Understanding the recruitment and selection of postgraduate researchers by English higher education institutions

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Information

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Contents

1 Executive summary

The Higher Education Funding Council for England (HEFCE) is undertaking a series of investigative projects to underpin efforts to ensure the continued success and sustainability of the UK's postgraduate higher education (HE) sector including postgraduate research. Knowledge of how postgraduate research students (PGRs) are recruited, selected and supported, and the contributions they make to the research base, is critical in understanding how the PGR market operates. In comparison with recruitment at undergraduate (UG) or taught postgraduate (PGT) level, relatively little attention has been given to how the PGR market operates or potential market interventions to optimise it.

This research aimed to enrich understanding of the transition to PGR study, in order to illuminate both how it works (attraction, selection and recruitment) and why institutions engage in it. The depiction of this complex and diverse landscape was principally explored through the perspectives of English higher education institutions (HEIs). The research chiefly looked at recruitment and selection at the institutional level, where most HEIs have at least some central processes. Inevitably, practice varies at local level, particularly by disciplinary area; for example, research proposals are typically required in the arts and humanities and social sciences, while most applications in the sciences tend to be to specific research projects.

Sixty institutions active in postgraduate research responded to an institutional survey, which sought a single response from each institution. A stratified sample of 11 institutions was selected for in-depth investigation to ground the research in actual practice. These case studies included engagement with staff at all levels including strategic and senior staff, academics and other staff with operational responsibility for recruitment and admissions, as well as with a range of academic supervisors and current PGRs to reflect some of the diversity of practice within institutions.

1.1 Motivations for PGR recruitment

All the institutions see PGRs as strategically important to their research capacity and outputs, and generally reference PGRs in institutional research strategies. As well as providing critical mass within research groups, they are seen as the engines of innovation, undertaking higher risk projects, but also instrumental in building international and inter-sectoral collaborations as well as delivering industry-funded research. Many institutions see them as integral to and supportive of the culture of being a university.

Over the longer term, institutions also see PGRs as important in contributing to institutional Research Excellence Framework (REF) performance and underpinning REF publications. Because of this, institutions particularly target PGR growth in areas of existing research excellence. In addition, institutions recognise the importance of PGRs as a potential pipeline of high-quality researchers for their future research capacity.

While many institutions make use of PGRs for teaching, this is seen as a subsidiary motivator for recruitment in comparison with their potential contribution to research. Similarly, although fee income is important for a few, most institutions recognise that the cost of providing PGR programmes is part of their investment in research activity.

1.2 Supply and demand for PGR

Almost all institutions are currently seeking at least some growth in their PGR numbers, although this is frequently not translated into formal quantitative targets. Growth is especially sought in international PGRs, although strategies for achieving it were not always clear, other than expressing an aspiration for the best possible talent. Institutions are confident that UK PGR programmes are currently internationally competitive. Some believe that this position is reinforced by the UK's world-leading professional development provision for PGRs and research staff. However, they recognise increasing competition as European PGR provision in English grows and also fear that the UK is perceived as less welcoming to international students due to current immigration policy and visa processes. This overall expectation that the international market will become more challenging is in tension with their individual aspirations for growth in international PGRs.

Almost all institutions also seek some growth in UK-domiciled PGR numbers, despite expecting reduced demand as the level of UG loans increases and there is less funding for PGT programmes. Overall, most institutions expect total PGR demand to fall, yet individually they maintain expectations for growth.

The introduction of the Research Councils' Centres of Doctoral Training (CDT) and Doctoral Training Partnerships (DTP) is impacting on the recruitment of PGRs. As well as increasing the concentration of PGRs within research-intensive institutions, the requirement for institutions to find associated administrative costs and matched funding is impacting on the availability of funds for institutional PGR scholarships and their flexibility to direct PGR recruitment according to institutional priorities.

Supply and demand is generally driven by the availability of funding, particularly for UK PGRs. Competition is strong for funded places and scholarships and expected to increase further as most institutions struggle to maintain their scholarship programmes, although a few institutions are investing in this area. Institutions expect constrained funding to lead to more variation in delivery mechanisms, such as blended learning, with the boundaries between full-time and part-time study becoming increasingly blurred. Institutions generally expect a reduction in self-funded PGRs. Although outside the scope of this project, several institutions mentioned professional doctorates as a possible growth area.

1.3 Marketing and recruitment

Institutions currently dedicate little resource to marketing their PGR programmes centrally, other than through web pages, a PGR prospectus, and advertising of funded opportunities and scholarships. Despite the challenges recognised, the prevailing strategy towards marketing PGR programmes is somewhat general, rather than targeted towards strategically important market segments, for example within the international market or in certain disciplines. The main exception to this is targeted effort towards their own UG and PGT

students. PGR marketing, particularly international, is sometimes ‘piggy-backed’ onto existing UG or PGT marketing efforts.

Institutions tend to be rather reactive and focus on areas of existing experience and strength, partly in the face of high numbers of applications from overseas, many of insufficient quality. They generally welcome recent bi-lateral country agreements between the UK and, for example, Brazil, but relatively few seem to have developed discrete partnership agreements at institutional level either in the UK or internationally specifically to develop PGR provision.

Institutions generally report no or few difficulties in getting sufficiently highly-qualified applications where there is funding in place. Alongside funding, institutions cite lack of supervisory capacity, laboratory facilities and general physical space as ongoing challenges, resulting in wasted effort handling applications for projects that they do not have the capacity to support. A few institutions also raised issues with insufficient English language standards for potential international PGRs. Some institutions mentioned strong competition for the most highly-qualified PGRs, losing out to quicker and more competitive offers from the US and Canada. There was little mention of competition from graduate recruiters from other employment sectors, despite institutions’ ambitions to recruit the highest possible calibre students.

There is increasing central coordination of some aspects of recruitment processes, with increased use of institutional Customer Relationship Management (CRM) systems for PGR recruitment, already widely used at UG and PGT level. Institutions are developing a better overview of demand and introducing targets for processing and responding to applications more quickly. One benefit is the potential market intelligence on the characteristics, demographics and interests of applicants, and conversion rates at each stage of the recruitment process.

PGR recruitment processes tend to be quite complex and in detail vary greatly amongst different institutions, disciplines and funding programmes. They range from programmes where multiple applicants compete for a known project in a funded programme, through to extended individual engagement with a potential supervisor prior to an application for a self-funded project. Responsibility is held in a wide variety of hands, from centralised processing through to decisions on individual suitability at faculty, departmental or supervisor level. Overall, institutions seem confident that current processes are effective.

1.4 Selection

Understanding institutions’ processes for selection needs to take into account the major variations in levels of competition between different funding streams. There is intense competition for places on some funded programmes and scholarship schemes. Interviews are widespread for international and UK applicants, but not universal, even within institutions that state they require interviews. The extent of training amongst academics charged with selecting and interviewing PGRs is variable, although notably higher in post-1992 institutions, whereas it appears to be near-ubiquitous amongst their recruitment/admissions colleagues, despite evidence to suggest that the latter appear only rarely to be involved in the interviewing process.

The most important factors in applicant selection are academic attainment, the strength of research ideas or proposal and evidence of prior research skills. Although not stated as a requirement by any institution investigated, success in a masters degree is increasingly being seen as the preferred evidence of research experience or aptitude. Integrated masters degrees are seen as more valuable than traditional UG degrees, in the disciplines for which they are available. Some institutions look in detail at attainment within specific project elements of prior study as a proxy for research aptitude. Several of these measures are driven by strategies to increase completion rates, on the basis that prior research experience or at least personal aptitude for research increases the chances of the recruit 'hitting the ground running' and lessens risk. On the other hand, there was little evidence for any assessment of other personal competencies which could contribute to a successful doctoral degree outcome.

The complexity and diversity of applicants and recruitment processes in institutions is such that applicants can have very different experiences. These range from straightforward application and subsequent timely offer, to a confusing, complex and frustrating process that requires significant resilience and perseverance from the applicant. These differences can be due to the separation of recruitment and funding applications in some programmes, but also, despite the increasing centralisation of applications, the individual nature of most PGR recruitment. Internal applicants, or those with good familiarity with the processes, are more likely to experience a smoother ride through the system. Applicants coming into the system cold are less likely to understand the requirements, or 'unwritten' rules, in applying for a PGR programme, raising questions about equality of access for all applicants.

Institutions are generally considering the issue of widening participation (WP) within PGR programmes, but are struggling to define what this means at PGR level, especially internationally, and how to translate this into institutional strategies and measures. A few institutions are undertaking pilot work across PGT and PGR programmes, but there is a current lack of data with which to assess the issue. There is currently a lack of knowledge as to whether HEIs are accessing the widest pool of talent in terms of PGR recruitment, as few institutions are recording sufficient demographic information at application stage, with the majority only doing so on admission of the PGR.

1.5 Monitoring existing practice and effectiveness

Institutions monitor application success rates (in terms of the ratio of applications to offers) and also their conversion rate of offers to acceptances. The former are highly subject to the context of the programme, with intense competition for funded programmes and scholarships. Higher proportions of UK and EU applicants tend to be successful than non-EU applicants, due in part to high numbers of poorly targeted, low-quality international applications.

Institutions' conversion rates are generally stable or rising slowly, which could be evidence that recruitment processes are improving in the face of perceptions of international competition.

Institutions' understanding of the provenance of their PGR applicants was investigated to shed light on the mobility of PGRs and the extent to which institutions target and recruit their existing students, both of which are factors when considering the 'width' of participation. Overall, roughly similar proportions of PGRs are recruited from within the institution and from other UK institutions. It is known from Higher Education Statistics Agency (HESA) data that around 60% of current PGRs are UK domiciles.

The proportion of PGR applicants that are 'returners to HE' (i.e. applying after a period spent away from university and/or in other employment, as opposed to those who progress immediately from UG or PGT study) varies between different types of institutions but also strongly with discipline.

The application and recruitment experiences of existing PGRs demonstrated some of the diversity of practice between different disciplines and PGR programmes, as well as in relation to applicant domicile, as much as differences between institutions. Experiences vary greatly, but included some applicants who had to demonstrate considerable personal resilience and commitment in order successfully to navigate long and complex processes of application and especially to secure funding. Obtaining deeper insights into such experiences would be beneficial and further work into this is recommended.

1.6 Future opportunities and support

A series of recommendations for possible support, activity or interventions for HEFCE to consider have been identified.

2 Background

2.1 The policy context

Postgraduate study is increasingly understood to be a key aspect of the higher education (HE) landscape in England and the UK, and in England there is a long-term strategic policy goal to increase the extent of postgraduate study (Department for Business, Innovation & Skills (BIS), 2009). The importance of postgraduate study, including postgraduate research in particular, has recently been highlighted by David Willetts MP (Minister of State for Universities and Science), BIS, Universities UK and HEFCE (BIS, 2011; Universities UK, 2013; HEFCE, 2013a, respectively), amongst others.

The postgraduate sector is not only important but thriving in the UK (BIS, 2010; Denicolo et al., 2010; Elsevier, 2013; HEFCE, 2013b), having experienced strong growth and gained an enviable international reputation. As Elsevier (2013) indicates, the UK is the fourth largest producer of PhDs in the world and over the last decade there has been growth in the number of new PhD graduates gaining their qualification within the UK, with a high degree of international mobility. The UK represents just 0.9% of the global population, but accounts for 3.2% of global research and development expenditure and 4.1% of researchers. It also accounts for 9.5% of downloads, 11.6% of citations and 15.9% of the world's most highly-cited journal articles recording the research undertaken.

Those undertaking postgraduate research programmes, referred to as postgraduate researchers (PGRs) in this report, are an important part of the UK's research base. At the same time, acquisition of doctoral degrees is a critical link in the skills supply chain for today's knowledge-intensive economy. It is therefore critical that the processes which encourage, select, recruit and develop talented people are effective and sustainable.

Postgraduate research is clearly an important element of the UK's HE system and much is funded currently through a 'dual support system'. Institutions receive some funding directly from the UK HE funding bodies (HEFCE in England) principally to provide supervision of PGRs, while a range of mechanisms exists for fees and stipends, including:

- the UK Research Councils, increasingly through doctoral training partnerships (DTP), Centres for Doctoral Training (CDT), industrial collaborations and associated studentships;
- other grant-awarding bodies, including charities, (e.g. the Wellcome Trust), foundations and government departments with substantial research interests;
- higher education institutions (HEIs) themselves, including scholarships and various university/industry collaborations;
- industry, including employer-sponsored programmes;
- international funding sources, including the EU and overseas governments;
- self-funding; and
- combinations of these types.

Many of these funders and funding schemes impose certain eligibility criteria for PGRs to participate, within which HEIs will work.

Superimposed on this range of funding models is the diversity of the postgraduate research community itself. Personal characteristics such as age, gender, ethnicity, country of origin and prior educational and work experience (together with their desired 'career trajectory') all impact to some extent on recruitment into research programmes and the role the PGR then takes within the research environment. This may result in different modes of study, such as those who combine part-time postgraduate research with other employment or activity. In all cases, the psychological contract created between institution and individual PGR will be an important aspect of the postgraduate research experience. Disciplinary differences are also very significant and in some cases relate to the diversity of the participating students.

In order to ensure the continued success and sustainability of postgraduate research in England, HEFCE is undertaking a programme of work to understand better how PGRs are recruited and supported and the contributions they make. It also wishes to ensure that the current funding system, including its own funding role, helps institutions to attract the best potential researchers into their research degree programmes and to optimise their contributions to current and future research.

One key issue is the initial attraction, engagement, recruitment and selection, and enrolment of individuals into research degree programmes. In comparison with the attention to recruitment and selection of undergraduates, there has been relatively little attention given to the approaches to recruitment and selection of PGRs adopted by HEIs, Research Councils or grant-awarding authorities, industry or other international funding sources. For these reasons, HEFCE has commissioned this research to improve its understanding of the recruitment and selection of PGRs by English HEIs.

2.2 Existing knowledge

A brief literature review was undertaken to support this project, focusing on existing research evidence on how PGRs are recruited and selected by HEIs, the policies and strategies which support and govern these activities and the approaches taken by individual HEIs and funding agencies to support the processes.

While there is a relatively rich evidence base on the recruitment and selection of UG students, this tends not to be transferable to doctoral level programmes, so is not considered in any detail here.

The published evidence base relating specifically to the attraction, recruitment and selection, and deployment of PGRs is limited. In particular there is little discussion that directly relates to the UK. Park (2007), Leonard and Metcalfe (2006) and Mellors-Bourne et al. (2012) have explored the motivations to undertake doctoral programmes, but otherwise relatively little work has been done on what motivates prospective PGRs.

It is also the case that little is known about how HEIs decide on the suitability of potential candidates. At a very basic level, HEFCE (2013a) notes that a masters degree is increasingly becoming an entry requirement for doctoral degree programmes in the UK, but

this is not an absolute or consistent requirement, not least because doctoral programmes (and those who undertake them) are extremely diverse.

Such considerations also raise the issue of what HEIs perceive the purpose of PGR study to be. Borrell-Damian (2009) has argued that many HEIs see the value of PGR programmes in developing collaborations with industry and businesses. However, this is clearly only one amongst a number of possible institutional motivators. The range of programmes and providers suggests that a range of motivating factors is likely to be present. However, such motivators are balanced by the institutional costs of providing PGR study, as it is also clear that teaching and supporting PGRs is resource-intensive and providing PGR programmes may represent a net overall 'cost' to HEIs (HEFCE, 2005).

Research in the US by Barnes and Randall (2012) suggests that much of the recruitment, selection and management of doctoral researchers takes place at the departmental and not the institutional level. Also in the US, Engle (2012) identified that there is little direction in recruitment of postgraduate students from the executive of the university. This was exacerbated by the decentralisation of recruitment – usually left to faculties or individual graduate school directors who delegated their responsibilities to staff, whose main role was teaching not recruitment – which led to inconsistent support and advice, inconsistent website information provision and inconsistent management of potential contacts. However, in the UK, Denicolo et al.'s (2010) research suggests that graduate schools have a high involvement with PGR admission and recruitment, with 78% of pre-1992 institutions indicating a high involvement compared with 45% for post-1992 institutions. The University of Manchester's PGR Review Group (2009) argued that there is a need for university-wide strategies for PGR marketing and recruitment and that each school should formulate a recruitment strategy consistent with the university's strategy, and also that this should involve close collaboration with the university's international office.

2.2.1 The supply of researchers in the UK

Park (2007) explored the main issues in the supply pipeline of researchers, which he identified as recruitment, funding, efficiency and cost-effectiveness, the status of researchers, and the growth of interdisciplinary and applied research. Specifically relating to recruitment and selection, he identified that HEIs and funders may face challenges to the supply chain of high-quality candidates, especially considering that undergraduate (UG) students are facing increasing debts which may in turn make the prospects of further study less attractive (Stuart et al., 2008; BIS, 2013; Universities UK, 2013).

The supply of high-quality candidates is not the only issue faced by universities in this field. There are also a number of systemic issues which may create challenges for the effective engagement of PGRs. Universities UK (2013) highlighted the complexity of funding PGR study, noting the range of different funding bodies that are involved (including HEFCE, the UK Research Councils and other grant-awarding bodies). Alongside the range of funded opportunities, there are also institutional scholarship schemes and an extensive market in self- and employer-funded PGR activity, which may be more akin to the wider HE marketplace. BIS (2010) estimated that around 30% of PGRs do not receive any support towards tuition fees or living costs. There is a danger that such complex arrangements

create a system that is opaque for potential PGRs and particularly for those individuals without family and social networks that can support engagement with PGR study (BIS, 2013). The combination of this systemic complexity with the higher debt levels of recent graduates raises a number of social equity issues that have led some to question whether a 'widening participation (WP) and access' agenda is needed in relation to PGR study.

However, any agenda to address inequalities around access for potential PGRs would need to begin by more clearly identifying the composition of the cohort in relation to the general population of HE graduates. Wakeling and Hampden-Thompson (2013) have highlighted that very little is understood about applicants to postgraduate research programmes. In particular, very little is known about demand, competition for places, or factors affecting success or relative popularity of different programmes. However, they indicated that pre-1992 universities, especially those which belong to the Russell Group, provide the majority of postgraduate study activity. This was also a finding of Denicolo et al. (2010). They also found that studying at a pre-1992 university, and in particular a Russell Group university, as an undergraduate makes a student more likely to progress to postgraduate research. Two out of five graduates stay with their first-degree institution for their higher degree. Zimdars (2007) has also highlighted that most of those undertaking postgraduate study at Oxford University were drawn from prestigious HEIs and few were from working class or ethnic minority backgrounds.

Wakeling and Kyriacou (2010) and Wakeling and Hampden-Thompson (2013) have explored these issues further, concluding that there is evidence of disparities in the recruitment of certain groups. They make the argument that it is possible to identify issues with representation at postgraduate level relating to gender, ethnicity and social class, although they did find that prior attainment appears paramount in entry to a research degree. More recently HEFCE (2013c) looked at the trends in postgraduate study and found for black and minority ethnic (BME) groups they were more likely than white students to transition to taught masters courses, but less likely to go on to PGR study. Recent research by BIS (2013) has also raised the issue of age with respect to PGRs. The demographics of the supply of PGRs is clearly an area where further research would be useful.

2.2.2 The supply of international researchers

Another issue identified by Park (2007) was the internationalisation and mobility of researchers including doctoral researchers. There is an increasingly international market for PGR study which has implications for UK HEIs in attracting international students and also retaining UK students. As BIS (2013) has highlighted, the strongest growth in PGR applications has recently been from international students. Universities UK (2013) also highlighted the growth in international HE students in the UK, noting that the most popular countries of origin at PGR level were China and the US. This research also highlighted the fact that the UK continues to be a popular destination for PGR study with international students. However, BIS (2013) also reveals important differentials in the recruitment rates of UK, EU and non-EU candidates. This raises potential research questions about why these different levels of recruitment occur and to what extent they are the result of different activities or policies by universities or funders.

The European University Association (2007), which includes representatives from a number of countries including the UK, highlighted that all countries in Europe should have the same conditions of access, recruitment and admission for international students as they do for their domestic students, other than conditions relating to language requirements. In all countries, it recommended that PGR study opportunities should be openly advertised on the institution's website and it also noted that some countries and some institutions were actively advertising opportunities internationally.

Engle (2012) highlighted that, for international students, US universities often use quite different recruitment processes and there is a need to better understand these differences, in particular the use of agents and any formal progression relationships with international institutions. Becker and Kolster (2012) reviewed international HE recruitment strategies and policies in 28 countries, and concluded that generally for successful international recruitment there was a need for a focused national recruitment strategy targeting international students. To increase the extent of international PGR recruitment, the report recommended that there should be more bi-lateral research collaborations supported by scholarships.

2.3 Existing guidance in this area

As we have shown, there appears to be little work that has specifically investigated PGR recruitment and selection in its own right. However, individual funding providers and agencies have produced guidelines for recruitment practice and most HEIs have guidance on their websites. For example, the Quality Assurance Agency for Higher Education (QAA) has produced two guides that highlight best practice in this area for HEIs, one as part of the QAA UK Quality Code for Higher Education, as Chapter B2: Recruitment, selection and admissions to higher education, (QAA, 2013), which is for all institutions admitting all levels of students. The second guide (QAA, 2012) looks at best practice in international recruitment but is not currently part of the QAA Quality Code.

The QAA UK Quality Code for Higher Education (2013) highlighted ten indicators of good practice in this area, based on the five Schwartz principles (Admissions to Higher Education Steering Group, 2004) which were developed for UG admissions, and states that a fair admissions system should:

- be transparent;
- enable higher education providers to select students who are able to complete the programme as judged by their achievements and their potential;
- strive to use assessment methods that are reliable and valid;
- seek to minimise barriers for applicants; and
- be professional in every respect and underpinned by appropriate organisational structures and processes.

The QAA guidance states that recruitment, selection and admissions should be informed by the strategic priorities of the university and with a shared understanding by all staff; they should be conducted in a fair and professional manner by authorised and competent staff and HEIs must have a process for handling appeals, which is fair and accessible and dealt

with efficiently in accordance with published timescales; HEIs must monitor and review to check they support the provider's mission and strategic objectives, and it must be made clear to prospective students that the HEI supports students in making informed decisions about higher study.

Specifically for recruitment into HEIs, they state that recruitment processes must assist students in making informed decisions about HE and must be underpinned by transparent entry requirements, both academic and non-academic. They should present no unnecessary barriers to prospective students and HEIs should determine how decisions are made and the reasons for those decisions should be recorded and conveyed to prospective students. Once students have been selected by HEIs, the guidance indicates a need to inform students of any significant changes to a programme promptly and the options available in the circumstances. HEIs should also give applicants sufficient information to transition from prospective student to current student.

For information provided for international students the QAA guidance (2012) states that HEIs should, in addition to the standard guidance, provide the following information to applicants:

- admissions processes and any variations for international students;
- visa requirements and procedures;
- entry requirements, including English language proficiency requirements;
- acceptance conditions, deposits required and refund policies;
- estimated cost of living, including accommodation costs;
- study costs (including tuition fees and other costs) and details of whether and how such costs may alter during the course of the programme;
- details of any scholarships and other financial assistance schemes programme details;
- an indication of student support services that are made available for international students; and
- information about employability including opportunities for work experience, volunteering and work placements in the UK.

The guide also indicates that institutions need to provide recruitment policies and procedures that are clearly signposted, accessible, and made available to potential applicants, their advisers, and third party agents. They also indicate that institutions should consider making available information about the responsibilities and obligations of applicants.

QAA Scotland (2012) has produced guidance for Scottish HEIs for recruiting international PGRs. They argue that in order to maintain buoyant recruitment of PGRs, a strategic approach will be required across each university. They make a number of suggestions for those marketing to and recruiting international students, including consideration of different modes of study, sponsorship conferences, summer schools and visits to institutions. They also suggest that institutions should provide accessible, targeted general support (academic and non-academic) for international PGRs and their families once they are accepted on the programme. Support should include pre-arrival and pre-registration information, details about language learning, and an induction.

Research Councils UK (RCUK) (2013) has published a Statement of Expectations for Doctoral Training which states that a 'robust process should be in place to attract and recruit outstanding quality applicants'. Each of the UK Research Councils produces guidelines and/or statements for funding which include recruitment and selection of PGRs. For example, the Economic and Social Research Council (ESRC) guidelines (2013) state for current Doctoral Training Centres (DTCs) that decision making should be fair and transparent in the recruitment of PGRs and in their on-going monitoring throughout the lifetime of an award; students must be selected and treated on the basis of their merits, abilities and potential and that selection must not be discriminatory. The Arts and Humanities Research Council (AHRC) (2010) guide makes similar statements and also links to the QAA guidelines (QAA, 2013). The AHRC also encourages institutions to be aware of legislation and guidance available both internally and externally, and to provide an effective support infrastructure for doctoral researchers with special needs. It explicitly recommends that all institutions should follow an open competition by national advertising of the studentships in the most appropriate place, e.g. national press, jobs.ac.uk etc. The guide also has similar advice for Block Grant Partnerships (BGP), Collaborative Doctoral Awards (CDA) and Project Studentships (PS). Other grant-awarding bodies also have clear admissions guidelines for doctoral researchers, for example the Wellcome Trust, which describes the purpose of the PhD programmes, the programmes available, eligibility, application process, deadlines for applications and key contacts for support and guidance.

There is evidence that some HEIs have responded to these QAA and Research Council guidelines. For example, The Open University (2013) 'Student Recruitment for Research Degrees Guidelines' make reference to the fact they were compiled in accordance with the QAA guidance, similarly the University of Durham states in its postgraduate admissions policy (University of Durham, 2012) that it complies with the university's strategic plan and the quality framework provided by the QAA.

The Schwartz principles for recruitment and selection of UG students (Admissions to Higher Education Steering Group, 2004) were adapted for relevance to doctoral students in the QAA Quality Code. A review of the impact of changes made by HEIs to their UG recruitment and selection after publication of the five Schwartz principles in 2004 is therefore significant (McCaig et al., 2008). The main findings of the review were that one third of HEIs reported that admissions had become more centralised as a result of the recommendations.

3 Methodology and approach

3.1 Research objectives and questions

This investigation of the 'landscape' of PGR recruitment and selection within English HEIs was designed principally from the perspective of the HEIs. To understand HEIs' approaches to PGR recruitment it was important to understand institutional motivations, and the perceived benefits and value of PGRs. It was also important to recognise that, with respect to recruitment and selection, HEIs might play a range of roles including as a recruiter, potentially vying with other employers who seek graduate talent, and as a service provider, selling a programme to prospective PGRs as consumers.

HEFCE has been developing better understanding of the postgraduate sector in the UK (HEFCE, 2013b) and how it may be responding to recent HE reforms, including work on transitions into postgraduate study (HEFCE, 2013c), the information needs of prospective postgraduate students (i-graduate, 2013; Mellors-Bourne et al., 2014) and potential market interventions to enhance the operation of the HE postgraduate system and HEIs' effectiveness within it. A key objective of this project was to provide some of the under-pinning knowledge for future similar work in relation to PGR study. In particular, it aimed to enrich understanding of transitions to PGR study, particularly looking at 'how it works' (recruitment, selection and support and development) and 'why institutions engage in it.'

Potential issues for investigation and questioning included a series of overarching issues:

- How does PGR recruitment fit within institutional strategic missions and what value does the HEI associate with PGR provision?
- Are HEIs accessing the widest pool of talent in terms of PGR recruitment?
- How could HEFCE, through funding or other mechanisms, increase the contribution of PGRs to research excellence? Are current funding models sustainable?

In relation to recruitment:

- How do HEIs go about attracting and recruiting PGRs? What are the different information and communication channels? Are there disciplinary differences? What policies are in place and how consistently are they applied?
- Do HEIs have targets for PGR recruitment, including WP strategies, international recruitment and disciplinary targets? What are the constraints?
- What are the trends in supply and demand for different types of PGR programmes?
- What barriers exist to PGR study? How will increased student debt impact on future recruitment into PGR programmes? What role do masters programmes play?

In relation to selection:

- What are the processes for assessing and selecting talent? Are there differences within institutions, e.g. for CDTs, between disciplines, for international or existing students within the HEI, for different funders?

- What are HEIs looking for during selection, in terms of candidate characteristics, prior education (including masters), experience and attributes?
- How confident are HEIs in the effectiveness of their selection processes to recruit the best candidates? What does good practice look like?
- What is the relationship between offers and acceptances? With whom do HEIs think they are competing in trying to attract and select talent?
- What are the barriers to converting the best applications to acceptances, e.g. funding availability, resources, supervision capacity/capability?

In relation to research capability:

- What do PGRs contribute to the research excellence and endeavour of an HEI?
- How do PGRs contribute to the wider activities and goals of the HEI, e.g. building external collaborations, teaching?
- Are the funding models and institutional growth strategies sustainable?

3.2 Primary research strategy and participation

The overall strategy adopted to obtain institutional perspectives on these questions was a survey of institutions, together with in-depth investigations in a selection of institutions, informed by the views of certain key stakeholders. This approach was designed chiefly to understand recruitment and selection at an institutional level, both strategically and operationally, but also to provide limited insight into how practice operates 'on the ground' locally and varies, for example by discipline.

3.2.1 Survey of institutions

We invited key senior staff at English HEIs offering PGR provision to respond to an online survey. A total of 123 institutions were invited to participate. The information sought aimed to capture strategic thinking as well as operational policies within the HEIs, encompassing the diversity of PGR provision, and knowledge of operational outcomes where available. Wider views were also invited in relation to trends over time, perceptions of future changes and the impact of certain sector developments.

The online survey included closed questions for quantitative analysis, as well as invitations for open-ended responses on many issues. The nature of the information sought was such that we aimed to gain a single, well-informed response from each institution, rather than multiple responses from different individuals with partial perspectives. The nature of the questionnaire necessitated many respondents seeking information from other colleagues, which they then collated into a single institutional response. The effort that would be required to complete the questionnaire was recognised in invitations to the survey, although this was expected to be offset by institutions' interest in the outcomes of the research.

Sixty institutional responses were received to the online survey, which was almost exactly half of all English HEIs active in PGR provision. When considered by mission group or other university group affiliation, 13 were Russell Group HEIs (out of 20 current English members),

32 were post-1992 institutions and 15 were other ('pre-1992') institutions. Of the 32 post-1992 institutions, 8 were University Alliance members, 8 Million+ members and 8 were GuildHE members (almost all of which were in the Crest consortium). A list of all participating institutions is given in Appendix 1.

Based on institutions' reporting to the Higher Education Statistics Agency (HESA) of numbers of 2012/13 postgraduate research degree qualifiers, these 60 institutions comprise around 67% of the population of active PGRs in England. Responses were made on behalf of their institutions by:

- 9 pro-vice chancellors (mainly but not exclusively for research);
- 22 directors, deans or other academic leads for research;
- 19 directors or heads of graduate school; and
- a variety of other staff managing or supporting research degree programmes.

3.2.2 In-depth investigations

In addition to the survey-based research, visits were made to a stratified sample of HEIs to conduct detailed, qualitative research. It was recognised that single institutional responses to the survey, although useful in obtaining institutional level information, would not reveal the true diversity of practice within institutions. Potential institutions for in-depth investigation were selected on the basis of several key characteristics of HEIs involved in PGR study provision. These included the type or 'mission' of institution (including its 'research intensiveness'), its role ('generalist' or specialist in terms of postgraduate research or a specific disciplinary focus), mode of study, and its PGR composition (UK vs. international).

Even with this relatively small number of variables, it would be impossible to represent all potential combinations, so the sample was designed to reflect different combinations of these characteristics and was purposive in nature. Eleven institutions were visited for in-depth research work (of which nine had also completed the survey), making a total of 62 institutions participating in the project (listed in Appendix 1).

Semi-structured, face-to-face interviews were carried out in each of the 11 institutions, with the pro-vice chancellor responsible for PGRs and/or director of research, several faculty-based academic leads for research and, in most cases, the central recruitment or admissions manager. Where certain key individuals could not be present for interview during our visits, telephone interviews were used instead.

Short interviews or focus groups were carried out in institutions with academic supervisors and, separately, a range of current doctoral students (comprising in total almost 40 supervisors and over 50 current PGRs). Within each of these groups we sought participation from different disciplines and PGR domiciles, to incorporate some understanding of the diverse range of practice extant and experienced on the ground and in different disciplines.

Some short 'vignettes' (or descriptions) of what we considered to be good, interesting or innovative practice have been included for illustration. A number of interviews and group discussions were also conducted with selected stakeholders, at which views on key strategic

issues were invited. Where these add to the results and findings from the survey and in-depth institutional visits, those insights have been included.

4 Institutional strategies and postgraduate researchers

4.1 PGRs in institutional research strategies

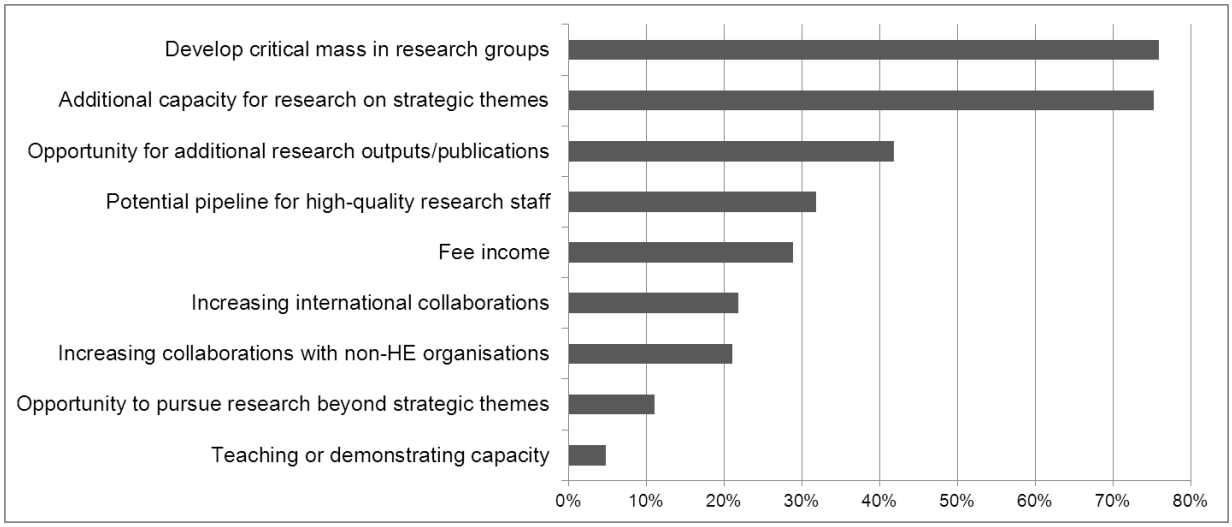
4.1.1 Rationales for recruiting PGRs

Institutions were invited to identify and rank their five most important reasons for recruiting PGRs from the list of options offered. These were scored numerically ('5' for most important, down to '1' for their fifth most important); Figure 1 illustrates the popularity of each option as a percentage of the maximum possible score (i.e. had all institutions rated it most important).

The most important reasons reported by the vast majority of institutions participating in the survey for recruiting PGRs were to develop critical mass in research groups and to increase their capacity for research on strategic themes. All but one of the HEIs responding to this question reported at least one of these two rationales within its top two most important reasons. The third most popularly identified important reason was the opportunity PGRs offered for additional research outputs. All these three top rationales could be seen directly to relate to maximising research outputs and/or potential assessment within the Research Excellence Framework (REF).

The relationship between PGRs and the REF was reinforced in the institutional interviews, where many institutions mentioned the importance of PGRs in supporting their institutional REF performance. Examples include a post-1992 institution that, after reviewing its REF submissions, has targeted its current PGR scholarships in disciplinary areas that it identified as strong and wanted to improve further. A Russell Group institution consistently mentioned the contributions of PGRs to the REF, having analysed its REF-submitted papers and found that a surprisingly high proportion had PGRs as first authors (approximately 40% overall and considerably higher in science, technology, engineering and mathematics (STEM) subjects). On the other hand, a PGR interviewed at a Russell Group institution thought that PGRs were doing more teaching in order to free up academics to do more 'REF-submittable' research.

Figure 1 Most important reasons for responding institutions to recruit PGRs (ranking five most important, n=54)

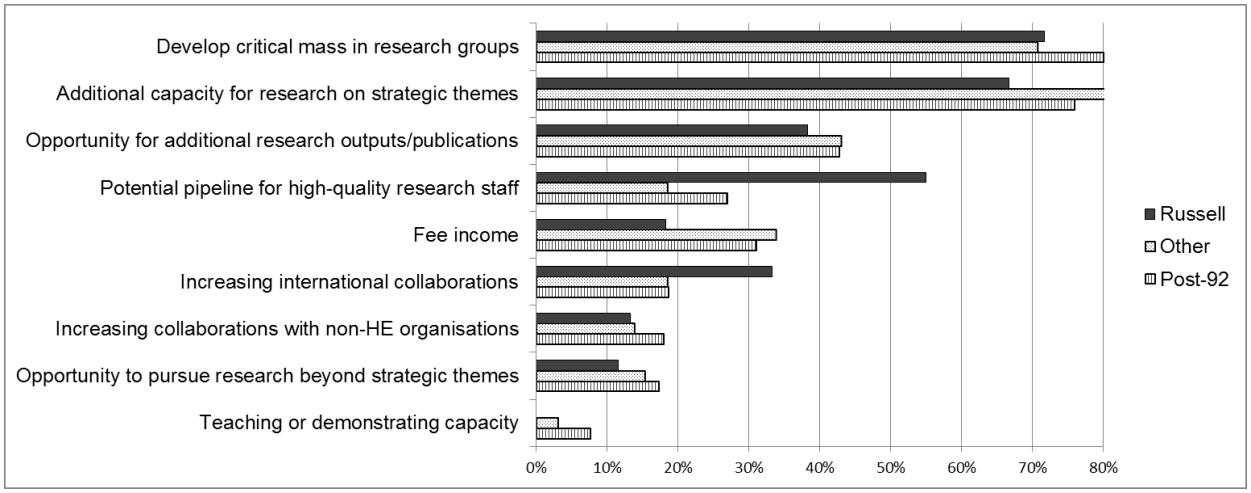


Nine institutions responding to the survey highlighted the role of postgraduate research as a pipeline for high-quality research staff as one of their two most important reasons. Although eight institutions cited fee income in their top two reasons, in the interviews most institutions recognised that overall there was a cost to providing PGR programmes, which they saw as part of their investment in research activity. Seven of the responding institutions placed the capacity of PGRs to undertake teaching or demonstrating within their most important reasons, but within other responses and interviews it seemed that the majority of institutions saw this as a subsidiary benefit and not a major driver for PGR recruitment.

Other reasons cited by respondents (beyond the options offered) to be of equivalent importance related to their institution's inherent commitment to research within their mission or to the reputation of their institution. Three institutions reasoned that PGRs demonstrated and/or enhanced their reputation as a research-active university and three others that PGRs added to the development of a research culture. One Russell Group institution saw the most important reason to be its contribution to training future generations of researchers more generally.

The institutional interviews generally supported these rationales. One institution mentioned its commitment to 'growing our own', i.e. supporting a flow of local graduates, particularly at masters level, through doctoral study and into its own academic workforce. Another theme that came through fairly strongly in the interviews was the value of PGRs in creating and supporting collaborations. Interdisciplinary, international and inter-sectoral collaborations were all mentioned as being easier to facilitate through PGR research projects, with the potential that this could lead to more substantial collaborations with international institutions and businesses.

Figure 2 Most important reasons for responding institutions to recruit PGRs (ranking 5 most important), by university affiliation



PGRs were also seen as vehicles for innovation, providing opportunities to explore more speculative research topics and push research boundaries, at lower risk and cost than using more experienced, expensive researchers. One academic felt that the need to produce REF-submittable research was generally making academics more risk-adverse in their choice of research topics, whereas PGRs could work on higher-risk projects (although projects still had to be 'achievable' with the doctoral timescale). A large industrial funder highlighted the innovative value of PGRs in exploring speculative research topics. The importance to industry of being able to conduct research relatively inexpensively through doctorates (i.e. investing more directly in the research rather than in the researcher) was also mentioned as a benefit of PGR capacity.

In Figure 2, these results are shown by university affiliation. This demonstrates that the relative ranking of rationales was generally similar between different 'types' of institution, although more post-1992 institutions cited current research capacity as being of topmost importance, while a considerably higher proportion of Russell Group institutions were interested in PGRs as part of the pipeline of future high-quality research staff. More of the Russell Group institutions also saw the benefit of PGRs in terms of increased international collaboration, which for them was more important than fee income.

4.1.2 Institutional strategies and PGRs

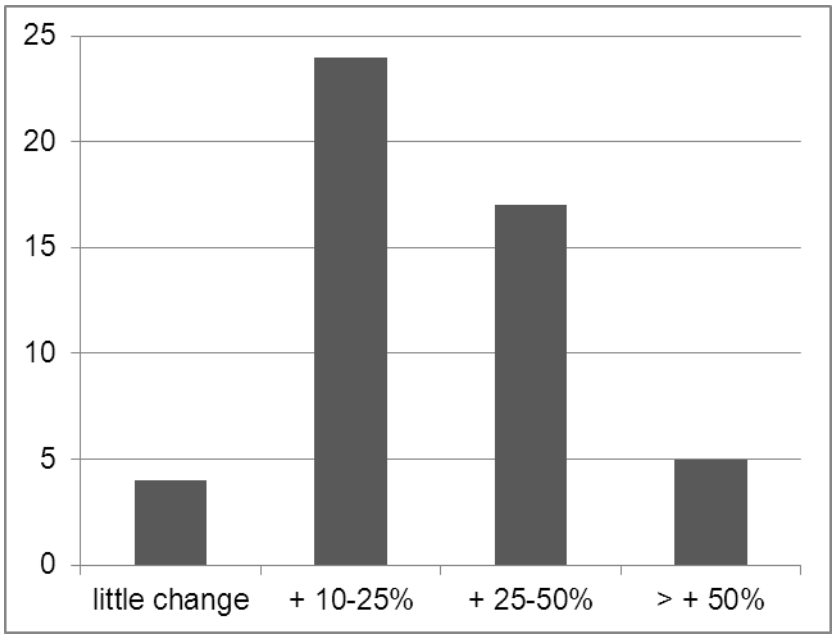
Of the 60 responding institutions, 51 reported that their institutional strategic priorities included an explicit strategy in relation to PGRs, while eight did not (and one was under review). Around half of these included references to strategic growth in the number of PGRs on their research degree programmes. A quarter of the institutions explicitly sought to improve the student experience for their PGRs. Other common themes mentioned by smaller numbers were a desire to increase the number of academic supervisors and research-active staff and also to improve the quality of their research activity (potentially contributing to future improvements in REF performance). A third group of small institutions was seeking to achieve Research Degree Awarding Power (RDAP) status. Five institutions explicitly mentioned their aspirations to provide excellent support to PGRs, including career development.

Most of the respondents (44) believed that within their institutional strategies there was an institutional-level strategy or plan which related specifically to recruitment of PGRs. However, these seemed to focus more on their aspirations for growth rather than specific strategies as to how they would achieve this. Within those that did specify strategies for development, two or three institutions mentioned potential increases in the number of scholarships or fee waivers they offered and a few more generally sought to improve efficacy of recruitment, while three other institutions stated that more specific plans were under development. Other strategic issues mentioned by individual institutions were development of an institutional DTC, opening a graduate school and a focus on 'growing their own' PGRs, as well as aspirations to develop greater diversity in PGR funding.

4.2 Aspirations for growth

Fifty of the responding institutions indicated the extent of percentage change they were seeking in the number of their PGRs in the next five years. As shown in Figure 3, most were seeking significant growth over that period, with 24 institutions (i.e. almost half) seeking 10-25% growth in their PGR numbers and a further 17 seeking 25-50% growth over the next five years. Five institutions wished to grow their numbers by over 50% within five years. Taken together, these aspirations would equate to an average overall extent of growth of PGR provision in English HEIs of around 5% per year.

Figure 3 Institutional respondents' views of the change in their PGR numbers that they are seeking over the next five years (n=50)



The most ambitious growth aspirations were expressed by post-1992 institutions, of which half sought growth of over 25% over five years, while none of the Russell Group institutions

and only one in five of the other (pre-1992) institutions sought growth of this magnitude. This is consistent with findings in the institutional interviews, where post-1992 institutions were most likely to be aiming to increase PGRs numbers to underpin their aspirations to increase their research capacity.

A few institutions interviewed described 'pausing' their drive to increase PGR numbers to review their strategy, prompted in one case by funding tensions between PGR, masters and capital expenditure on research infrastructure, while another was due to concerns over previous growth which had resulted in reduced completion rates. A number of Russell Group institutions compared their PGR numbers with those in other Russell Group institutions, and also the ratio of UG numbers to PGRs they believed was 'expected' for a research-intensive institution. One institution reported that it thought its balance was not right and was looking at increasing its PGR numbers. However, within the interviews, the overall message was that growth in PGR numbers was seen as desirable but was primarily constrained by access to funding, particularly for UK-domiciled PGRs.

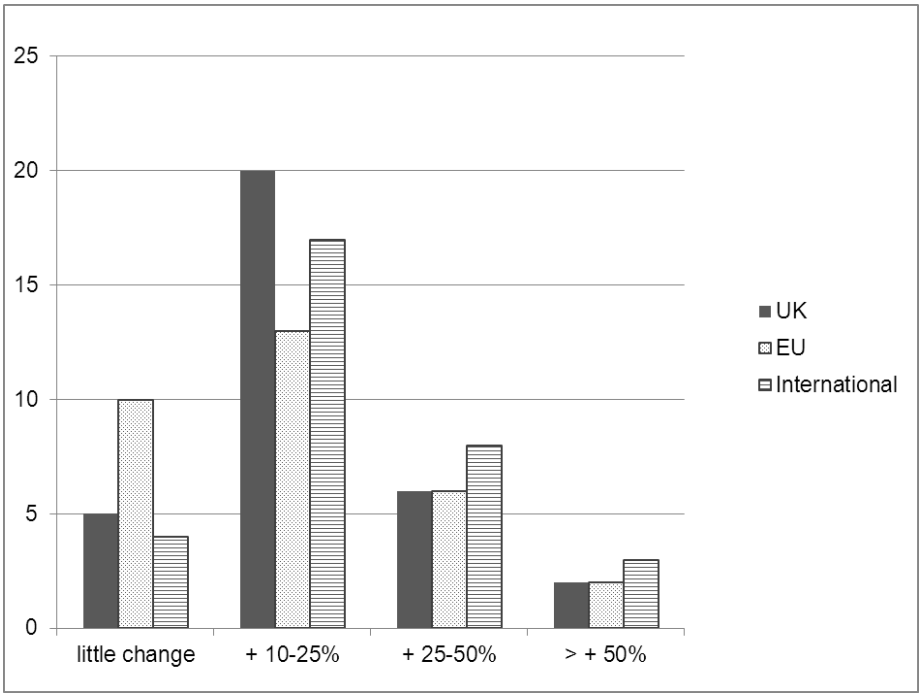
4.3 Strategic targeting

From the results obtained, it is clear that most institutions are seeking to grow their PGR numbers to at least some extent, and some ambitiously. It was felt important to ascertain the extent to which they were targeting different types of PGR within those recruitment strategies. Such targeting could potentially be on the basis of different disciplines of research study, different international domiciles or other demographic characteristics of PGRs, or within different types of doctoral training programme or funding stream.

Respondents were invited to state their targeted percentage change in their PGR numbers within different domiciles (UK, other EU and other international). Only 32 respondents were willing and/or able to specify the change they sought with this level of detail. Those results are shown in Figure 4. The restricted sample size should be borne in mind but the overall balance of results suggests a trend where institutions anticipating greater growth would expect relatively more of it to be in international PGR numbers. Viewed overall, the expectation was for the strongest growth in PGR numbers to be from outside the EU, but also significant growth from within the UK, and the least growth from countries in the European Union.

The rationale for institutions to anticipate differential growth from different regions of the world to some extent related to their current targeting of recruitment effort, described in the next section. Broader 'strategic' reasons were not widely articulated in the survey responses or interviews.

Figure 4 Respondents' views of extent of change sought in their PGR numbers, by domicile of PGR (n=32)



4.3.1 International targeting

Respondents were asked whether they targeted PGRs of certain international domiciles and, if they did, which were the five most important countries they were targeting. The majority (42) reported that they did not target specific international domiciles, and this was the case for all but four of the post-1992 institutions. Somewhat higher proportions (nearly half) of the Russell Group institutions and other pre-1992 institutions reported some specific international focus, although several suggested that this was secondary to their most important strategy which was to target high-quality applicants. It was also clear that in several cases that they were reporting their existing strong markets, rather than areas they had necessarily identified as having potential for future growth.

Of the countries identified, China and Saudi Arabia were the most commonly mentioned (these were the only two countries identified by more than five universities), followed by Iraq, Nigeria, Malaysia, Indonesia, India and the US.

A number of respondents mentioned the existence of particular funding schemes or opportunities in certain countries or regions, and it was this that they were particularly targeting. Others indicated that due to resource constraints they were only able to target countries in which they already had strong collaborations or numbers of current PGRs. Only one respondent indicated that their institution had a specific country target list, but that it was considered strategically important and therefore confidential. Several of the institutions interviewed mentioned linking into international bi-lateral research agreements, particularly with government scholarships, for example Brazil. Targeting by country could also vary by discipline; one institution mentioned the spill-over effect of existing international PGRs or alumni positively influencing the decisions of prospective researchers, such that clusters of particular nationalities developed in certain disciplines/research groups.

However, overall, the impression gained from these results was that most institutions were not currently focusing recruitment efforts towards specific target international markets at country level, despite their aspirations to grow their international PGR numbers. The most common, somewhat reactive, strategy could be encapsulated by one comment: "*International students are welcome from across the world.*"

University of Nottingham

Nottingham has strategically invested in international campuses (in Malaysia and China) and has over 300 PGRs on those sites, who are jointly supervised by local and UK staff.

Part of its rationale is to build student numbers at UG level abroad as a potential 'feeder' mechanism for high-quality PGR applicants, who would ultimately undertake PGR programmes based either in the UK or on the international campuses. It is thought that the local partnerships developed will also contribute to enhancement of Nottingham's overall international research profile.

University of Cambridge

Interviewees at Cambridge suggested that the university's global reputation meant that it received huge numbers of expressions of interest in research, and consequently did not undertake proactive marketing of PGR opportunities. The university funds half of all its postgraduates already but nonetheless is engaged in plans to develop new scholarship schemes to widen its support for the highest calibre potential researchers, irrespective of their background. It is setting up a pool of funded masters scholarships, potentially with some WP criteria, specifically with the intention of this being a pathway to PGR study.

Cambridge already benefits through overseas PGRs who are funded through the Gates Scholarships scheme and aspires to develop a UK equivalent too. It hopes that this will be a focus for the university's next fundraising drive.

4.3.2 By research discipline

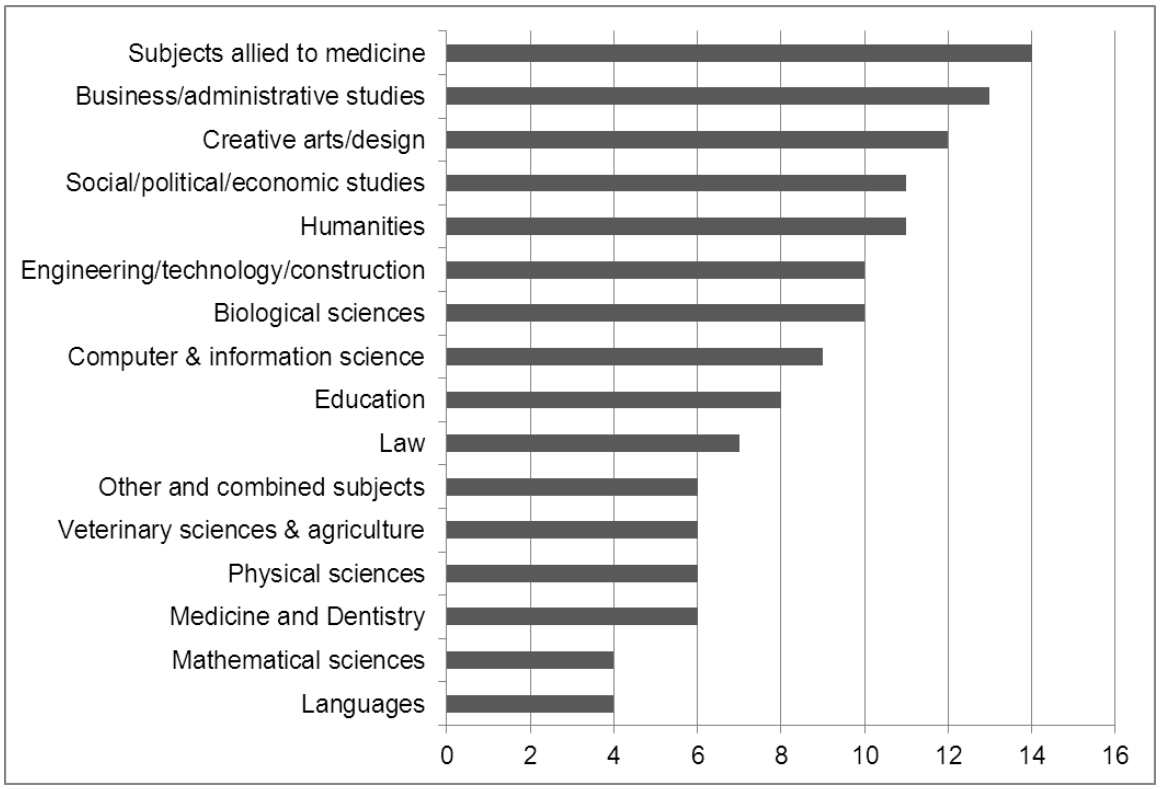
Half of all the responding institutions (30) reported that they did not target particular research disciplines within their PGR recruitment, and this was the case for all but three of the Russell Group institutions. The institutions that did undertake some strategic targeting by subject were invited to identify up to five broad research disciplines they were targeting for PGR recruitment, using a simplified categorisation of disciplines. The most commonly cited disciplines (by over 10 institutions) were subjects allied to medicine, business, creative arts and design, social/political/economic studies, the humanities, biological sciences and

engineering/technology (Figure 5). The least commonly selected research disciplines (by four institutions) were mathematical sciences and languages, followed by medicine and physical sciences. Every subject in the categorisation was selected as a target area by at least four institutions.

Although some of this apparent targeting by subject was directly related to the inclusion in the sample of specialist institutions, analysis showed that this did not account for all of the targeting reported, so some institutions were reporting genuine strategic selection of the subjects in which they wished to recruit PGRs. However, this was definitely a minority view and there was little evidence nationally of this type of targeting. Several institutions commented that they did utilise some degree of subject-based targeting, but it was simply related to the disciplines in which they had their core faculties and had existing strength.

Most of the institutions interviewed had not set quantitative targets for particular research disciplines, although several institutions reported that they did set annual recruitment targets by broad disciplinary area/faculty.

Figure 5 Institutional respondents' most important broad research disciplines in which they targeted PGR recruitment (n=30; up to five choices permitted)



4.3.3 Widening participation

The question was posed as to whether responding institutions were strategically targeting certain types of PGR in terms of WP, and if so in what way they were interpreting 'widening'. The vast majority of respondents (48) simply indicated that they were not, although four of these institutions reported that they were actively considering what WP meant at PGR level and whether they should attempt to adjust their recruitment to pursue it.

Of the 12 institutions which reported that they did target PGRs in this way, five of them articulated this as their offer of part-time programmes, through which adults in employment could participate who would not be able to undertake full-time programmes. Several of the other institutions reporting a deliberate strategy for WP were targeting first degree or masters students in their own institution who were known to be from less privileged backgrounds and had entered the institution through established WP programmes. Two Russell Group institutions reported that they had obtained funding through HEFCE's pilot Postgraduate Support Scheme specifically to support UK/EU applicants from under-represented groups to progress to postgraduate taught (PGT) courses and potentially onwards to PGR, while two others were also specifically putting support into PGT provision in order to affect wider progression to PGR study.

Within the institutions interviewed, there was generally an interest in exploring how WP could be defined for entry into PGR, many commenting that this could usefully be explored on a national level by HEFCE. One institution was looking at household income as a potential WP measure, while another had ambitious targets to recruit more women into STEM disciplines where they have traditionally been a minority. The issue of what WP means internationally was also raised; what does a 'WP participant' from China look like? One institution was considering defining WP for PGRs on a global scale, and diverting funding into masters scholarships to support the supply into research degrees.

A related perspective obtained from current PGRs at one post-1992 institution was that one of the reasons they had chosen to study there was the extent of remunerated work opportunities available within the institution. This had been important to them as they needed to be able to offset their relatively challenged financial positions.

Brunel University

As a university with a strong provision in STEM disciplines, Brunel has won funding to attempt to increase the gender diversity within certain subject areas through its recruitment activities and targeted support for women commencing postgraduate study in these disciplines. Staff in the university are well aware of WP issues and understand how personal circumstances and constraints may impact on prospective PGRs contemplating and undertaking doctoral research.

University of the Arts, London

The University of the Arts was actively considering how to define WP on an international and global scale. It was in the process of exploring how potential studentships (e.g. Commonwealth or similar) could be used to support students from developing areas. Along with several other institutions interviewed, University of the Arts considered that ensuring 'wide' participation in PGT study was critical as a key pathway to PGR study, and so was endeavouring to put funding into masters scholarships. Just after the interviews, the university announced 250 masters scholarships, demonstrating its investment in this area.

4.3.4 Targeting different doctoral programmes and structures

There was more evidence that some institutions were strategically targeting their recruitment of PGRs in terms of funding streams. Although around half of all respondents stated that they did not target PGR recruitment on this basis, these were almost all post-1992 institutions. Most of the other institutions did seek to target PGRs within certain programme, training or funding structures. Around 20 institutions indicated that their highest priority was to recruit PGRs into CDTs or DTPs.

When questioned directly on the impact of this type of structure, some respondents reported that it had a positive impact on recruitment and especially on their institution's efforts in

marketing and recruitment. As one respondent put it: "*Where the university has DTC activity, targeted marketing activity follows.*" However, others reported both positive and negative impacts, as it could take effort, resources and support away from other programmes and priorities. A stakeholder group expressed the view that institutional scholarships would decrease as that type of funding might be diverted to provide the matched funding and administrative costs required within a CDT/DTP programme. This was reinforced by several of the institutions interviewed reporting that the cost of providing matched funding was being offset by providing fewer institutional scholarships. It was noted that several institutions, especially those with collaborative programmes, were currently working on integrating recruitment for CDT/DTP activity within their institutional recruitment processes and regulations.

Generally, where an institution has funded PGR places, through institutional or external funding, these are specifically promoted using a variety of methods including both online and print media.

A few institutions cited other doctoral programmes for which they were targeting PGR recruitment, including other forms of collaborative provision and a small number of EU funding programmes. Outside the Russell Group institutions, professional and practice doctorates were highlighted as an existing or growing priority by 10 institutions[1].

4.4 Perceptions of the wider market and its challenges

Respondents to the survey were invited to share thoughts on how they perceived the market for PGRs would change over the next three to five years, in terms of supply or demand, or other changes, which underpinned the strategic thinking of their university. The three issues most commonly raised were:

- the anticipated impact from recent changes to the funding of UK undergraduates and PGT programmes;
- the impact of growing international competition but also perceptions of the UK as a less-welcoming destination for international students; and
- the impact of changes to the structures of doctoral training, including CDT/DTPs.

4.4.1 Impact of changes to the UK HE funding regime

The issue raised by the largest number of respondents was their expectation that demand from UK students to undertake PGR study would decrease in future, as a result of the new levels of 'debt' carried by current students undertaking first degrees and decreases in availability of funding for PGT study. Over 40 respondents (i.e. two thirds) explicitly expected that they would see some decrease in demand for PGR study from UK students, and this was reinforced in the institutional interviews. This view is clearly in tension with the stated

[1] Professional or practice doctorates were outside the scope of this project, so were not investigated in depth.

aspirations of almost all institutions to grow their UK PGR numbers to some degree over the next five years.

Most of these respondents anticipated that UG student debt would in future reduce the number of UK graduates who were likely to seek to pursue PGR study unless it was on a fully-funded basis (and they did not expect a rise in PGR funding). A few anticipated that an impact would be to shift the shape of the PGR market, with more graduates delaying their pursuit of PGR programmes until later career stages, which could result in greater demand for professional doctorate programmes. However, some felt that this would not be the case, suggesting that debt-laden adults were more likely to invest in their children's education rather than their own research aspirations, which could mean an overall decrease in demand rather than a shift.

Several institutions expected the lack of funding to create greater variation in delivery mechanisms, such as blended learning, with the boundaries between full-time and part-time study becoming more blurred. Institutions also generally expected a reduction in self-funded PGRs. Several respondents expected that there would be a stronger negative impact on PGR study in the arts and humanities, and less impact and more resilience in the STEM disciplines where there is a higher proportion of funded PGR programmes. This view was generally reflected in the interviews; however, one interviewee questioned the drive to increase PGR numbers anyway, particularly in the social sciences, arts and humanities, when there was no evidence of increased demand from academia or businesses.

A significant number of respondents, particularly but not exclusively from Russell Group institutions, were more worried about the impact of more constrained funding in the UK for PGT programmes, which they saw as a key enabling pathway for PGR study ("*PGT is the doorway to PGR*"). They assumed that the funding changes would result in fewer graduates qualified at masters level through PGT programmes from whom they could recruit high-quality entrants to PGR study. There was some suggestion that disciplines where integrated masters programmes were proportionally more common would be impacted less than others.

One of the stakeholders consulted expressed concern that the loss of focused PGT programmes prior to PGR study could reduce the potential competitiveness of UK postgraduate provision against other countries' where programmes were longer, unless there was a more significant taught element within PGR programmes.

4.4.2 International competitiveness

Almost all the respondents felt that the UK's doctoral programmes were currently competitive internationally, many suggesting that current strong demand from international students provided evidence for this position. A small number felt that the position was less strong in relation to part-time programmes or professional doctorates. Several respondents felt the relatively short duration of UK full-time programmes was an asset, although one felt that this was seen as a weakness internationally. Several others felt that the UK's position in relation to developing transferable skills during PGR training was world-leading and contributed to competitiveness.

Almost a third of respondents expected that there would be a future decrease in demand for UK PGR programmes from prospective international PGRs (i.e. those from outside the EU). They felt this was principally for two, potentially linked, reasons: an increase in the number of universities in other countries which were developing more attractive and high-quality provision delivered in English, and a reduction in the attractiveness of the UK as a study location. Several expressed concerns about how they could raise their visibility in the international market. Over half the respondents highlighted perceptions abroad that recent changes to the UK visa and immigration regime were making the UK a less attractive destination. This was echoed in the institutional interviews where every institution mentioned the potential impact of the negative publicity around the UK visa requirements, if not the practice: *"[the] underlying anxiety is that the UK is an unwelcoming place*".

Again, the widespread perceptions of a future decrease in the overall international market for PGRs was in clear tension with aspirations for international growth stated by the majority of individual institutions. At the same time, many respondents saw a continuing challenge in terms of the availability of funding for international PGRs.

4.4.3 Impact of changes to the structure of PGR training

The other commonly cited issue within the UK PGR system was the perceived impact of the growth of CDT/DTP activity, which a quarter of all respondents mentioned. Almost all of them felt that this would lead to further concentration of PGRs into research-intensive institutions, but analysis of these responses revealed a divide within them. Those in post-1992 institutions saw CDT/DTP activity as a clear threat. On the other hand, those in the Russell Group and some other pre-1992 universities who mentioned CDT/DTPs felt it added to their recruitment and made them more competitive. However, some of these institutions also raised issues in relation to their impact, including the requirement to find matched funding and administration costs.

In the interviews, several institutions mentioned that they were currently working through the complex mechanisms of recruiting into DTPs which spanned multiple institutions which had different processes and regulations. A few institutions highlighted that the requirement for matched funding in the CDT/DTPs was restricting the availability of QR (HEFCE 'Quality-related') funding for institutional scholarships and, therefore, the flexibility of the institution to direct PGR funding and resources towards institutional research priorities. A recent report by Universities UK has also observed that the match-funding requirement within DTP participation represents a significant financial risk to institutions and failure to secure additional funding could impact on their ability to support future research activity (Universities UK, 2014).

Linked to the expected effect of concentration of PGRs in research-intensive institutions, many respondents stated a long-term need to develop new funding streams in order to maintain their level of PGR activity, from overseas or, especially, from within UK industry. Given the latter expectation, several thought that new models of PGR provision would have to emerge, including more part-time and professionally-linked activity. Some explicitly stated that the number of professional doctorates would increase. In the interviews there was little evidence that institutions were actively pursuing European funding streams for PGRs, which

have increased significantly in Horizon 2020, the EU research and innovation programme. The recent development of UK doctoral programmes following the ‘SET for Success’ report (Roberts, 2002) and the creation of CDT/DTP structures means the UK is well placed to take advantage of these funding streams.

Overall, it was quite striking that these broader thoughts about the PGR market over the next three to five years appeared not to underpin but to be in tension with the stated aspirations of almost all institutions for growth in their PGR numbers. The open-ended comments tend to suggest (at least among these respondents) a lower level of confidence in the PGR market than might be inferred from the growth aspirations of their institutions.

In the next sections we turn to institutions’ practices in attraction, selection and recruitment of PGRs.

5 Marketing and attraction of applicants

A significant part of the research project sought to understand the strategies, mechanisms and level of effort undertaken by institutions to attract potential applicants to PGR programmes, select and recruit them. In this section the focus is on the attraction of prospective applicants through marketing and promotion.

It is worth emphasising from the start that the PGR market within HE is distinct and different to the UG market and, to a large extent, to the PGT provision, both of which have been the subject of recent research studies. The UG and masters markets have also benefited from certain national interventions, with the aim of improving the operation of the market, such as the unified UCAS (Universities and Colleges Admissions Service) application process for UG study and more recently HEFCE and other funders' investment in the Key Information Set and the Unistats website, supporting applicants' decision-making. HEFCE and the other UK national funding bodies have recently investigated the information needs of prospective PGT applicants and are currently developing guidance for applicants and institutions in relation to information about PGT.

The PGR market is intricately related to the availability of PGR programme funding, in a more inherent but also more complex way than either of the UG or PGT markets, and investigation of institutional marketing or attraction efforts needs to recognise this dependency.

5.1 Operational issues and levels of activity

5.1.1 Responsibility

Overall responsibility for PGR recruitment within an institution was most commonly held (in around half of cases) by the pro-vice chancellor for research (PVC-R or equivalent). In most of the other cases, responsibility was held either by another PVC or the director/head of the graduate school.

There were some differences in the way operational responsibility for recruitment into PGR programmes was held or distributed between different types of institutions, and in some cases within a group/type. Most of the Russell Group institutions stated that they had a central recruitment/admissions team with (some) specific operational responsibility for PGR recruitment. For many the graduate school also had some responsibility for recruitment, along with responsibility at faculty (or college) and departmental levels. Some also indicated that individual academics held some responsibility too. For a small number of Russell Group institutions, in contrast, responsibility was almost entirely held at departmental level.

The picture was broadly similar amongst the other pre-1992 institutions. Fewer of these had a central team but a few also devolved any responsibility out to individual academics, the effect being that more responsibility was held at graduate school and faculty and/or departmental level. Amongst the post-1992 institutions, only a quarter had a central recruitment team which held responsibility for PGR recruitment. Most of the post-1992 institutions held operational responsibility either in their graduate school (if they had one) or

at faculty level, or both, but they appeared to devolve relatively little responsibility to departments or individual academics.

The broad pattern was that there tended to be a greater spread of responsibility, including greater levels of delegation, within most of the Russell Group institutions, whereas responsibility was more concentrated in the post-1992 institutions, although this did not always involve a central recruitment team.

Over half of the responding institutions indicated that they had only one person, in full-time equivalent (FTE) terms, or less dedicated to attraction or marketing work centrally for PGR programmes. Of those who had more than one person, in many cases the resource was shared between PGR and PGT activity. Only a few Russell Group institutions had more than a few people involved, but some stated that it was difficult to assess the extent of resource when there was so much devolved responsibility. In the institutional interviews, most institutions described centralised coordination of PGR recruitment through the admissions team, but with engagement of the graduate school/s and significant devolution of many of the processes within recruitment to faculty/department level.

5.1.2 Level at which marketing takes place

The vast majority of responding institutions stated that they undertook at least some marketing of PGR opportunities at institutional level. Three quarters of respondents undertook PGR-specific marketing at institutional level; around half marketed both PGR and PGT activity together at this level. Only seven institutions did not engage in institutional level marketing in relation to PGR programmes. Marketing was also carried out on a funder-specific basis, and/or in relation scholarship programmes, by over half of the institutions.

Most institutions also carried out marketing at either faculty or departmental level, or both. There was evidence to suggest that marketing was carried out at both faculty and departmental level by most Russell Group respondents and other pre-1992 institutions, while most of the small and post-1992 institutions tended not to operate at both levels. The institutions that seemed to rely exclusively on institutional level marketing were small, specialist institutions.

In the institutional interviews the level of centralised marketing varied. In several cases this was limited to the production of a postgraduate research prospectus and, possibly, advertisement of any institutional scholarship programmes. Any other marketing was done at faculty or school level from local budgets. Conversely, one institution had refocused its marketing team from UG recruitment activities to PGT and PGR, promoting the distinctive nature of doctoral study at their institution. However, for the majority, most of their marketing effort was put into promoting scholarships and funded programme opportunities, in order to get high calibre applicants, while there was widespread expectation, on the other hand, that those who are self-funded "*would make their own way to the institution*."

Overall, the majority of PGR attraction effort could be described as somewhat reactive, rather than proactive. Most of the institutions interviewed highlighted that they did not have any difficulties in getting a sufficient number of high-quality applications, and a few noted that the 'problem' was in receiving applications from too many qualified applicants. They all

agreed that availability of funding was the main constraint in recruiting PGRs. However, a number of institutions noted that they had lost good candidates to other institutions, particularly if applicants obtained an earlier offer with confirmed funding.

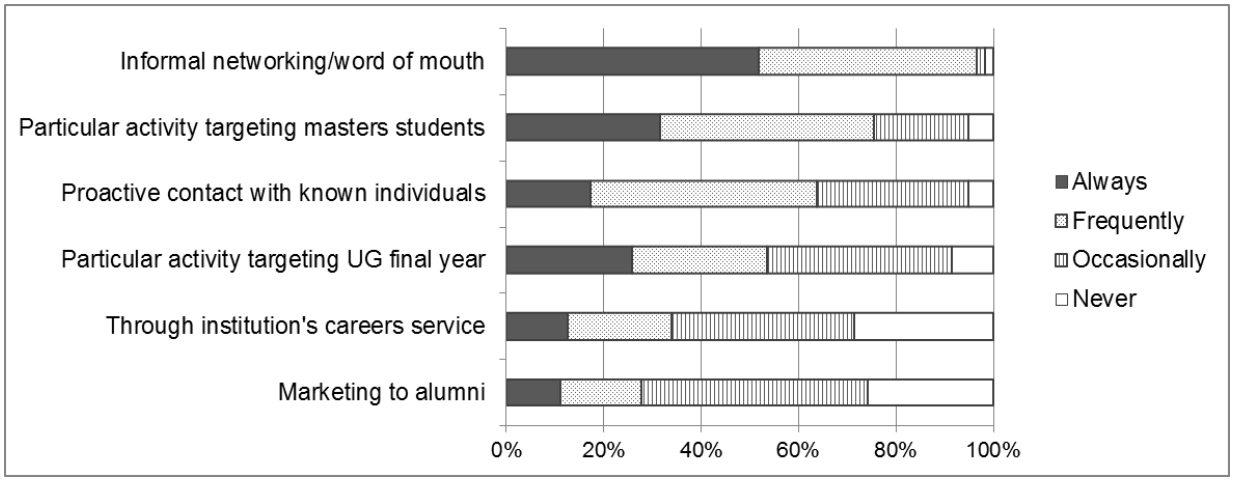
5.2 Marketing activity and channels

5.2.1 Within the institution

The most commonly used marketing and communication channel used by institutions to attract applicants to PGR programmes from within their own institution was informal, with almost every responding institution utilising word of mouth and networking to do this (Figure 6). Over half made proactive contact with known potential candidates, and around two thirds always or frequently undertook particular activity targeting their masters students. This was less commonly undertaken towards current final year undergraduates, although still around half of institutions regularly took this approach. On the other hand, discrete marketing to alumni was relatively rare, and only around a third routinely used the institution's careers service to recruit PGRs.

Several of the institutional interviews highlighted the value of offering 'research summer schools', providing UG students an opportunity to experience research first-hand, as a way of attracting current students into PGR programmes. They also highlighted the benefits of open days, for both existing students and the local community.

Figure 6 Respondents' use of marketing channels to attract applicants within their own institution (n=58)



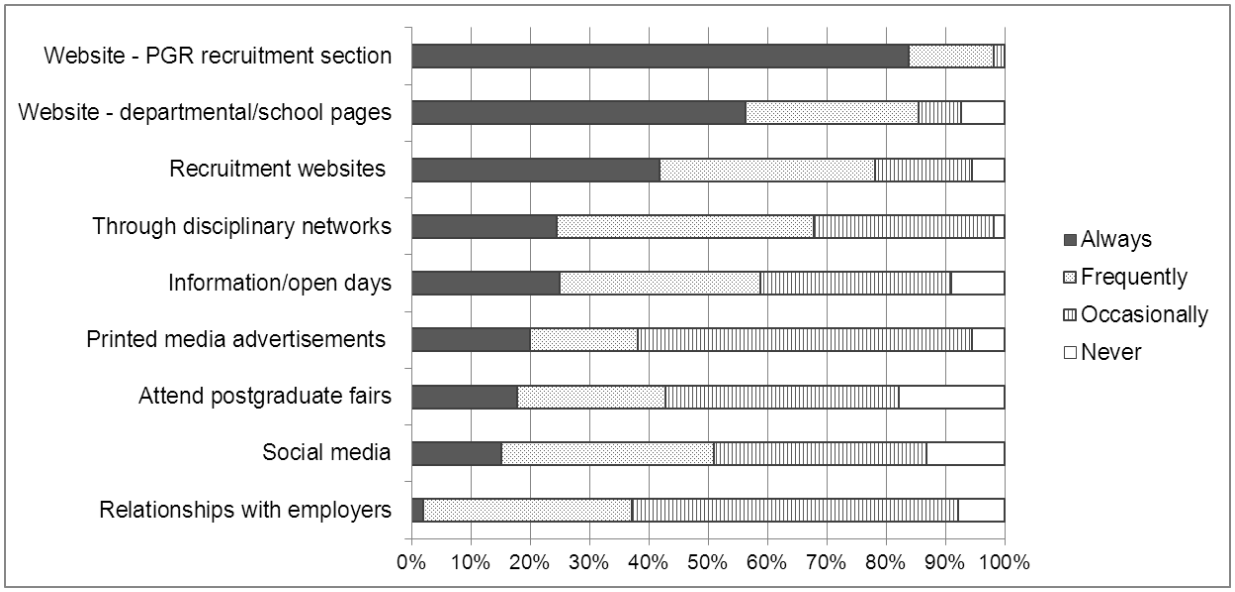
5.2.2 Within the UK

Figure 7 shows the most popular marketing channels used by institutional respondents to attract applicants within the UK. All respondents had a section on their institution's website dedicated to PGR recruitment and the vast majority (but not all) promoted opportunities as part of the web content of relevant departments or schools/faculties. Recruitment websites such as jobs.ac.uk were also very commonly used to promote individual scholarships. Just under half of the institutions always or frequently attended postgraduate fairs and around half used social media as a promotional mechanism. Relationships with employers were not universally used, but this route would necessarily relate to the nature of the opportunities.

Local advertising was very rarely used, and even rarer was the use of the careers services of other universities, with only five respondents believing that they did this other than occasionally (and half that they never did). Almost as rare was proactive contact with other UK institutions, with a quarter of respondents reporting that they never did this.

Taken together, this evidence seems to suggest that in relation to potential PGR applicants within the UK, institutions tend either to target their own students or to market rather generically, with very little use being made of opportunities for targeted promotion or more direct contact through other UK universities. The absence of such collaboration could be interpreted as evidence for a competitive UK market, but on the surface seems to represent a missed opportunity overall.

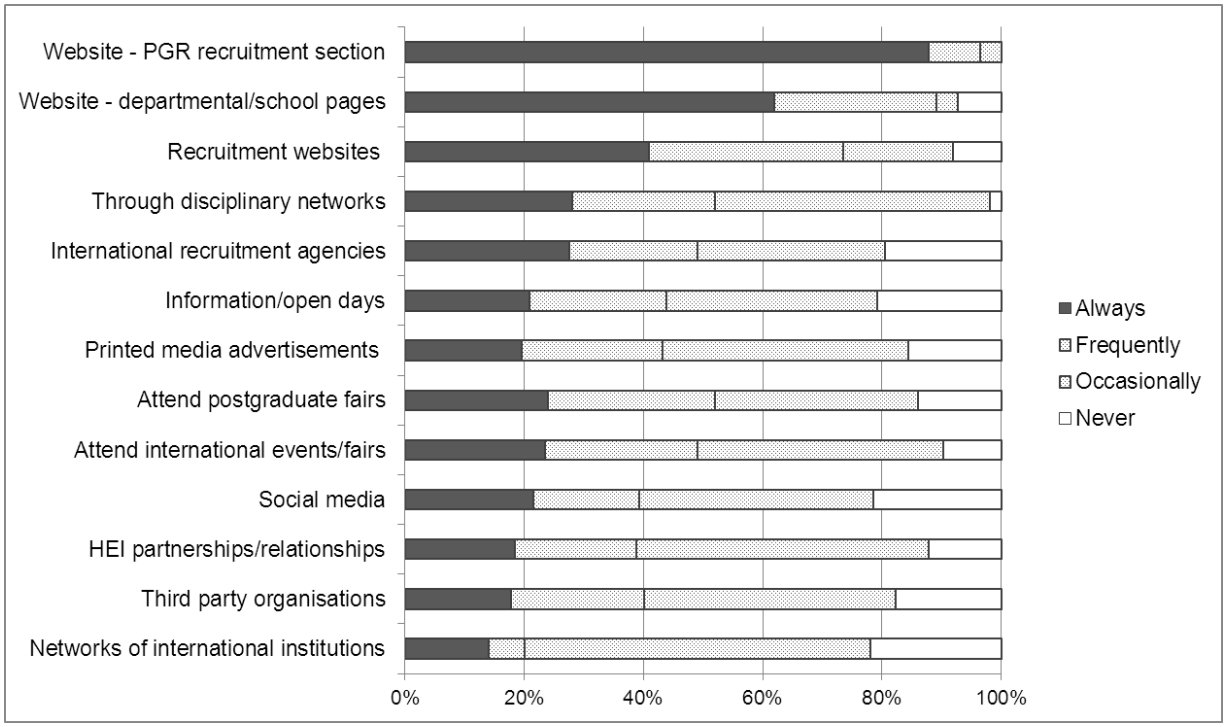
Figure 7 Respondents' use of marketing channels to attract applicants from other UK institutions (n=58)



5.2.3 International marketing

Many of the elements of the marketing mix to attract applicants from other countries were broadly similar to those used to attract UK applicants (Figure 8). However, around half also frequently used international recruitment agents or agencies and attended international recruitment fairs. Third parties such as the British Council were also used frequently by 40% of respondents, although specific international institutional networks were less widely used. Up to 40% also made use of existing partnerships or relationships with specific HEIs, a form of targeted marketing which was much more common internationally than was the case in the UK (where it was very rare).

Figure 8 Respondents' use of marketing channels to attract applicants from other UK institutions (n=57)



Respondents were asked whether their institution encouraged targeting of its marketing activity towards certain elements of the potential market, such as particular HEIs, particular courses or subjects at first degree or masters level. Two thirds of the responding institutions reported that their institution did not undertake targeted marketing in this way. Of the one third of institutions (20) that did, the focus tended to be related to particular subjects or courses, and to a slightly greater extent at masters level than first degree level, although this was only just over half the institutions. A small proportion had some focus towards particular institutions. Overall, this suggested that there was not a strong degree of targeting of marketing effort towards particular sectors or elements of the potential market for PGRs.

Generally, apart from one institution, the institutions interviewed did not have strong proactive international marketing campaigns for PGRs, relying on their web presence, as

well as taking advantage of any international marketing of UG and masters programmes in specific countries, and occasional participation at international postgraduate fairs.

Several institutions noted that their international recruitment mostly occurred through academics and research groups with existing relationships and collaborations. One institution reported that they had had to reduce their investment in international recruitment as funding had been reallocated to provide the matched funding to their Research Council PGRs in doctoral training structures. Institutions also commented that they received large volumes of unsolicited applications, many of which tended to be relatively poorly informed or targeted and from lower-calibre applicants.

Kings College London

Kings has invested substantially in PGR scholarships and developing partnerships as part of its strategic international marketing effort. Over the past 18 months it has brokered deals with a dozen national funding bodies in countries including Turkey and India, within the Middle East and in a range of Latin American countries. In return for their assistance in enrolling high-quality students, Kings can set preferential fees for students on these pathways. Although it does not have an international campus, Kings does have some offices overseas and has developed regional funding brochures for students in key target regions, for example, China.

It has also begun to develop new PGR delivery models with these partners, which may involve blended delivery (attending part of the programme at Kings) or joint degrees. These have been developed with the intention of raising the international profile and assuring an effective pipeline of reliably high-quality candidates.

5.2.4 Other pre-application engagement

As part of engagement or communication with a prospective applicant, respondents indicated that they did expect certain types of interaction to take place prior to an application. Almost every responding institution anticipated that they would spend time explaining the application process, and the majority would describe the PGR programme/s available, largely irrespective of the research discipline. Most but not all would have prior discussion about the research topic, but this varied by discipline. The extent to which there was review or comment on a draft of a research proposal was much more varied, with less than half saying that this was routine, and half indicating that it depended on the research discipline. These variations reflect some of the inherent differences between different doctoral programmes and in different disciplines.

All of the institutions interviewed acknowledge that time was often spent, usually by supervisors, in communicating with potential applicants. This ranged from just providing information on the process, providing feedback on a potential research proposal, through to mentoring prospective candidates through the application process. One institution commented that it perceived that there was a gradual reduction underway in the extent of pre-application communication with prospective PGRs.

The research proposal is regularly assessed as part of a PGR application, and this was one aspect where pre-application support could be available to some groups of applicants. This leads to the inference that some internal candidates could take more advantage of this support than external applicants, who might well not be aware that it was available, raising concerns that there could be issues of inequality of access in some instances.

University of Leicester

Although interviewees at Leicester believed that the process of pre-application interaction was tending to reduce, at the same time as applications were rising, it recognised that useful interactions with potential supervisors could be very time-consuming. Within its College of Arts, Humanities and Law, an initiative had been set up inviting potential applicants to attend a pre-application workshop where they had been given support to put together a good application. They felt that this represented a good solution in offering applicants support on a relatively equitable basis while at the same time placing some constraint on the amount of effort that individual staff might need to exert in support of potential applicants.

5.2.5 Operational issues

Respondents were asked whether their institution used a central enquiry management system such as a customer relationship management (CRM) software system, and whether it was used in PGR marketing and recruitment. A third of the responding institutions reported that they did not have such a system, which was roughly even across the different types of institution. A further third of respondents said that although they had such a system it was not used for PGR recruitment. This was particularly common amongst post-1992 institutions.

The remaining third of institutions did use their CRM system within PGR recruitment activity, most commonly using the system to monitor pre-application communications and engagement with prospective applicants and to a lesser extent to handle post-admission communications. Relatively few felt they were able to use it to provide intelligence on their recruitment processes.

Several of the institutions interviewed were using, or looking at how they could use, their CRM systems to provide management information on enquiries, applications, interviews, offers and acceptances. One institution was collecting fairly comprehensive personal data at application stage, which they were considering how to use in developing their WP strategy. However, several institutions did not try to collect any WP-related data until registration of a successful PGR candidate.

Notably, a further five institutions (most within the Russell Group) were currently piloting or about to trial a system, or were about to roll it out after selective trials. Were those developments to be positive, almost all of the Russell Group respondents would then be using a centralised enquiry management system to support their PGR recruitment.

Informal interactions with prospective applicants (prior to formal application) were being handled at a wide variety of levels within institutions. Almost every institution reported that

individual academics handled interactions of this kind, while two thirds of respondents reported that they were handled at institutional level, but most of these also handled them at departmental and individual academic level as well. Only a handful of institutions, which were small specialist entities, handled all enquiries centrally. Only four institutions stated that they monitored centrally informal pre-application interactions that took place in departments or by individual academics, which contrasts with the situation in many institutions for PGT and especially international student recruitment where stronger efforts are made for these to be routinely recorded.

The extent of informal interactions with prospective PGRs came through strongly in all the institutional interviews. The process of applying to do doctoral research is so complex and individual, particularly compared with applying for UG or masters courses, that building an initial relationship with a potential supervisor is advantageous and recommended by most institutions, particularly for the social sciences, arts and humanities.

University of Bristol

Bristol has a highly devolved structure in relation to PGR recruitment, with annual recruitment numbers set by faculty and/or schools and negotiated with the university centrally. However, a centrally-supported online application and CRM system through which all applicants are asked to apply has been in existence for the past two years. This records initial contact with the university if it is made through a central service/activity such as the website, admissions department or a careers fair, and the system monitors response times for different communication stages against targets. If the initial contact is made through an academic or at faculty level the CRM does not currently register this until the point of application. Once an application has been received, processing of the application and any associated decision is devolved to the individual faculty offices, but is supported by the online system.

6 Recruitment and selection

Having attracted graduates to consider and then make applications for study on a doctoral programme, institutions have a variety of policies and processes in place in order to select between applicants and try to ensure that the students they admit are of sufficient intellectual calibre and have the right personal attributes to undertake research and ultimately complete their studies. Although such processes need to comply with the requirements of the QAA Quality Code and Schwartz principles, there is considerable scope for local interpretation at faculty and departmental level. This section presents institutional perceptions of recruitment and selection processes and attempts to portray some of that local variation.

6.1 Organisational and practical issues

In terms of the extent of their centralised resourcing for PGR admissions processes, just under half of responding institutions indicated that they had one person (FTE equivalent), while a quarter had between one and five FTEs and the remainder more than five FTEs. The majority of those with the largest numbers were Russell Group institutions. For at least half of the institutions, this meant that they had considerably more centralised resource in relation to the admissions aspects of recruitment than for marketing and attraction (reported in Section 5.2.1).

Coventry University

Coventry has deliberately moved from having an entirely faculty-run process to a much more systematic recruitment process with two staff in a central PGR recruitment team, currently located within the university's admissions office. Applications (all online) are received and screened by the central team on the basis of checking references, qualifications/transcripts (for international applicants including those relating to English language proficiency) and the research proposal. Each application is then assigned to faculty-based academic leads who ensure academic robustness and whether it can be resourced and supervised, prior to selecting the relevant department and individuals to assess it and conduct an interview process. Once the selection process has taken place, the faculty lead signs it off and returns the application to the central team to make an offer. There is now compulsory training for all academics involved in selection panels and interviews.

The current PGRs interviewed verified that the process could be very fast, taking place entirely within a few weeks on occasions, and operated irrespective of funding situation. They also commented on the catalytic role of the dedicated PGR admissions manager, not only ensuring that all parties played their role in timely fashion but in providing personal guidance and support to the applicant during the process, although this was presumably enabled partly by the scale of current PGR recruitment.

Cranfield University

Cranfield has centralised all applications through an online portal, inviting applicants to upload all elements required including scanned documents. After initial screening these are forwarded as a package to schools, which have differing approaches to selection. For studentships, applicants are likely to be interviewed by both the potential supervisor (often remotely) and the funder, followed by formal academic interviews including by the supervisor. In other cases the process awaits satisfactory outcome of development of a research proposal.

When the school-based selection processes are complete, the application is returned to the centre and the offer made by the central Academic Services team. Current students attested to the rapidity of the process. The university is now beginning to regulate more closely the approaches taken in different schools, with the aim of a very customer-facing and streamlined approach.

6.2 Selection processes

In Figure 9, the respondents' reporting of the processes used to select between applicants are summarised, with some indication of who is involved. The chart has been laid out to distinguish the typical steps in the process of review, interview and selection.

The majority of, but not all, respondents' institutions included routine use of a screening stage by a recruitment/admissions team, but notably only about half of these respondents had reported that they had a central team with any responsibility for recruitment, so it is possible that some were referring to a faculty- or department-based group with this remit.

As an example, one institution interviewed indicated that its initial central review process ensured that applicants had met institutional eligibility criteria but also removed key personal data before distributing applications to relevant departments for more detailed review by appropriate supervisors. This could be regarded as 'best practice' in relation to ensuring equality in selection.

It was clear that across all disciplines, individual academics who were potential supervisors reviewed applications, and in addition a panel or committee of academics undertook this role in the majority of institutions. The involvement of a funding or collaborating employer appeared common as part of this where relevant.

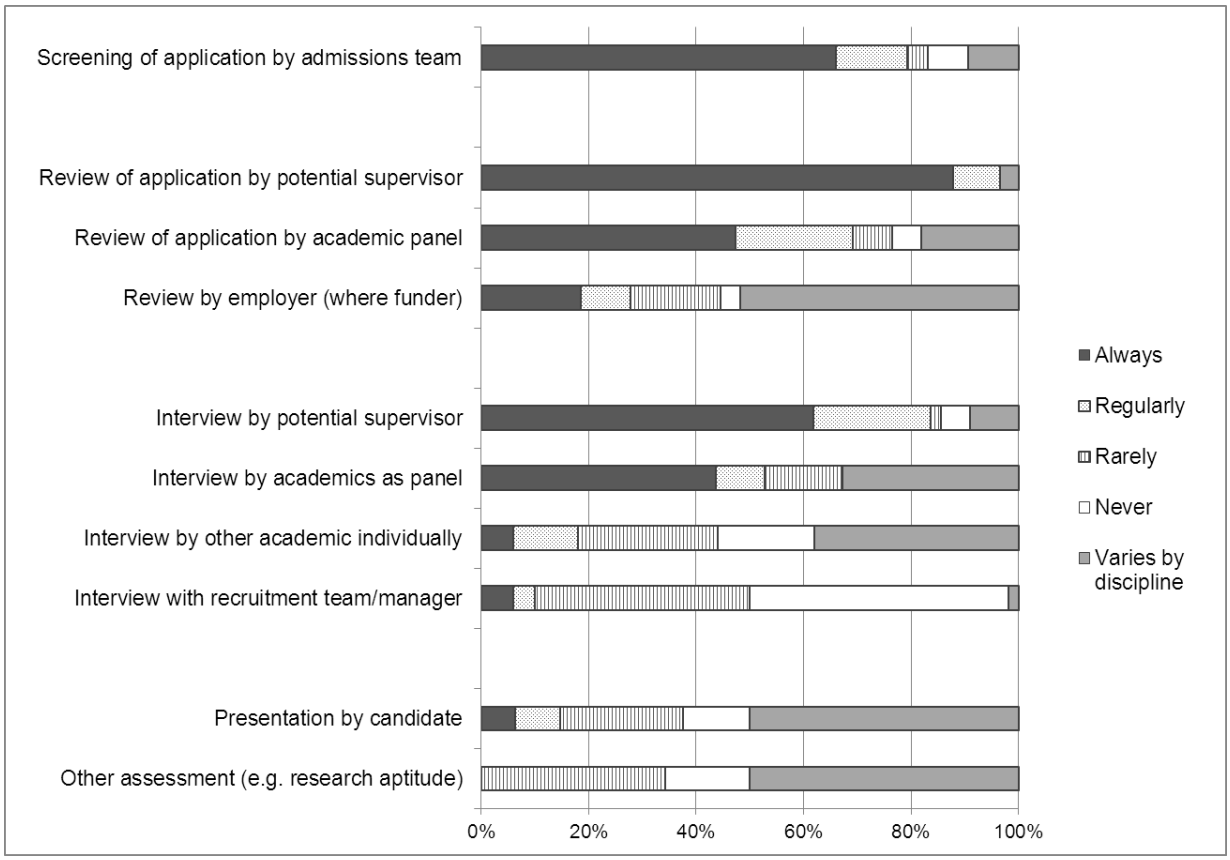
Every responding institution reported that they always conducted an interview of some kind with short-listed applicants, which was most commonly by the potential supervisor but in the majority of cases there was also an interview with a panel of academic staff, and in some cases by another individual academic. In a number of Russell Group institutions it appeared that the only interview expected was with the potential supervisor, whereas in other types of institution there was a requirement for more than one interview or for there to be several people involved. Whether there was an interview with an academic panel or simply another

individual, i.e. in addition to the potential supervisor, also varied greatly with the discipline. It seemed very rare for an applicant to have an interview with the admissions team.

However, in the focus groups with current PGRs, it was clear that even for institutions which stated that they required interviews, not all applicants did go through this process. This (i.e. not being interviewed) appeared to be more common amongst internal candidates, where the prior (usually) masters or UG degree was seen as a *"long interview process"*, and for others who were well-known candidates through other forms of engagement.

Only seven institutions regularly demanded a presentation as a standard part of their process, although far more suggested that this varied with discipline. Other kinds of assessment (such as measuring aptitude for research, or psychometric testing) were rare but possible in certain disciplines.

Figure 9 Selection processes for applicants to PGR programmes (n=59)



Respondents were also invited to indicate whether their processes were different for international applicants. The majority did not indicate that they were different, other than that many respondents stated that they used video- or tele-conferencing systems or Skype in order to carry out interviews remotely. A number also mentioned assessment of English language proficiency in some cases, imposing an International English Language Testing System (IELTS)-based requirement. Most of the institutions interviewed required particular

English language qualifications or levels for international applicants, but one noted that this did not always prevent language issues. One current PGR interviewed reported that in her applications to several Russell Group universities, one had accepted her US masters qualification in English language studies as proof of her language abilities, while another had still required an IELTS qualification.

The responsibility for a final decision as to whether to make a candidate an offer seemed to vary considerably for different institutions. In the majority of cases, responsibility was at faculty or school/department level, with the decision made by a dean of school or an academic lead for research in the faculty or similar. In around a quarter of cases it was an institutional role's responsibility, most commonly either a senior research academic (such as dean of research) or the research degrees committee. In a smaller number of cases the decision appeared to lie with the person leading the graduate school, while a few others reported that the admissions team had the final word. Very rarely was the final decision with the potential supervisor, and in many cases there was a well-known hierarchical chain of approval based on a recommendation made at departmental level.

University of Nottingham

Nottingham has a large portfolio of 21 RCUK-funded doctoral training programmes (CDT/DTC/DTP). Its Graduate School supports their development, implementation and management. It has recently implemented an institution-wide governance structure and is reviewing systems and processes across the DTPs in a variety of areas including recruitment, to ensure best practice is shared and processes are standardised where possible.

It recognises that recruitment within DTPs is distinctive from much other PGR recruitment in that candidates are: mainly home or EU students (to comply with RCUK eligibility criteria), RCUK-funded, often recruited to a broad programme rather than a specific project (where PhD project selection or proposal development takes place in the first year), sometimes selected by industry partners as well as academics. There is a growing trend for candidates to apply through one university within a DTP consortium for a PhD based at another institution or to be required to apply to (and register) at more than one consortium partner. Interview days with talks and cohort-building activity and other pre-registration events are also becoming increasingly common.

Brunel University

Brunel University offers a number of fully funded PGR studentships in sport, health and exercise sciences; staff reported that the applications for these were very competitive, typically around 40 applicants per place. They had modelled their selection process to that of a professional job application, demanding a formal CV, letter and references, processed by the central team and passed to the department for selection. Short-listed candidates would have two interviews, including making a presentation and showing examples of their written work. They were asked to undertake certain experimental work with current PGRs in the lab,

which not only gave an opportunity to observe their soft skills but applicants also had an opportunity to 'experience' research so that they were better informed and successful applicants more likely to enrol and ultimately also to complete.

6.3 Recruitment training

Specific training was provided for many key individuals involved in selecting PGR applicants but not in all institutions. As Figure 10 illustrates, 80% of the responding institutions provided interview/selection training for potential supervisors, although less than 40% made this compulsory. Such training was available to other academics taking part in selection processes but only rarely compulsory. By comparison, training was compulsory in over two thirds of institutions for central admissions or recruitment team members and in only one in ten of institutions was this not provided. Elsewhere it is shown, however, that interviews with recruitment or admissions team members were rare in the standard selection process.

Figure 10 Provision of training for those involved in selection of PGR applicants (n=55)

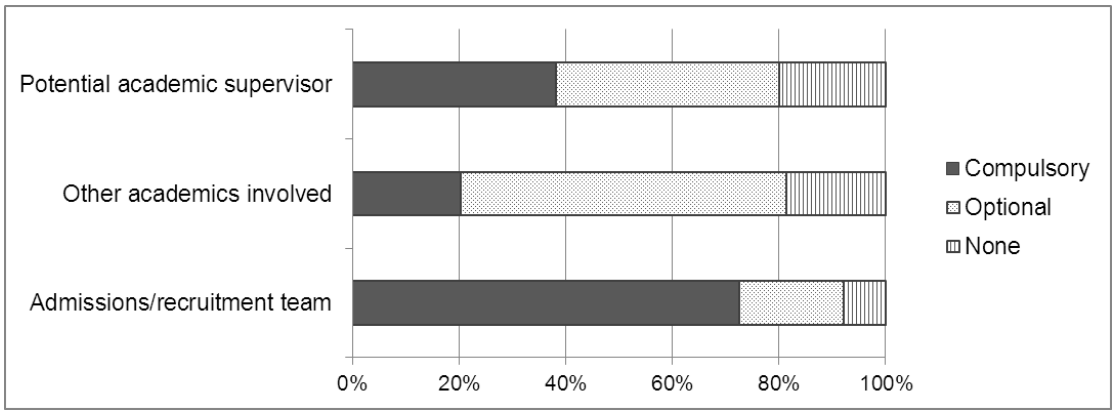
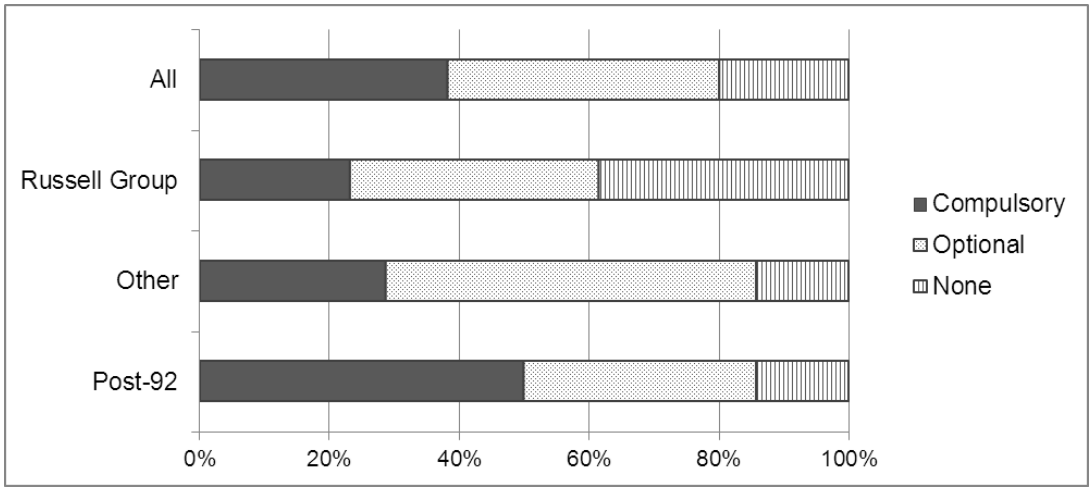


Figure 11 Provision of training for potential academic supervisors involved in selection of PGR applicants, by university type (n=55)

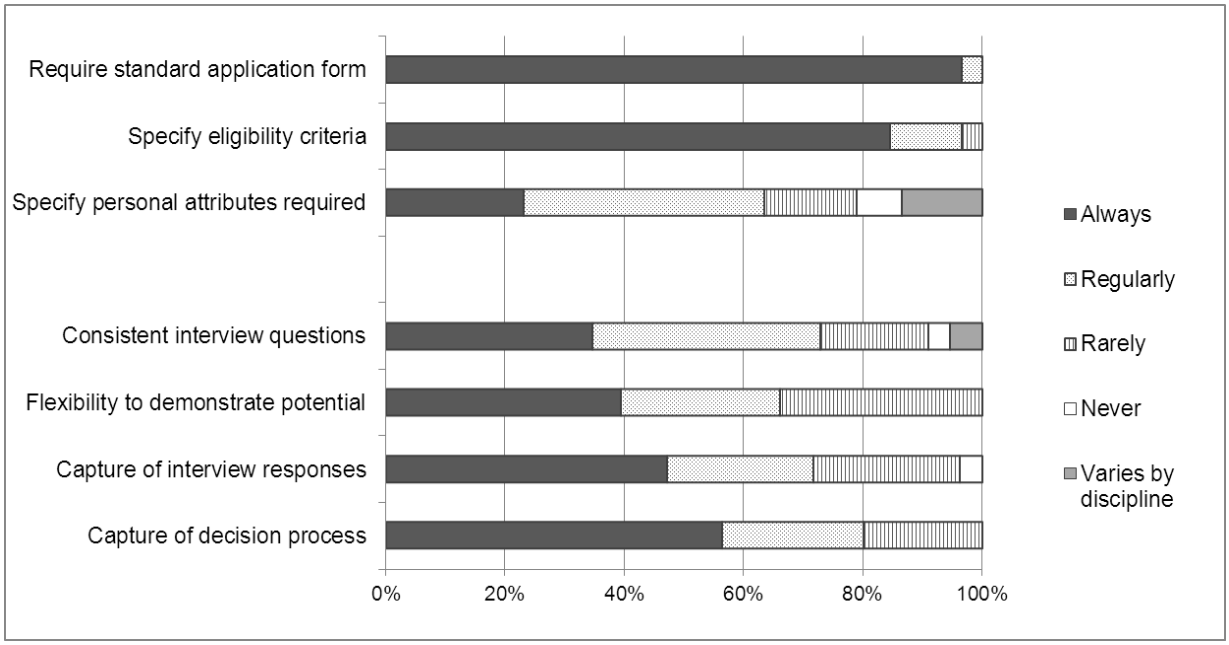


Although the sample sizes are small, there was also a clear trend of difference between different types of institutions in relation to the extent of training for selection processes. The proportions of Russell Group institutions that offered compulsory or optional training for academics who were potential supervisors were both lower than in other types of institution, while a higher proportion of Russell Group respondents indicated that they did not offer any training (Figure 11). Training was compulsory in more of the post-1992 institutions. The same broad trend was observed between university types for training of the other academics involved in the selection process.

6.4 Ensuring transparency and fairness

The vast majority of institutional respondents stated that they required all PGR recruitment to use a standard application form and almost as many required the use of specified eligibility criteria. The use of other specified attributes was not universal but was still widespread, with some disciplinary differences. Within the interview process itself, consistency of interview questions for all candidates was always or regularly maintained in the majority of (but not all) institutions, again with some disciplinary differences. On the other hand all institutions believed that they used some flexibility to enable applicants from different backgrounds to demonstrate their potential. In terms of capturing the elements of the process as a record or paper trail, all institutions believed that interview responses were regularly captured and a higher proportion that the selection decision process was recorded. These results are illustrated in Figure 12.

Figure 12 Use of possible selection processes to ensure transparent and equitable selection between applicants (n=58)



One or two institutions specifically explained that they used some variety in their selection processes according to circumstances. One respondent noted that the process depended on whether the application was for an advertised scholarship position or not. If advertised, a selection interview panel was held and closely noted, with a strict process to demonstrate it was equitable. On the other hand, if the student was self- or externally-funded then there was no element of competition and the supervisor would carry out the process using the standard questions on the admissions form. Another institution explained that it used consistent questions on more general aspects of MPhil or PhD recruitment, but supplemented these with topic- or discipline-specific questions.

This was echoed in the institutional interviews where, generally, applications for scholarships were more likely to follow a formal panel-based interview process. In a few cases, the application process for a position on a doctoral programme was separate from the application for funding.

In order to monitor trends in the type of people making applications for PGR study, and potentially provide baseline monitoring of equality in recruitment processes, almost every institution was routinely collecting certain data about applicants. Their gender was collected by all but one institution responding to the question, while all but one other institution collected applicant domicile. All but a handful of responding institutions also collected age, ethnicity, level of prior degree and previous institution, as well as the discipline in which they were applying. Half of the institutions attempted to record whether the candidate had made prior applications to the institution. Around one in three recorded the socio-economic background of the applicant, although the specific manner in which this was done was not investigated.

Obtaining these types of demographic information about applicants is generally a prerequisite for monitoring the profile of applicants in relation to equity of access and informing potential strategies for WP. Overall there seems to be scope for more proactive attention to ensuring equality of access and WP consistently throughout institutions.

6.5 Unsuccessful applicants

The most common reasons that applications were unsuccessful fell into three broad areas: the applicant, the research proposal and whether it could be supervised, and lack of funding. It should again be borne in mind that in some cases, particularly funded programmes, multiple applications were received and there was strong competition between applicants, while in other cases (such as those who had funding in place) an application could simply be judged against eligibility criteria and appropriate resources. Although this was not investigated quantitatively, by far the most commonly cited reason for lack of success was that the academic attributes of the applicant either did not match the eligibility requirements or were insufficiently strong. A number of respondents commented that they received large numbers of speculative applications from overseas, many of which were of low quality and did not meet basic eligibility criteria.

The most widespread issues with applicants' research proposals were either that they were not clear or well thought through, or that the research did not fall within the supervisory capacity of the department or else did not fit the institution's strategic focus. The institutional interviews confirmed some of the constraints to offering 'qualified' applicants places on doctoral programmes. These also included lack of resources, such as a lack of laboratory space or of laboratory equipment, shortage of desk space and, for one institution, lack of accommodation within the city. All institutions mentioned the challenge of matching supervisory capabilities and capacity to potential PGRs' research projects, especially in the social sciences, arts and humanities. There was also some mention of qualified staff not always being interested in supervising PGRs. One post-1992 institution striving to increase its research activity described the difficulty of balancing its desire to raise PGR numbers and increase the proportion of staff with doctorates, with regulations that restricted staff from any supervisory role while studying for their own PhD. A Russell Group institution noted that an added benefit of recruiting more experienced staff pre-REF had provided an opportunity significantly to increase its PGR numbers.

However, for applicants seeking PGR study where funding was not already in place, the inability to secure funding could be the simple reason that an application was unsuccessful. Although several other issues were mentioned by single respondents, the only other factor raised by several respondents was insufficient English language proficiency.

There was a varying level of feedback given to applicants who had been unsuccessful in their application for a PGR programme. All responding institutions did inform unsuccessful applicants and interviewees that they had been unsuccessful (although a few respondents suggested that this was not the case in every discipline in their institution). Around three quarters of responding institutions gave unsuccessful applicants feedback, although in a third of these it varied across disciplines, and these proportions were slightly higher for those who had been unsuccessful at interview stage. Several institutions indicated that their policy was to give feedback only where it was specifically sought. Less than half of the respondents' institutions regularly reviewed previous applicants' applications when they were re-recruiting for a similar programme, and half said that this would rarely or never happen.

6.6 Defining quality

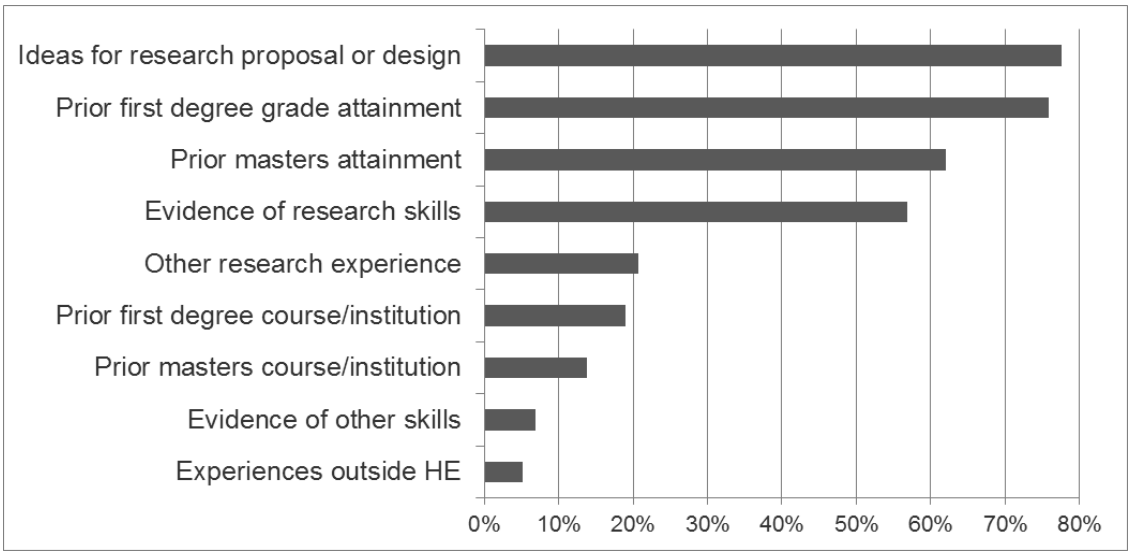
Many respondents had made clear in their responses to questions on strategy that their over-riding interest in recruiting PGRs was to seek the highest quality of applicant, and whether this was an international or domestic application was a secondary matter. The most important factors cited by respondents as constituting high quality in an application are shown in Figure 13, where each respondent was invited to select the three most important factors. This demonstrates that the most commonly used factors were the ideas for the research, attainment at first degree and/or masters level, and evidence of research skills. The specific institution or course at which the prior degree had been obtained was only considered within their three most important factors by a minority of institutions, and very few considered other skills than research or experience outside HE to be of high importance.

The institutional interviews supported the survey findings and gave detail in relation to some of these issues, including that the relative importance of the applicants' ideas for research was discipline-specific. In relation to academic attainment, the increasing importance of having a masters in PGR applications was apparent in the survey and the interviews, and can also be seen in recent HESA statistics. While this has been commonplace for PGR study in social sciences and the arts and humanities for some time, it was also now very commonly cited for applications in other subject areas. Although none of the institutions stated that a masters qualification was a requirement for entry to a doctoral programme, it was increasingly being seen as providing evidence of the applicant's capability for research. One current PGR reported being offered a place without interview, despite being an external applicant, on the institution's assessment of the strength of their masters dissertation. An institution reported that it was increasingly using applicants' scores in their masters dissertation as it believed this to be the most effective proxy for aptitude for PGR study. Where an applicant had not undertaken discrete PGT study, having an integrated masters degree was seen as a significant asset in those subjects where they were available.

One institution interviewed noted that some UK applicants were losing out to European applicants as the latter were more likely to apply with a masters qualification and stronger evidence of research experience. The 'recruitment' of internal candidates to PGR programmes also appeared to be more common from masters programmes than undergraduate.

Quality was broadly defined as intellectual rigour (known or potential) but also especially aptitude for research. Three interviewees talked of seeking the PGR's ability to 'hit the ground running', i.e. the ability to carry out serious research of value within a sensible period of starting the programme. This could well have been a reaction to previous issues of non-completions within prescribed or reasonable time frames, so could be seen as a strategy of avoidance of risk. More than one institution was currently undertaking research to try to identify the characteristics of completers and non-completers in order to select and recruit individuals with high chances of completion. This had led them to target masters graduates with good grades, especially their dissertation score, and was leading in some disciplines for it to be rare to take on a PGR with only a first degree.

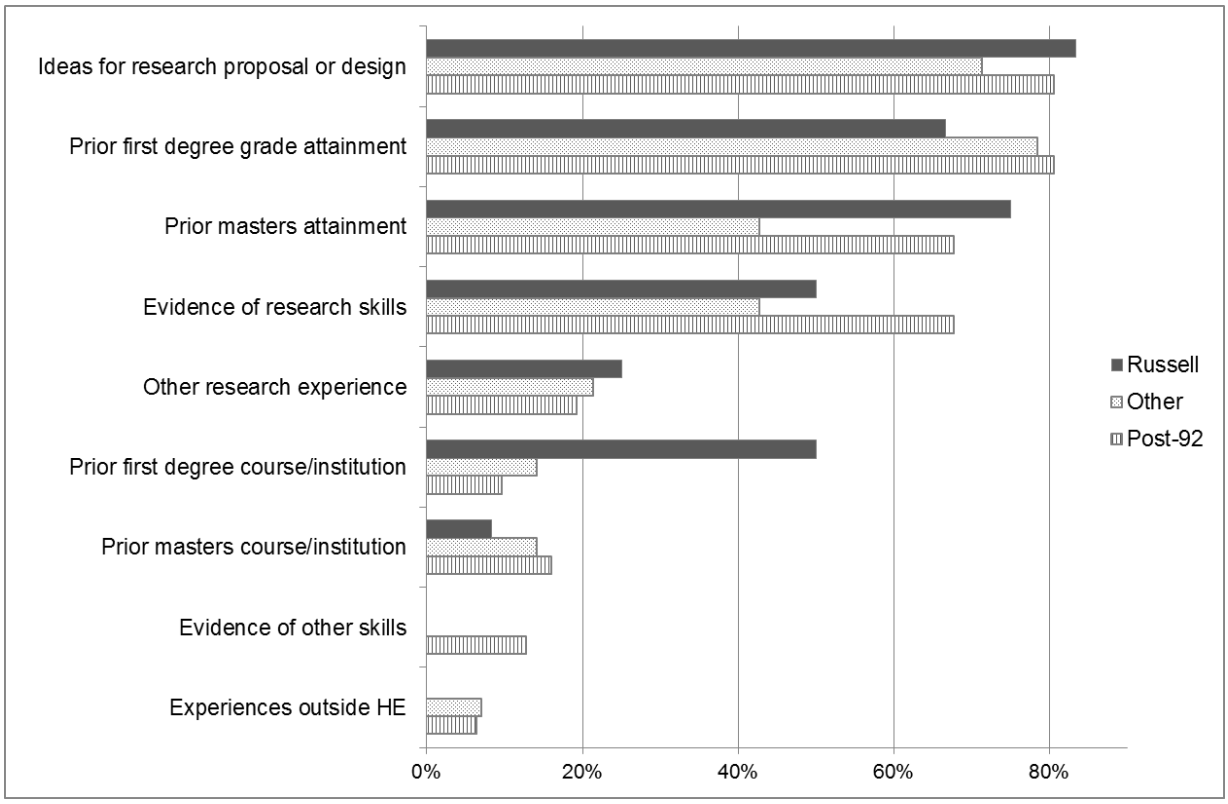
Figure 13 Respondents' most important factors constituting a high quality application for a PGR programme (Three most important choices allowed, n=57)



The interest in assessing a candidate's potential aptitude for research, or ideally obtaining evidence for personal interest in research and existing research skills, did not seem to translate to any widespread use of diagnostic methods during selection or assessment. As seen in Figure 13, evidence for other skills or experiences outside HE that might lend support to this judgement were not common at all.

In Figure 14 these results are shown for responding institutions of different types/affiliations. While much of the pattern of results is the same for the different types, it is notable that a higher proportion of Russell Group institutions rated attainment in a prior masters as more important than attainment at first degree level, and far more of them considered the specific course or institution of the first degree to be very important than did respondents in other groups. On the other hand, a higher proportion of the post-1992 institutions considered evidence for research skills to be important, than of respondents in other groups. It was only a few post-1992 institutions that considered evidence of other competencies to be very important.

Figure 14 Respondents' most important factors constituting a high quality application for a PGR programme, by university type (Three most important choices allowed, n=57)


Ideas for research proposal or design
Prior first degree grade attainment
Prior masters attainment
Evidence of research skills
Other research experience
Prior first degree course/institution
Prior masters course/institution
Evidence of other skills
Experiences outside HE
0%
20%
40%
60%
80%
Russell
Other
Post-92

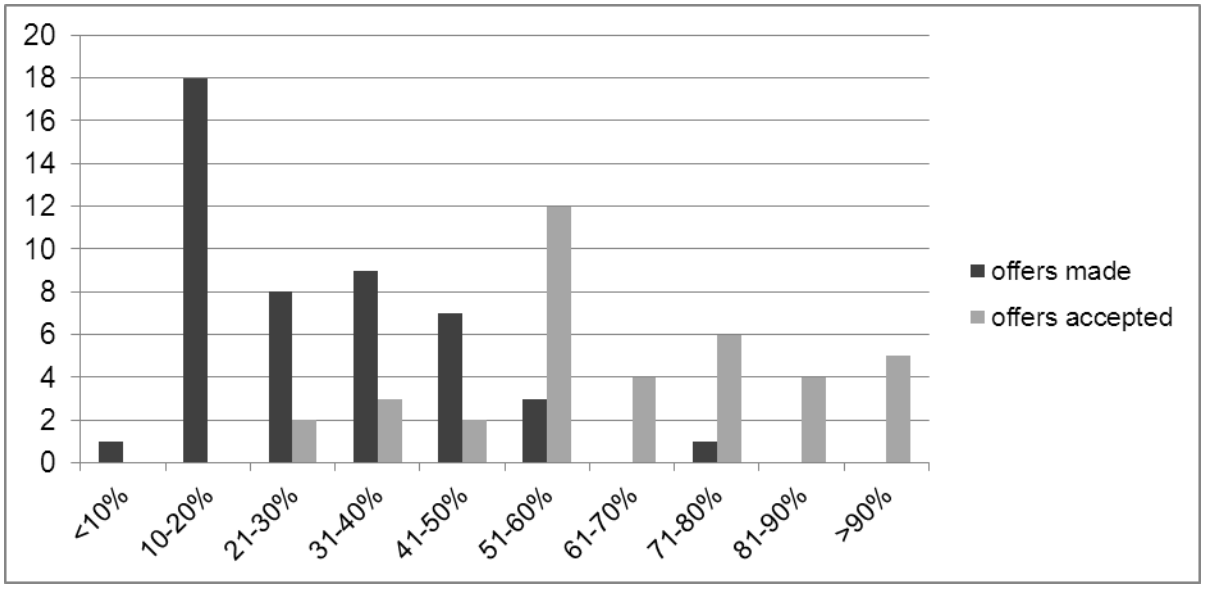
7 Evaluation and effectiveness of recruitment and selection

Institutions were collecting certain information and undertaking some evaluation of their PGR recruitment process and its effectiveness. All the responding institutions reported that they routinely collected data on the number of applications made to their PGR programmes and the offers made, and almost all also collected the proportion of their offers that were accepted (known as the 'conversion rate'). Around two thirds monitored information in relation to how applicants had learnt about the PGR study opportunity.

7.1 Application success rates

On the basis of the responses given, the overall percentage of applications that are successful (i.e. an offer results from the application) varies strongly between different institutions. As shown in Figure 15, the most common position was for between 10% and 20% of applications to result in an offer, although for significant numbers of institutions it was in a higher percentage band (up to 41-50%) and for a few higher still. Although the sample size is very small for analysis, the evidence suggested that this did not correlate strongly with university type. Application success rates between 10% and 50% were reported by institutions in the Russell Group and other pre-1992 group. The highest rates were reported by post-1992 institutions, and overall more of this group tended to have somewhat higher rates, but it was one of this group that reported the lowest rate at under 10% and several reported below 20%.

Figure 15 Responding institutions' rates of success: ratio of offers to applications and of acceptances to offers (n=47)



The interviews, however, suggested that monitoring success rates at institutional level may not reveal much useful management information, as the process is very context-dependent and particularly influenced by availability of funding. Additionally, most institutions appeared to be predominantly reactive to applications, rather than proactively driving demand. All the institutions interviewed stated that they were receiving sufficient numbers of high quality applications for PGR programmes, and several mentioned receiving large numbers of very poor international applications that needed to be 'weeded out'. A few institutions reported figures separately for UK and international applicants, suggesting that the proportion of UK (and EU) applicants who received an offer was considerably higher than the proportion of international applicants.

A number of institutions mentioned that they knew that their overall rate tended to mask greater variations between rates within different faculties. There were also large differences between the number of applications for funded programmes and scholarships, which were very competitive, and for other opportunities, so the particular range of programmes on offer in any year could have a significant impact on the apparent success rates.

When considering the proportion of offers that were accepted (the 'conversion rate'), the percentages were again quite widely spread but across a higher range. Most respondents were able to quote a definite figure, suggesting that this was a metric that they routinely obtained, while a few did not know specifically and made an estimate. The most commonly reported band was for 51-60% of offers to be accepted, although several institutions reported rates at much higher levels. Again there was no clear correlation with university type, based on this restricted sampling, although the lowest acceptance figures were reported by 'other' (pre-1992) institutions, while the responses from Russell Group and post-1992 institutions were similar.

Respondents were also asked to report whether they believed there was a discernible change or trend in their conversion rate over the last three to five years. A quarter of respondents saw a falling trend over this period, while the other three quarters were roughly evenly split between those who believed the position was stable and those who perceived a slow rise in the proportion of their offers that were being accepted over this period.

In the institutional interviews, the primary reason given that offers were not accepted, or in some cases delayed for a year, was lack of funding. However, several institutions noted that they experienced competition for the very highest quality applicants, with the Russell Group institutions citing US and Canadian institutions and other Russell Group institutions as their main competitors. The focus groups with current PGRs revealed the importance of timeliness in the overall recruitment process: many of those who had made multiple applications had accepted their first offer. One institution noted the difficulty of competing with US institutions, where they believed the best candidates quickly received an offer of a place and funding. The "*onerous and expensive*" visa application process in the UK (as described by one interviewee) was also seen as a disadvantage in attracting the best overseas candidates.

Conversely, the length of the UK PhD, compared with other systems in places such as the US, was seen as an advantage by some PGRs, and the reason that they had chosen a UK institution. The arts and humanities faculty of one Russell Group institution saw the US as a

target market for recruiting PGRs as they are attracted by the shorter UK programmes, particularly if they are self-funded. The US, Canada, Australia and, increasingly, European institutions were noted as main competitors.

7.2 Provenance of applicants

In addition to the broad trends ascertained from respondents in relation to PGR applicant domicile, some investigation was made in relation to the more detailed 'trajectory' of PGRs currently recruited by institutions. This was considered in terms of where they had previously studied, in order to shed some light on the extent to which institutions recruit their own students or those from other institutions, but also whether their progression into PGR study was directly from prior HE study or after a period away from HE (i.e. as 'returners' to HE). A recent study for HEFCE has highlighted that prospective 'returners' to HE have some different information needs when considering PGT study, and have fewer opportunities to acquire some of the information they need, compared with those who are already within the HE environment (Mellors-Bourne et al., 2014). It could be that something similar occurs in relation to PGR study, which could lessen the extent of mobility.

Some of these results are illustrated in the charts in Figure 16, which show that there were considerable variations between different institutions. The largest proportion of responding institutions reported that they recruited 21-30% of their PGRs from within their own institution, although this varied from less than 10% for five institutions to one case where it was over half. There was no clear trend in this percentage in relation to the affiliation group (i.e. broad type) of institution.

A roughly similar range and spread were obtained for the proportion of PGRs that respondents said they recruited directly from other UK institutions. Again the most frequently reported percentage was 21-30% of those recruited, with a slightly higher proportion reporting fewer than 10% and only one institution over 40%. There was some evidence to suggest that Russell Group and other pre-1992 institutions were recruiting somewhat higher proportions of PGRs from other UK institutions than was the case in post-1992 institutions.

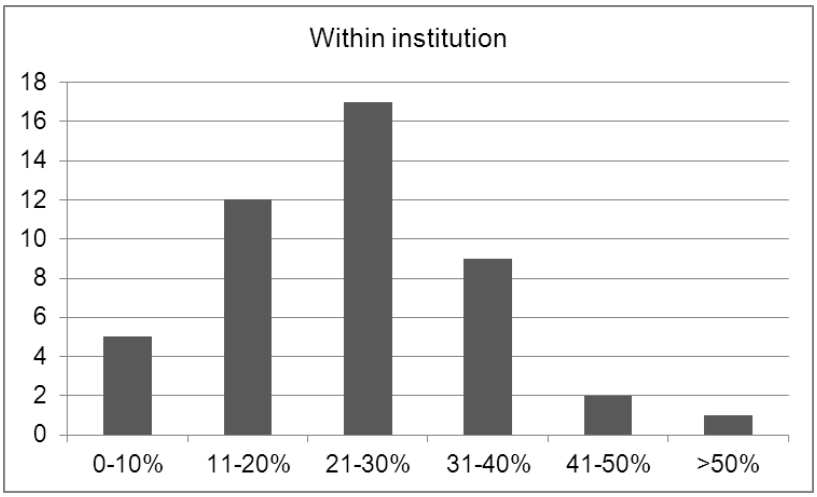
Taking these two results together, the most common proportion of PGRs recruited from within the UK would be 40-60%. Although the original domiciles of these recruits are not known, this does accord roughly with the known overall proportion of around 60% of current PGRs being UK-domiciles, and about 40% non-UK domiciles, from recent HESA data. Almost all respondents reported that they recruited less than 20% of PGRs from EU institutions while most reported that the proportion from outside the EU was 11-30%, which again broadly correlates with the HESA data for those who enter PGR study.

There was a greater spread and different trend of variation between institutions in relation to the proportion of PGRs that were recruited as 'returners' to HE. Although the most common proportion was less than 10%, ten institutions reported figures of over 40% including three over 50%. Here there was evidence for differences between institutional groups, although the not always consistently. In general there were relatively lower proportions of 'returners' in responding Russell Group institutions, and generally higher proportions in the post-1992 institutions. There were also high proportions reported by certain specialist institutions in the

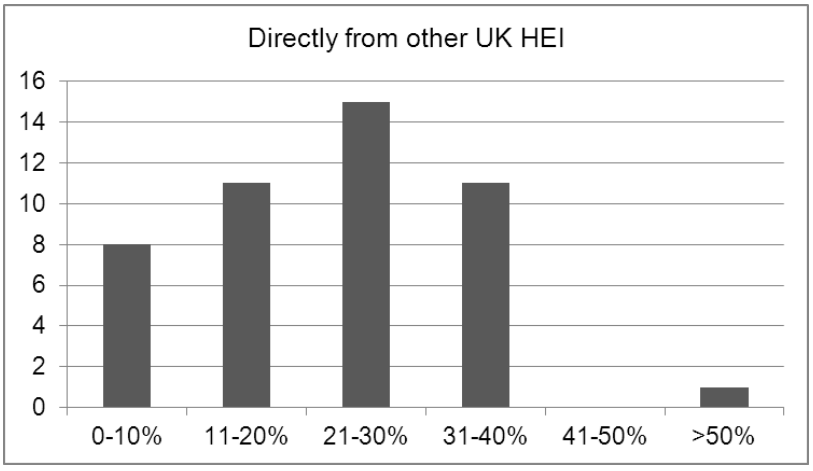
'other pre-1992' group, including the Open University and Cranfield University, which was as expected since both actively focus much of their provision for mature students.

Figure 16 Respondents' estimates of proportions of PGRs recruited from (a) within their own institution, (b) other UK HE institutions, and (c) as returners after time away from HE (n=46)

(a)



(b)



(c)

It should be borne in mind, however, that disciplinary differences are also closely related to the career 'trajectory' of PGRs, with much higher proportions of those studying physical and biological sciences doing so immediately after first or masters degrees (and most at a relatively young age), but only a minority of social sciences, education or arts and humanities doing so. Thus the proportions of 'direct' entrants as opposed to 'returners' will also partly reflect the disciplinary focus of an institution.

7.3 Other evaluative information

All responding institutions reported that their policies and processes for PGR recruitment were monitored and reviewed in terms of their effectiveness. The responsibility for doing so was most commonly held by the institution's research degrees committee or equivalent, although almost as many institutions charged their central admissions team with this oversight and compliance with the QAA Quality Code and/or other regulatory frameworks. Directors of graduate schools were given the responsibility in a significant minority of cases. Annual reviews were commonly mentioned in relation to overall performance in recruitment.

Another metric that several institutions mentioned was doctoral study completion data. A few institutions reported that as a result of previously relatively poor completion rates, which in one instance they thought had resulted from growth in their PGR numbers, they had deliberately adjusted their recruitment strategies. Their aim now was to increase the rate of completion of their PGRs, by recruiting what they perceived to be lower-risk candidates in terms of their suitability for research, based on evidence of prior research experience or high scores in project or dissertation work at masters level. However, there was little immediate evidence to suggest that completion rates were being fed back into reviews of recruitment strategies on a regular basis.

Two thirds of responding institutions reported that they sometimes obtained feedback from candidates to whom they had offered a place on a PGR programme but who had not accepted it, although this was not generally a routine process. Eleven institutions reported that they did not seek feedback of this kind and only one made reference to a regular "*decliners survey*".

Complaints relating to recruitment and selection were usually handled, ultimately, by either the most senior institutional staff member with overall responsibility for (all) admissions or by the director of the graduate school. A number of institutions placed that responsibility with a variety of other senior staff, sometimes at faculty level rather than centrally.

7.4 Students' experiences of application

Over 50 current doctoral students (PGRs) were interviewed or took part in focus groups as part of the in-depth research. This gave a brief but rich insight into students' experience of the recruitment processes 'on the ground.' Participants had been selected deliberately to display some of the diversity amongst PGRs in terms of broad research discipline, domicile and mode of study, in order to view potential differences in recruitment practice.

The experiences reported echoed the diversity of several aspects of PGR study and also the range of recruitment processes operating in different institutions, programmes and to some extent personal circumstances. A full investigative project is recommended to portray the full range of issues. Within our sample there was some indication of significant differences between the experiences of external as opposed to internal candidates, as well as variances expected in relation to other circumstances.

Several external applicants attested to the personal resilience that had been required for them to navigate the succession of stages of engagement, application, securing funding and then enrolment onto a PGR programme, particularly in research-intensive institutions. In some of the institutions where processes were quite highly devolved to faculty or department level, progress along this pathway could be unclear or even confusing, particularly where application for funding was a separate part of the application process (and could only be conducted after receipt of a study offer). Conversely, one international applicant reported being trapped between needing an offer from the institution to confirm her national government funding, while the institution wanted proof of funding before providing her an offer. Several other applicants reported that they had left their prior employment and started their doctoral programme on the basis of only a verbal offer of funding.

However, in other cases, some external students were complimentary and related positive experiences, including UK students who had applied for funded projects or scholarships. Although they recognised that there had been intense competition, they believed that the process had been well-planned, streamlined and, they perceived, fit for purpose and fair.

The experiences of certain internal candidates had differed to some extent from the process specified by the institution, particularly where advantage could be taken of the student being a "*known quantity*." Perhaps understandably, it seemed to be relatively common for these candidates not to have been interviewed formally. In some cases, significant support was given by the potential supervisor to co-develop the research proposal and also to help the student to navigate the application process successfully. The timescale for internal applications of this kind varied from very long (such as a year to secure funding after a position was offered) to very short indeed – a matter of only two to three weeks in rare instances.

These differences potentially raise some issues in relation to equity of access, with internal candidates in a seemingly stronger position than external candidates in some cases to successfully navigate through the application process. In the interviews, institutions reported that on their website they generally advise potential applicants to contact the institution or potential supervisors before making an application. However, external applicants may not be aware of the implications of not doing this, and could therefore unintentionally be disadvantaged. In one institution PGRs that had been both internal and external candidates reported receiving helpful assistance from the central PGR recruitment team, but any future research into application experiences could usefully consider the extent to which this was available to both internal and external applicants.

This variety of experiences indicates that any future research into student experiences of applications and recruitment to PGR study would need to take into account different aspects of PGR diversity, and potentially at a more significant scale in order to be meaningful.

8 Challenges, opportunities and recommendations

8.1 Research findings

- All institutions see PGRs as strategically important to their research capacity and outputs, and they are generally referenced in institutional research strategies. They provide critical mass within research groups but also undertake higher risk research projects than research staff. The project touched on the extent to which PGRs contribute to institutional REF performance, underpinning REF publications, such that many institutions target PGR growth in areas of research excellence.

- PGRs are also seen as effective routes to building international and inter-sectoral collaborations, as well as providing much of the capacity to deliver industrially contracted research, thereby being engines of innovation. Institutions also recognise the importance of PGRs to their potential pipeline of high-quality researchers. While their contributions to teaching are acknowledged they are subsidiary and not a strategic driver of recruitment. Although fee income was important for a few, most institutions recognise the cost of providing PGR programmes as part of their investment in research activity, and some simply see PGRs as implicit to being a research-active university.

- Almost all institutions are seeking at least some growth in their PGR numbers, although this is frequently not translated into formal quantitative targets. Growth is especially sought in international PGRs, as institutions believe that UK PGR programmes are internationally competitive, partly reinforced by world-leading professional development provision. However, they recognise increasing competition as European provision in English grows and also fear that the UK is perceived as less welcoming to international students due to current immigration policy and visa processes. The view held by many that there is an increasingly challenging international market suggests that their own aspirations for growth may be challenging.

- Almost all institutions also seek some growth in UK-domiciled PGR numbers, yet expect reduced demand as the level of UG loans increases and there is less funding for PGT

programmes. Overall, most institutions expect total PGR demand to fall, but individually still have expectations for growth.

- The introduction of the Research Councils' CDT/DTP programmes is impacting on the recruitment of PGRs. As well as increasing the concentration of PGRs within research-intensive institutions, the requirement for institutions to find associated administrative costs and matched funding is impacting on the availability of funds for institutional PGR scholarships and their flexibility to direct PGR recruitment according to institutional priorities. Institutions, especially those with collaborative programmes, are currently working on integrating recruitment for CDT/DTP within HEI recruitment processes and regulations.

- Supply and demand is generally driven by the availability of funding, particularly for UK PGRs. Competition is strong for funded places and scholarships and expected to increase further as most institutions struggle to maintain their scholarship programmes, although a few institutions are investing in this area. Institutions expect the lack of funding to create more variation in delivery mechanisms, such as blended learning, with the boundaries between full-time and part-time study becoming more blurred. Institutions generally expect a reduction in self-funded PGRs. Although outside the scope of this project, institutions mentioned professional doctorates as a potential growth area, although a few mentioned the cost of UG education impacting on the decisions of mid-career professionals to support their children's education rather than invest in their own professional development.

- Institutions currently dedicate little resource centrally to marketing PGR programmes; such activity is mainly limited to the production of a PGR prospectus and advertising of funded scholarships. Despite the challenges recognised, the prevailing strategy towards marketing PGR programmes is general, rather than targeted towards strategically important target market segments, for example within the international market or certain disciplines. In contrast, one clear segment where they target effort is their own UG and PGT students.

- Institutions tend to be somewhat reactive and many are focusing recruitment effort on areas of existing experience and strength, often where they have connections at department or individual supervisor level. Institutions generally welcomed the recent bi-lateral country agreements between the UK and, for example, Brazil. There was relatively little evidence for the development of institutional partnership agreements designed to lead to PGR recruitment, unlike at PGT level.

- Institutions generally reported no or few difficulties in getting sufficiently highly-qualified applications. The main constraint is getting the funding and resources into place to support the right candidate. Alongside funding, institutions cited lack of supervisory capacity, laboratory facilities and general physical space as ongoing challenges, resulting in wasted effort handling applications for projects that they did not have the capacity to support. A few institutions also raised issues with insufficient English language standards for potential international PGRs. Some institutions mentioned strong competition for the most highly-qualified PGRs, perceiving that they could be losing out

to quicker and more competitive offers from the US and Canada. There was little mention of competition from graduate recruiters from other employment sectors.

- Central coordination of some aspects of recruitment processes is a growing trend, with increased use of institutional CRM systems for PGR recruitment, already widely used at UG and PGT level. Institutions are developing a better overview of demand and are introducing targets for processing and responding to applications more quickly. A benefit is the potential market intelligence on the characteristics, demographics and interests of applicants, and conversion rates at each stage of the recruitment process.

- PGR recruitment processes tend to be quite complex and in detail vary greatly amongst different institutions, disciplines and funding programmes. They range from programmes where multiple applicants compete for a known project in a funded programme, through to extended individual engagement with a potential supervisor prior to an application for a self-funded project. Responsibility is held in a wide variety of hands, from centralised processing through to decisions on individual suitability at faculty, departmental or supervisor level. Overall, institutions seem confident that their current processes are effective.

- Selection interviews are widespread for international and UK applicants, but not universal, even within institutions that state they require interviews. The extent of training amongst academics charged with selecting PGRs is variable, whereas their central recruitment/admissions colleagues are trained yet appear only rarely to be involved in the interviewing process.

- Universally, institutions are seeking the highest quality candidates they can find. This tends to override international or sectoral strategies. The most important factors in applicant selection are academic attainment, the strength of research ideas or proposal, and evidence of prior research skills. Although not a requirement, a masters degree is increasingly being seen as preferred evidence for research experience or aptitude. Where available, integrated masters degrees are seen as preferable to traditional UG degrees. Performance in project work or dissertation within a masters may be used as a proxy for research aptitude, although other personal competencies and attributes are not widely assessed.

- The complexity and diversity of applicants and recruitment processes in institutions is such that applicants can have very different experiences. These range from straightforward application, and subsequent timely offer, to a confusing, complex and frustrating process that requires significant resilience and perseverance from the applicant. These differences are largely due to the separation of recruitment and funding applications in some programmes, but also due, despite the increasing centralisation of applications, to the individual nature of most PGR recruitment. Internal applicants, or those with good familiarity with the processes, are more likely to experience a smoother ride through the system.

- External or ‘returning’ applicants coming into the system cold are less likely to understand the requirements, or ‘unwritten’ rules, in applying for a PGR programme, raising questions about equality of access for all applicants. The importance, in some

disciplines, of the quality of the research idea or proposal may favour internal applicants as they may know that they can engage a potential supervisor in advance in order to develop ideas. External candidates may be unaware of the extent to which they can obtain this type of support.

- Institutions are generally considering the issue of WP within PGR programmes, but are struggling to define what this means at PGR level, especially internationally, and how to translate this into institutional strategies and measures. A few institutions are undertaking pilot work across PGT and PGR programmes, but there is a current lack of data with which to assess the issue. There is also a paucity of knowledge as to whether HEIs are accessing the widest pool of talent in terms of PGR recruitment, as few institutions are recording sufficient demographic information about candidates at application stage, with the majority only doing so at time of admission of the PGR.

- A full investigation of the composition of current institutional PGR cohorts, in relation to mobility, would require analysis of HESA datasets. However, information from these respondents suggests that, on average, institutions recruit about as many PGRs from their own institution as they do from all other UK institutions combined, although there is great variability between different institutions. There is also great variability in the proportion of PGRs who have 'returned' to HE after time spent in employment, rather than being recruited directly from a prior degree, although this is strongly related to discipline too.

- Overall, institutions believe that UK PGR programmes are competitive internationally and that their own processes are broadly effective, on which basis they are seeking growth in numbers. There is some evidence to suggest that they may need to up their game to market and recruit in a more strategic and targeted fashion if they are to achieve their aims in what they believe will be an increasingly challenging market.

8.2 Possible opportunities for HEFCE support

The project included exploring the question 'How can HEFCE through funding or other mechanisms increase PGRs' contribution to research excellence?' A number of areas of possible activity or involvement by HEFCE in relation to recruitment and selection are listed here. These are put forward on the basis of inferences we make from the research findings but also directly from suggestions made by respondents to the survey and in the interviews. They were invited to highlight issues where they believed HEFCE could provide a contribution to sustaining or improving the UK PGR recruitment market and institutions' performance within it.

8.2.1 Funding

- The most common issue raised by respondents was around funding. Generally, institutions welcomed the dual support system and the flexibility within HEFCE QR funding to respond to institutional, rather than national, priorities. There was a general appeal that HEFCE should increase its funding support for PGR study, ideally in the form of scholarships or funding for programmes, which was in some cases a response to

perceptions that CDT/DTP funding was leading to concentration in certain areas of the PGR market to the detriment of others.

- Other funding suggestions included possible development of a loan scheme to help UK graduates fund PGR study, especially those who are considering part-time PGR study and currently are predominantly self-funded, and/or initiatives to incentivise employers, particularly small and medium-sized enterprises (SMEs), to support PGR activity. HEFCE might consider exploring the market and financial feasibility of such schemes.

- There were repeated requests for HEFCE to enhance and/or broaden the funding mechanisms for UK students to undertake PGT study, given that this was seen increasingly as a critical pathway to high quality PGR study which could in future restrict the range of participants able to progress to PGR study.

- Some institutions were already benefiting from HEFCE's pilot Postgraduate Support Scheme to trial initiatives at PGT level and the extent to which these enabled widened progression to PGR study, while other institutions were disappointed not to have been successful in bids to it. Given the interest in potential widening of participation, further research investigation to define WP within PGR study and develop new initiatives to support this would be valuable.

8.2.2 Marketing support

- Given the level of concern around the possible damage to the UK's reputation as a welcoming destination for HE study from recent immigration policy changes, it is not surprising that many institutions directly requested HEFCE's support in lobbying to seek change in UK immigration policy. However, as the issue is also one of perception, another option could be additional and sustained international promotion of the positive aspects of studying HE in the UK. More joined-up efforts by the key bodies promoting international HE study in the UK, including Universities UK, the International Unit, British Council and UKTI Education would be helpful, in effect comprising a national marketing effort, to sustain what is still a very competitive position in the international PGR market.

- A recent BIS study on the wider benefits and value of international study in the UK (Mellors-Bourne et al., 2013) found highly positive perceptions of benefits from international alumni from UK HEIs, with the potential for these to be used in promotional efforts. The research was conducted principally at PGT and UG level, so a similar study focused on personal narratives and the impact and benefits of PGR study in the UK could provide useful examples and case studies for either institutional or national marketing efforts.

8.2.3 Investigative work: participation and evaluation

- Developing a better and more common understanding of what constitutes WP in PGR programmes is probably necessary, before considering potential funding of development initiatives to sustain or improve the diversity of participation and equality of access to

PGR programmes. One specific avenue that could be utilised would be tracking of any students in receipt of WP initiatives, using student data that have undergone 'matching' so that individual students can be tracked across different datasets, or within the Futuretrack longitudinal research project, some of whom would now be undertaking or completing PGR study. Alternatively, given institutions' interest in WP within PGR programmes, it is likely that a range of institutions would be willing to participate in a project to track their students who had been part of any WP initiatives.

- There is no centralised data on PGR applications. Although institutions did not wish to see a UCAS-style central admissions system for PGRs, many institutions interviewed expressed interest in benchmarking and evaluating their recruitment efforts. HEFCE could usefully explore how to collate institutional data on demand for PGR study that could be useful to help HEIs to benchmark and provide a UK overview of gross changes in the attractiveness of PGR study. Recent work (BIS, 2013) has provided useful groundwork although that project used applications as a basis for the research, rather than the applicants themselves.

- There is clearly rich evidence to be gathered from current or recent PGRs on their experience in relation to motivations for PGR study and especially application and recruitment processes. The inherent complexity and diversity within the PGR market requires a more substantial investigation than could be achieved in this study, which focused primarily on HEI perspectives. Such an investigation could provide information in relation to participation and equality of access, and extending such research to those who did not succeed in undertaking PGR study would be a valuable part of this.

- There could be benefit in seeking to add one or two additional questions to the Postgraduate Research Experience Survey in relation to experiences of recruitment, as this is not currently covered in the survey.

- The institutions interviewed noted that professional doctorates were outside the scope of this study, but would welcome a HEFCE study into professional doctorate programmes as these were anticipated to become a growing part of PGR study in the future.

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Appendix 1. Institutions participating in the primary research

Aston University	Northumbria University	University of Derby
Birkbeck, University of London	Nottingham Trent University	University of East Anglia
Birmingham City University	Oxford Brookes University	University of Exeter
Brunel University	Plymouth University	University of Greenwich
Canterbury Christ Church University	Queen Mary London	University of Hull
Coventry University	Royal Agricultural University	University of Kent
Cranfield University	Royal Northern College of Music	University of Leicester
De Montfort University	Royal Veterinary College	University of Manchester
Falmouth University	Southampton Solent University	University of Nottingham
Harper Adams University	St George's, University of London	University of Oxford
Heythrop College, University of London	St Mary's University, Twickenham, London	University of Portsmouth
Keele University	The Open University	University of Reading
King's College London	University College London	University of Southampton
Kingston University	University of Bath	University of Sunderland
Lancaster University	University of Birmingham	University of Surrey
Leeds Trinity University	University of Bristol	University of Sussex
London Metropolitan University	University of Cambridge	University of the Arts London
London School of Economics and Political Science	University of Central Lancashire	University of West London
London South Bank University	University of Chester	University of Worcester
Loughborough University	University of Chichester	University of York
Newcastle University	University of Cumbria	

Group discussions were conducted and/or interviews undertaken to include inputs from the following stakeholders and groups: British Academy, British Aerospace plc, Department for Business, Innovation & Skills (BIS), ICARG (CBI), Research Councils UK, Russell Group, Scottish Funding Council, Universities UK, Vitae External Advisory Board, Wellcome Trust.

Appendix 2. List of abbreviations

AHRC	Arts and Humanities Research Council
BGP	Block Grant Partnership
BIS	Department for Business, Innovation & Skills
BME	Black and Minority Ethnic
CDA	Collaborative Doctoral Awards
CDT	Centre of Doctoral Training
CRM	Customer Relationship Management
DTC	Doctoral Training Centre
DTP	Doctoral Training Partnership
ESRC	The Economic and Social Research Council
EU	European Union
FTE	Full-Time Equivalent
HE	Higher Education
HEI	Higher Education Institution
HESA	Higher Education Statistics Agency
IELTS	International English Language Testing System
PGT	Postgraduate Taught
PGR	Postgraduate Researcher or Postgraduate Research, depending on context
PS	Project Studentship
PVC	Pro-vice chancellor
QAA	Quality Assurance Agency for Higher Education
QR	Quality-related (HEFCE funding)
RCUK	Research Councils UK
RDAP	Research Degree Awarding Power
REF	Research Excellence Framework
STEM	Science, Technology, Engineering and Mathematics
UCAS	Universities and Colleges Admissions Service
UG	Undergraduate
WP	Widening participation