for these I have placed them based on the most common entry tariff quintile in the HESA data.

Table A4. 2: Percentage of young full-time UK entrants to each institution tariff grouping, by country of domicile, 2012 (column percentages)

	England	Scotland	Wales	Northern Ireland	UK
Lowest	21	9.4	24.4	3.3	19.6
Low	26.3	16.8	29.9	42.7	26.3
Medium	18.4	24.8	18.2	7.7	18.5
High	22.3	27.7	20.1	41.2	23.3
Highest	11.9	21.3	7.3	5	12.1

Source: HESA Student Census 2012 / UCAS tariff score

Institutional supply

Table A4. 3: Number of UK/EU entrants within each country system divided by number of entrants from each country domicile in all UK HEIs – all full-time entrants, 2012

	As ratio of all UK/EU places	As ratio of UK places only
England	1.05	1
Scotland	1.26	1.1
Wales	1.18	1.1
Northern Ireland	0.75	0.72

Table A4. 4: Percentage of UK entrants within each country divided by percentage of UK entrants in all UK, by institution tariff group; and UK and EU entrants within each country divided by UK and EU entrants in all UK, by institution tariff group – young full-time entrants 2012

	England		Scotland		Wales		Northern Ireland	
	UK	UK+EU	UK	UK+EU	UK	UK+EU	UK	UK+EU
Lowest	1.07	1.08	0.4	0.39	1.34	1.33	0	0
Low	1.02	1.02	0.58	0.57	0.98	1	1.83	2.52
Medium	0.98	0.98	1.23	1.18	1.29	1.32	0.16	0.16
High	0.95	0.94	1.16	1.18	1.04	1.03	2.1	2.06
Highest	0.98	0.96	2.24	2.21	0	0	0	0

Table A4. 5: Percentage of UK entrants within each region to institution tariff group divided by the percentage of all UK entrants to institution tariff group – young full-time entrants, 2012

	NE	YH	NW	EM	WM	East	London	SE	SW
Lowest	0.64	0.85	0.75	0.96	1.33	1.86	1.87	1.11	0.11
Low	0.57	0.76	2.1	0.49	1.31	0.9	0.67	1.03	1.02
Medium	1.6	1.39	0.05	1.58	0.43	0.58	0.84	0.84	1.99
High	1	1.23	1.25	1.67	0.97	0.6	0.48	1.21	0
Highest	1.63	0.74	0	0	0.76	1.27	1.48	0.64	2.83

NE=North-East; YH = Yorkshire and Humber; NW = North-West; EM = East Midlands; WM = West Midlands; East = Eastern; London = Greater London; SE = South-East; SW = South-West.

Field of study supply: English regions

Table A4. 6: Percentage of UK entrants within each region to field of study divided by the percentage of all UK entrants to field of study – young full-time entrants, 2012

	NE	YH	NW	EM	WM	East	London	SE	SW
Medicine and dentistry	1.14	1	0.95	0.64	0.86	0.95	1.55	0.55	0.73
Veterinary science	0	0	1.5	2	0	2.5	2.5	0	2
Agriculture and related subjects	0.6	0.3	0.9	1.5	2.3	1.1	0.6	0.5	1.3
Subjects allied to medicine	0.91	1.03	1.17	0.82	1.05	1.64	1.01	0.7	0.68
Biological sciences	1.18	1.1	1.03	0.82	1.1	1.02	0.81	0.91	1.04
Physical sciences	1.2	1.02	1.11	1.13	0.8	0.56	0.67	1.13	1.2
Mathematical sciences	1.04	0.65	1	0.87	1.48	0.96	0.96	1.04	1.22
Computer science	1.13	0.91	0.76	0.82	1.13	0.91	1.29	0.82	0.76
Engineering and technology	1.07	0.97	0.8	1.15	1.07	0.6	0.92	0.87	0.93
Architecture, building and planning	1.28	0.94	0.83	1.44	0.44	0.56	0.89	1.17	1.06
Social studies	1.24	1.13	0.85	1.04	0.97	0.96	0.9	1.16	0.94
Law	1.16	0.86	1.11	1.09	1.25	1	0.98	0.86	0.89
Business and administrative studies	0.77	0.97	1.04	0.98	1.14	1.01	1.08	0.94	0.94
Mass communications/documentation	1.13	0.94	1.1	1.29	0.81	0.71	1.29	1.19	0.97
Education	0.6	1.1	1.54	1.15	1.02	0.83	0.75	0.81	0.94
Languages	1.15	1.15	0.92	0.9	0.84	1.16	0.77	1.3	0.98
Historical and philosophical studies	0.98	1.24	0.83	1	0.81	1.02	0.74	1.39	0.91
Creative arts and design	0.67	0.84	0.91	1.05	0.81	1.06	1.44	1.18	1.33
Combined	3.5	1	1.5	0.5	0	4	0	0	4

NE=North-East; YH = Yorkshire and Humber; NW = North-West; EM = East Midlands; WM = West Midlands; East = Eastern; London = Greater London; SE = South-East; SW = South-West.

Field of study earnings data

Table A4. 7: Median hourly earnings of graduates by degree subject studied, in descending amount

Degree subject studied	Median hourly earnings (£)
Medicine and dentistry*	21.29
Mathematical sciences, engineering, technology and architecture**	18.92
Physical or environmental sciences	17.74
Business	17.30
Education	16.97
Law	16.95
Social studies	16.33
Biological and agricultural sciences	15.83
Librarianship and languages	14.85
Medical related subjects	14.65
Humanities	14.63
Arts	12.06
<i>All graduates</i>	<i>15.18</i>

Source: ONS (2012).

Notes:

'All graduates' includes those who did not specify subject studied.

*Have assumed this includes veterinary science, although depending on specific subject this may overestimate earnings for those who should be in the biological and agricultural sciences group.

**Have assumed this includes computer science.

Appendix to Chapter 5

Entrants

Table A5. 1: Number of young full-time UK domiciled entrants to higher education by country of domicile – five years of entry

	1996	2004	2010	2011	2012
England	181715	219430	264565	283465	242970
Scotland	20585	22885	22780	22200	22405
Wales	11430	13045	14180	14170	14585
Northern Ireland	8310	11140	10875	11370	10555

Table A5. 2: Number of young full-time UK entrants to higher education by country of study – five years of entry

	1996	2004	2010	2011	2012
England	182500	218315	262585	280790	241600
Scotland	24490	26190	25645	24845	25645
Wales	13410	15200	17940	19235	16795
Northern Ireland	5000	7910	7375	7400	7460

The tables show the change in number of entrants from each country, and into each country's HE system, over time. The number of entrants from, and places in, each country increased between 1996 and 2012, illustrating the general expansion of HE since 1996. There was however a decrease in entrants from England and Northern Ireland in 2012, going against the previously upward trend, assumed to be in relation to the impact of the introduction of the new fees regime. The number of places taken up in Northern Ireland in 2012 however did not decrease, suggesting further that the decrease in Northern Irish entrants was to those who may otherwise have left Northern Ireland (further supported by Table 4.1 which shows a decrease in inward RUK entrants to Northern Ireland in 2012, and so suggesting the increase within Northern Ireland was due to home-domiciled students staying). There had been a dip in entrants from Scotland and Wales in 2011 however, argued to be due to changes in deferral activity in the year before the fee change was introduced (Croxford and Raffé, 2014b), although the change in Welsh entrants was very small. The number of places taken in Wales also decreased, despite an increase in Wales-domiciled entrants, suggesting this was due to fewer England-domiciled movers into Wales, supported by Table 4.1. As has been discussed elsewhere by Croxford and Raffé (2014b), and

Whittaker, Raffe and Croxford (2015), there appears to have been some impact of fee changes in their year of introduction and anticipatory changes in 2011, that had an impact on cross-border flows, but that this was fairly limited in scope.

Outflows and inflows

Table A5. 3: Percentage of movers-out and movers-in of young full-time entrants by country of domicile and country of study – five years of entry

	1996	2004	2010	2011	2012
Movers-out, by country of domicile					
England	6	5	4	4	5
Scotland	8	7	6	6	5
Wales	48	39	34	36	42
Northern Ireland	42	29	32	35	31
Movers-in, by location of HEI					
England	5	4	3	3	4
Scotland	21	17	14	14	17
Wales	55	46	47	51	49
Northern Ireland	2	1	2	3	3

Geographical origins and destinations

Table A5. 4: Percentage of full-time entrants to each country's HE system by domicile and year of entry

	1996	2004	2010	2011	2012
England					
Home	86	85	83	83	81
RUK	5	4	3	3	4
EU	5	3	5	5	5
Overseas (non-EU)	4	7	9	9	11
Total	198895	243940	304605	325450	285445
Scotland					
Home	72	75	70	68	68
RUK	21	16	14	13	14
EU	4	4	9	10	11
Overseas (non-EU)	3	5	7	9	8
Total	26275	28765	30610	30575	31385
Wales					
Home	39	45	44	40	44
RUK	54	48	46	50	43
EU	5	2	3	3	4
Overseas (non-EU)	2	5	7	7	8
Total	14505	16471	20015	21395	19130
Northern Ireland					
Home	88	93	92	91	90
RUK	2	1	2	3	3
EU	10	5	3	2	2
Overseas (non-EU)	1	1	3	4	5
Total	5605	8425	7815	7840	8035

Table A5. 5: Percentage of young full-time Scotland-domiciled entrants to region of study in 2010, 2011 and 2012

Region of study	2010	2011	2012
North-East	1.1	1.1	0.8
Yorks&Humber	0.6	0.7	0.4
North-West	0.8	0.9	0.6
East Midlands	0.3	0.3	0.2
West Midlands	0.3	0.2	0.2
Eastern	0.4	0.4	0.4
Greater London	1.1	1.1	0.9
South-East	0.6	0.7	0.7
South-West	0.5	0.6	0.4
Scotland	94.3	93.7	95.2
Wales	0.2	0.2	0.2
Northern Ireland	0	0.1	0

Table A5. 6: Percentage of young full-time Wales-domiciled entrants to region of study in 2010, 2011 and 2012

Region of study	2010	2011	2012
North-East	0.8	0.9	1.0
Yorks&Humber	3.0	3.0	2.8
North-West	8.7	8.8	10.1
East Midlands	2.6	2.6	2.7
West Midlands	4.1	4.2	4.3
Eastern	1.0	1.2	1.2
Greater London	3.7	3.8	3.8
South-East	4.5	4.6	5.0
South-West	8.8	9.6	10.4
Scotland	0.6	0.5	0.7
Wales	62.2	60.7	58.2
Northern Ireland	0	0	0

Table A5. 7: Percentage of young full-time Northern Ireland-domiciled entrants to region of study in 2010, 2011 and 2012

Region of study	2010	2011	2012
North-East	4.5	4.4	4.1
Yorks&Humber	1.5	1.9	1.8
North-West	10.4	11.8	8.7
East Midlands	1.0	1.3	1.1
West Midlands	0.9	1.3	1.0
Eastern	1.1	1.2	1.1
Greater London	2.2	2.5	1.9
South-East	1.4	1.7	1.4
South-West	1.4	1.6	1.6
Scotland	8.3	8.3	7.4
Wales	1.2	1.4	1.1
Northern Ireland	66.1	62.8	68.8

Main regional flows

A summary of where, as a percentage of all entrants, movers from each region were most likely to enter HE:

- Movers from the North-East most commonly entered HEIs in the neighbouring regions of Yorkshire and Humber (14.2% of all NE entrants) and the North-West (8.5%).
- Those from Yorkshire and Humber were most likely to enter HEIs in the North-West (13.2% of all entrants), the North-East (10.9%) and the East Midlands (9%).
- Those from the North-West were likely to enter Yorkshire and Humber HEIs in flows the other way (16.3% of entrants), the East Midlands (4.8%) or the West Midlands (6.9%).
- The East Midlands exchanged flows with Yorkshire and Humber (17.4% of all entrants), and also moved relatively commonly into the West Midlands (10%) and the North-West (7.5%).
- The West Midlands exchanged flows with both the East Midlands (11.4% of all entrants) and the North-West (9.6%).
- Those from the Eastern region were most likely to move to the South-East (16.1% of all entrants), London (13.6% of all entrants), and the East Midlands (11.4%). This was the region with the greatest overall percentage of movers.
- Those from Greater London were most likely to go to the South-East (16.2% of all entrants), and exchange flows with Eastern (9.5%).
- Those from the South-East were by far most likely to enter South-West HEIs (15.2%) or London HEIs (14.7% of all entrants), so exchanging flows unevenly with London.
- Finally those from the South-West were most likely in return to enter South-East HEIs (16% of entrants), followed by Welsh HEIs (10.3%). This is the only instance of a DA being a relatively popular region of destination for English regional movers.

The only example where flows were not exchanged were in relatively few movers from the North-West to North-East, though movement in the other direction was relatively common; and a greater extent of movement from the Eastern region to the East Midlands and the South-East than vice versa.

Table A5. 8: Welsh LAs with the highest percentage of movers among entrants – most frequent region destinations in 2010, 2011 and 2012

LA domicile	% of entrants			% of movers		
	2010	2011	2012	2010	2011	2012
Flintshire	34.6 (NW)	35.9 (NW)	39.9 (NW)	53.2 (NW)	54.4 (NW)	56.6 (NW)
Conwy	29.8 (NW)	30.6 (NW)	38.6 (NW)	48.1 (NW)	48.9 (NW)	55.7 (NW)
Denbighshire	32 (NW)	32.1 (NW)	36.8 (NW)	50.4 (NW)	50.2 (NW)	53.8 (NW)
Wrexham	28.2 (NW)	24.7 (NW)	28.4 (NW)	54.8 (NW)	44.5 (NW)	48.7 (NW)
Powys	9.8 (NW)	11 (NW)	12.8 (NW)	20.2 (NW)	21.1 (NW)	23.8 (NW)
	9.7 (WM)	10.6 (WM)	10.4 (WM)	17 (WM)	20.2 (WM)	18.7 (WM)
	8.2 (SW)	10.6 (SW)	10.1 (SW)	12.2 (SW)	20.2 (SW)	19.2 (SW)
Monmouthshire	18.1 (SW)	18.1 (SW)	21.9 (SW)	31.2 (SW)	32 (SW)	38.5 (SW)

NW = North-West; WM = West Midlands; SW = South-West.

Institutions entered

Table A5. 9: Institution type entered by young full-time stayers and movers by region of domicile 2012 (row percentages)

Domicile	Stayer/mover	Highest tariff	High tariff	Medium tariff	Low tariff	Lowest tariff	N
North East	Stayed in region	4.9	11.6	33.5	25	24.9	5965
	Moved out of region	14.3	25.4	16.2	25	19	4175
Yorks&Humb	Stayed in region	4.5	13.8	30.1	33.3	18.3	10565
	Moved out of region	12.6	26.4	23.2	24	13.8	10750
North West	Stayed in region	0	20.3	0.4	61.1	18.2	18290
	Moved out of region	15.9	27.9	21.9	18.3	15.8	14670
East Midlands	Stayed in region	0	20.1	32.8	19.6	27.5	7070
	Moved out of region	13.2	24.5	22.4	22.9	16.9	12065
West Midlands	Stayed in region	2	16.2	5.3	38.3	38.2	11930
	Moved out of region	12.2	25.9	20.7	25.7	15.4	14175
Eastern	Stayed in region	5.3	14.4	11.3	23.6	45.3	6445
	Moved out of region	15.7	26.9	21.5	18.1	17.6	19865
Greater London	Stayed in region	12.1	12.6	12.5	19.3	42.9	20325
	Moved out of region	16.4	29.3	15.4	22.2	16.7	25400
South East	Stayed in region	4.4	25.4	13.9	31.9	24.4	14095
	Moved out of region	24.1	24.6	19.8	17.3	14	25805
South West	Stayed in region	17.8	0	46.2	31.6	4.4	8745
	Moved out of region	13.5	34.1	15.6	20.3	16.3	12290

Table A5. 10: Percentage of young full-time entrants in each country by domicile, by institution type and in total (column percentages)

Country of study	Domicile of entrants	Institution type					Total
		Highest	High	Medium	Low	Lowest	
England	Home	69.7	74.2	83	85.8	89.2	81
	RUK	4.7	3.6	3.3	4.5	2.1	3.6
	Other EU	7.4	5.1	4.3	3.9	4.3	4.8
	Overseas	18.2	17.1	9.4	5.8	4.4	10.5
	N = 100%	38150	68510	50910	71965	55530	285445
Scotland	Home	45.8	69.1	82.3	82.5	89.6	67.9
	RUK	26	11.8	7	6.9	-	13.8
	Other EU	12.1	12.5	7.7	8	8.5	10.5
	Overseas	16.1	6.6	2.9	2.7	-	7.8
	N = 100%	9690	8605	6505	4375	2210	31385
Wales	Home	-	30	37.4	48.5	61.2	44.4
	RUK	-	54.9	48.1	40.9	30.1	43.4
	Other EU	-	3.6	5.1	4.5	1.9	3.8
	Overseas	-	11.5	9.4	6.1	6.8	8.4
	N = 100%	0	4795	4680	4825	4825	19130
Northern Ireland	Home	-	87.7	97.8	92.6	-	90.4
	RUK	-	4.5	-	-	-	2.5
	Other EU	-	1.4	-	3.3	-	2.3
	Overseas	-	6.4	-	3.5	-	4.8
	N = 100%	0	3955	230	3850	0	8035

'-' fewer than 52 cases.

Table A4.10 shows that home students made up lower percentages of entrants as tariff levels increased. In the highest tariff institutions in Scotland the low percentage of home entrants are due to RUK entrants mainly, but also EU and overseas entrants; but mainly due to RUK entrants at the high tariff Welsh university of Cardiff. This compares to a comparatively high percentage of home entrants at highest tariff institutions in England, with overseas entrants making up the highest percentage otherwise, which we may expect if these entrants are globally mobile and therefore likely to be relatively advantaged. Institutions in Northern Ireland are most dominated by home entrants, as are lowest tariff institutions in England and Scotland.

Fields of study entered at frequently entered institutions

Movers-out of Scotland: The RG universities accounted for a reasonably large proportion of the students who left Scotland to study medicine or veterinary medicine, and also subjects allied to medicine (SAM) at Cambridge and Kings College London – though Cumbria and Northumbria also accounted for some SAM movers. In terms of frequency though, arts subjects were those most typically entered by movers to most of the RG universities, apart from Imperial where science subjects were

mainly entered due its specialist nature, and Manchester where science and medicine were most frequently entered. Social sciences were also commonly entered by those going to Cambridge, Newcastle and Northumbria. Newcastle attracted mainly social science students rather than arts and sciences students as at the other RGs.

Movers-out of Wales: For Welsh movers to the most frequently entered institutions, sciences were the main subject area entered by movers to Manchester, Bath and Gloucestershire. Social sciences were most popular at Chester and Manchester Metropolitan; and arts entrants at Bath Spa.

Movers-out of Northern Ireland: Social sciences were the most or one of the most frequently entered fields of study for 9 out of 10 of the frequently entered universities. Entrants to Manchester were the most evenly spread across a range of subject areas: sciences, arts, medicine and SAM but was the only one with relatively few social science entrants. Medicine was also a common subject entered at Dundee and Glasgow; and subjects allied to medicine at Dundee and Liverpool. Other than Manchester, only movers to Heriot-Watt entrants were relatively commonly entering sciences, and only at Glasgow were movers commonly entering arts subjects.

Frequently entered institutions for EU and overseas entrants

It can be noted that there is only limited overlap between the institutions entered by cross-border movers within the UK, and the institutions that were most frequented by EU and non-EU overseas entrants. I have looked at this two ways. Firstly those HEIs for which a large percentage of their entrants are non-UK; and the HEIs which the relatively highest percentages of all EU and overseas students entered.

The HEIs for which more than a quarter of 2012 entrants were non-EU overseas students were: Buckingham, St. Andrews, SOAS, LSE, University of the Arts London, UCL, Sunderland, Royal Academy of Music, East Anglia.

The HEIs that attract the highest percentages of all non-EU overseas entrants (at least 2% of all overseas entrants) were: University of the Arts London, Sunderland, Exeter, Liverpool, UCL, Nottingham, Manchester.

The HEIs for which more than 10% of 2012 entrants were EU students were: Royal College of Music, Aberdeen, Guildhall Institute, Royal Academy of Music, Trinity Laban, Glasgow, Napier, Royal Conservatoire, GSA, Imperial, Kings College, Heriot-Watt, SOAS, UCL, Royal Holloway. A lot of specialist arts colleges and Scottish universities feature here.

The HEIs that attracted the highest percentages of all EU entrants (at least 1.5% of all EU entrants) were: Glasgow, Aberdeen, University of the Arts London, Middlesex, Napier, Kings College, London Metropolitan, UCL, Edinburgh, Westminster, Coventry, Essex, Kent, Manchester, Glamorgan - a very mixed group, and difficult on the face of it to identify what the factors in their popularity with EU students may be (it may be that analysing which EU countries entrants come from and which fields of study they enter would help).

Fields of study

Table A5. 11: Percentage of young full-time stayers and movers entering field of study groups by country of domicile 2012 (row percentages)

Domicile	Stayer/mover	Medicine and veterinary medicine	Subjects allied to medicine	Sciences	Engineering and technology	Social science and law	Arts	N
England	Stayed in England	3.2	7.4	23.9	7.3	33.6	24.5	231290
	<i>Stayed within region</i>	2.2	8.3	25	6.8	36.6	2	103750
	<i>Moved between regions</i>	4	6.6	23	7.7	31.1	27.3	127545
	Moved out of England	4.9	4.5	31.9	6.6	21.4	30.7	11680
	<i>to Wales</i>	3.8	4.9	35.5	6.9	22.7	26.2	8100
	<i>to Scotland</i>	7.3	3.4	24.1	5.4	18.3	41.4	3395
Scotland	Stayed in Scotland	4.2	9.9	24.2	12.4	34.4	15	21325
	Moved out of Scotland	6.2	5.8	16.2	11.5	25.1	34.8	1080
Wales	Stayed in Wales	2	6.1	27	6	36.8	22	8485
	Moved out of Wales	5.6	9.3	22.9	7.9	27.7	26.3	6100
Northern Ireland	Stayed in Northern Ireland	3.8	12	22.1	12.9	35	14.2	7260
	Moved out of Northern Ireland	8.4	12.9	20.1	6.8	33.3	18.4	3295
	<i>to England</i>	7.1	11.7	19	7.5	35.9	18.6	2390
	<i>to Scotland</i>	11.5	17.3	22.3	5	27.2	16.8	780

Table A5. 12: Percentage of England-domiciled stayers and movers entering each field of study, young full-time entrants 2012 (column percentages)

	Stayers	Movers out	Total
Medicine & dentistry	2	3.6	2.1
Veterinary science	0.2	-	0.2
Agriculture & related subjects	0.9	0.9	0.9
Subjects allied to medicine	7.4	4.5	7.2
Biological sciences	11.9	18.3	12.2
Physical sciences	5.3	8.7	5.5
Mathematical sciences	2.3	2.4	2.3
Computer science	4.3	2.5	4.2
Engineering & technology	5.5	5.4	5.5
Architecture, building & planning	1.7	1.2	1.7
Social studies	9	8.6	9
Law	4.4	2.6	4.3
Business & administrative studies	12	7.2	11.8
Mass communications & documentation	3.3	1	3.2
Education	4.8	2	4.6
Languages	6.1	10.3	6.3
Historical & philosophical studies	5.4	10	5.6
Creative arts & design	13	10.4	12.8

'-' fewer than 52 cases.

Table A5. 13: Percentage of Scotland-domiciled stayers and movers entering each field of study, young full-time entrants 2012 (column percentages)

	Stayers	Movers out	Total
Medicine & dentistry	2.8	3.8	2.8
Veterinary science	0.4	-	0.4
Agriculture & related subjects	1	-	1.1
Subjects allied to medicine	9.9	5.8	9.7
Biological sciences	10.9	7.3	10.8
Physical sciences	5.8	5.3	5.8
Mathematical sciences	1.9	-	1.9
Computer science	5.6	-	5.4
Engineering & technology	10.3	10.1	10.3
Architecture, building & planning	2.1	-	2
Social studies	8	9.1	8.1
Law	5	5.3	5
Business & administrative studies	14.8	6.7	14.4
Mass communications & documentation	2	-	2
Education	4.6	-	4.5
Languages	4.2	8.4	4.4
Historical & philosophical studies	3.7	6.7	3.8
Creative arts & design	7.1	19.8	7.7

'-' fewer than 52 cases.

Table A5. 14: Percentage of Wales-domiciled stayers and movers entering each field of study, young full-time entrants 2012 (column percentages)

	Stayers	Movers out	Total
Medicine & dentistry	1.1	3.2	2
Veterinary science	0	-	-
Agriculture & related subjects	0.8	1.8	1.2
Subjects allied to medicine	6.1	9.3	7.5
Biological sciences	13.9	10	12.3
Physical sciences	5.4	7.3	6.2
Mathematical sciences	1.9	2.9	2.3
Computer science	5.8	2.7	4.5
Engineering & technology	5.1	6	5.4
Architecture, building & planning	0.9	1.9	1.3
Social studies	7.7	7.1	7.4
Law	5	4.8	4.9
Business & administrative studies	11.8	8.7	10.5
Mass communications & documentation	2.1	2.7	2.3
Education	10.3	4.4	7.9
Languages	5.5	6.3	5.8
Historical & philosophical studies	4.9	5.8	5.3
Creative arts & design	11.7	14.1	12.7

'-' fewer than 52 cases.

Table A5. 15: Percentage of NI-domiciled stayers and movers entering each field of study, young full-time entrants 2012 (column percentages)

	Stayers	Movers out	Total
Medicine & dentistry	2.6	6.3	3.8
Veterinary science	0	-	-
Agriculture & related subjects	1.2	-	1.2
Subjects allied to medicine	12	12.9	12.3
Biological sciences	8.2	10.1	8.8
Physical sciences	3.1	4.7	3.6
Mathematical sciences	1.4	2	1.6
Computer science	9.3	3.2	7.4
Engineering & technology	9.1	5.4	8
Architecture, building & planning	3.7	1.4	3
Social studies	9.3	7.5	8.8
Law	4.6	4.8	4.6
Business & administrative studies	13.4	10.7	12.5
Mass communications & documentation	3.3	3.2	3.3
Education	4.5	7	5.2
Languages	4.5	5.6	4.8
Historical & philosophical studies	4.2	3.8	4.1
Creative arts & design	5.6	9	6.6

'-' fewer than 52 cases.

Table A5. 16: Mean UCAS tariff points of England-domiciled entrants to fields of study, by country of study – young full-time entrants 2012

	England	Scotland	Wales	Northern Ireland
Medicine and dentistry	51.25	51.18	49.35	49.07
Veterinary science	47.11	50.7	-	-
Agriculture and related subjects	28.23	-	23.34	-
Subjects allied to medicine	33.03	31.33	37.6	42.43
Biological sciences	31.35	39.51	31.17	33.31
Physical sciences	37.55	43.76	31.73	39
Mathematical sciences	43.41	46.63	38.63	-
Computer science	25.69	36.63	25.67	-
Engineering and technology	34.8	38.29	40.79	41.22
Architecture, building and planning	30.98	43.42	40.79	41.22
Social studies	33.71	41.45	30.63	37.04
Law	33.71	37.35	35.02	-
Business and administrative studies	26.94	32.61	28.97	-
Mass communications and documentation	26.33	29.56	32.47	-
Education	25.94	36.84	24.92	-
Languages	37.69	44.66	34.48	36.53
Historical and philosophical studies	37.81	44.72	32.37	37.55
Creative arts and design	27.89	36.07	27.82	37

‘-’ fewer than 52 cases.

Table A5. 17: Mean UCAS tariff points of Scotland-domiciled entrants to fields of study, by country of study – young full-time entrants 2012

	England	Scotland
Medicine and dentistry	60.6	57.17
Veterinary science	-	54.58
Agriculture and related subjects	29.02	30.5
Subjects allied to medicine	47.55	36.96
Biological sciences	35.28	41.38
Physical sciences	46.6	44.4
Mathematical sciences	61.35	48.51
Computer science	51.93	37.5
Engineering and technology	44.91	37.5
Architecture, building and planning	31.67	41.97
Social studies	45.16	39.3
Law	51.33	46.82
Business and administrative studies	36.83	40.1
Mass communications and documentation	36.16	37.4
Education	31.87	40.88
Languages	46.54	46.92
Historical and philosophical studies	49.24	46.24
Creative arts and design	37.84	40.26

‘-’ fewer than 52 cases.

Table A5. 18: Mean UCAS tariff points of Wales-domiciled entrants to fields of study, by country of study – young full-time entrants 2012

	England	Wales
Medicine and dentistry	47.49	46.16
Veterinary science	46.38	-
Agriculture and related subjects	24.96	21.55
Subjects allied to medicine	30.89	27.39
Biological sciences	30.08	25.3
Physical sciences	35.27	27.41
Mathematical sciences	42.99	33.29
Computer science	25	21.42
Engineering and technology	32.61	24.95
Architecture, building and planning	29.63	26.64
Social studies	31.46	23.44
Law	33.39	28.31
Business and administrative studies	26.95	22.21
Mass communications and documentation	26.24	25.09
Education	23.06	20.83
Languages	35.62	29.89
Historical and philosophical studies	34.09	28.34
Creative arts and design	27.11	23.32

'-' fewer than 52 cases.

Table A5. 19: Mean UCAS tariff points of NI-domiciled entrants to fields of study, by country of study – young full-time entrants 2012

	England	Scotland	Northern Ireland
Medicine and dentistry	48.07	47.63	49.42
Veterinary science	45	42.25	-
Agriculture and related subjects	30.17	-	31.76
Subjects allied to medicine	33.36	27.31	33.81
Biological sciences	28.81	31.9	30.72
Physical sciences	33.48	38.79	33.09
Mathematical sciences	44.97	38.54	42.22
Computer science	28.03	30.06	30.44
Engineering and technology	35.27	34.6	32.17
Architecture, building and planning	25.3	36.63	25.66
Social studies	29.29	32.04	30.9
Law	37.09	34.54	37.25
Business and administrative studies	28.85	30.83	30.79
Mass communications and documentation	27.74	31.5	29.55
Education	25.58	35.21	35.37
Languages	37.23	37.35	33.66
Historical and philosophical studies	35.09	35.77	33.22
Creative arts and design	31.11	33.92	30.67

'-' fewer than 52 cases.

Table A5. 20: Most frequently entered field of study by movers to lower tariff institutions, by country of domicile – young full-time entrants 2012

Country of domicile	Field of study entered	Percentage of movers
England	Biological sciences	27.6
	Creative arts and design	20.1
	Business and administrative studies	10
	Physical sciences	6.1
Scotland	Creative arts and design	29
	Biological sciences	-
	Business and administrative studies	-
	Engineering and technology	-
	Subjects allied to medicine	-
Wales	Creative arts and design	18.5
	Subjects allied to medicine	12.1
	Business and administrative studies	11.8
	Biological sciences	9.5
	Education	8.6
	Social studies	6.4
Northern Ireland	Education	15
	Biological studies	13.3
	Business and administrative studies	12.3
	Creative arts and design	11.5
	Subjects allied to medicine	11.4
	Social studies	8.4

Lower tariff institutions combine those in the lowest and low tariff groups.

'-' fewer than 52 cases.

Table A5. 21: Most frequently entered field of study by movers to higher tariff institutions, by country of domicile – young full-time entrants 2012

Country of domicile	Field of study entered	Percentage of movers
England	Languages	14.8
	Historical and philosophical studies	14
	Biological sciences	12.6
	Social studies	10.3
	Physical sciences	8.7
	Medicine and dentistry	7.4
Scotland	Languages	12.8
	Engineering and technology	11.8
	Social studies	11.5
	Historical and philosophical studies	10.3
	Creative arts and design	9
	Law	-
	Medicine and dentistry	-
	Physical sciences	-
Wales	Physical sciences	11.6
	Biological sciences	11.2
	Languages	10.3
	Historical and philosophical studies	8.9
	Social studies	8.5
	Engineering and technology	7.7
	Subjects allied to medicine	7
	Medicine and dentistry	6.8
Northern Ireland	Medicine and dentistry	14.3
	Subjects allied to medicine	12.6
	Languages	9.6
	Business and administrative studies	8.3
	Biological sciences	7.5
	Engineering and technology	7
	Physical sciences	6.4
	Law	6.3

Higher tariff institutions combine those in the high and highest tariff groups.

'-' fewer than 52 cases.

Table A5. 22: Field of study measures summary table

	Supply in home country	Earnings rate	Professional employment rate	More common at lower or higher tariff institutions?	Mean tariff points of entrants in HE system	More likely to be movers?
Medicine and dentistry	England: even Scotland: high Wales: low NI: high	High	High	Higher	England: high Scotland: high Wales: high NI: high	England: Yes Scotland: Yes Wales: Yes NI: Yes
Veterinary science	England: even Scotland: high Wales: low NI: low	High	High	Higher	England: high Scotland: high Wales: - NI: -	England: Yes Scotland: No Wales: Yes NI: Yes
Agriculture and related subjects	England: even Scotland: even Wales: even NI: even	Medium	Medium	Both	England: low Scotland: medium Wales: low NI: medium	England: No Scotland: Yes Wales: Yes NI: No
Subjects allied to medicine	England: even Scotland: high Wales: low NI: high	Low	High	Both	England: medium Scotland: medium Wales: medium NI: medium	England: No Scotland: No Wales: Yes NI: Yes
Biological sciences	England: even Scotland: even Wales: high NI: low	Medium	Medium	Both	England: medium Scotland: high Wales: low NI: medium	England: Yes Scotland: No Wales: No NI: Yes
Physical sciences	England: even Scotland: even Wales: high NI: low	Medium	Medium	Higher	England: medium Scotland: high Wales: medium NI: medium	England: Yes Scotland: No Wales: Yes NI: Yes
Mathematical sciences	England: even Scotland: even Wales: low NI: low	High	High	Higher	England: high Scotland: high Wales: medium NI: high	England: No Scotland: Yes Wales: Yes NI: Yes

	Supply in home country	Earnings rate	Professional employment rate	More common at lower or higher tariff institutions?	Mean tariff points of entrants in HE system	More likely to be movers?
Computer science	England: even Scotland: even Wales: even NI: high	High	Medium	Lower	England: low Scotland: medium Wales: low NI: medium	England: No Scotland: No Wales: No NI: No
Engineering and technology	England: even Scotland: high Wales: even NI: high	High	High	Higher	England: medium Scotland: high Wales: low NI: medium	England: No Scotland: No Wales: Yes NI: No
Architecture, building and planning	England: even Scotland: even Wales: low NI: high	High	Medium	Both	England: medium Scotland: high Wales: medium NI: low	England: No Scotland: No Wales: Yes NI: No
Social studies	England: even Scotland: even Wales: low NI: even	Medium	Medium	Both	England: medium Scotland: medium Wales: low NI: medium	England: No Scotland: Yes Wales: No NI: No
Law	England: even Scotland: even Wales: even NI: even	Medium	Medium	Both	England: medium Scotland: high Wales: medium NI: medium	England: No Scotland: No Wales: No NI: No
Business and administrative studies	England: even Scotland: even Wales: even NI: low	Medium	Low	Lower	England: low Scotland: medium Wales: low NI: medium	England: No Scotland: No Wales: No NI: No
Mass communications and documentation	England: even Scotland: low Wales: low NI: even	Low	Low	Lower	England: low Scotland: medium Wales: low NI: low	England: No Scotland: Yes Wales: Yes NI: No

	Supply in home country	Earnings rate	Professional employment rate	More common at lower or higher tariff institutions?	Mean tariff points of entrants in HE system	More likely to be movers?
Education	England: even Scotland: low Wales: high NI: even	Medium	Medium	Lower	England: low Scotland: high Wales: low NI: medium	England: No Scotland: No Wales: No NI: Yes
Languages	England: even Scotland: even Wales: even NI: low	Low	Low	Higher	England: medium Scotland: high Wales: medium NI: medium	England: Yes Scotland: Yes Wales: Yes NI: Yes
Historical and philosophical studies	England: even Scotland: even Wales: even NI: low	Low	Low	Higher	England: medium Scotland: high Wales: medium NI: medium	England: Yes Scotland: Yes Wales: Yes NI: No
Creative arts and design	England: even Scotland: low Wales: even NI: low	Low	Low	Lower	England: low Scotland: medium Wales: low NI: medium	England: No Scotland: Yes Wales: Yes NI: Yes

Notes:

- Supply: 1.2 and over = high; 0.9-1.19 = even; under 0.9 = low.
- Earnings rate: over £18 = high; £15-18 = medium; under £15 = low.
- Professional employment rate: over 85% = high; 75-85% = medium; below 75% = low.
- Mean tariff point of entrants: 40 and over = high; 30-39 = medium; under 30 = low.
- More common at lower or higher tariff institutions = whether a higher percentage of movers to lower or higher tariff institutions enter the field of study, or whether movers to both enter the field to an equal extent.
- More likely to be movers = higher percentage of movers than stayers enter field of study.

Table A5. 23: Field of study group entered by young full-time stayers and movers by region of domicile 2012 (row percentages)

Domicile	Stayer/mover	Medicine and veterinary medicine	Subjects allied to medicine	Sciences	Engineering and technology	Social science and law	Arts	N
North East	Stayed in region	1.2	8.1	30.7	7.9	33.0	18.7	5965
	Moved out of region	5.9	7.6	22.1	8.1	27.1	29.0	4175
Yorks&Humber	Stayed in region	1.7	9.7	25.5	6.4	37.8	18.6	10565
	Moved out of region	5.0	6.9	24.0	7.5	28.7	27.6	10750
North West	Stayed in region	2.0	9.8	24.8	6.4	37.8	19.0	18290
	Moved out of region	4.5	7.6	24.6	7.9	27.1	28.1	14670
East Midlands	Stayed in region	2.2	8.7	21.1	7.3	38.7	21.6	7070
	Moved out of region	4.1	7.8	25.3	7.1	30.2	25.2	12065
West Midlands	Stayed in region	2.0	9.2	26.2	6.1	38.3	18.2	11930
	Moved out of region	4.5	6.8	24.7	7.0	29.6	27.2	14175
Eastern	Stayed in region	3.2	11.5	23.2	4.2	31.5	25.8	6445
	Moved out of region	3.4	5.1	23.9	7.3	31.3	28.8	19865
Greater London	Stayed in region	3.0	7.2	24.9	8.1	38.5	18.3	20325
	Moved out of region	2.5	5.3	21.4	8.2	36.8	25.4	25400
South East	Stayed in region	1.4	5.2	24.0	6.8	34.5	28.1	14095
	Moved out of region	4.5	6.2	24.0	7.5	29.3	28.2	25805
South West	Stayed in region	2.8	7.0	25.2	6.5	33.9	24.2	8745
	Moved out of region	4.7	7.5	24.7	7.5	25.0	30.6	12290

Appendix to Chapter 6

Wales-domiciled entrants

Table A6. 1: Wales-domiciled young full-time 2012 entrants – binary regression model comparing movers to stayers

	Model 1: Background and characteristics			Model 2: School type and home area			Model 3: Course entered			Model 4: Institution tariff level entered			Model 5: Field of study factors		
	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)
<i>Ref: Female</i>															
Male	-.05	.04	.96	-.06	.04	.95	-.06	.04	.94	-.09	.04	.91*	-.05	.04	.96
<i>Ref: Higher managerial/professional</i>															
Lower managerial/professional	-.21	.05	.81***	-.15	.05	.86**	-.15	.05	.86**	-.13	.06	.88*	-.15	.06	.86**
Intermediate	-.39	.06	.68***	-.33	.06	.72***	1.34	.06	.71***	-.3	.07	.74***	-.29	.07	.75***
Working class	-.62	.07	.54***	-.51	.07	.6***	-.5	.07	.61***	-.42	.07	.65***	-.46	.16	.63**
<i>Ref: Parent with HE qualification</i>															
No parent with HE qualification	-.09	.06	.92	-.05	.06	.95	-.01	.06	.99	.02	.06	1.02	-.0	.06	.97
<i>Ref: White</i>															
Black	.27	.18	1.32	.39	.18	1.47*	.34	.18	1.4	.33	.18	1.39	.33	.18	1.39
Indian	.63	.22	1.88**	.53	.22	1.7*	.53	.23	1.7*	.45	.23	1.57	.45	.23	1.57*
Pakistani or Bangladeshi	-.32	.16	.73*	-.35	.16	.7*	-.29	.16	.75	-.38	.16	.69*	-.46	.16	.63**
Chinese	.51	.21	1.67*	.43	.21	1.54*	.34	.22	1.41	.21	.22	1.24	.24	.22	1.27
Other Asian background	.25	.23	1.28	.24	.23	1.27	.14	.23	1.15	.16	.24	1.24	.21	.24	1.23
Mixed/Other ethnic group	.44	.12	1.55***	.43	.12	1.53***	.41	.12	1.5**	.38	.12	1.47**	.38	.12	1.47**
<i>Ref: Lowest attainment quintile</i>															
Low attainment quintile	.44	.06	1.55***	.44	.06	1.55***	.35	.06	1.4***	.25	.07	1.29***	.24	.06	1.28***
Medium attainment quintile	.65	.06	1.91***	.64	.06	1.89***	.53	.07	1.69***	.31	.07	1.36***	.31	.07	1.36***
High attainment quintile	.87	.06	2.39***	.85	.06	2.34***	.72	.07	2.06***	.38	.07	1.46***	.38	.07	1.46***
Highest attainment quintile	1.35	.06	3.85***	1.35	.06	3.84***	1.17	.07	3.23***	.61	.08	1.83***	.63	.08	1.87***

	Model 1: Background and characteristics			Model 2: School type and home area			Model 3: Course entered			Model 4: Institution tariff level entered			Model 5: Field of study factors		
	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)
<i>Ref: State school</i>															
Independent school				1.3	.09	3.68***	1.26	.1	3.52***	1.04	.1	2.84***	1.05	.1	2.85***
<i>Ref: Area non-low participation rate</i>															
Area low participation rate				-.3	.06	.74***	-.28	.06	.76***	-.23	.06	.79***	-.24	.06	.79***
<i>Ref: Business and administrative studies</i>															
Medicine and dentistry							.41	.15	1.5**	.03	.15	1.03			
Subjects allied to medicine							.58	.09	1.79***	.44	.09	1.55***			
Biological sciences							-.13	.08	.88	-.21	.08	.81**			
Agriculture and related subjects							1.43	.18	4.19***	1.43	.18	4.19***			
Physical sciences							.35	.09	1.42***	.11	.09	1.11			
Mathematical sciences							.36	.13	1.44***	.05	.13	1.05			
Computer science							-.34	.11	.71**	-.39	.11	.68**			
Engineering and technology							.43	.1	1.53***	.27	.1	1.31**			
Architecture building planning							.96	.17	2.62***	.92	.17	2.51***			
Social studies							.25	.09	1.29**	.14	.09	1.15			
Law							.07	.1	1.07	-.12	.1	.89			
Mass comms/documentation							.53	.13	1.71***	.57	.13	1.78***			
Languages							.16	.09	1.17	-.13	.1	.88			
Historical/philosophical studies							.26	.1	1.29**	.02	.1	1.02			
Creative arts and design							.52	.08	1.69***	.63	.08	1.88***			
Education							-.53	.09	.59***	-.37	.09	.69***			
<i>Ref: Degree course</i>															
Sub-degree course							-1.01	.1	.36***	-.91	.1	.4***	-.8	.1	.45***
Institution tariff level										.01	.0	1.01***	.01	.0	1.01***
Field of study supply													-.79	.07	.45***
Field of study employment													-.0	.0	1

	Model 1: Background and characteristics			Model 2: School type and home area			Model 3: Course entered			Model 4: Institution tariff level entered			Model 5: Field of study factors		
	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)
level															
Field of study earnings															
<i>Constant</i>	-.64	.06	.53***	-.73	.07	.48***	-.79	.09	.45***	-2.45	.13	.09***	-.19	.23	.83
<i>Nagelkerke R²</i>		0.09			0.11			0.15			0.18			0.17	

*** statistically significant at $p < .001$; ** statistically significant at $p < .01$; * statistically significant at $p < .05$; $N = 14383$.

Table A6. 2: Probability (marginal effect) of being a mover by social characteristics, estimated on logistic regression model (model 4) for Wales–domiciled 2012 young full-time entrants

	Margin	S.E.	z	P> z	95% Confidence Interval	
Social class						
Higher managerial & professional	.468	.003	147.71	0.000	.462	.474
Lower managerial & professional	.437	.003	172.56	0.000	.432	.442
Intermediate	.393	.003	130.81	0.000	.387	.399
Working	.365	.003	129.35	0.000	.36	.371
Parental education						
Parental HE	.413	.002	220.28	0.000	.409	.416
No parental HE	.419	.002	175.17	0.000	.414	.424
School type						
State school	.403	.001	284.13	0.000	.4	.406
Independent school	.654	.007	98.63	0.000	.641	.667
Ethnicity						
White	.412	.001	283.42	0.000	.409	.415
Black	.497	.014	35.52	0.000	.47	.525
Indian	.529	.018	30.04	0.000	.495	.564
Pakistani or Bangladeshi	.326	.011	29.77	0.000	.304	.347
Chinese	.466	.017	27.27	0.000	.433	.5
Other Asian	.45	.018	24.82	0.000	.415	.486
Mixed/Other	.506	.009	55.81	0.000	.488	.524
Home area						
Non-low participation area	.421	.001	282.25	0.000	.419	.424
Low participation area	.367	.004	87.89	0.000	.359	.375
Attainment quintile						
Lowest	.344	.003	103.96	0.000	.338	.351
Low	.402	.003	138.53	0.000	.397	.408
Medium	.416	.003	135.93	0.000	.41	.422
High	.433	.003	132.16	0.000	.427	.44
Highest	.49	.004	135.42	0.000	.483	.497

Other variables controlled in the model: gender, field of study entered, course level entered, average tariff points of institution entered.

Table A6. 3: Probability (marginal effect) of being a mover by interaction between attainment group and social class, estimated from logistic regression model (model 4) for Wales-domiciled 2012 young full-time entrants

	Margin	S.E.	z	P> z	95% Confidence Interval	
Lowest attainment group						
Higher managerial & professional	.403	.004	98.92	0.000	.395	.411
Lower managerial & professional	.375	.004	103.59	0.000	.368	.383
Intermediate	.337	.004	88.93	0.000	.33	.345
Working	.314	.004	87.17	0.000	.307	.321
Low attainment group						
Higher managerial and professional	.458	.004	123.42	0.00	.451	.465
Lower managerial and professional	.43	.003	131.77	0.000	.423	.436
Intermediate	.39	.004	110.05	0.000	.383	.4
Working	.365	.003	106.99	0.000	.358	.371
Medium attainment group						
Higher managerial & professional	.47	.004	122.83	0.000	.463	.478
Lower managerial & professional	.442	.003	131.81	0.000	.435	.449
Intermediate	.402	.004	110.26	0.000	.394	.409
Working	.376	.004	107.19	0.000	.369	.383
High attainment group						
Higher managerial & professional	.487	.004	124.04	0.000	.479	.495
Lower managerial & professional	.458	.004	129.79	0.000	.451	.465
Intermediate	.418	.004	109.6	0.000	.41	.425
Working	.392	.004	106.42	0.000	.385	.399
Highest attainment group						
Higher managerial & professional	.539	.004	130.7	0.000	.531	.547
Lower managerial & professional	.51	.004	133.57	0.000	.503	.518
Intermediate	.469	.004	114.35	0.000	.461	.477
Working	.442	.004	111.08	0.000	.435	.45

All other variables controlled in the model.

Table A6. 4: Probability (marginal effect) of being a mover by interaction between school type and attainment group, estimated from logistic regression model (model 4) for Wales-domiciled 2012 young full-time entrants

	Margin	S.E.	z	P> z	95% Confidence Interval	
State school						
Lowest attainment group	.348	.003	111.26	0.000	.342	.354
Low attainment group	.401	.003	150.21	0.000	.395	.406
Medium attainment group	.413	.003	148.62	0.000	.407	.418
High attainment group	.428	.003	145.19	0.000	.422	.434
Highest attainment group	.479	.003	147.60	0.000	.473	.486
Independent school						
Lowest attainment group	.576	.007	82.20	0.000	.562	.589
Low attainment group	.629	.007	95.83	0.000	.617	.642
Medium attainment group	.641	.007	97.51	0.000	.628	.654
High attainment group	.656	.007	99.38	0.000	.643	.669
Highest attainment group	.701	.006	108.39	0.000	.688	.714

All other variables controlled in the model.

Table A6. 5: Probability (marginal effect) of being a mover by interaction between school type and ethnicity and social class, estimated from logistic regression model (model 4) for Wales-domiciled 2012 young full-time entrants

	Margin	S.E.	z	P> z	95% Confidence Interval	
State school						
White	.411	.006	318.72	0.000	.409	.414
BME	.453	.005	95.22	0.000	.444	.462
Higher managerial & professional	.46	.003	162.36	0.000	.454	.466
Lower managerial & professional	.433	.002	192.53	0.000	.428	.437
Intermediate	.394	.003	146.42	0.000	.389	.399
Working	.369	.003	144.92	0.000	.364	.374
Independent school						
White	.635	.006	104.69	0.000	.623	.646
BME	.674	.007	95.74	0.000	.66	.687
Higher managerial & professional	.681	.006	112.86	0.000	.669	.693
Lower managerial & professional	.656	.006	105.54	0.000	.644	.669
Intermediate	.619	.007	93.24	0.000	.606	.632
Working	.594	.007	86.85	0.000	.58	.607

All other variables controlled in the model.

Table A6. 6: Percentage of stayers and movers to lower and higher tariff institutions by characteristics, Wales-domiciled young full-time entrants 2012

	Lower tariff		Higher Tariff	
	Stayers	Movers	Stayers	Movers
Gender				
Female	56.1	60.8	57.9	52.1
Male	43.9	39.2	42.1	47.9
Social class				
Higher managerial and professional	15.7	20.2	24.1	35.1
Lower managerial and professional	28.2	31.6	32.9	34.2
Intermediate	22	20.5	22	17.7
Working class	34.1	27.6	21	13.1
Parental education				
Parent with HE qualification	53.5	57.7	66.9	73.5
No parent with HE qualification	46.5	42.3	33.1	26.5
Ethnicity				
White	93.9	92.4	89.5	90.5
BME	6.1	7.6	10.5	9.5
Attainment				
Highest quintile	6.4	9.1	39.5	50.6
High quintile	11.9	14.4	28.4	26.3
Medium quintile	18.7	21.4	18.3	16.3
Low quintile	28.1	31.6	10.9	5.7
Lowest quintile	34.9	23.5	-	-
Home area				
Non low participation area	84.5	88.8	91.9	93.8
Low participation area	15.5	11.2	8.1	6.2
School type				
State school	98.7	96.4	94.8	85.9
Independent school	1.3	3.6	5.2	14.1
Total (N)	5090	2530	1440	2570

'-' fewer than 52 cases.

Columns within characteristics = 100%.

Table A6. 7: Wales-domiciled young full-time 2012 entrants to higher tariff institutions – binary regression model comparing movers to stayers

	Model 1: Background and characteristics			Model 2: School type and home area			Model 3: Course entered			Model 4: Field of study factors		
	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)
<i>Ref: Female</i>												
Male	.23	.07	1.26**	.23	.07	1.26**	.16	.08	1.17*	.21	.07	1.24**
<i>Ref: Higher managerial/professional</i>												
Lower managerial and professional	-.34	.1	.71**	-.27	.1	.76**	-.29	.1	.75**	-.29	.1	.75**
Intermediate	-.57	.12	.56***	-.52	.12	.6***	-.53	.12	.59***	-.53	.12	.59***
Working class	-.81	.14	.45***	-.68	.14	.51***	-.7	.14	.5***	-.67	.14	.51***
<i>Ref: Parent with HE qualification</i>												
No parent with HE qualification	-.03	.1	.97	.0	.1	1	.01	.13	1.1	-.02	.1	.99
<i>Ref: White</i>												
BME	.01	.12	1.01	-.04	.12	.96	.1	.13	1.1	-.02	.12	.98
<i>Ref: Lowest / low attainment quintile</i>												
Medium attainment quintile	.48	.15	1.62**	.48	.15	1.62**	.54	.15	1.71***	.53	.14	1.7***
High attainment quintile	.53	.14	1.71***	.52	.14	1.69***	.59	.14	1.8***	.59	.14	1.81***
Highest attainment quintile	.8	.13	2.23***	.85	.13	2.34***	.92	.13	2.5***	.97	.13	2.63***
<i>Ref: State school</i>												
Independent school				1.06	.14	2.87***	1.02	.14	2.78***	1.06	.14	2.88***
<i>Ref: Area non-low participation rate</i>												
Area with low participation rate				-.14	.14	.87	-.16	.14	.85	-.12	.14	.89
<i>Ref: Business/administrative studies</i>												
Medicine and dentistry							-.35	.2	.71			
Subjects allied to medicine							-.67	.18	.51***			
Biological sciences							.08	.18	1.09			
Physical sciences							.26	.18	1.29			

	Model 1: Background and characteristics			Model 2: School type and home area			Model 3: Course entered			Model 4: Field of study factors		
	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)
Mathematical sciences							.24	.21	1.27			
Computer science							-.91	.25	.4***			
Engineering and technology / Architecture building and planning							.16	.19	1.18			
Social studies							.73	.21	2.07**			
Law							-.57	.19	.57**			
Languages							-.06	.18	.94			
Historical and philosophical studies							.2	.19	1.22			
Creative arts and design							1.31	.29	3.7***			
Field of study supply										-.2	.15	.82
Field of study employment level										-.03	.01	.97***
Field of study earnings										.05	.02	1.05*
<i>Constant</i>	.26	.14	1.3	.1	.15	1.11	.09	.21	1.09	2.26	.49	9.54***
<i>Nagelkerke R²</i>		.05			.07			.13			.09	

*** statistically significant at p<.001; ** statistically significant at p<.01; * statistically significant at p<.05; N = 3726.

Table A6. 8: Wales-domiciled young full-time 2012 entrants to lower tariff institutions - binary regression model comparing movers to stayers

	Model 1: Background/characteristics			Model 2: School type/home area			Model 3: Course entered			Model 4: Field of study factors		
	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)
<i>Ref: Female</i>												
Male	-.16	.05	.85**	-.16	.05	.85**	-.12	.06	.89*	-.11	.05	.9*
<i>Ref: Higher managerial/professional</i>												
Lower managerial and professional	-.15	.08	.86	-.11	.08	.89	-.13	.08	.88	-.14	.08	.87
Intermediate	-.32	.09	.73***	-.27	.09	.76**	-.29	.09	.75**	-.29	.09	.75**
Working class	-.48	.08	.62***	-.41	.08	.67***	-.44	.09	.64***	-.43	.08	.65***
<i>Ref: Parent with HE qualification</i>												
No parent with HE qualification	-.03	.07	.98	.0	.07	1	.04	.07	1.04	.02	.07	1.02
<i>Ref: White</i>												
BME	.28	.1	1.32**	.29	.1	1.34**	.21	.1	1.24*	.21	.1	1.23*
<i>Ref: Lowest attainment quintile</i>												
Low attainment quintile	.51	.07	.98	.52	.07	1.68***	.41	.08	1.51***	.43	.08	1.54***
Medium attainment quintile	.54	.08	1.71***	.56	.08	1.74***	.4	.08	1.5***	.43	.08	1.54***
High attainment quintile	.56	.09	1.74***	.58	.09	1.79***	.43	.09	1.54***	.46	.09	1.58***
Highest attainment quintile	.77	.11	2.16***	.81	.11	2.24***	.65	.11	1.91***	.65	.11	1.92***
<i>Ref: State school</i>												
Independent school				1.07	.17	2.92***	.92	.18	2.52***	.95	.17	2.59***
<i>Ref: Area non-low participation rate</i>												
Area with low participation rate				-.35	.08	.71***	-.35	.08	.71***	-.35	.08	.71***
<i>Ref: Business/administrative studies</i>												
Subjects allied to medicine							1.2	.12	3.32***			
Biological sciences							-.38	.11	.69***			

	Model 1: Background/characteristics			Model 2: School type/home area			Model 3: Course entered			Model 4: Field of study factors		
	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)
Physical / Mathematical sciences							.17	.14	1.18			
Computer science							-.29	.14	.75*			
Engineering and technology							.35	.14	1.41*			
Architecture building and planning							1.15	.22	3.15***			
Social studies							.09	.12	1.09			
Law							.44	.14	1.55**			
Mass comms/documentation							.75	.15	2.12***			
Languages							.32	.16	1.38*			
Historical and philosophical studies							.22	.16	1.25			
Creative arts and design							.18	.09	1.2			
Education							-.57	.11	.57***			
<i>Ref: Degree course</i>												
Sub-degree course							-1.32	.13	.27***	-1.23	.12	.29***
Field of study supply										-1.29	.1	.28***
Field of study employment level										.02	.0	1.02***
Field of study earnings										-.07	.01	.93***
<i>Constant</i>	-.78	.08	.46***	-.82	.08	.44***	-.75	.11	.47***	-.06	.31	.94
<i>Nagelkerke R²</i>		0.04			0.05			0.13			0.11	

*** statistically significant at p<.001; ** statistically significant at p<.01; * statistically significant at p<.05; N = 7448.

Table A6. 9: Probability (marginal effect) of being a mover by social characteristics, estimated on logistic regression model (model 3) for Wales–domiciled 2012 young full-time entrants to higher tariff institutions

	Margin	S.E.	z	P> z	95% Confidence Interval	
Social class						
Higher managerial & professional	.727	.004	168.47	0.000	.718	.735
Lower managerial & professional	.668	.004	156.55	0.000	.66	.676
Intermediate	.614	.006	104.41	0.000	.603	.626
Working	.572	.007	82.69	0.000	.558	.585
Parental education						
Parental HE	.663	.003	216.86	0.000	.657	.669
No parental HE	.663	.005	135.54	0.000	.653	.672
School type						
State school	.637	.003	236.76	0.000	.632	.643
Independent school	.829	.006	139.52	0.000	.818	.841
Ethnicity						
White	.661	.003	248.1	0.000	.656	.666
BME	.682	.008	85.76	0.000	.666	.697
Home area						
Non-low participation area	.665	.003	254.49	0.000	.66	.67
Low participation area	.633	.01	64.8	0.000	.613	.652
Attainment quintile						
Lowest - low	.502	.009	56	0.000	.485	.52
Medium	.63	.006	101.15	0.000	.618	.643
High	.642	.005	132.68	0.000	.632	.651
Highest	.713	.003	204.19	0.000	.706	.72

Other variables controlled in model: gender, whether from low participation area, field of study entered.

Table A6. 10: Probability (marginal effect) of being a mover by social characteristics, estimated on logistic regression model (model 3) for Wales-domiciled 2012 young full-time entrants to lower tariff institutions

	Margin	S.E.	z	P> z	95% Confidence Interval	
Social class						
Higher managerial & professional	.373	.005	82.55	0.000	.364	.382
Lower managerial & professional	.346	.003	103.61	0.000	.34	.353
Intermediate	.309	.004	82.96	0.000	.302	.316
Working	.279	.003	90.14	0.000	.273	.286
Parental education						
Parental HE	.317	.002	127.64	0.000	.312	.322
No parental HE	.325	.003	117.02	0.000	.319	.33
School type						
State school	.317	.002	176.7	0.000	.313	.32
Independent school	.531	.013	40.08	0.000	.505	.557
Ethnicity						
White	.318	.002	173.11	0.000	.314	.321
BME	.363	.007	50.48	0.000	.349	.377
Home area						
Non-low participation area	.331	.002	171.47	0.000	.328	.335
Low participation area	.259	.004	59.03	0.000	.25	.268
Attainment quintile						
Lowest	.258	.003	86.63	0.000	.253	.264
Low	.346	.003	105.76	0.000	.34	.352
Medium	.341	.004	86.49	0.000	.334	.349
High	.35	.005	70.97	0.000	.34	.36
Highest	.397	.007	58.88	0.000	.384	.41

Other variables controlled in model: gender, whether from low participation area, field of study entered.

Table A6. 11: Percentage of Wales-domiciled young full-time 2012 movers by social characteristics - movers by region of HEI entered (column percentages within characteristics)

	NE	YH	NW	EM	WM	East	London	SE	SW
Gender									
Female	46.9	56.2	58.6	49.9	59.3	55.4	59.2	54.1	57
Male	53.1	43.8	41.4	50.1	40.7	44.6	40.8	45.9	43
Social class									
Managerial and professional classes	60.6	61.5	52.4	61.2	56	65.4	65.8	62.3	62.3
Intermediate and Working classes	39.4	38.5	47.6	38.8	44	34.6	34.2	37.7	37.7
Parental education									
Parent with HE qualification	67.3	66	57.5	66.9	64	73.5	71.1	66	69.1
No parent with HE qualification	32.7	34	42.5	33.1	36	26.5	28.9	34	30.9
Attainment									
Lowest - low	-	36	39.9	27.1	33.3	-	28.7	30.4	32.5
Medium	-	17.9	21.2	20.6	18.5	-	20.1	19.6	19.4
High - highest	70.3	46	38.9	52.3	48.2	53.8	33.6	28.6	48.1
Total (N)	143	404	1469	391	629	175	549	727	1511

NE = North-East; YH = Yorkshire and Humber; NW = North-West; EM = East Midlands; WM = West Midlands; East = Eastern; London = Greater London; SE = South-East; SW = South-West.

Scotland (99 movers) and NI (2 movers) excluded.

Home area and school type not reported due to small cell sizes.

-- fewer than 52 cases.

Table A6. 12: Wales-domiciled young full-time 2012 entrants - multinomial regression model comparing movers to North-West/South-West/West Midlands and movers to elsewhere in the rest of UK to stayers

	Movers to NW/SW/WM			Movers to RUK		
	B	S.E.	Exp(B)	B	S.E.	Exp(B)
<i>Ref: Male</i>						
Female	.09	.05	1.1*	.01	.05	1.01
<i>Ref: Working class</i>						
Higher managerial and professional	.36	.08	1.43***	.55	.09	1.73***
Lower managerial and professional	.25	.07	1.28**	.39	.08	1.48***
Intermediate	.1	.07	1.11	.19	.09	1.21*
<i>Ref: No parent with HE qualification</i>						
Parent with HE qualification	-.02	.07	.98	.0	.07	1
<i>Ref: Highest attainment quintile</i>						
Lowest attainment quintile	-.66	.09	.52***	-.47	.11	.63***
Low attainment quintile	-.32	.07	.72***	-.38	.09	.69***
Medium attainment quintile	-.29	.07	.75***	-.29	.08	.75**
High attainment quintile	-.18	.07	.84*	-.29	.08	.75**
<i>Ref: BME</i>						
White	.11	.09	1.11	-.53	.09	.59***
<i>Ref: Independent school</i>						
State school	-.86	.11	.43***	-1.24	.11	.29***
<i>Ref: Low HE participation area</i>						
Non low HE participation area	.21	.07	1.24**	.25	.09	1.28**
<i>Ref: Arts</i>						
Medicine and veterinary medicine	.66	.12	1.93***	-.05	.14	.96
Subjects allied to medicine	.31	.09	1.36***	-.13	.1	.88
Sciences	-.26	.06	.77***	-.7	.07	.5***
Engineering and technology	.2	.1	1.22*	-.09	.11	.91
Social sciences and law	-.16	.06	.85**	-.7	.07	.51***
<i>Ref: Sub-degree</i>						
Degree	.71	.11	2.02***	1.01	.17	2.74***

	Movers to NW/SW/WM			Movers to RUK		
	B	S.E.	Exp(B)	B	S.E.	Exp(B)
Institution tariff	.003	.0	1.003***	.01	.0	1.01***
Constant	-1.96	.25		-3.12	.3	
<i>Nagelkerke R²</i>			0.17			

*** statistically significant at p<.001; ** statistically significant at p<.01; * statistically significant at p<.05; N stayers = 7990, N movers to regions bordering Wales (North-West, South-West and West Midlands) =3454, N movers to the rest of the UK =2364.

Northern Ireland-domiciled entrants

Table A6. 13: Northern Ireland-domiciled young full-time 2012 entrants – binary regression model comparing movers to stayers

	Model 1: Background and characteristics			Model 2: Home area			Model 3: Course entered			Model 4: Institution tariff level entered			Model 5: Field of study factors		
	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)
<i>Ref: Female</i>															
Male	-.2	.04	.82***	-.2	.04	.82***	.02	.05	1.02	-.02	.05	.99	-.08	.05	.93
<i>Ref: Higher managerial/professional</i>															
Lower managerial/professional	-.52	.07	.59***	-.52	.07	.59***	-.49	.07	.61***	-.44	.07	.65***	-.45	.07	.64***
Intermediate	-.72	.07	.49***	-.72	.07	.49***	-.67	.08	.51***	-.6	.08	.55***	-.61	.08	.55***
Working class	-.82	.08	.44***	-.82	.08	.44***	-.76	.08	.47***	-.64	.09	.53***	-.66	.09	.52***
<i>Ref: Parent with HE qualification</i>															
No parent with HE qualification	.15	.06	1.16*	.15	.06	1.16*	.15	.07	1.16*	.18	.07	1.2**	.18	.07	1.2**
<i>Ref: White</i>															
BME	.74	.15	2.09***	.74	.15	2.1***	.84	.15	2.31***	.73	.15	2.01***	.73	.15	2.07***
<i>Ref: Lowest attainment quintile</i>															
Low attainment quintile	-.62	.07	.54***	-.62	.07	.54***	-.62	.07	.54***	-.78	.07	.46***	-.77	.07	.47***
Medium attainment quintile	-.91	.07	.4***	-.91	.07	.4***	-.94	.08	.39***	-1.37	.08	.26***	-1.33	.08	.26***
High attainment quintile	-.8	.07	.45***	-.8	.07	.45***	-.86	.07	.42***	-1.47	.08	.23***	-1.43	.08	.24***
Highest attainment quintile	-.27	.07	.77***	-.27	.07	.77***	-.47	.07	.63***	-1.31	.09	.27***	-1.2	.09	.3***
<i>Ref: Area non-low participation rate</i>															
Area with low participation rate				-.05	.09	.95	-.01	.09	.99	.01	.1	1.01	-.01	.09	.99
<i>Ref: Business/administrative studies</i>															
Medicine and dentistry							.9	.13	2.47***	.62	.13	1.86***			
Subjects allied to medicine							.33	.09	1.4***	.2	.09	1.22*			
Biological sciences							.43	.1	1.54***	.37	.1	1.45***			

	Model 1: Background and characteristics			Model 2: Home area			Model 3: Course entered			Model 4: Institution tariff level entered			Model 5: Field of study factors		
	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)
Agriculture and related subjects							.32	.2	1.38	.13	.21	1.14			
Physical sciences							.51	.13	1.66***	.24	.13	1.28			
Mathematical sciences							.63	.18	1.88***	.25	.18	1.29			
Computer science							-.86	.13	.43***	-.9	.13	.41***			
Engineering and technology							-.38	.11	.69**	-.54	.11	.59***			
Architecture building planning							-.81	.17	.45***	.82	.18	.44***			
Social studies							-.0	.1	1	-.27	.1	.76**			
Law							.34	.12	1.4**	.23	.12	1.25			
Mass comms/documentation							.17	.14	1.18	.3	.14	1.4*			
Languages							.44	.12	1.55***	.13	.12	1.14			
Historical and philosophical studies							.21	.13	1.23	-.19	.13	.83			
Creative arts and design							.7	.1	2***	.76	.1	2.14***			
Education							.7	.11	2.02***	.71	.11	2.04***			
<i>Ref: Degree course</i>															
Sub-degree course							.19	.2	1.21	.08	.2	1.09	.12	.2	1.12
Institution tariff level										.01	.0	1.01***	.01	.0	1.01***
Field of study supply													-.1	.07	.37***
Field of study employment level													.03	.0	1.03***
Field of study earnings													-.04	.01	.96**
<i>Constant</i>	.27	.07	1.3***	.27	.07	1.31***	-.02	.1	.99	-2.74	.17	.07***	-3.03	.3	.05***
<i>Nagelkerke R²</i>		.06			.06						.16			.15	

*** statistically significant at p<.001; ** statistically significant at p<.01; * statistically significant at p<.05; N = 10553.

Table A6. 14: Probability (marginal effect) of being a mover by social characteristics, estimated on logistic regression model (model 4) for Northern Ireland-domiciled 2012 young full-time entrants

	Margin	S.E.	z	P> z	95% Confidence Interval	
Social class						
Higher managerial & professional	.393	.004	100.59	0.000	.385	.4
Lower managerial & professional	.295	.003	108.37	0.00	.29	.3
Intermediate	.262	.003	98.77	0.000	.257	.267
Working	.254	.003	87.12	0.000	.249	.26
Parental education						
Parental HE	.277	.002	140.68	0.000	.273	.28
No parental HE	.314	.002	123.65	0.000	.309	.319
Ethnicity						
White	.288	.001	192.92	0.000	.285	.291
BME	.455	.011	39.52	0.000	.433	.478
Home area						
Non-low participation area	.291	.002	189.59	0.000	.288	.294
Low participation area	.292	.006	50.19	0.000	.28	.3
Attainment quintile						
Lowest	.53	.004	131.34	0.000	.522	.538
Low	.341	.004	93.37	0.000	.334	.348
Medium	.223	.003	73.77	0.000	.217	.228
High	.204	.003	78.15	0.000	.199	.209
Highest	.23	.003	71.68	0.000	.224	.327

Other variables controlled in the model: gender, field of study entered, course level entered, average tariff points of institution entered.

Table A6. 15: Probability (marginal effect) of being a mover by interaction between attainment group and social class, estimated from logistic regression model (model 4) for Northern Ireland-domiciled 2012 young full-time entrants

	Margin	S.E.	z	P> z	95% Confidence Interval	
Lowest attainment group						
Higher managerial & professional	.623	.005	136.23	0.000	.614	.632
Lower managerial & professional	.528	.004	124.25	0.000	.52	.536
Intermediate	.491	.004	112.56	0.000	.483	.5
Working	.482	.005	105.10	0.000	.473	.491
Low attainment group						
Higher managerial & professional	.454	.005	94.14	0.000	.445	.464
Lower managerial & professional	.36	.004	89.51	0.000	.352	.368
Intermediate	.327	.004	83.09	0.000	.319	.335
Working	.319	.004	76.83	0.000	.311	.327
Medium attainment group						
Higher managerial & professional	.331	.004	73.96	0.000	.322	.34
Lower managerial & professional	.25	.003	72.48	0.000	.243	.257
Intermediate	.223	.003	67.94	0.000	.217	.229
Working	.217	.003	63.60	0.000	.21	.223
High attainment group						
Higher managerial & professional	.309	.004	76.24	0.000	.301	.317
Lower managerial & professional	.231	.003	76.31	0.000	.226	.237
Intermediate	.206	.003	71.13	0.000	.2	.211
Working	.2	.003	66.26	0.000	.194	.206
Highest attainment group						
Higher managerial & professional	.34	.004	75.76	0.000	.331	.349
Lower managerial & professional	.258	.004	73.32	0.000	.251	.265
Intermediate	.23	.003	69.72	0.000	.224	.237
Working	.224	.003	65.46	0.000	.217	.23

All other variables controlled in the model.

Table A6. 16: Northern Ireland-domiciled young full-time undergraduate entrants to lower and higher tariff institutions - percentage of stayers and movers by characteristics, 2012

	Lower tariff		Higher Tariff	
	Stayers	Movers	Stayers	Movers
Gender				
Female	54.2	59.7	54.7	56.8
Male	45.8	40.3	45.3	43.2
Social class				
Higher managerial and professional	10.9	18.5	18.4	31.6
Lower managerial and professional	27.7	24.2	31	32.7
Intermediate	27.7	26.7	28.7	21.5
Working class	31	30.7	22	14.3
Parental education				
Parent with HE qualification	54.3	48.6	63.5	71.3
No parent with HE qualification	45.7	51.4	36.5	28.7
Ethnicity				
White	98.5	-	98.2	95.8
BME	1.5	-	1.8	4.2
Attainment				
Highest quintile	5.5	6.4	30.5	47.7
High quintile	16	10	33.1	27.6
Medium quintile	20.1	13.2	22.1	12.3
Low quintile	30.3	24	10.3	7.5
Lowest quintile	28.1	46.4	4	5
Home area				
Non low participation area	91.9	91.4	94.7	96
Low participation area	8.1	8.6	5.3	4
Total (N)	3565	1290	3470	1410

Columns within characteristics =100%.

'-' suppressed due to low number of BME movers.

Table A6. 17: Northern Ireland-domiciled young full-time 2012 entrants to higher tariff institutions – binary regression model comparing movers to stayers

	Model 1: Background and characteristics			Model 2: Home area			Model 3: Course entered			Model 4: Field of study factors		
	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)
<i>Ref: Female</i>												
Male	-.06	.07	.94	-.06	-.07	.94	.03	.07	1.03	.02	.07	1.03
<i>Ref: Higher managerial/professional</i>												
Lower managerial/professional	-.36	.1	.7***	-.36	.1	.7***	-.33	.1	.72**	-.4	.1	.67***
Intermediate	-.71	.11	.49***	-.7	.11	.49***	-.67	.12	.51***	-.71	.11	.49***
Working class	-.85	.13	.43***	-.84	.13	.43***	-.8	.14	.45***	-.88	.13	.42***
<i>Ref: Parent with HE qualification</i>												
No parent with HE qualification				.03	.11	1.03	.04	.11	1.04	-.0	.11	1
<i>Ref: White</i>												
BME	.9	.2	2.47***	.91	.2	2.48***	.99	.21	2.7***	.1	.2	2.71***
<i>Ref: Lowest attainment quintile</i>												
Low attainment quintile	-.55	.2	.58**	-.55	.2	.58**	-.58	.2	.56**	-.58	.2	.56**
Medium attainment quintile	-.79	.18	.46***	-.79	.18	.45***	-.9	.2	.41***	-.89	.19	.41***
High attainment quintile	-.41	.17	.66*	-.41	.17	.66*	-.53	.19	.59**	-.54	.18	.59**
Highest attainment quintile	.12	.17	1.13	.12	.17	1.13	-.16	.18	.85	-.1	.17	.9
<i>Ref: Area non-low participation rate</i>												
Area with low participation rate				-.06	.17	.94	-.04	.18	.97	-.08	.17	.92
<i>Ref: Business/administrative studies</i>												
Medicine and dentistry							.6	.16	1.82***			
Subjects allied to medicine							-.01	.15	.99			
Biological sciences							.12	.17	1.13			
Physical sciences							.5	.18	1.65**			

	Model 1: Background and characteristics			Model 2: Home area			Model 3: Course entered			Model 4: Field of study factors		
	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)
Mathematical sciences							.25	.21	1.29			
Engineering and technology / Architecture building and planning							-.47	.16	.63**			
Social studies							-.72	.17	.49***			
Law							-.05	.17	.96			
Languages							.51	.16	1.66**			
Historical/philosophical studies							-.11	.18	.9			
Creative arts and design							.77	.19	2.16***			
Field of study supply										-1.32	.11	.27***
Field of study employment level										.04	.01	1.04***
Field of study earnings										-.02	.02	.98
Constant	-.11	.18	.9	-.11	.18	.9	-.07	.22	.94	-1.63	.39	.2***
Nagelkerke R ²		0.07			0.07			0.12			0.13	

*** statistically significant at p<.001; ** statistically significant at p<.01; * statistically significant at p<.05; N = 4231.

Table A6. 18: Northern Ireland-domiciled young full-time 2012 entrants to lower tariff institutions – binary regression model comparing movers to stayers

	Model 1: Background and characteristics			Model 2: Home area			Model 3: Course entered			Model 4: Field of study factors		
	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)
<i>Ref: Female</i>												
Male	-.13	.07	.88	-.13	.07	.88	.14	.08	1.15	-.08	.07	.92
<i>Ref: Higher managerial/professional</i>												
Lower managerial/professional	-.6	.13	.55***	-.6	.14	.55***	-.57	.14	.57***	-.69	.13	.5***
Intermediate	-.76	.13	.47***	-.76	.13	.47***	-.73	.14	.48***	-.77	.12	.47***
Working class	-.71	.13	.49***	-.72	.13	.49***	-.69	.13	.5***	-.73	.12	.48***
<i>Ref: Parent with HE qualification</i>												
No parent with HE qualification	.34	.11	1.4**	.34	.11	1.4**	.31	.11	1.37*	.34	.1	1.4**
<i>Ref: White</i>												
BME	.47	.26	1.61	.47	.26	1.6	.54	.27	1.71*	.5	.26	1.65
<i>Ref: Lowest attainment quintile</i>												
Low attainment quintile	-.82	.1	.44***	-.82	.1	.44***	-.86	.1	.43***	-.74	.09	.48***
Medium attainment quintile	-1.06	.11	.35***	-1.06	.11	.35***	-1.15	.12	.32***	-.98	.11	.38***
High attainment quintile	-1.15	.13	.32***	-1.15	.13	.32***	-1.26	.13	.28***	-1.04	.12	.35***
Highest attainment quintile	-.42	.16	.66**	-.42	.16	.66**	-.58	.16	.56***	-.46	.16	.63**
<i>Ref: Area non-low participation rate</i>												
Area with low participation rate				.03	.13	1.03	.04	.13	1.04	.04	.13	1.04
<i>Ref: Business/administrative studies</i>												
Subjects allied to medicine							.6	.14	1.82***			
Biological sciences							.81	.14	2.25***			
Physical / Mathematical sciences							.27	.21	1.31			
Computer science							-.53	.18	.59**			

	Model 1: Background and characteristics			Model 2: Home area			Model 3: Course entered			Model 4: Field of study factors		
	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)
Engineering and technology / Architecture building and planning							-.59	.16	.55***			
Social studies							.52	.15	1.69**			
Law							.75	.2	2.12***			
Mass comms/documentation							.29	.17	1.34			
Languages / Historical and philosophical studies							.21	.18	1.23			
Creative arts and design							.74	.14	2.1***			
Field of study supply										-1.76	.13	.17***
Field of study employment level										.07	.01	1.07***
Field of study earnings										.06	.02	1.06*
Constant	-.14	.13	.87	-.14	.13	.87	-.5	.15	.6**	-4.15	.56	.02***
Nagelkerke R ²		0.08			0.08			0.12			0.14	

*** statistically significant at p<.001; ** statistically significant at p<.01; * statistically significant at p<.05; N = 4587.

Table A6. 19: Probability (marginal effect) of being a mover by social characteristics, estimated on logistic regression model (model 3) for Northern Ireland–domiciled 2012 young full-time entrants to higher tariff institutions

	Margin	S.E.	z	P> z	95% Confidence Interval	
Social class						
Higher managerial & professional	.394	.005	75.1	0.000	.384	.405
Lower managerial & professional	.318	.004	76.79	0.000	.31	.326
Intermediate	.249	.004	59.43	0.000	.241	.257
Working	.226	.005	46	0.000	.217	.236
Parental education						
Parental HE	.294	.003	100.4	0.000	.288	.299
No parental HE	.302	.004	69.36	0.000	.293	.311
Ethnicity						
White	.291	.002	125.37	0.000	.286	.295
BME	.526	.015	34.02	0.000	.496	.557
Home area						
Non-low participation area	.297	.002	125.2	0.000	.292	.301
Low participation area	.288	.011	26.78	0.000	.267	.309
Attainment quintile						
Lowest	.419	.012	33.76	0.000	.395	.444
Low	.273	.007	37.22	0.000	.258	.287
Medium	.212	.005	44.18	0.000	.202	.221
High	.278	.004	69.64	0.000	.271	.286
Highest	.353	.004	86.07	0.000	.345	.361

Other variables controlled in model: gender, field of study entered.

Table A6. 20: Probability (marginal effect) of being a mover by social characteristics, estimated on logistic regression model (model 3) for Northern Ireland–domiciled 2012 young full-time entrants to lower tariff institutions

	Margin	S.E.	z	P> z	95% Confidence Interval	
Social class						
Higher managerial & professional	.327	.007	49.36	0.000	.314	.34
Lower managerial & professional	.218	.004	56.66	0.000	.21	.225
Intermediate	.189	.003	55.45	0.000	.182	.196
Working	.194	.003	56.21	0.000	.188	.201
Parental education						
Parental HE	.19	.003	70.81	0.000	.185	.196
No parental HE	.242	.003	75.85	0.000	.236	.249
Ethnicity						
White	.212	.002	104.03	0.000	.208	.216
BME	.302	.018	17.02	0.000	.267	.337
Home area						
Non-low participation area	.213	.002	101.37	0.000	.209	.217
Low participation area	.22	.007	32.74	0.000	.207	.234
Attainment quintile						
Lowest	.342	.004	84.73	0.000	.334	.349
Low	.186	.003	54.73	0.000	.179	.193
Medium	.146	.004	38.56	0.000	.139	.153
High	.131	.004	32.71	0.000	.123	.139
Highest	.232	.008	28.85	0.000	.216	.248

Other variables controlled in model: gender, field of study entered.

Table A6. 21: Northern Ireland-domiciled young full-time 2012 entrants – characteristics of movers by region of HEI entered

	NE	YH	NW	EM/ WM	East/SE	London	SW	Scotland
Gender								
Female	59.4	57	61.4	57.9	53.2	53.8	50.6	61.9
Male	40.6	43	38.6	42.1	46.8	46.2	49.4	38.1
Social class								
Managerial and professional	60.8	53.5	44.1	44.3	58.1	58.9	61.4	58.2
Intermediate and Working	39.2	46.5	55.9	55.7	41.9	41.1	38.6	41.8
Parental education								
Parent with HE qualification	66.7	58.1	50.8	55.7	64.8	63.2	66.4	65.3
No parent with HE qualification	33.3	41.9	49.2	44.3	35.2	36.8	33.6	34.7
Attainment quintile*								
Low - Lowest	34	46.9	52.7	51.8				39.8
Medium	18.5	-	16.9	-				12.4
High - highest	47.5	-	30.4	-	52.5	55	64	47.7
Total	435	185	920	215	270	195	170	780

NE = North-East; YH = Yorkshire and Humber; NW = North-West; EM = East Midlands; WM = West Midlands; East = Eastern; London = Greater London; SE = South-East; SW = South-West.

Home area cell sizes too small to report.

*Where medium cell size below 52 cases, only shows the highest frequency group.

Table A6. 22: Northern Ireland-domiciled young full-time 2012 entrants - multinomial regression model comparing movers to North-West England, the rest of England and Scotland to stayers

	Movers to North-West England			Movers to rest of England			Movers to Scotland		
	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)
<i>Ref: Male</i>									
Female	.12	.08	1.12	.01	.06	1.01	.22	.09	1.25*
<i>Ref: Working class</i>									
Higher managerial and professional	.6	.12	1.81***	.8	.11	2.22***	.64	.15	1.89***
Lower managerial and professional	-.17	.12	.85	.4	.1	1.49***	.39	.13	1.47**
Intermediate	-.14	.11	.87	.17	.1	1.19	.06	.12	1.06
<i>Ref: No parent with HE qualification</i>									
Parent with HE qualification	-.35	.1	.7**	-.17	.08	.84*	-.06	.11	.94
<i>Ref: Highest attainment quintile</i>									
Lowest attainment quintile	.97	.14	2.64***	.95	.11	2.57***	2.04	.16	7.72***
Low attainment quintile	.42	.14	1.52**	.06	.11	1.07	1.08	.15	2.96***
Medium attainment quintile	.13	.14	1.14	-.48	.11	.62***	.25	.15	1.29
High attainment quintile	.01	.14	1.01	-.59	.1	.56***	.31	.13	1.37*
<i>Ref: Arts</i>									
Medicine and veterinary medicine	.61	.2	1.85**	-.18	.14	.84	.68	.17	1.97***
Subjects allied to medicine	.31	.14	1.36*	-.52	.11	.59***	.18	.14	1.2
Sciences	.03	.13	1.03	-.6	.01	.55***	-.03	.13	.97
Engineering and technology	-.63	.18	.54***	-.91	.12	.4***	-1.01	.2	.36***
Social sciences and law	.43	.12	1.22	-.54	.09	.59***	-.25	.12	.78*
Institution tariff	-.0	.0	1	.01	.0	1.01***	.02	.0	1.02***
Constant	-2.24	.34	.02***	-4.94	.27	0.06***	-9.0	.37	.06***
<i>Nagelkerke R²</i>					0.17				

*** statistically significant at $p < .001$; ** statistically significant at $p < .01$; * statistically significant at $p < .05$; N = 10429; N stayers = 7260, N movers to NW = 921, N movers to rest of England = 1466, N movers to Scotland = 782.

Appendix to Chapter 7

Scotland-domiciled entrants

Table A7. 1: Scotland-domiciled young full-time 2012 entrants – binary regression model comparing movers to stayers

	Model 1: Background and characteristics			Model 2: School type			Model 3: Course entered			Model 4: Institution tariff level			Model 5: Field of study factors		
	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)
<i>Ref: Female</i>															
Male	.0	.07	1.0	-.1	.07	.91	-.05	.08	.95	-.05	.08	.95	0.09	.07	1.09
<i>Ref: Higher managerial / professional</i>															
Lower managerial & professional	-.47	.09	.63***	-.24	.1	.79*	-.28	.1	.76**	-.27	.1	.76**	-.3	.1	.74**
Intermediate	-.59	.11	.56***	-.33	.11	.72**	-.37	.12	.69**	-.36	.12	.7**	-.38	.12	.68**
Working class	-.96	.13	.38***	-.58	.13	.56***	-.61	.13	.54***	-.59	.13	.55***	-.59	.13	.56***
<i>Ref: Parent with HE qualification</i>															
No parent with HE qualification	-.59	.1	.55***	-.37	.1	.69***	-.31	.1	.75**	-.3	.1	.75**	-.31	.1	.73**
<i>Ref: White</i>															
BME	.64	.11	1.9***	.55	.12	1.73***	.69	.12	2***	.69	.12	2.08***	.71	.12	2.04***
<i>Ref: Lowest attainment quintile</i>															
Low attainment quintile	-.49	.1	.61***	-.57	.13	.57***	-.6	.13	.55***	-.7	.13	.5***	-.68	.13	.51***
Medium attainment quintile	-.51	.12	.6***	-.7	.12	.5***	-.77	.13	.46***	-.95	.14	.39***	-.89	.13	.41***
High attainment quintile	-.55	.12	.58***	-.91	.13	.4***	-.1	.13	.37***	-1.25	.15	.29***	-1.15	.15	.32***
Highest attainment quintile	.27	.1	1.3**	-.23	.11	.79*	-.27	.11	.76	-.61	.14	.55***	-.46	.14	.63**
<i>Ref: State school</i>															
Independent school				2.21	.08	9.06***	2.2	.08	9.04***	2.14	.08	8.53***	2.16	.08	8.63***
<i>Ref: Social sciences and law</i>															
Medicine /veterinary medicine							.03	.16	1.03	.05	.16	1.05			

	Model 1: Background and characteristics			Model 2: School type			Model 3: Course entered			Model 4: Institution tariff level			Model 5: Field of study factors		
	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)
Subjects allied to medicine							-.01	.16	.99	.02	.16	1.02			
Sciences							-.05	.11	.96	-.07	.11	.94			
Engineering and technology							.3	.12	1.35*	.29	.12	1.33*			
Arts							1.14	.09	3.14***	1.11	.09	3.03***			
<i>Ref: Degree course</i>															
Sub-degree course							.47	.16	1.6*	.59	.17	1.8***	.64	.17	.19***
Institution tariff level										.003	.001	1.003***	.004	.001	1.004***
Field of study supply													-.03	.22	.97
Field of study employment level													-.01	.01	.99
Field of study earnings													-.2	.03	.82***
<i>Constant</i>	-	.94	.01***	-2.89	.1	.06***	-3.2	.12	.04***	-4.1	.23	.02***	-3.8	.48	.68
	2.35														
<i>Nagelkerke R²</i>		0.05			0.17			0.21			0.21			0.21	

*** statistically significant at p<.001; ** statistically significant at p<.01; * statistically significant at p<.05; N = 21541.

Table A7. 2: Probability (marginal effect) of being a mover by social characteristics, estimated on logistic regression model (model 4) for Scotland–domiciled 2012 young full-time entrants

	Margin	S.E.	z	P> z	95% Confidence Interval	
Social class						
Higher managerial and professional	.034	.001	49.45	0.000	.323	.035
Lower managerial and professional	.026	.001	46.37	0.000	.025	.027
Intermediate	.024	.001	36.22	0.000	.022	.025
Working	.019	.001	30.41	0.000	.018	.02
Parental education						
Parental HE	.028	.0005	61.07	0.000	.028	.029
No parental HE	.021	.0005	40.44	0.000	.02	.022
School type						
State school	.02	.0003	63.72	0.000	.02	.021
Independent school	.151	.003	59.79	0.000	.146	.156
Ethnicity						
White	.025	.0004	67.72	0.000	.024	.025
BME	.048	.002	29.49	0.000	.044	.051
Attainment quintile						
Lowest	.05	.001	42.82	0.000	.047	.052
Low	.025	.001	36.46	0.000	.024	.027
Medium	.02	.001	34.55	0.000	.019	.021
High	.015	.0005	32.51	0.000	.014	.016
Highest	.028	.0008	36.47	0.000	.026	.029

Other variables controlled in the model: gender, field of study entered, course level entered, average tariff points of institution entered.

Table A7. 3: Probability (marginal effect) of being a mover by interaction between school type and attainment group, estimated from logistic regression model (model 4) for Scotland-domiciled 2012 young full-time entrants

	Margin	S.E.	z	P> z	95% Confidence Interval	
State school						
Lowest attainment group	.046	.001	40.31	0.000	.044	.049
Low attainment group	.024	.001	35.81	0.000	.022	.025
Medium attainment group	.019	.001	34.85	0.000	.018	.02
High attainment group	.014	.0004	33.36	0.000	.013	.015
Highest attainment group	.026	.001	38.64	0.000	.025	.027
Independent school						
Lowest attainment group	.274	.005	51.31	0.000	.264	.285
Low attainment group	.163	.004	40.81	0.000	.156	.171
Medium attainment group	.134	.003	39.13	0.000	.127	.141
High attainment group	.105	.003	37.42	0.000	.1	.111
Highest attainment group	.176	.004	45.66	0.000	.168	.183

All other variables controlled in the model.

Table A7. 4: Probability (marginal effect) of being a mover by interaction between school type and ethnicity and social class, estimated from logistic regression model (model 4) for Scotland-domiciled 2012 young full-time entrants

	Margin	S.E.	z	P> z	95% Confidence Interval	
State school						
White	.024	.0003	69.12	0.000	.023	.025
BME	.046	.002	29.71	0.000	.043	.049
Higher managerial & professional	.032	.001	49.62	0.000	.031	.033
Lower managerial & professional	.025	.001	47.37	0.000	.024	.026
Intermediate	.023	.001	36.48	0.000	.021	.024
Working	.018	.001	30.71	0.000	.017	.019
Independent school						
White	.163	.002	68.32	0.000	.158	.168
BME	.268	.007	39.62	0.000	.255	.281
Higher managerial & professional	.206	.003	60.61	0.000	.2	.213
Lower managerial & professional	.168	.003	50.67	0.000	.161	.174
Intermediate	.156	.004	40.67	0.000	.149	.164
Working	.13	.004	32.88	0.000	.122	.138

All other variables controlled in the model.

Table A7. 5: Probability (marginal effect) of being a mover by interaction between attainment group and social class, estimated from logistic regression model (model 4) for Scotland-domiciled 2012 young full-time entrants

	Margin	S.E.	z	P> z	95% Confidence Interval	
Lowest attainment group						
Higher managerial & professional	.092	.002	43.85	0.000	.088	.096
Lower managerial & professional	.075	.002	41.21	0.000	.071	.078
Intermediate	.069	.002	35.05	0.000	.066	.073
Working	.058	.002	30.03	0.000	.054	.062
Low attainment group						
Higher managerial & professional	.052	.001	38.63	0.000	.05	.055
Lower managerial & professional	.042	.001	35.95	0.000	.039	.044
Intermediate	.039	.001	30.86	0.000	.036	.041
Working	.032	.001	26.5	0.000	.029	.034
Medium attainment group						
Higher managerial & professional	.043	.001	37.92	0.000	.04	.045
Lower managerial & professional	.034	.001	35.1	0.000	.032	.036
Intermediate	.031	.001	30.26	0.000	.029	.033
Working	.025	.001	25.96	0.000	.023	.027
High attainment group						
Higher managerial & professional	.033	.001	37.21	0.000	.031	.035
Lower managerial & professional	.026	.001	34.03	0.000	.025	.028
Intermediate	.024	.001	29.18	0.000	.022	.026
Working	.02	.001	25.27	0.000	.018	.021
Highest attainment group						
Higher managerial & professional	.057	.001	45.63	0.000	.054	.059
Lower managerial & professional	.045	.001	40.61	0.000	.043	.047
Intermediate	.042	.001	33.23	0.000	.039	.044
Working	.034	.001	28.76	0.000	.032	.037

All other variables controlled in the model.

Table A7. 6: Percentage of Scotland-domiciled young full-time stayers and movers entering selected fields of study by school type, 2010-2012 entrants

	State school		Independent school	
	Stayer	Mover	Stayer	Mover
Medicine and veterinary medicine	3.3	6.3	10.5	6
Physical/mathematical sciences	7.7	6.4	6.8	8.4
Biological sciences	11.4	7.8	10.4	6.5
Languages	3.9	5.8	5.8	11.1
Historical and philosophical studies	2.8	3.9	5.9	9.7
Creative arts and design	6.8	29.6	5.6	9.8
Total (all fields of study)	55130	1705	5600	1720

Column percentages, but do not equal 100% as only selected fields of study shown.

Table A7. 7: Percentage of stayers and movers by characteristics of entrants to lower and higher tariff institution, Scotland-domiciled young full-time entrants 2012

	Lower tariff		Higher Tariff	
	Stayers	Movers	Stayers	Movers
Gender				
Female	52	57.7	54.9	51.3
Male	48	42.3	45.1	48.7
Social class				
Higher managerial and professional	18.4	30.5	33.2	53.1
Lower managerial and professional	29.2	37.2	31.6	25.7
Intermediate and working class	52.5	32.4	35.3	21.1
Parental education				
Parent with HE qualification	53.5	71.3	72.1	87.2
No parent with HE qualification	46.5	28.7	27.9	12.8
Ethnicity				
White	93.9	-	93.3	89.3
BME	6.1	-	6.7	10.7
Attainment*				
Highest/high/medium quintile	29.1	19.7		
Low quintile	26.3	18.6		
Lowest quintile	50.9	61.7		
Highest quintile			29.6	48.5
High quintile			28.9	19.3
Medium quintile			21.8	15.4
Lowest/low quintile			19.7	16.8
School type				
State school	96.8	78.1	85.5	34.7
Independent school	3.2	21.9	14.5	65.3
Total (N)	5585	285	10385	600

Columns within characteristics =100%.

- left blank due to low numbers of BME movers.

*Groupings used where attainment groups had low numbers: medium to highest in lower tariff institutions, and low to lowest in higher tariff institutions.

Table A7. 8: Scotland-domiciled young full-time 2012 entrants to lower tariff institutions – binary regression model comparing movers to stayers

	Model 1: Background and characteristics			Model 2: School type			Model 3: Course entered			Model 4: Field of study factors		
	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)
<i>Ref: Female</i>												
Male	-.43	.14	.65**	-.51	.14	.6***	-.52	.15	.6***	-.32	.15	.73*
<i>Ref: Higher managerial/professional</i>												
Lower managerial/professional	-.32	.18	.73	-.2	.2	.82	-.23	.2	.8	-.18	.19	.84
Intermediate / Working class	-1.0	.19	.37***	-.85	.2	.43***	-.87	.21	.42***	-.78	.2	.46***
<i>Ref: Parent with HE qualification</i>												
No parent with HE qualification	-.47	.17	.63**	-.41	.17	.66*	-.34	.18	.71	-.37	.17	.69*
<i>Ref: White</i>												
BME	1.09	.2	2.98***	1.13	.2	3.1***	1.31	.21	3.72***	1.33	.21	3.77***
<i>Ref: Lowest attainment quintile</i>												
Low /medium/high/ highest attainment quintile	-.38	.16	.68*	-.36	.16	.7*	-.49	.17	.61*	-.46	.17	.63**
<i>Ref: State school</i>												
Independent school				1.95	.19	7.03***	1.98	.2	7.22***	2.11	.19	8.26***
<i>Ref: Social sciences and law</i>												
Subjects allied to medicine / Sciences / Engineering and Technology							.2	.18	1.23			
Arts							1.55	.19	4.69***			
Field of study supply										-.82	.62	.44
Field of study employment level										.01	.01	1.01
Field of study earnings										-.21	.06	.81***
<i>Constant</i>	-2.15	.16	.12***	-2.44	.18	.09***	-2.85	.21	.06***	-.24	1.1	3.47
<i>Nagelkerke R²</i>		0.07			0.11			0.16			0.16	

*** statistically significant at p<.001; ** statistically significant at p<.01; * statistically significant at p<.05; N = 5294.

Table A7. 9: Scotland-domiciled young full-time 2012 entrants to higher tariff institutions – binary regression model comparing movers to stayers

	Model 1: Background and characteristics			Model 2: School type			Model 3: Course entered			Model 4: Field of study factors		
	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)
<i>Ref: Female</i>												
Male	.12	.09	1.12	.06	.09	1.06	.16	.1	1.18	.22	.1	1.24*
<i>Ref: Higher managerial/professional</i>												
Lower managerial/professional	-.61	.12	.54***	-.37	.13	.69**	-.42	.13	.66**	-.43	.13	.65**
Intermediate / Working class	-.71	.14	.49***	-.35	.15	.7*	-.37	.15	.69*	-.39	.15	.68*
<i>Ref: Parent with HE qualification</i>												
No parent with HE qualification	-.64	.15	.53***	-.31	.16	.73	-.3	.16	.74	-.3	.16	.74
<i>Ref: White</i>												
BME	.49	.15	1.63**	.33	.16	1.39*	.42	.16	1.51*	.44	.16	1.55**
<i>Ref: Lowest/low attainment quintile</i>												
Medium attainment quintile	-.32	.16	.72*	-.38	.17	.68*	-.41	.17	.66*	-.37	.17	.69*
High attainment quintile	-.37	.15	.69*	-.56	.16	.57***	-.57	.16	.57***	-.49	.16	.61**
Highest attainment quintile	.49	.13	1.63***	.2	.13	1.23	.22	.13	1.25	.34	.14	1.41*
<i>Ref: State school</i>												
Independent school				2.25	.1	9.51***	2.22	.1	9.18***	2.25	.1	9.48***
<i>Ref: Social sciences and law</i>												
Medicine and veterinary medicine / Subjects allied to medicine Sciences							-.03	.16	.97			
Engineering and Technology							-.24	.14	.79			
Arts							.02	.16	1.02			
							.7	.12	2.01***			

	Model 1: Background and characteristics			Model 2: School type			Model 3: Course entered			Model 4: Field of study factors		
	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)
Field of study supply										.39	.24	1.48
Field of study employment level										.0	.01	1
Field of study earnings										-.2	.03	.82***
<i>Constant</i>	-2.52	.13	.08***	-3.39	.15	.03***	-3.54	.17	.03***	-.84	.52	.43
<i>Nagelkerke R²</i>		0.06			0.21			0.22			0.22	

*** statistically significant at p<.001; ** statistically significant at p<.01; * statistically significant at p<.05; N = 10604.

Table A7. 10: Probability (marginal effect) of being a mover by social characteristics, estimated on logistic regression model (model 3) for Scotland-domiciled 2012 young full-time entrants to higher tariff institutions

	Margin	S.E.	z	P> z	95% Confidence Interval	
Social class						
Higher managerial & professional	.037	.001	39.03	0.000	.035	.039
Lower managerial & professional	.025	.001	32.75	0.000	.023	.026
Intermediate/Working	.026	.001	32.23	0.000	.024	.027
Parental education						
Parental HE	.031	.001	46.42	0.000	.03	.032
No parental HE	.023	.001	26.2	0.000	.022	.025
School type						
State school	.02	.0005	43.56	0.000	.019	.021
Independent school	.157	.003	54.58	0.000	.152	.163
Ethnicity						
White	.028	.001	49.88	0.000	.027	.029
BME	.042	.002	21.26	0.000	.038	.046
Attainment quintile						
Lowest -low	.034	.001	29.16	0.000	.032	.037
Medium	.023	.001	26.62	0.000	.021	.025
High	.02	.001	29.51	0.000	.018	.021
Highest	.042	.001	39.88	0.000	.04	.044

Other variables controlled in model: gender, field of study entered.

Table A7. 11: Probability (marginal effect) of being a mover by social characteristics, estimated on logistic regression model (model 3) for Scotland-domiciled 2012 young full-time entrants to lower tariff institutions

	Margin	S.E.	z	P> z	95% Confidence Interval	
Social class						
Higher managerial & professional	.047	.002	23.39	0.000	.043	.051
Lower managerial & professional	.038	.001	26.23	0.000	.035	.04
Intermediate/Working	.02	.001	24.46	0.000	.018	.022
Parental education						
Parental HE	.034	.001	30.43	0.000	.031	.036
No parental HE	.023	.001	24.84	0.000	.022	.025
School type						
State school	.026	.001	35.58	0.000	.025	.028
Independent school	.161	.008	20.85	0.000	.146	.176
Ethnicity						
White	.026	.001	34.74	0.000	.025	.028
BME	.09	.005	18.57	0.000	.081	.1
Attainment quintile						
Lowest -low	.031	.001	35.2	0.000	.029	.033
Medium - Highest	.023	.001	19.53	0.000	.021	.025

Other variables controlled in model: gender, field of study entered.

Table A7. 12: Scotland-domiciled young full-time 2012 entrants - multinomial regression model comparing movers to NE/NW and movers to elsewhere in the rest of UK to stayers

	Movers to NE/NW			Movers to RUK		
	B	S.E.	Exp(B)	B	S.E.	Exp(B)
<i>Ref: Male</i>						
Female	.2	.13	1.22	-.09	.08	.92
<i>Ref: Working class</i>						
Higher managerial and professional	.51	.23	1.67*	.59	.17	1.8**
Lower managerial and professional	.2	.24	1.22	.33	.17	1.39
Intermediate	.15	.26	1.17	.26	.18	1.3
<i>Ref: No parent with HE qualification</i>						
Parent with HE qualification	.16	.17	1.18	.37	.12	1.45**
<i>Ref: Highest attainment quintile</i>						
Lowest attainment quintile	.39	.25	1.48	.74	.16	.84
Low attainment quintile	-.01	.24	.99	-.17	.16	.84
Medium attainment quintile	-.22	.23	.81	-.4	.14	.67**
High attainment quintile	-.38	.24	.69	-.75	.13	.48***
<i>Ref: Independent school</i>						
State school	-2.33	.14	.1***	-2.07	.09	.13***
<i>Ref: Arts</i>						
Medicine/veterinary medicine/ Subjects allied to medicine	-.88	.16	.42***	-1.22	.11	.3***
Sciences / Engineering and technology	-.94	.21	.39***	-1.08	.14	.34***
Social sciences and law	-.95	.17	.39***	-1.05	.11	.35***
Institution tariff	-.003	.001	.997**	.01	.001	1.01***
Constant	-1.28	.59		-3.34	.4	
<i>Nagelkerke R²</i>			0.19			

*** statistically significant at $p < .001$; ** statistically significant at $p < .01$; * statistically significant at $p < .05$; N stayers = 20639, N movers to north of England = 270, N movers to rest of UK = 703.

Table A7. 13: Probability (marginal effect) of being a mover by interaction between ethnicity and social class, estimated from logistic regression model (model 4) for Scotland-domiciled 2012 young full-time entrants

	Margin	S.E.	z	P> z	95% Confidence Interval	
White						
Higher managerial & professional	.051	.001	67.21	0.000	.05	.052
Lower managerial & professional	.041	.001	57.1	0.000	.039	.042
Intermediate	.038	.001	41.32	0.000	.036	.039
Working	.031	.001	33.01	0.000	.029	.033
BME						
Higher managerial & professional	.089	.003	33.79	0.000	.084	.094
Lower managerial & professional	.072	.002	32.04	0.000	.068	.076
Intermediate	.067	.002	28.96	0.000	.062	.071
Working	.055	.002	26.11	0.000	.051	.06

All other variables controlled in the model.

England-domiciled entrants

Table A7. 14: England-domiciled young full-time 2012 entrants – binary regression model comparing movers to stayers

	Model 1: Background and characteristics			Model 2: School type and home area			Model 3: Course entered			Model 4: Institution tariff level entered			Model 5: Field of study factors		
	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)
<i>Ref: Female</i>															
Male	.05	.02	1.05**	.04	.02	1.04	.01	.02	1.01	-.001	.02	1	-.01	.02	.99
<i>Ref: Higher managerial/professional</i>															
Lower managerial and professional	-.08	.03	.92**	-.05	.03	.95	-.02	.03	.98	-.01	.03	.99	-.02	.03	.98
Intermediate	-.16	.03	.85***	-.11	.03	.89**	-.09	.03	.92*	-.06	.03	.94	-.07	.03	.93*
Working class	-.32	.03	.73***	-.24	.03	.79***	-.196	.03	.82***	-.15	.03	.86***	-.16	.03	.85***
<i>Ref: Parent with HE qualification</i>															
No parent with HE qualification	-.44	.03	.64***	-.39	.03	.68***	-.37	.03	.69***	-.34	.03	.71***	-.35	.03	.7***
<i>Ref: White</i>															
Black	-1.24	.07	.29***	-1.2	.07	.3***	-1.2	.07	.31***	-1.13	.07	.32***	-1.17	.07	.31***
Indian	-.94	.07	.39***	-.96	.07	.38***	-.94	.07	.39***	-.96	.07	.38***	-.99	.07	.37***
Pakistani or Bangladeshi	-2.12	.12	.12***	-2.1	.12	.12***	-2.09	.12	.12***	-2.08	.12	.13***	-2.1	.12	.12***
Chinese	-.49	.12	.61***	-.523	.12	.59***	-.46	.12	.63***	-.53	.12	.59***	-.62	.12	.54***
Other Asian background	-.84	.1	.43***	-.84	.1	.43***	-.83	.1	.44***	-.85	.1	.43***	-.86	.1	.42***
Other ethnic group	-.54	.05	.59***	-.54	.05	.58***	-.55	.05	.58***	-.56	.05	.57***	-.56	.05	.57***
<i>Ref: Lowest attainment quintile</i>															
Low attainment quintile	.1	.04	1.1**	.08	.04	1.08*	-.01	.04	1	-.06	.04	.94	-.06	.04	.94
Medium attainment quintile	.09	.04	1.1*	.05	.04	1.04	-.07	.04	.93*	-.24	.04	.79***	-.23	.04	.8***
High attainment quintile	.1	.03	1.1**	.04	.04	1.04	-.16	.04	.85***	-.43	.04	.65***	-.39	.4	.68***
Highest attainment quintile	.09	.03	1.1*	.02	.03	1.02	-.28	.04	.76***	-.7	.05	.5***	-.64	.04	.53***
<i>Ref: State school</i>															
Independent school				.47	.03	1.6***	.37	.03	1.45***	.24	.03	1.3***	.26	.03	1.29***
<i>Ref: Area with non-low participation rate</i>															
Area with low participation rate				-.19	.04	.82***	-.18	.05	.84***	-.14	.04	.87***	-.14	.04	.87***

	Model 1: Background and characteristics			Model 2: School type and home area			Model 3: Course entered			Model 4: Institution tariff level entered			Model 5: Field of study factors		
	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)
<i>Ref: Business and administrative studies</i>															
Medicine and dentistry							1	.07	2.73***	.89	.07	2.45***			
Subjects allied to medicine							.01	.06	1.01	-.05	.06	.95			
Biological sciences							.83	.04	2.28***	.79	.04	2.21***			
Veterinary science							.82	.16	2.28***	.63	.16	1.88***			
Agriculture and related subjects							.35	.11	1.41**	.33	.11	1.39***			
Physical sciences							.77	.05	2.15***	.64	.05	1.89***			
Mathematical sciences							.41	.07	1.51***	.27	.07	1.3***			
Computer science							.03	.07	1.03	.0	.07	1			
Engineering and technology							.37	.06	1.45***	.29	.06	1.33***			
Architecture building and planning							-.04	.1	.99	-.01	.1	.99			
Social studies							.32	.05	1.38***	.23	.05	1.25***			
Law							.04	.07	1.04	-.01	.07	.99			
Mass comms/documentation							-.84	.1	.43***	-.82	.1	.44***			
Languages							.74	.05	2.26***	.61	.05	1.84***			
Historical and philosophical studies							.82	.05	2.26***	.68	.05	1.98***			
Creative arts and design							.1	.05	1.1*	.14	.05	1.15**			
Education							-.48	.08	.62***	-.43	.08	.65***			
<i>Ref: Degree course</i>															
Sub-degree course							-.67	.08	.51***	-.66	.08	.52***	-.7	.08	.5***
Institution tariff level										.0	.0	1.004***	.0	.0	1***
Field of study employment level													-.01	.0	.99***
Field of study earnings													.02	.01	1.02***
Constant	-2.6	.03	.07***	-2.66	.03	.07***	-2.89	.05	.06***	-3.72	.07	.02***	-3.39	.12	.03***
Nagelkerke R ²		0.04			0.04			0.06			0.07			0.05	

*** statistically significant at p<.001; ** statistically significant at p<.01; * statistically significant at p<.05; N = 230397.

Table A7. 15: Probability (marginal effect) of being a mover by social characteristics, estimated on logistic regression model (model 4) for England-domiciled 2012 young full-time entrants

	Margin	S.E.	z	P> z	95% Confidence Interval	
Social class						
Higher managerial & professional	.04	.0002	158.48	0.000	.039	.04
Lower managerial & professional	.039	.002	172.44	0.000	.039	.04
Intermediate	.037	.0003	139.1	0.000	.037	.038
Working	.034	.0003	134.42	0.000	.034	.035
Parental education						
Parental HE	.044	.0002	213.86	0.000	.043	.044
No parental HE	.031	.0002	177.59	0.000	.031	.032
School type						
State school	.037	.0001	253.02	0.000	.036	.037
Independent school	.046	.0004	125.34	0.000	.046	.047
Ethnicity						
White	.049	.0002	285.63	0.000	.049	.049
Black	.016	.0003	49.94	0.000	.016	.017
Indian	.019	.0004	50.89	0.000	.019	.02
Pakistani or Bangladeshi	.006	.0002	28.17	0.000	.006	.007
Chinese	.029	.001	28.07	0.000	.027	.032
Other Asian	.022	.0006	34.18	0.000	.02	.023
Mixed/Other	.029	.0004	67.05	0.000	.028	.03
Home area						
Non-low participation area	.038	.0002	251.15	0.000	.038	.038
Low participation area	.033	.0003	96.74	0.000	.033	.034
Attainment quintile						
Lowest	.05	.0004	125.47	0.000	.049	.051
Low	.047	.0003	136.8	0.000	.046	.048
Medium	.039	.0003	148.15	0.000	.039	.04
High	.033	.0002	138.92	0.000	.032	.033
Highest	.025	.0002	117.33	0.000	.025	.026

Other variables controlled in the model: gender, field of study entered, course level entered, average tariff points of institution entered.

Table A7. 16: Probability (marginal effect) of being a mover by interaction between school type and ethnicity and social class, estimated from logistic regression model (model 4) for England-domiciled 2012 young full-time entrants

	Margin	S.E.	z	P> z	95% Confidence Interval	
State school						
White	.054	.0002	301.1	0.000	.053	.054
BME	.022	.0002	110.38	0.000	.021	.022
Higher managerial & professional	.049	.0003	180.26	0.000	.048	.049
Lower managerial & professional	.048	.0002	194.21	0.000	.047	.048
Intermediate	.045	.0003	145.59	0.000	.045	.046
Working	.042	.0003	136.58	0.000	.041	.042
Independent school						
White	.07	.0005	143.55	0.000	.069	.071
BME	.029	.0003	89.78	0.000	.028	.029
Higher managerial & professional	.063	.0005	127.01	0.000	.062	.064
Lower managerial & professional	.062	.0005	124.9	0.000	.061	.063
Intermediate	.059	.0005	108.23	0.000	.058	.06
Working	.055	.0005	101.46	0.000	.054	.056

All other variables controlled in the model.

Table A7. 17: Probability (marginal effect) of being a mover by interaction between ethnicity and attainment group, estimated from logistic regression model (model 4) for England-domiciled 2012 young full-time entrants

	Margin	S.E.	z	P> z	95% Confidence Interval	
White						
Lowest attainment group	.076	.001	123.83	0.000	.075	.077
Low attainment group	.073	.001	141.36	0.000	.072	.074
Medium attainment group	.062	.0004	162.37	0.000	.061	.062
High attainment group	.052	.0003	164.38	0.000	.052	.053
Highest attainment group	.04	.0003	147.05	0.000	.04	.041
BME						
Lowest attainment group	.031	.0004	86.9	0.000	.031	.032
Low attainment group	.03	.0003	89.45	0.000	.029	.031
Medium attainment group	.025	.0003	93.89	0.000	.025	.026
High attainment group	.021	.0002	93.61	0.000	.021	.022
Highest attainment group	.016	.0002	89.61	0.000	.016	.016

All other variables controlled in the model.

Table A7. 18: Probability (marginal effect) of being a mover by interaction between school type and attainment group, estimated from logistic regression model (model 4) for England-domiciled 2012 young full-time entrants

	Margin	S.E.	z	P> z	95% Confidence Interval	
State school						
Lowest attainment group	.064	.001	121.12	0.000	.063	.065
Low attainment group	.061	.0004	136.75	0.000	.06	.062
Medium attainment group	.051	.0003	156.38	0.000	.051	.052
High attainment group	.043	.0003	158.38	0.000	.043	.044
Highest attainment group	.033	.0002	145.3	0.000	.033	.034
Independent school						
Lowest attainment group	.082	.001	103.95	0.000	.081	.084
Low attainment group	.078	.001	111.88	0.000	.077	.08
Medium attainment group	.067	.001	118.91	0.000	.065	.068
High attainment group	.056	.0005	117.77	0.000	.055	.057
Highest attainment group	.043	.0004	104.72	0.000	.042	.044

All other variables controlled in the model.

Table A7. 19: Probability (marginal effect) of being a mover by interaction between attainment group and social class, estimated from logistic regression model (model 4) for England-domiciled 2012 young full-time entrants

	Margin	S.E.	z	P> z	95% Confidence Interval	
Lowest attainment group						
Higher managerial & professional	.07	.0006	110.36	0.000	.068	.07
Lower managerial & professional	.069	.0006	112.54	0.000	.068	.07
Intermediate	.065	.0007	100.18	0.000	.064	.067
Working	.06	.0006	96.35	0.000	.059	.061
Low attainment group						
Higher managerial & professional	.066	.0005	121.7	0.000	.065	.067
Lower managerial & professional	.065	.0005	124.33	0.000	.064	.066
Intermediate	.062	.0006	108.46	0.000	.061	.063
Working	.057	.0006	102.7	0.000	.056	.058
Medium attainment group						
Higher managerial & professional	.056	.0004	133.99	0.000	.055	.057
Lower managerial & professional	.055	.0004	137.36	0.000	.055	.056
Intermediate	.053	.0005	116.34	0.000	.052	.053
Working	.048	.0004	109.75	0.000	.048	.049
High attainment group						
Higher managerial & professional	.047	.0004	137.67	0.000	.046	.047
Lower managerial & professional	.047	.0003	116.35	0.000	.044	.045
Intermediate	.044	.0004	109.76	0.000	.04	.042
Working	.041	.0004	125.93	0.000	.034	.037
Highest attainment group						
Higher managerial & professional	.036	.0003	125.93	0.000	.036	.037
Lower managerial & professional	.036	.0003	126.19	0.000	.036	.036
Intermediate	.034	.0003	107.97	0.000	.033	.035
Working	.031	.0003	103.31	0.000	.031	.032

All other variables controlled in the model.

Table A7. 20: Percentage of England-domiciled stayers and movers from ethnic groups who entered selected field of study groups, young full-time entrants 2010-12 (column percentages)

	White		Black		Asian		Mixed/Other	
	Stayer	Mover	Stayer	Mover	Stayer	Mover	Stayer	Mover
Medicine and veterinary	3	4.4	1.2	-	4.4	15	2.9	6.7
Subjects allied to medicine	6.4	4.1	8.3	-	11	7.1	6.2	-
Sciences	23.9	31.1	22.4	25.8	25	25.2	22.5	27.2
Engineering and technology	7	6.3	8.7	16	9.3	14.8	8.1	8.1
Social sciences and law	31.4	22.4	45	34	40.9	26.9	35.2	23.4
Arts	28	31.7	14	15.8	9.1	10.9	24.8	31.4
Total (N)	567745	33665	45010	700	95570	1485	39115	1305

'-' fewer than 52 cases.

Table A7. 21: Percentage of England-domiciled young full-time stayers and movers to lower and higher tariff institutions by characteristics, 2012

	Lower tariff		Higher Tariff	
	Stayers	Movers	Stayers	Movers
Gender				
Female	55.4	50.9	52.5	58.7
Male	44.6	49.1	47.5	41.3
Social class				
Higher managerial and professional	17.1	23.8	34.7	39
Lower managerial and professional	27.8	31.7	31.7	33.4
Intermediate	22.3	19.8	17.9	16.4
Working class	32.8	24.7	15.8	11.2
Parental education				
Parent with HE qualification	43.7	56.7	66	74.9
No parent with HE qualification	56.3	43.3	34	25.1
Ethnicity				
White	68.5	90.2	77.5	88.3
Black	9.5	2.8	3.4	1.5
Asian	16.1	3.8	13.5	5.6
Mixed/Other	5.9	3.2	5.6	4.6
BME	31.5	9.8	22.5	11.7
Attainment group				
Highest quintile	5.6	4.7	45.6	42.6
High quintile	12.9	14	30.3	29.3
Medium quintile	21	20.2	18.1	19.1
Low quintile	25.4	25.2	4.5	7.1
Lowest quintile	35.2	35.9	1.4	1.8
Home area				
Non low participation area	84.4	87.4	93.5	95.3
Low participation area	15.6	12.6	6.6	4.7
School type				
State school	96.7	94	77.1	68.4
Independent school	3.3	6	22.9	31.6
Total (N)	111290	3545	77720	5630

Table A7. 22: England-domiciled young full-time 2012 entrants to lower tariff institutions – binary regression model comparing movers to stayers

	Model 1: Background and characteristics			Model 2: School type and home area			Model 3: Course entered			Model 4: Field of study factors		
	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)
<i>Ref: Female</i>												
Male	.16	.04	1.17***	.15	.04	1.17***	.03	.04	1.03	.18	.04	1.2***
<i>Ref: Higher managerial/professional</i>												
Lower managerial/professional	-.08	.05	.92	-.07	.05	.94	-.07	.05	.94	-.07	.05	.94
Intermediate	-.17	.06	.84**	-.15	.06	.86*	-.16	.06	.85*	-.15	.06	.86*
Working class	-.23	.06	.8***	-.19	.06	.83**	-.2	.06	.82**	-.18	.06	.83**
<i>Ref: Parent with HE qualification</i>												
No parent with HE qualification	-.42	.05	.66***	-.4	.05	.67***	-.39	.05	.68***	-.39	.05	.68***
<i>Ref: White</i>												
Black	-1.58	.11	.21***	-1.56	.11	.21***	-1.49	.11	.23***	-1.55	.11	.21***
Asian	-1.64	.09	.2***	-1.64	.09	.19***	-1.58	.09	.21***	-1.61	.09	.2***
Other ethnic group	-.92	.1	.4***	-.92	.1	.34***	-.91	.1	.4***	-.92	.1	.4***
<i>Ref: Lowest attainment quintile</i>												
Low attainment quintile	-.18	.05	.84***	-.18	.05	.83***	-.21	.05	.81***	-.210	.050	.81***
Medium attainment quintile	-.22	.05	.81***	-.21	.05	.81***	-.24	.05	.79***	-.242	.054	.79***
High attainment quintile	-.14	.06	.87*	-.13	.06	.88*	-.19	.06	.83**	-.165	.060	.85**
Highest attainment quintile	-.45	.09	.64***	-.44	.09	.65***	-.5	.09	.61***	-.502	.093	.61***
<i>Ref: State school</i>												
Independent school				.39	.08	1.48***	.43	.08	1.54***	.37	.08	1.45***
<i>Ref: Area with non-low participation rate</i>												
Area with low participation rate				-.16	.05	.85**	-.18	.05	.83**	1.15	.05	.86**
<i>Ref: Social sciences and law</i>												
Subjects allied to medicine							.1	.09	1.1			

	Model 1: Background and characteristics			Model 2: School type and home area			Model 3: Course entered			Model 4: Field of study factors		
	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)
Sciences							1.05	.05	2.87***			
Engineering and technology							.34	.09	1.4***			
Arts							.61	.05	1.84***			
<i>Ref: Degree course</i>												
Sub-degree course							-.42	.1	.66***	-.44	.09	.64***
Field of study employment level										-.01	.0	.99***
Field of study earnings										-.02	.01	.98
<i>Constant</i>	-2.76	.05	.06***	-2.79	.05	.06***	-3.2	.06	.04***	-1.67	.2	.19***
<i>Nagelkerke R²</i>		0.05			0.05			0.07			0.05	

*** statistically significant at $p < .001$; ** statistically significant at $p < .01$; * statistically significant at $p < .05$; N = 106193.

Table A7. 23: England-domiciled young full-time 2012 entrants to higher tariff institutions – binary regression model comparing movers to stayers

	Model 1: Background and characteristics			Model 2: School type and home area			Model 3: Course entered			Model 4: Field of study factors		
	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)
<i>Ref: Female</i>												
Male	-.27	.03	.77***	-.28	.03	.76***	-.22	.03	.81***	-.28	.03	.76***
<i>Ref: Higher managerial/professional</i>												
Lower managerial/professional	-.04	.04	.96	-.02	.04	.98	-.01	.04	.99	-.02	.04	.98
Intermediate	-.04	.05	.96	-.01	.05	.99	-.0	.05	1	-.01	.05	.99
Working class	-.2	.05	.82***	-.12	.06	.89*	-.1	.06	.91	-.12	.06	.89*
<i>Ref: Parent with HE qualification</i>												
No parent with HE qualification	-.36	.04	.7***	-.31	.04	.74***	-.29	.04	.75***	-.31	.04	.74***
<i>Ref: White</i>												
Black	-.97	.11	.38***	-.92	.11	.4***	-.88	.11	.42***	-.92	.11	.4***
Indian	-.87	.09	.42***	-.88	.09	.42***	-.87	.09	.42***	-.87	.09	.42***
Pakistani or Bangladeshi	-1.17	.16	.18***	-1.69	.16	.19***	-1.69	.16	.19***	-1.67	.16	.19***
Chinese	-.56	.15	.57***	-.57	.15	.57***	-.53	.15	.59***	-.57	.15	.57***
Other Asian background	-.78	.14	.46***	-.77	.14	.46***	-.73	.14	.48***	-.76	.14	.47***
Other ethnic group	-.36	.07	.7***	-.37	.07	.69***	-.37	.07	.69***	-.36	.07	.7***
<i>Ref: Lowest attainment quintile</i>												
Low attainment quintile	.17	.13	1.18	.13	.13	1.14	.08	.13	1.08	.12	.13	1.13
Medium attainment quintile	-.34	.12	.71**	-.39	.12	.68**	-.46	.12	.64***	-.4	.12	.67**
High attainment quintile	-.48	.12	.62***	-.53	.12	.59***	-.62	.12	.54***	-.54	.12	.58***
Highest attainment quintile	-.55	.12	.58***	-.59	.12	.55***	-.71	.12	.49***	-.6	.12	.55***
<i>Ref: State school</i>												
Independent school				.34	.03	1.41***	.29	.03	1.34***	.34	.03	1.4***

	Model 1: Background and characteristics			Model 2: School type and home area			Model 3: Course entered			Model 4: Field of study factors		
	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)
<i>Ref: Area with non-low participation rate</i>												
Area with low participation rate				-.16	.07	.85*	-.15	.07	.86*	-.16	.07	.85*
<i>Ref: Business and administrative studies</i>												
Medicine and dentistry							.55	.08	1.74***			
Subjects allied to medicine							-.22	.09	.8*			
Biological sciences							.21	.07	1.23**			
Veterinary science / agriculture							-.41	.16	.66*			
Physical sciences							.02	.08	1.02			
Mathematical sciences							-.2	.1	.82*			
Computer science							-.36	.14	.7*			
Engineering and technology							-.27	.09	.76**			
Architecture building and planning							.77	.12	2.16***			
Social studies							-.06	.08	.94			
Law							-.28	.11	.76**			
Mass comms/documentation							.19	.16	1.21			
Languages							.27	.07	1.31***			
Historical and philosophical studies							.34	.07	1.41***			
Creative arts and design							.12	.09	1.12			
Education							.08	.18	1.08			
Field of study employment level										-.0	.0	1
Field of study earnings										.01	.01	1.01

	Model 1: Background and characteristics			Model 2: School type and home area			Model 3: Course entered			Model 4: Field of study factors		
	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)
<i>Constant</i>	-1.78	.12	.17***	-.16	.07	.85*	-1.89	.13	.15***	-1.63	.18	.2***
<i>Nagelkerke R²</i>		0.03			0.03			0.04			.02	

*** statistically significant at p<.001; ** statistically significant at p<.01; * statistically significant at p<.05; N = 80443.

Table A7. 24: Probability (marginal effect) of being a mover by social characteristics, estimated on logistic regression model (model 3) for England-domiciled 2012 young full-time entrants to higher tariff institutions

	Margin	S.E.	z	P> z	95% Confidence Interval	
Social class						
Higher managerial & professional	.062	.0005	137.5	0.000	.061	.063
Lower managerial & professional	.061	.0005	133.39	0.000	.06	.062
Intermediate	.061	.0006	97.69	0.000	.06	.062
Working	.056	.0007	79.42	0.000	.055	.058
Parental education						
Parental HE	.066	.0004	185.78	0.000	.066	.067
No parental HE	.05	.0004	114.97	0.000	.049	.051
School type						
State school	.057	.0003	191.64	0.000	.056	.057
Independent school	.075	.0006	126.07	0.000	.074	.076
Ethnicity						
White	.071	.0003	217.26	0.000	.07	.072
Black	.031	.001	30.04	0.000	.029	.033
Asian	.029	.0005	55.61	0.000	.028	.03
Mixed/Other	.05	.001	51.37	0.000	.048	.052
Home area						
Non-low participation area	.061	.0003	213.77	0.000	.06	.062
Low participation area	.053	.001	52.6	0.000	.051	.055
Attainment quintile						
Lowest	.103	.003	32.7	0.000	.097	.109
Low	.109	.002	66.51	0.000	.106	.112
Medium	.068	.0006	104.84	0.000	.067	.069
High	.058	.0005	127.57	0.000	.058	.059
Highest	.055	.0004	147.58	0.000	.054	.055

Other variables controlled in model: gender, field of study entered.

Table A7. 25: Probability (marginal effect) of being a mover by social characteristics, estimated on logistic regression model (model 3) for England-domiciled 2012 young full-time entrants to lower tariff institutions

	Margin	S.E.	z	P> z	95% Confidence Interval	
Social class						
Higher managerial & professional	.026	.0003	77.96	0.000	.025	.027
Lower managerial & professional	.024	.0003	90.74	0.000	.024	.025
Intermediate & Working	.022	.0003	77.79	0.000	.022	.023
Parental education						
Parental HE	.029	.0003	110.19	0.000	.028	.029
No parental HE	.019	.0002	106.35	0.000	.019	.02
School type						
State school	.023	.0002	138.17	0.000	.022	.023
Independent school	.034	.0008	43.45	0.000	.033	.036
Ethnicity						
White	.035	.0002	158.56	0.000	.034	.036
Black	.008	.0003	30.4	0.000	.008	.009
Asian	.007	.0002	36.69	0.000	.007	.008
Mixed/Other	.015	.0004	33.01	0.000	.014	.015
Home area						
Non-low participation area	.024	.0002	133.71	0.000	.023	.024
Low participation area	.02	.0003	63.43	0.000	.016	.017
Attainment quintile						
Lowest	.027	.0003	100.85	0.000	.026	.027
Low	.022	.0003	84.97	0.000	.021	.022
Medium	.021	.0003	77.66	0.000	.021	.022
High	.022	.0003	65.79	0.000	.022	.023
Highest	.017	.0004	39.17	0.000	.016	.017

Other variables controlled in model: gender, field of study entered.

Table A7. 26: Percentage of movers from South-West England to Welsh and Scottish HEIs by characteristics (column percentages within characteristics)

	Welsh HEIs	Scottish HEIs
Gender		
Female	53.2	57.4
Male	46.8	42.6
Social class		
Higher managerial and professional	26.7	36.1
Lower managerial and professional	32.9	33.6
Intermediate	21.3	
Working class	19.1	30.3
Parental education		
Parental HE	61	75
No parental HE	39	25
Attainment group		
Lowest, low, medium	59.6	28.4
High	22.1	28.9
Highest	18.3	42.6
School type		
State school	89.2	58.8
Independent school	10.8	41.2
Total (N)	2160	260

Table A7. 27: Percentage of movers from West Midlands to Welsh and Scottish HEIs by characteristics (column percentages within characteristics)

	Welsh HEIs	Scottish HEIs
Gender		
Female	51.5	57.7
Male	48.5	42.3
Social class		
Higher managerial and professional	24	44.5
Lower managerial and professional	33.7	27.3
Intermediate and working class	42.3	28.2
Parental education		
Parental HE	58.6	-
No parental HE	41.4	-
Attainment group		
Lowest, low, medium	65.1	30.9
High and highest	35	69.1
School type		
State school	51.5	-
Independent school	48.5	-
Total (N)	1420	190

Parental education and school type not shown due to low number of 'no parental HE' and independent school movers to Scotland.

'-' fewer than 52 cases.

Table A7. 28: Percentage of movers from North-West England to Welsh and Scottish HEIs by characteristics (column percentages within characteristics)

	Welsh HEIs	Scottish HEIs
Gender		
Female	50.1	57.2
Male	49.9	42.8
Social class		
Higher managerial and professional	25.7	38.7
Lower managerial and professional	31.4	31.5
Intermediate	18.3	15
Working class	24.5	14.7
Parental education		
Parental HE	59.1	70.4
No parental HE	40.9	29.6
Attainment group		
Lowest and low	48.2	11.3
Medium	22.6	14.4
High	17.9	23.9
Highest	11.2	50.5
School type		
State school	92.1	75.5
Independent school	7.9	24.5
Total (N)	965	590

Home area not shown due to low number of low participation movers to Scotland.

Table A7. 29: Percentage of movers from North-East England to Scottish HEIs by characteristics (column percentages within characteristics)

	Scottish HEIs
Gender	
Female	76.9
Male	23.1
Social class	
Higher managerial and professional	37.2
Lower managerial and professional	29.7
Intermediate and working class	33.2
Parental education	
Parental HE	67.4
No parental HE	32.6
Attainment group	
Lowest and low	22
Medium	21.6
High	27.1
Highest	29.3
School type	
State school	76.9
Independent school	23.1
Total (N)	355

Movers to Wales not shown as n=100 and sub-groups are too small to report.

Table A7. 30: Percentage of movers from Greater London to Welsh and Scottish HEIs by characteristics (column percentages within characteristics)

	Welsh HEIs	Scottish HEIs
Gender		
Female	45.4	60.3
Male	54.6	39.7
Social class		
Higher managerial and professional	29.6	39.5
Lower managerial and professional	31.1	36.2
Intermediate	21.6	14.8
Working class	17.7	9.5
Parental education		
Parental HE	65.1	78.8
No parental HE	34.9	21.2
Attainment group		
Lowest and low	53.5	11.4
Medium	19.7	15.1
High	16.2	29.4
Highest	10.5	44.2
School type		
State school	80	44.3
Independent school	20	55.7
Total (N)	625	570

	Model 1: Background and characteristics			Model 2: School type and home area			Model 3: Course entered			Model 4: Institution tariff level			Model 5: Field of study factors		
	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)
Medicine and veterinary medicine							-.05	.13	.95	-.1	.13	.91			
Subjects allied to medicine							-.14	.1	.87	-.17	.1	.84			
Sciences							.45	.06	1.57***	.41	.06	1.51***			
Engineering and technology							.08	.1	1.08	.06	.1	1.06			
Arts							.05	.06	1.05	.04	.06	1.04			
Institution tariff										.0	.0	1.002***	.0	.0	1.002***
Field of study employment level													-.01	.0	.99**
Field of study earnings													.05	.01	1.05***
Constant	-2	.08	.14***	-2.01	.08	.14***	-2.09	.09	.12***	-2.76	.13	.06***	-2.73	.25	.07***
Nagelkerke R ²		0.01			0.01			0.02			0.02			0.01	

*** statistically significant at p<.001; ** statistically significant at p<.01; * statistically significant at p<.05; N = 19682.

Table A7. 32: West Midlands domiciled entrants – regression model comparing cross-border movers to stayers within England

	Model 1: Background and characteristics			Model 2: School type and home area			Model 3: Course entered			Model 4: Institution tariff level			Model 5: Field of study factors		
	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)
<i>Ref: Female</i>															
Male	.12	.05	1.13*	.12	.05	1.13*	.07	.06	1.08	.06	.06	1.07	.07	.06	1.07
<i>Ref: Higher managerial/professional</i>															
Lower managerial and professional	-.01	.07	.99	.01	.07	1.01	.02	.07	1.02	.04	.07	1.04	.04	.07	1.04
Intermediate	-.03	.1	.97	-.01	.1	1	-.01	.1	.99	.01	.1	1.01	.02	.01	1.02
Working class	-.12	.09	.89	-.08	.09	.92	-.09	.09	.99	-.05	.09	.95	-.05	.09	.95
<i>Ref: Parent with HE qualification</i>															
No parent with HE qualification	-.44	.08	.64***	-.42	.08	.66***	-.41	.08	.66***	-.39	.08	.68***	-.4	.08	.67***
<i>Ref: White</i>															
BME	-	.09	.24***	-	.09	.24***	-	.09	.26***	-1.35	.09	.26***	-	.09	.25***
	1.41			1.41			1.34						1.39		
<i>Ref: Lowest attainment quintile</i>															
Low attainment quintile	.07	.09	1.08	.07	.09	1.07	.08	.09	1.08	.04	.09	1.04	.03	.09	1.03
Medium attainment quintile	.04	.09	1.04	.02	.09	1.02	.02	.09	1.02	-.07	.09	.93	-.08	.09	.93
High attainment quintile	.01	.09	1.01	-.02	.09	.98	-.06	.09	.94	-.22	.1	.8*	-.19	.1	.82*
Highest attainment quintile	-.05	.09	1.01	-.09	.09	.91	-.2	.09	.82*	-.48	.11	.62***	-.39	.11	.68***
<i>Ref: State school</i>															
Independent school				.29	.08	1.34***	.3	.09	1.35***	.22	.09	1.24*	.19	.09	1.21*
<i>Ref: Area non-low participation rate</i>															
Area with low participation rate				-.05	.08	.95	-.05	.08	.96	-.02	.08	.98	-.01	.08	.99***
<i>Ref: Social sciences and law</i>															
Medicine and veterinary medicine							-.94	.16	.39***	-.93	.17	.4***			

	Model 1: Background and characteristics			Model 2: School type and home area			Model 3: Course entered			Model 4: Institution tariff level			Model 5: Field of study factors		
	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)
Subjects allied to medicine							-.2	.12	.82	-.19	.12	.83			
Sciences							-.9	.17	.41***	-.89	.17	.41***			
Engineering and technology							-.92	.13	.4***	-.89	.13	.41***			
Arts							-.44	.13	.65***	-.42	.13	.66**			
Institution tariff										.002	.0	1.002***	.002	.0	1.002***
Field of study employment level													-.01	.004	.99**
Field of study earnings													.01	.02	1.01
-															
Constant	2.27	.09	.1***	-2.3	.09	.1***	-1.74	.14	.18***	-2.3	.19	.1***	-2.09	.31	.12***
Nagelkerke R ²		.05			.05			.07			0.07			0.06	

*** statistically significant at p<.001; ** statistically significant at p<.01; * statistically significant at p<.05; N = 26108.

Table A7. 33: North-West domiciled entrants – regression model comparing cross-border movers to stayers within England

	Model 1: Background and characteristics			Model 2: School type and home area			Model 3: Course entered			Model 4: Institution tariff level			Model 5: Field of study factors		
	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)
<i>Ref: Female</i>															
Male	.02	.05	1.02	.01	.05	1.01	-.06	.06	.94	-.08	.06	.93	-.03	.06	.97
<i>Ref: Higher managerial/professional</i>															
Lower managerial/professional	-.19	.07	.83**	-.15	.07	.86*	-.14	.07	.87	-.12	.07	.89	-.13	.07	.88
Intermediate	-.29	.09	.75**	-.24	.09	.79**	-.24	.09	.79**	-.21	.09	.81*	-.2	.09	.82*
Working class	-.34	.09	.71***	-.24	.09	.79**	-.24	.09	.79**	-.19	.09	.83*	-.19	.09	.83*
<i>Ref: Parent with HE qualification</i>															
No parent with HE qualification	-.42	.07	.66***	-.36	.07	.7***	-.34	.07	.72***	-.32	.07	.73***	-.33	.07	.72***
<i>Ref: White</i>															
BME	-	.11	.36***	-	.11	.36***	-.98	.11	.38***	-.97	.11	.38***	-.1	.11	.37***
	1.02			1.02											
<i>Ref: Lowest attainment quintile</i>															
Low attainment quintile	-.12	.09	.89	-.14	.09	.87	-.15	.1	.86	-.19	.1	.83*	-.19	.1	.83*
Medium attainment quintile	-.19	.09	.83*	-.22	.09	.8*	-.26	.09	.78**	-.4	.09	.67***	-.39	.09	.68***
High attainment quintile	-.17	.09	.84	-.22	.09	.8*	-.29	.09	.75**	-.53	.1	.59***	-.5	.1	.61***
Highest attainment quintile	.03	.09	1.03	-.05	.09	.95	-.24	.09	.79**	-.67	.11	.51***	-.55	.11	.58***
<i>Ref: State school</i>															
Independent school				.7	.08	2.01***	.66	.08	1.94***	.49	.08	1.64***	.49	.08	1.64***
<i>Ref: Area non-low participation rate</i>															
Area with low participation rate				-.34	.09	.71***	-.34	.09	.71***	-.31	.09	.73***	-.31	.09	.74***
<i>Ref: Social sciences and law</i>															

	Model 1: Background and characteristics			Model 2: School type and home area			Model 3: Course entered			Model 4: Institution tariff level			Model 5: Field of study factors		
	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)
Medicine/veterinary medicine							1.33	.13	3.79***	1.27	.13	3.54***			
Subjects allied to medicine							.13	.14	1.13	.11	.14	1.12			
Sciences							1.11	.08	3.04***	1.07	.08	2.91***			
Engineering and technology							.44	.13	1.55**	.39	.13	1.48**			
Arts							.91	.08	2.5***	.88	.08	2.42***			
Institution tariff										.0	.0	1.003***	.0	.0	1.004***
Field of study employment level													-.01	.0	.1
Field of study earnings													.01	.02	1.01
Constant	-2.4	.09	.09***	-2.45	.09	.09***	-3.05	.11	.05***	-3.98	.16	.02***	-2.97	.31	.05***
Nagelkerke R ²		0.03			0.04			0.07			0.07			0.05	

*** statistically significant at p<.001; ** statistically significant at p<.01; * statistically significant at p<.05; N=31623.

Table A7. 34: North-East domiciled entrants – regression model comparing cross-border movers to stayers within England

	Model 1: Background and characteristics			Model 2: School type and home area			Model 3: Course entered			Model 4: Institution tariff level			Model 5: Field of study factors		
	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)
<i>Ref: Female</i>															
Male	.16	.1	1.17	.14	.1	1.15	.13	.1	1.14	.09	.1	1.1	.11	.1	1.11
<i>Ref: Higher managerial/professional</i>															
Lower managerial/professional	-.34	.13	.71**	.25	.13	.78	-.24	.13	.79	-.19	.13	.83	-.19	.13	.83
Intermediate	-.24	.16	.79	-.13	.16	.88	-.12	.16	.89	-.01	.16	.99	-.01	.16	.99
Working class	-.84	.18	.43***	-.67	.18	.51***	-.66	.18	.52***	-.56	.18	.57**	-.56	.18	.57**
<i>Ref: Parent with HE qualification</i>															
No parent with HE qualification	.57	.12	.57***	-.48	.12	.62***	-.45	.12	.64***	-.42	.12	.66**	-.43	.12	.65***
<i>Ref: Lowest attainment quintile</i>															
Low attainment quintile	.26	.2	1.3	.24	.2	1.27	.25	.2	1.28	.1	.2	1.11	.1	.2	1.1
Medium attainment quintile	.48	.18	1.61**	.43	.18	1.54*	.43	.18	1.54*	.05	.19	1.06	.05	.19	1.05
High attainment quintile	.57	.19	1.77**	.48	.19	1.62*	.44	.19	1.55*	-.17	.21	.84	-.14	.21	.87
Highest attainment quintile	.62	.19	1.86**	.54	.19	1.71*	.39	.19	1.48*	-.59	.24	.55*	-.46	.24	.55*
<i>Ref: State school</i>															
Independent school				.85	.13	2.35***	.83	.13	2.3***	.54	.14	1.72***	.56	.13	1.76***
<i>Ref: Area non-low participation rate</i>															
Area with low participation rate				-.26	.14	.78	-.25	.14	.78	-.16	.14	.86	-.17	.14	.85
<i>Ref: Social sciences and law</i>															
Medicine/veterinary medicine							1.02	.22	2.77***	.9	.22	2.46***			

	Model 1: Background and characteristics			Model 2: School type and home area			Model 3: Course entered			Model 4: Institution tariff level			Model 5: Field of study factors			
	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)	
Subjects allied to medicine							.38	.21	.146	.36	.22	1.43				
Sciences							.49	.15	1.63**	.43	.15	1.53**				
Engineering and technology							.43	.21	1.54*	.37	.21	1.45				
Arts							.75	.14	2.12***	.71	.14	2.04***				
Institution tariff										.01	.0	1.01***	.01	.0	1.01***	
Field of study employment level													.0	.01	1	
Field of study earnings													-.02	.03	.98	
Constant	-															
	2.9	.19	.06***	-3.03	.19	.05***	-3.45	.21	.03***	-5.49	.3	.0***	-4.78	.55	.01***	
<i>Nagelkerke R²</i>		0.04			0.06			0.07			0.1			0.09		

*** statistically significant at $p < .001$; ** statistically significant at $p < .01$; * statistically significant at $p < .05$; N = 9654.

Table A7. 35: Greater London domiciled entrants – regression model comparing cross-border movers to stayers within England

	Model 1: Background and characteristics			Model 2: School type and home area			Model 3: Course entered			Model 4: Institution tariff level			Model 5: Field of study factors		
	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)
<i>Ref: Female</i>															
Male	.02	.06	1.02	-.01	.06	.99	-.03	.06	.98	-.06	.06	.94	-.05	.06	.95
<i>Ref: Higher managerial/professional</i>															
Lower managerial/professional	-.11	.08	.89	-.03	.08	.97	-.02	.08	.98	.01	.08	1.01	.0	.8	1
Intermediate	-.34	.1	.71**	-.22	.1	.8*	-.22	.1	.81*	-.16	.1	.86	-.16	.1	.85
Working class	-.62	.12	.54***	-.45	.12	.64***	-.45	.12	.64***	-.33	.12	.72**	-.33	.12	.72**
<i>Ref: Parent with HE qualification</i>															
No parent with HE qualification	-.45	.09	.64***	-.34	.09	.71***	-.31	.09	.74**	-.24	.09	.79**	-.27	.09	.77**
<i>Ref: White</i>															
Black	-1.01	.1	.36***	-.86	.11	.42***	-.77	.11	.47***	-.69	.11	.5***	-.77	.11	.46***
Asian	-.78	.09	.46***	-.7	.09	.5***	-.65	.09	.53***	-.68	.09	.51***	-.71	.09	.49***
Mixed/Other ethnic group	-.44	.1	.65***	-.37	.1	.69***	-.35	.1	.71**	-.34	.1	.72**	-.35	.1	.71**
<i>Ref: Lowest attainment quintile</i>															
Low attainment quintile	.35	.11	1.42**	.33	.11	1.39**	.34	.11	1.41**	.12	.11	1.12	.1	.11	1.1
Medium attainment quintile	.16	.11	1.17	.09	.11	1.09	-.31	.09	.74**	-.45	.12	.64***	-.47	.12	.63***
High attainment quintile	.44	.11	1.54***	.28	.11	1.33**	.23	.11	1.26*	-.57	.13	.57***	-.56	.13	.57***
Highest attainment quintile	.51	.1	1.67***	.28	.11	1.33**	.16	.11	1.18	-.98	.15	.38***	-.92	.15	.4***
<i>Ref: State school</i>															
Independent school				.82	.07	2.27***	.82	.07	2.26***	.53	.08	1.7***	.52	.08	1.68***
<i>Ref: Social sciences and law</i>															
Medicine and veterinary							.91	.15	2.48***	.84	.15	2.32***			

	Model 1: Background and characteristics			Model 2: School type and home area			Model 3: Course entered			Model 4: Institution tariff level			Model 5: Field of study factors		
	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)
medicine															
Subjects allied to medicine							.06	.17	1.06	-.02	.17	.98			
Sciences							.57	.09	1.77***	.5	.09	1.65***			
Engineering and technology							.66	.12	1.93***	.58	.09	1.79***			
Arts							.66	.09	1.94***	.59	.09	1.8***			
Institution tariff										.01	.0	1.01***	.01	.0	1.01***
Field of study employment level													-.0	.01	1
Field of study earnings													.01	.2	1.01
Constant	-	.11	.04***	-3.38	.11	.03***	-3.81	.12	.02***	-5.51	.18	.0***	-5.04	.36	.01***
	3.12														
<i>Nagelkerke R²</i>		0.05		0.07			0.08			0.1			0.09		

*** statistically significant at p<.001; ** statistically significant at p<.01; * statistically significant at p<.05; N = 43146.

Table A7. 36: Percentage and number of entrants who were stayers within their home region or were movers to another English region or country of study, by characteristics, young full-time England-domiciled entrants 2012 (Column percentages within characteristics)

	Stayers (%)	Movers (%)	Stayers (N)	Movers (N)
Gender				
Female	55.4	53.1	57500	73945
Male	44.6	46.9	46245	65270
Social class				
Higher managerial and professional	18.1	28.7	18790	39995
Lower managerial and professional	27	31.8	28030	44325
Intermediate	22.3	19.2	23165	26680
Working class	32.5	20.3	33765	29220
Parental education				
Parent with HE qualification	43.7	60.7	45390	84450
No parent with HE qualification	56.3	39.3	58360	54775
Ethnicity				
White	69.4	78.7	71490	108925
Black Caribbean	1.7	1.5	1790	2045
Black African	4.2	4.8	4300	6605
Other Black Background	0.3	0.3	360	400
Asian Indian	5.5	4.3	5620	5935
Asian Pakistani	6.5	2	6705	2755
Asian Bangladeshi	2.9	0.6	2965	760
Chinese	0.9	1	980	1425
Other Asian Background	2.6	1.6	2725	2265
Mixed / Other	5.9	5.3	6085	7275
<i>All BME</i>	<i>30.6</i>	<i>21.3</i>	<i>31535</i>	<i>29460</i>
Attainment				
Highest quintile	13.8	24.7	14315	34320
High quintile	18.2	21.4	18930	29785
Medium quintile	21.8	20.7	22645	28830
Low quintile	20.8	16.8	21545	23335
Lowest quintile	25.4	16.5	26315	22950
Home area				
Not low participation area	84.3	90.9	86245	125480
Low participation area	15.7	9.1	16020	12500
School type				
State school	94.8	84.5	93250	114275
Independent school	5.2	15.5	5155	20925
Total	42.7	57.3	103750	139220

Table A7. 37: England-domiciled young full-time 2012 entrants - multinomial regression model comparing movers to another region and movers to another country to stayers within region

	Movers to other English region			Movers to other country		
	B	S.E.	Exp(B)	B	S.E.	Exp(B)
<i>Ref: Male</i>						
Female	-.07	.01	.94***	-.01	.02	.99
<i>Ref: Working class</i>						
Higher managerial and professional	.34	.02	1.4***	.36	.04	1.43***
Lower managerial and professional	.25	.01	1.29***	.28	.03	1.32***
Intermediate	.15	.01	1.16***	.16	.04	1.17***
<i>Ref: No parent with HE qualification</i>						
Parent with HE qualification	.26	.01	1.3***	.49	.03	1.64***
<i>Ref: White</i>						
Black	.35	.02	1.41***	-.88	.07	.41***
Indian	-.3	.02	.74***	-1.12	.07	.33***
Pakistani/ Bangladeshi	-1.06	.02	.35***	-2.47	.12	.08***
Chinese	-.07	.05	.93	-.64	.12	.53***
Other Asian background	-.42	.03	.66***	-1.07	.1	.34***
Mixed/Other	-.16	.02	.85***	-.63	.05	.53***
<i>Ref: Highest attainment quintile</i>						
Lowest attainment quintile	-.04	.02	.96*	.62	.05	1.86***
Low attainment quintile	-.01	.02	.99	.63	.04	1.87***
Medium attainment quintile	-.02	.02	.98	.43	.04	1.54***
High attainment quintile	-.04	.02	.98	.24	.03	1.27***
<i>Ref: Independent school</i>						
State school	-.56	.02	.57***	-.71	.03	.49***
<i>Ref: Low HE participation area</i>						
Non low HE participation area	.34	.01	1.41***	.32	.04	1.38***
<i>Ref: Arts</i>						

	Movers to other English region			Movers to other country		
	B	S.E.	Exp(B)	B	S.E.	Exp(B)
Medicine and veterinary medicine	-.08	.03	.93**	.15	.05	1.16**
Subjects allied to medicine	-.35	.02	.7***	-.73	.05	.48***
Sciences	-.31	.01	.74***	-.03	.03	.97
Engineering and technology	-.15	.02	.86***	-.33	.05	.72***
Social sciences and law	-.22	.01	.8***	-.6	.03	.55***
Institution tariff	.01	.0	1.01***	.01	.0	1.01***
Constant	-1.63	.08	.01***	-4.85	.16	0.22***
Nagelkerke R ²			0.15			

*** statistically significant at p<.001; ** statistically significant at p<.01; * statistically significant at p<.05; N stayers = 96349, N movers to other region = 121624, N movers to other country = 11143.

Table A7. 38: England-domiciled young full-time 2012 entrants - multinomial regression model comparing movers to Wales and movers to Scotland to stayers

	Movers to Wales			Movers to Scotland		
	B	S.E.	Exp(B)	B	S.E.	Exp(B)
<i>Ref: Male</i>						
Female	-.04	.02	.96	.22	.04	1.24***
<i>Ref: Working class</i>						
Higher managerial and professional	.16	.04	1.18***	.18	.08	1.2*
Lower managerial and professional	.18	.04	1.19***	.12	.07	1.13
Intermediate	.1	.04	1.1*	.1	.08	1.1
<i>Ref: No parent with HE qualification</i>						
Parent with HE qualification	.34	.03	1.4***	.37	.05	1.45***
<i>Ref: White</i>						
Black	-1.26	.08	.29***	-.69	.14	.5***
Indian	-.9	.08	.29***	-1.04	.13	.35***
Pakistani/ Bangladeshi	-2.29	.14	.1***	-1.42	.21	.24***
Chinese	-.76	.17	.47***	-.41	.18	.67*
Other Asian background	-.95	.12	.39***	-.59	.18	.55**
Mixed/Other	-.68	.06	.5***	-.3	.09	.74***
<i>Ref: Highest attainment quintile</i>						
Lowest attainment quintile	.83	.05	2.29***	-.1	.11	.91
Low attainment quintile	.83	.05	2.3***	.28	.09	1.32**
Medium attainment quintile	.67	.05	1.96***	.22	.06	1.24**
High attainment quintile	.44	.04	1.55***	.22	.05	1.24***
<i>Ref: Independent school</i>						
State school	-.03	.04	.97	-.58	.04	.56***
<i>Ref: Low HE participation area</i>						
Non low HE participation area	.18	.04	1.2***	.08	.08	1.09
<i>Ref: Arts</i>						
Medicine and veterinary medicine	.38	.06	1.46***	-.05	.07	.95

	Movers to Wales			Movers to Scotland		
	B	S.E.	Exp(B)	B	S.E.	Exp(B)
Subjects allied to medicine	-.26	.06	.77***	-1.05	.1	.35***
Sciences	.44	.03	1.55***	-.34	.05	.71***
Engineering and technology	-.03	.05	.97	-.62	.08	.54***
Social sciences and law	-.32	.03	.73***	-.68	.05	.51***
Institution tariff	.001	.0	1.001***	.01	.0	1.01***
Constant	-4.43	.11		-7.77	.17	
Nagelkerke R ²			0.09			

*** statistically significant at $p < .001$; ** statistically significant at $p < .01$; * statistically significant at $p < .05$; N stayers = 217973, N movers to Wales = 7724, N movers to Scotland = 3245.

Table A7. 39: Percentage of England-domiciled young full-time movers to Wales, Scotland and Northern Ireland, by characteristics (column percentages within characteristics)

	Welsh HEIs	Scottish HEIs	Northern Irish HEIs
Gender			
Female	50.2	57.9	57.6
Male	49.8	42.1	42.4
Social class			
Managerial and professional classes	61.7	72.8	70.2
Intermediate + Working class	38.3	27.2	29.8
Parental education			
Parent with HE qualification	63.2	76.2	
No parent with HE qualification	36.8	23.8	
Ethnicity			
White	89.7	88.4	
Black	2.4	1.8	
Asian	4.5	4.9	
Other	3.5	4.9	
<i>BME</i>	10.3	11.6	
Attainment quintile			
Low + Lowest	42.6	13.2	
Medium	23.1	16.2	
High + highest	34.2	70.6	54.9
Home area participation rate			
Not low participation area	90.5	94.5	
Low participation area	9.5	5.5	
School type			
State school	87.4	63.6	
Independent school	12.6	36.4	
Total (N)	8100	3395	185

- Welsh HEIs social class of entrants: Higher managerial and professional = 28.3%; lower managerial and professional = 33.3%.
- Scottish HEIs social class of entrants: Higher managerial and professional = 40.3%; lower managerial and professional = 32.6%.
- Data omitted for movers to Northern Ireland due to low counts of those with no parental HE, BME students, lower attainers, those from low participation areas, and those who went to independent school.

Table A7. 40: Percentage of England-domiciled and all UK-domiciled entrants at English HEIs by characteristics, young full-time entrants 2012 (Column percentages within characteristics)

	England domiciled	All UK domiciled
Gender		
Female	54.2	54.3
Male	45.8	45.7
Social class		
Higher managerial and professional	23.8	24
Lower managerial and professional	29.6	29.7
Intermediate	20.6	20.6
Working class	25.9	25.7
Parental education		
Parent with HE qualification	52.7	53.3
No parent with HE qualification	47.3	46.7
Ethnicity		
White	74	74.8
BME	26	25.2
Attainment quintile		
Highest attainment	20.5	20.4
High attainment	18.5	18.5
Medium attainment	21.2	21
Low attainment	20	19.9
Lowest attainment	19.9	20.1
School type		
State school	89.3	89.2
Independent school	10.7	10.8
Home area participation rate		
Low participation area	12.1	11.9
Non-low participation area	87.9	88.1
Total (N)	231290	241600

Table A7. 41: Percentage of Northern Ireland-domiciled and all UK-domiciled entrants at Northern Irish HEIs by characteristics, young full-time entrants 2012 (Column percentages within characteristics)

	NI-domiciled	All UK domiciled
Gender		
Female	55.1	55.2
Male	44.9	44.8
Social class		
Higher managerial and professional	14.6	15.2
Lower managerial and professional	29.5	29.6
Intermediate	29.6	29.2
Working class	26.3	26
Parental education		
Parent with HE qualification	58.9	59.4
No parent with HE qualification	41.1	40.6
Ethnicity		
White	98.4	98.1
BME	1.6	1.9
Attainment quintile		
Highest attainment	16.3	15.9
High attainment	20.5	20.2
Medium attainment	20.9	21.3
Low attainment	24.5	24.6
Lowest attainment	17.8	17.9
Home area participation rate		
Low participation area	6.7	6.6
Non-low participation area	93.3	93.4
Total (N)	7260	7460