

Recruiting researchers: survey of employer practice 2009



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Vitae's employer network

Vitae is a national organisation funded by the research councils to realise the potential of the UK's higher education research workforce. A key part of this work is examining how doctoral graduates make the transition into other sectors. 'What do researchers do? (2009)' demonstrates that doctoral graduates go on to work within a wide variety of destinations. This survey represents Vitae's most systematic attempt to develop an understanding of the attitudes and practices of non-higher education employers in relation to doctoral graduates.

Through its employer network Vitae works with current and prospective employers of doctoral graduates to:

- provide information about researcher careers and employment
- facilitate dialogue between doctoral graduates and employers
- provide information on the latest thinking in recruiting, training and working with doctoral graduates
- campaign to raise the range of employment opportunities open to doctoral graduates
- provide an opportunity for employers to engage in national discussions around how we train our doctoral graduates.

We aim to raise awareness of the value and contribution of doctoral graduates to the UK economy and society and to work with employers to look at how doctoral graduates can support their organisation more effectively. The examples of recruitment and employment practice identified in this survey and through our wider employer engagement activities mean that Vitae is able to support organisations by sharing practice from across a wide range of organisations that are successfully targeting and employing doctoral graduates.

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Foreword

I am delighted to introduce the first Vitae survey of researcher engagement with employers in the UK. We are greatly encouraged by the responses of over 100 employers who have enabled us to gain a real insight into the practical implications of recruiting research staff in these challenging times.

Encouragingly, a key finding is that 73% of all those employers surveyed would welcome more applications from doctoral graduates and that over one-third are already actively targeting them.

As we have seen from previous studies, the process of achieving a doctorate develops an enquiring mind, problem-solving abilities and the ability to assimilate new ideas quickly. These attributes are much valued by the employers cited in the survey. Those who are actively engaged in recruiting doctoral graduates have many practices in place to increase the likelihood of attracting and retaining the best. The survey highlights these practices and a very positive next step will be the production of some targeted case studies to help to disseminate best practice.

So there are key messages to be taken on board by employers, researchers and universities within the report. For me it highlights the need to supply as much information as possible to employers about the skills that doctoral graduates can bring to the workplace. We must ensure that there is awareness on all sides of the very real commercial benefits which can be gained by the UK economy from employing an extraordinarily talented and diverse group of people.

David Cairncross
Secretary, CBI Inter-Company Academic Relations Group (ICARG)

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Executive summary

This report sets out the findings of a piece of research conducted by Vitae into the experiences and attitudes of employers towards doctoral graduates. The research surveyed 104 employers who represent a diverse mix of sectors, organisation size and orientation towards doctoral graduates.

It was found that most employers surveyed (73%) would welcome more applications from doctoral graduates and that a third of employers surveyed (31%) are already actively targeting doctoral graduates. Employers are keen to recruit researchers both for their technical skills and for their 'first class brains'.

Employers who are actively targeting doctoral graduates employ a wide range of practices to attract, recruit and retain them. These practises are likely to be instructive for other employers who are interested in increasing their recruitment of doctoral researchers. Key features of the practice of those employers who are actively orientated towards doctoral graduates include:

- Specifying a doctorate as either an essential or desirable characteristic in job applications
- Developing a specific recruitment process for doctoral graduates
- Offering an enhanced starting salary for doctoral researchers
- Developing wider links with universities that could be leveraged for recruitment
- Developing placement and internship schemes

It was found that typically employers rank doctoral graduates skills in the following order

1. data analysis
2. problem solving
3. drive and motivation
4. project managing
5. interpersonal skills
6. leadership
7. commercial awareness

As might be expected they anticipate that doctoral graduates would be strongest in skills that are closely allied to the process of research such as data analysis. Although there is broad agreement on the order of ranking, employers disagree about the level at which they could expect doctoral graduates skills to be at. The greater the organisations experience of doctoral graduates the higher the anticipated level of competence across all skills.

Analysis of employers' responses to the survey has enabled four groups to be developed to describe organisations' orientation to doctoral graduates. It is anticipated that this typology will be useful for employers who wish to calibrate their own experience against the rest of the market.

Group 1: 6% of respondents think very clearly about the value of doctoral graduates to their business. They are actively targeting doctoral graduates and typically have lots of practice related to the recruitment and retention of this group.

Group 2: 25% of respondents also show a strong interest in doctoral graduates. These companies have some practice designed to engage and recruit them but their level of engagement with this section of the market is less developed than group 1.

Group 3: 47% of respondents have some interest in doctoral graduates with some employers already recruiting from this cohort. Many more in this group expressed an interest in doctoral graduates but do not seem to be actively targeting this group at the current time. Employers in this group have not generally developed a range of practice to target doctoral researchers.

Group 4: 22% of respondents have no real interest in doctoral graduates and answered 'no' to almost all questions about engagement with the cohort.

This research enhances the understanding of the doctoral labour market. Throughout the report key messages and implications are brought out for a variety of stakeholders. These are grouped below as part of the executive summary.

Key messages: employers

- Around a third of employers surveyed are actively targeting doctoral graduates in their recruitment
- The more experience employers have of doctoral graduates the higher they rate their skills
- Employers who simply encourage researchers to apply on the same basis as other graduate recruits are not usually successful in recruiting doctoral graduates
- Some employers surveyed have developed specific recruitment processes for doctoral graduates which typically include using specialised tests, exploring learning from the doctorate or using less testing
- Many of the organisations that actively target doctoral graduates offer an enhanced starting salary
- Employers frequently use wider links with universities to support their recruitment of doctoral researchers
- 15% of employers who responded to this survey use placements and internships to build stronger relationships with universities and to identify potential recruits
- Employers surveyed generally rate doctoral graduates' skills most highly in technical areas and areas related to undertaking a doctorate such as problem solving, data analysis and project management
- Employers who are interested in targeting the researcher labour market may find that the practice highlighted in this survey (e.g. enhanced salaries, strong links with universities, use of placement schemes etc) is useful in increasing their attractiveness to doctoral researchers
- Many of the employers surveyed who do not wish to recruit doctoral graduates do not have any experience of working with this group

Key messages: **doctoral graduates**

- Around a third of employers who responded to this survey actively target doctoral graduates. *These employers may specify they need a doctorate in job applications, use a specialised recruitment process or even offer a salary premium*
- Many employers would be happy to recruit doctoral graduates but do not actively signal this. *Doctoral graduates are typically in competition with high achieving graduates and will need to prove their particular value*
- Employers who already have links with universities are a good place for doctoral researchers to start their job searching. *These employers are more likely to understand the skills possessed by researchers and may be willing to talk about their recruitment needs*
- Placements and internships offer doctoral graduates a good opportunity to establish a relationship with an employer that may develop into a job offer
- Doctoral graduates should be aware of the way employers will typically rank their skills to help them to articulate their actual skills during recruitment
- Doctoral graduates may wish to investigate how much knowledge and experience employers have of researchers as part of the job searching and application processes
- Doctoral graduates should be aware that there are a minority of employers who do not have any interest in recruiting doctoral graduates. *If doctoral graduates are to overcome this during recruitment they will need to focus on their individual skills and motivations rather than their qualifications*

Key messages: **universities**

- Around a third of employers surveyed are actively targeting doctoral graduates. *Universities may wish to develop their knowledge of this group and engage them specifically around the recruitment of researchers*
- Universities that develop links and partnerships with companies may find that there are additional benefits in improved employment opportunities for doctoral graduates
- Universities may find it useful to explore existing relationships with employers (e.g. through KTPs) to see if any might be interested in finding out more about what doctoral graduates could offer to their business
- This report develops a typology of different levels of employer engagement with researchers. *Universities may wish to explore whether the typology developed in this report is useful in helping to focus employer liaison work and the building of partnerships*
- Universities may find it useful to provide opportunities for employers to learn more about researchers. *Increasing employers' knowledge base may have knock on effects in their orientation to doctoral graduates*

Employer engagement with doctoral researchers

This publication is designed to contribute to the wider understanding of the role doctoral graduates play in the labour market. The research in this publication is based on a survey of employers in which they were asked questions about their understanding of and engagement with researchers. The employers' answers to the survey questions were analysed to form broad conclusions based on the whole survey. The respondents were then grouped into four main types. It is believed that this typology is useful for both understanding the labour market and for allowing employers to calibrate their own practice and to explore how they might engage with the researcher labour market further.

The survey was completed by a diverse range of organisations. A full breakdown of the sample can be found in the appendix to this report along with a discussion of the methodology. In summary this was a general survey of UK employers designed to investigate their experience of recruiting doctoral graduates and other researchers. The sample represents

- a good mix of organisation size
- a broad range of sectors
- diverse levels of experience of doctoral graduates

Participants in the survey were asked a range of questions about their experience of recruiting doctoral researchers. Typically these questions were designed to focus on employers' actual experience, but there are also a number of questions that investigate their perceptions of doctoral graduates.

Responding to applications from researchers

Key to understanding employers' orientations to doctoral graduates is whether they would want to recruit more of them. Participants were therefore asked 'Would you welcome more applications from doctoral graduates?'

Yes 73% **No** 27%

This demonstrates that most employers surveyed are happy to accept applications from doctoral graduates. As will be seen, this does not necessarily mean that all of these organisations are actively targeting doctoral graduates.

An additional question asked participants whether they would consider targeting research staff in their recruitment. Participants were asked 'There are 40,000 professional researchers who are employed by UK universities. Would you consider targeting this group in your recruitment?'

Yes 31% **No** 33% **More information needed** 36%

The answers to this question reveal that while there is a reasonable level of awareness amongst participants about doctoral graduates they are generally much less informed

about research staff. There is clearly a need to better articulate who belong to this group and what their unique selling points might be for a range of potential employers.

Employers welcome doctoral graduates because...

- They are seen to be useful in certain roles

We recognise that it is very useful to have PhD experience for certain roles e.g. consultant.

- Because their research interest connects with the employers business

Our roles are more based around particular skill sets ... if their research had been into the impact of e-learning etc. that would be of interest.

- They are seen as being a high quality recruits 'first class brains'

What we are looking for is first class brains.

Key messages

Employers

- The majority of employers surveyed would like to recruit more doctoral graduates
- A third of employers surveyed do not feel well enough informed about research staff as a group of potential recruits
- Employers surveyed are typically recruiting doctoral graduates because of their research skills, technical knowledge and their ability to learn

Doctoral graduates

- Most employers surveyed would welcome more applications from doctoral graduates

Universities

- Employers surveyed would like more information about research staff

Actively targeting researchers

The previous questions examine employers' attitudes by asking whether they would like to increase recruitment of doctoral graduates or researchers. However, there are a number of employers who go beyond this and are actively targeting researchers. The questions discussed in this section explore the strategies that employers use to target doctoral graduates.

Participants were asked whether they listed 'a doctorate' a qualification that they are looking for when they advertise vacancies. Participants were asked 'Does your organisation employ candidates for job positions in which having a doctorate is stated in the job description to be either an essential or a desirable requirement?'

Yes 37% **No** 63%

Among the 63% of companies that answered 'no' to this question, 10% reported having employees with doctorates (typically in research and development, engineering and teaching roles).

The answers to this question go beyond those to 'Would you welcome more applications from doctoral graduates' in demonstrating an active orientation towards doctoral graduates. This question is asking employers about their current practice rather than asking them to take a hypothetical position on a future graduate. We can therefore read the 37% who answered 'Yes' as representing a section of the labour market that is actively targeting doctoral graduates.

Some employers surveyed have focused their targeting even further by developing a recruitment process that is targeted explicitly at researchers. Participants were asked 'Does your recruitment process for doctoral researchers differ from that for other university applicants?'

Yes 11% **No** 89%

Two more organisations also stated that they were planning to introduce a specific recruitment process in the future. While the percentage of companies that have crafted specific recruitment processes is relatively small it is clear that these companies have a very strong orientation towards doctoral graduates and that their practice therefore provides clues for those organisations that are seeking to expand their doctoral recruitment.

The specific recruitment processes used to recruit doctoral graduates vary depending on the company and the job role, but include using:

- specific assessment centers
- specialised recruitment agencies
- a presentation on the thesis in the interview
- specific recruitment tests focusing on technical skills
- less testing for doctoral level recruits.

The use of different recruitment strategies recognises the different level of experience that doctoral graduates bring. Many are being sought out because of their existing skills and abilities rather than because of their potential to develop these skills.

We do have a different process for doctoral recruits with specialist PhDs. This has a greater focus on the specific technical skills that we are looking for.

It also recognises that doctoral graduates are keen to be treated as 'different' from standard graduate recruits. They are generally keen for their additional experience and education to be recognised by employers. One researcher who contributed to the 'Recruiting PhDs: What Works? (2007)' report commented,

There is a real gap in the job market for PhD students since we don't necessarily fit onto graduate schemes, but don't have the necessary experience to apply for higher jobs. It would help a great deal if companies thought carefully about what positions they want open to PhD students and made this clear in their recruitment literature.

The survey also explored whether organisations have any practice which is designed to specifically attract and retain doctoral graduates. Participants were asked 'Does your organisation do anything specifically to attract and retain doctoral recruits? This might include enhanced starting salaries (higher than a standard graduate starting salary) or specific/accelerated pathways through graduate recruitment scheme.'

Yes 30% **No** 70%

The development of specific packages which are designed to attract and retain doctoral graduates again point to a section of the labour market which is particularly interested in this cohort and is targeting them actively.

The majority of the companies who responded that they do something to attract and retain doctoral recruits offer higher starting salaries to doctoral graduates than they do within their graduate schemes.

These are the main sectors which offered an enhanced salary and their average starting salary offered:

■ Banking and finance:	£50,500
■ Energy and utilities:	£36,250
■ Science and pharmaceutical:	£30,000
■ Engineering:	£26,200

The premium offered to doctoral graduates is different depending on the company, sector and job position. However, an average premium offered by the participants is £3,100 above their average graduate recruitment salary.

This figure is close to that found in the 'AGR Graduate Recruitment Survey 2009' which found that a 47.7% of AGR members who responded offered a salary premium of some kind to PhDs. The median premium for a PhD was £3,500 which compared favourably with the premium for other postgraduate qualification (excluding MBAs) which was £2,000. The 'Survey of employer attitudes to postgraduate researchers' (2006) also underlines that 'most of the recruiters took experience and skills into account when deciding salaries for doctoral candidates and notes that only 21% would take on PhDs at same salary level as other university candidates.

Key messages

Employers

- Around a third of employers who responded to this survey are actively targeting doctoral graduates in their recruitment
- Some employers surveyed have developed specific recruitment processes for doctoral graduates which typically include using specialised tests, exploring learning from the doctorate or using less testing
- Many of the organisations that actively target doctoral graduates offer an enhanced starting salary

Doctoral graduates

- Some employers surveyed actively target doctoral graduates. These employers may specify they need a doctorate in job applications, use a specialised recruitment process or even offer a salary premium

Universities

- Around a third of employers surveyed who responded to this survey are actively targeting doctoral graduates. Universities may wish to develop their knowledge of this group and engage them specifically around the recruitment of researchers

Creating wider links with universities

A number of employers surveyed are clearly interested in building wider links with universities that go beyond their recruitment strategy. These links seem to be built for broader business reasons, but clearly have positive knock-on effects for their recruitment. Strategies employed include funding studentships or research projects, providing placements and internships or involvement in Knowledge Transfer Partnerships.

39 % of the participants describe themselves as having collaborations, links or partnerships with a university involving doctoral researchers:

- some of the university links are related to an specific discipline
- most of the companies have links with more than one university
- the links include partnerships, joint research projects, PhD/doctoral researchers career events, marketing of the companies career opportunities.

More specifically 15% of the participants offer a specific programme or internship to doctoral graduates (an additional company responded that it was planning to introduce a scheme soon). These include:

- funding doctoral study (EngD or PhD) either directly or through
- collaborative awards for studentships (CASE)
- placements and internships
- involvement in Knowledge Transfer Partnership (KTP)
- organising seminars for doctoral graduates

The companies that are offering placement and internship programmes are spread across a wide range of sectors (engineering, IT and information, pharmaceutical, banking and finance, science, retail, public sector, non-profit).

The use of placements clearly provides an additional mechanism through which organisations surveyed can attract doctoral graduates by building a relationship with them before recruitment begins.

Key messages

Employers

- Employers surveyed frequently use wider links with universities to support their recruitment of doctoral researchers
- 15% of employers who responded to this survey use placements and internships to build stronger relationships with universities and to identify potential recruits

Key messages (continued)

Doctoral graduates

- Employers surveyed who already have links with universities are a good place for doctoral researchers to start their job searching. These employers are more likely to understand the skills possessed by researchers and may be willing to talk about their recruitment needs
- Placements and internships offer doctoral graduates a good opportunity to establish a relationship with an employer that may develop into a job offer

Universities

- Universities that develop links with companies around knowledge transfer activity may find that there are additional benefits of improved employment opportunities for doctoral graduates
- Universities may find it useful to explore existing relationships with employers (e.g. through KTPs) to see if any might be interested in finding out more about what doctoral graduates could offer to their business

Employers' evaluation of researchers' competencies

A clear picture of employers' practice is therefore emerging from this survey. Majority of employers that took part in the survey are happy to receive applications from doctoral graduates and around a third are actively targeting this group. In order to further understand what influences employers orientation to doctoral graduates a number of questions were included in the survey to ascertain employers evaluation of where doctoral graduates strengths and weaknesses lay.

Participants were asked to rate researchers' competence in the following skills:

- commercial awareness
- data analysis
- drive and motivation
- interpersonal skills
- leadership
- problem solving
- project management

On average, employers ranked researchers relative competence in the different areas in the following order:

1. data analysis
2. problem solving
3. drive and motivation
4. project management
5. interpersonal skills
6. leadership
7. commercial awareness

Employers surveyed tend to anticipate that doctoral graduates would be stronger in technical areas that are related to their research and to expect that they may have to develop their soft skills. While there is a strong agreement between respondents about the relative weighting of the different skill areas, there is significant disagreement about the absolute level of skills that

doctoral graduates had. As will be demonstrated below the greater an employers' experience of researchers and their active orientation towards them the better they rate them across all skill areas. So while some employers may be recruiting doctoral graduates for strong technical skills they are also rating their soft skills highly as well.

The answers to the question about competencies such as 'How would you expect an employee with a doctoral qualification to perform in the following areas?' were used to create an index by which employer attitudes to doctoral graduates' skills could be measured. It was discovered that no single factor (eg size of organisation, level of recruitment of doctoral graduates) is a particularly good predictor of employer attitude to researchers.

Employer groups and researcher engagement

A typology was created that looked at the answers to a number of questions (especially 5,5c,6,6c,6e,6g,6i,7). The more positive answers to those questions the higher up the typology employers moved. While the typology was based on answers to these quantitative questions we also stepped through each employer's response to look for other answers that illustrated their level of engagement with doctoral graduates. This analysis identified the following four groups.

Group 1: 6% of respondents think very clearly about the value of doctoral graduates to their business. They are actively targeting doctoral graduates and typically have lots of practice related to the recruitment and retention of this group.

Group 2: 25% of respondents also show a strong interest in doctoral graduates. These companies have some practice designed to engage and recruit them but their level of engagement with this section of the market is less developed than group 1.

Group 3: 47% of respondents have some interest in doctoral graduates with some employers already recruiting from this cohort. Many more in this group expressed an interest in doctoral graduates but do not seem to be actively targeting this group at the current time. Employers in this group have generally not developed a range of practice to target doctoral researchers.

Group 4: 22% of respondents have no real interest in doctoral graduates and answered 'no' to almost all questions about engagement with the cohort.

The different groups therefore represent a progression in terms of level of engagement with doctoral graduates. This moves from high levels of interest and strategic investment in doctoral recruitment in group 1 to disinterest in group 4. What is interesting is that employers' perceptions of doctoral graduates' skills follows a remarkably similar pattern.

Table 1 demonstrates that there is a progression in employers perception of the value of researchers' skills that moves from group 4 (the least engaged) to group 1 (the most engaged). The percentages in table 1 relate to the percentage of employers in that group that rates those skills as either 'high' or 'very high' when asked 'How would you expect an employee with a doctoral qualification to perform in the following areas?'.
 Table 1: Level of performance expectations

	Group 1	Group 2	Group 3	Group 4
Data analysis	100%	100%	91%	91%
Problem solving	100%	88%	89%	83%
Drive and motivation	100%	84%	59%	74%
Project management	83%	36%	70%	39%
Interpersonal skills	67%	56%	39%	26%
Leadership	67%	28%	24%	17%
Commercial awareness	50%	20%	28%	22%
Overall	81%	59%	57%	50%

Table 1: Level of performance expectations

Those cells coloured orange don't fit the pattern. However these all have high responses to the 'medium' category.

It is therefore valuable to explore this typology further. It is likely that the practices within groups 1 and 2 may offer ideas and strategies that will be useful to other employers who are interested in actively engaging with the doctoral labour market.

Key messages

Employers

- The more experience employers have of doctoral graduates the higher they rate their skills
- Employers who participated in the survey generally rate doctoral graduates skills most highly in technical areas and areas related to undertaking a doctorate such as problem solving, data analysis and project management
- It is possible to group employers into four groups depending on their orientation to doctoral researchers

Doctoral

- Doctoral graduates should be aware of the way employers will typically rank their skills to help them to articulate their actual skills during recruitment
- Doctoral graduates may wish to investigate how much knowledge and experience employers have of researchers as part of job searching and application processes

Universities

- May wish to explore whether the typology developed in this report is useful in helping to focus employer liaison work

Group 1

6% of respondents to the survey were categorised in group 1. These employers have a very clearly thought through approach to the targeting of doctoral graduates. They clearly perceive a strong benefit to their business in engaging with this group and have lots of ideas about recruitment and retention. As might be expected the science and pharmaceutical sector is the most common sector within this group.

Employers in group 1 generally rated doctoral graduates' skills very highly as can be seen in figure 1.

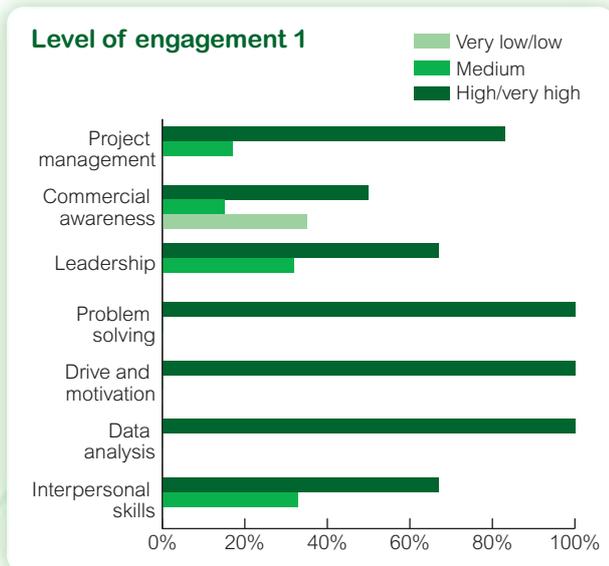


Figure 1: Level of engagement - Group 1

As can be seen from this figure (above) group 1 employers feel that doctoral graduates are very strong in problem solving, drive and motivation, data analysis and project management. They also rate them more highly in leadership and commercial awareness than any other group. Group 1 employers describe doctoral graduates as being of 'generally higher quality'. This is particularly interesting as this group have more experience of doctoral graduates than any other and correspondingly rate their abilities highly.

This is not to say that Group 1 employers are completely uncritical of doctoral graduates, nor do they see all doctoral graduates as the same. Group 1 employers note that they are particularly looking for those who have 'experience of working with clients' and have strong abilities to make decisions or work collaboratively.

Group 1 employers are typically active employers of doctoral graduates who also actively target more doctoral graduates in their recruitment strategy. In order to achieve this they usually have specific recruitment strategies to attract and retain doctoral graduates which differ from their standard graduate recruitment. This may include targeting specific careers events, enhanced salaries and specific development paths. Some doctoral graduates are clearly treated as much more analogous to an experienced hire than a graduate recruit and are recruited as much for specific technical expertise as their potential.

Group 1 employers also typically have developed strong links with universities often as part of their general business, and this closeness enables them to 'look out for specific targets that suit job roles more closely'. Some have also developed these links into some kind of internship or placement scheme.

Key messages

Employers

- Group 1 employers typically have a strong knowledge base about doctoral graduates and a well developed approach to recruiting and retaining them
- Other employers who are interested in targeting the researcher labour market may find that the practice found in group 1 (e.g. enhanced salaries, strong links with universities, use of placement schemes etc) is useful in increasing your attractiveness to doctoral researchers

Doctoral graduates

- There are a small number of employers who are actively recruiting doctoral researchers. Doctoral researchers should be aware of which of these organisations are actively recruiting from their disciplines

Universities

- Group 1 employers are likely to be interested in partnerships with universities around a range of issues including recruitment. There is likely be value in investing in these relationships

Group 2

25% of respondents to the survey were categorised in group 2. These employers show a strong interest in doctoral graduates. They typically have some clear ideas about how to engage and recruit them, but are not as active in their targeting as those in group 1. Energy and utilities, engineering and manufacturing, and banking and finance are the most common sectors in this group

Like those in group 1 they typically rate doctoral graduates' skills highly especially in the more technical areas.

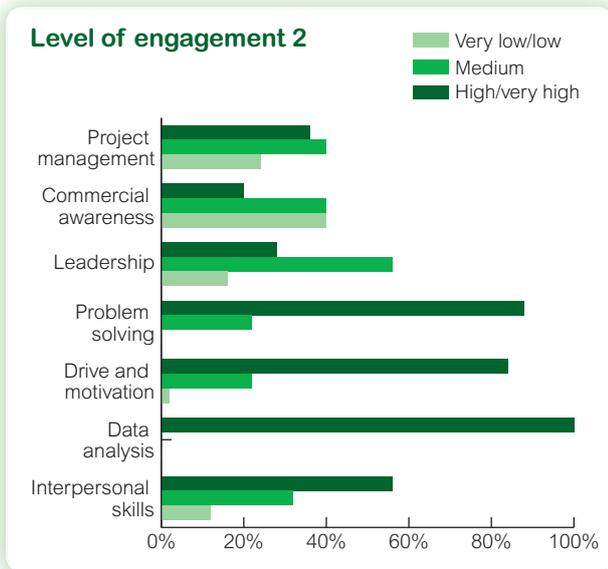


Figure 2: Level of engagement - Group 2

Group 2 employers feel that doctoral researchers are strong in the areas of problem solving, drive and motivation, data analysis and interpersonal skills. They are less sure about their abilities in project management, commercial awareness and leadership.

Employers in group 2 recognise that 'Researchers are not a homogeneous group', even more than with group 1, they are looking for doctoral graduates who are able to prove that they can expand their skills and transfer knowledge to new contexts.

Some forget that their deep specialism is unlikely to be wanted by many employers. However, the general experience that they have gained through a doctorate may be.

Some note that the doctoral graduates they interview 'have not always done their homework about us as a business'. Others comment that they 'often don't seem equipped to answer questions about their skills, their career aspirations and their understanding of our business well enough to demonstrate that they are a safe bet to take on'. The message for researchers is clear employers like those in group 2 are interested in employing the right kind of doctoral graduate, rather than just any doctoral graduate. Qualifications need to be supplemented with strong skill sets and appropriate research and preparation for interview.

Group 2 employers are typically employers of doctoral graduates and frequently used specific recruitment strategies to attract and retain doctoral graduates to them.

However, unlike those employers in group 1 they do not generally use a different recruitment process from other graduate recruits. This group is also unsure about university research staff, and feel that they need more information about this group. Some organisations have links with universities although not usually of the depth of those in group 1.

Key messages

Employers

- Group 2 employers are usually very interested in doctoral graduates and have experience of recruiting them
- Group 2 employers are usually utilising the same recruitment methods for doctoral graduates as for standard graduate recruits

Doctoral graduates

- Group 2 employers perceive a value in doctoral graduates but do not usually require a doctorate. Doctoral graduates should therefore realise that they are typically in competition with high achieving graduates and will need to prove their particular value

Universities

- Group 2 employers do not usually have the same depth of links with institutions as Group 1 employers. Universities may be interested in exploring with these employers as to whether they can develop their relationship

Group 3

47% of respondents to the survey were categorised in group 3. Employers in this group have some interest in doctoral graduates and would either like to start recruiting or are already recruiting (to some extent). However, organisations in this group generally show little evidence of clearly thought out approach to the recruitment of this group. The employers in this group are drawn from a wide range of sectors (there are over 20 different sectors in this group).

As can be seen from figure 3 the employers in group 3 still anticipate that researchers will have strong skills in a number of technical areas.

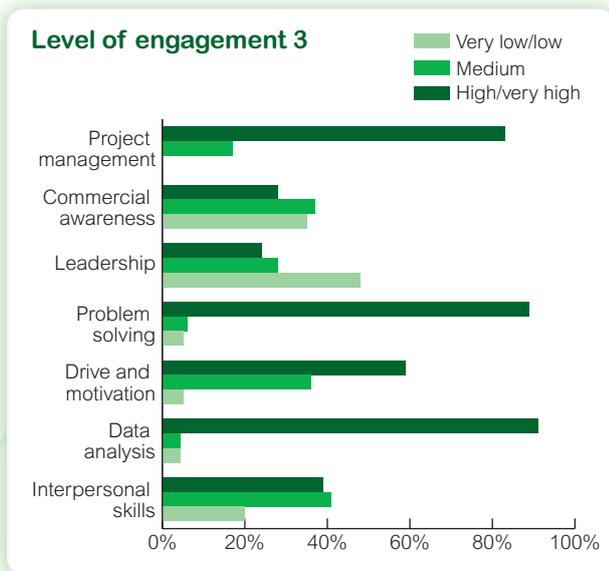


Figure 3: Level of engagement - Group 3

Group 3 employers anticipate researchers having strong skills in technical areas related to their study (project management, problem solving, drive and motivation and data analysis). In many cases they have relatively little direct experience of doctoral graduates and so it is important to understand that this perception is not based on actual doctoral graduates' performance.

There is some concern amongst this group that doctoral graduates do not necessarily offer any added value.

Very mixed. The good are excellent the not so good are no better than a graduate.

Most employers in group 3 do not currently employ doctoral graduates although there are some exceptions. It is also worth noting that it is possible that some of these employers may not be tracking the doctoral graduates that they do employ. Most of the organisations have employees who hold a doctoral graduate or are not sure about that level of qualification among their employees. Most would welcome more applications from doctoral researchers. Although in some cases this is just seen as part of an equal opportunities policy rather than an active orientation towards researchers.

Researchers are welcome to apply to the graduate recruitment scheme, but in practice very few do.

Employers in group 3 are generally happy to recruit doctoral graduates, some are even eager to do so.

Although having a PhD is not an essential requirement for an employee in our organisation it is a definite asset and is viewed very positively by the firm.

Doctorates can be helpful but not something we look for specifically in a candidate.

However, they are generally looking to recruit on the same basis as they would with a standard graduate recruit. One employer notes that 'qualifications in themselves are not key criteria'.

They do not generally have much interest in recruiting research staff and feel that they need more information about them. They also generally have limited or underdeveloped links with universities.

Key messages

Employers

- Employers who simply encourage researchers to apply on the same basis as other graduate recruits are not usually successful in recruiting doctoral graduates

Doctoral graduates

- Many employers would be happy to recruit doctoral graduates but do not actively signal this

Universities

- Universities may find it useful to provide opportunities for employers to learn more about researchers. Increasing employers' knowledge base may have knock on effects in their orientation to doctoral graduates

Group 4

22% of participants in the survey were categorised in group 4. This group of employers are generally have very little interest in doctoral graduates and answered “no” to almost all questions the questions in the survey. As with group 3 this group is drawn from a diverse range of sectors.

Despite both a lack of experience and interest in doctoral graduates, group 4 employers still rate the cohort highly in technical areas as can be seen from figure 4.

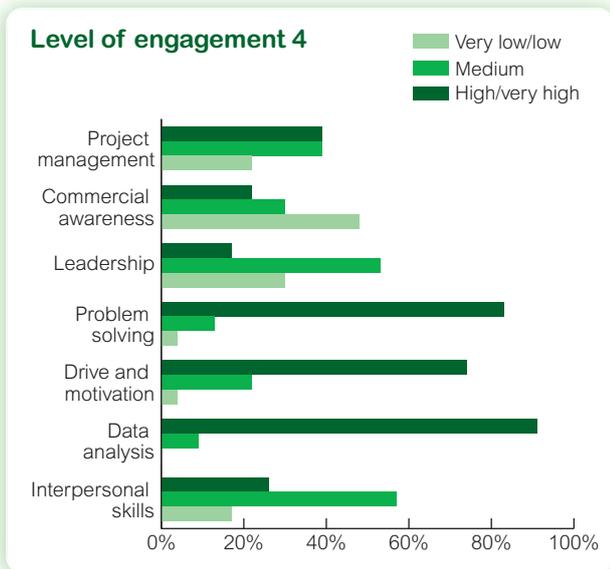


Figure 4: Level of engagement - Group 4

Group 4 employers anticipate that doctoral graduates will be strong in problem solving, drive and motivation and data analysis. However they feel that they would be weaker in other areas.

'They do not understand what non-university employers want/need.'

This group are not recruiting doctoral graduates and most employers in this group do not have any employees who hold a doctoral qualification. In general applications from doctoral researchers are not welcome and they are not interested in recruiting research staff.

Generally a sign that people have gone too far in the wrong direction, though we do still consider them. Normally question their commercial interest and breadth of skills.

Although it is worth noting that for some this was part of a general (temporary) move away from graduate recruitment brought about by the recession. For others a doctoral degree is seen as unnecessary and 'not an advantage' and still others were concerned that doctoral graduates would have 'very high expectations of a prospective employer'. Group 4 employers generally do not have any relationships with universities.

Key messages

Employers

- Group 4 employers are generally not interested in doctoral graduates and do not recruit anyone from this group
- Some Group 4 employers have taken this stance because of their perception of the abilities of researchers. In most cases this perception is not based on experience

Doctoral graduates

- Doctoral graduates should be aware that there are a minority of employers who do not have any interest in recruiting doctoral graduates. If doctoral graduates are to overcome this during recruitment they may have to expect that they will need to focus on their individual skills and motivations rather than their qualifications

Universities

- Universities may find it useful to provide opportunities for employers to learn more about researchers. Increasing employers' knowledge base may have knock-on effects in their orientation to doctoral graduates

This survey collected information about the labour market for doctoral graduates. It demonstrates that 78% of the participants in the survey have some interest in recruiting doctoral graduates. However, it should also be noted that the survey was undertaken during 2009 in the middle of an economic climate in which recruitment was in decline and in which some employers were looking to shed staff rather than add new staff. It will therefore be interesting to see how doctoral level recruitment fairs as the economy moves out of recession.

The findings of this survey are considerably more positive than those of the Leeds or Sheffield surveys (see 5. references). While these surveys are not directly comparable they do cover similar ground and the current survey has found it easier to identify a range of highly engaged employers who are actively orientated towards doctoral graduates. We can therefore hypothesise that there is a growing understanding of researchers amongst non-higher education employers. However the only way to establish whether this trend is real will be to repeat the survey in 2010.

Recommendation: The survey is repeated in 2010 with a view to capturing trends more conclusively and increasing participation rates.

The survey has demonstrated that there are a number of organisations that are very actively engaged with the researcher market. Scrutinising their practice further and exploring the experience of researchers within those organisations offers the opportunity to flesh out this study and deepen our understanding of employer practice. Those organisations that are currently in group 2 and 3 are likely to be interested in the practice that exists in group 1 and 2 and which may be able to improve their orientation to the researcher market.

Recommendation: To undertake detailed case studies with organisations in groups 1 and 2 to explore employer practice further.

The AGR Graduate Recruitment Survey (2009) is a study that focuses on graduate vacancies and salaries in 2009 in addition to forecasting expected graduate recruitment figures for 2010. The survey canvases the opinions of 245 of the UK's leading graduate recruitment firms.

www.agr.org.uk/index/IndexSegmented.aspx?subject=13&subjectname=Surveys

Code of Conduct for the Recruitment of Researchers (2005) by the European charter for researchers. The Charter and Code of Conduct are intended to give individual researchers the same rights and obligations wherever they may work throughout the EU.

www.ec.europa.eu/eracareers/pdf/am509774CEE_EN_E4.pdf

Collaborative Doctoral Education: University-Industry Partnerships for Enhancing Knowledge Exchange (2009) involved 33 universities, 31 companies, and 18 other stakeholder organisations, from 20 different countries across Europe. It highlights that both universities and business consider collaborative doctoral programmes as important channels for supporting both innovation and recruitment efforts.

www.eua.be/research/doctoral-programmes/doc-careers/

Employers briefing: Targeting the postgraduate and researcher market (2009) was jointly authored by Vitae, the Association of Graduate Careers Advisory Services and the Association of Graduate Recruiters to highlight the skills and experience of postgraduates and people with a background in academic research.

www.vitae.ac.uk/CMS/files/upload/Employers%20Briefing_8pp_A4.pdf

EMPRESS: Employers perceptions of recruiting research staff and students (2005) was produced by the University of Leeds and based on a survey of employers and researchers.

www.prospects.ac.uk/cms/ShowPage/Home_page/Main_menu___Research/Labour_market_information/Graduate_Market_Trends_2006/Employers__perceptions_of_recruiting_research_staff_and_students__Spring_06_/p!eFjkLLk

Joint Skills Statement (2001) is a document that sets out a joint statement of the skills that postgraduate researchers funded by the Research Councils would be expected to develop during their research training.

www.vitae.ac.uk/CMS/files/upload/RCUK-Joint-Skills-Statement-2001.pdf

New Industry, New Jobs. Building Britains future (HM Government, 2009). This report highlights the economic impact of research in higher education institutions and industry as a key element of a strategy for UK economic growth after the recession.

www.dius.gov.uk/~media/publications/N/new_industry_new_jobs

Recruiting PhDs: What works? (2007) is a piece of original research based on interviews with researchers and employers examining the issues and challenges around recruiting and employing researchers.

www.vitae.ac.uk/cms/files/UKGRAD-Recruiting-PhDs-what-works-Mar-2007.pdf

Researcher career stories on film (2009) is a collection of 20 films of researchers talking about their careers. These films illustrate the range and variety of careers that people with a research training go on to provide an opportunity for researchers to talk about how their experience has helped them in roles across the economy.

www.vitae.ac.uk/careerstoriesonfilm

Researchers' skills and competencies: At a glance (2009) is a short document setting out the typical skills that you can expect a researcher to have developed.

www.vitae.ac.uk/CMS/files/upload/Vitae_ResearchersSkills_Oct09.pdf

SET for success (2002) is a government commissioned report that set out the need to develop the training and support of doctoral graduates and research staff to ensure their skills were more widely transferable.

www.hm-treasury.gov.uk/ent_res_roberts.htm

Survey of employer attitudes to postgraduate researchers (2006) was produced by the University of Sheffield and presents the results of a survey of 104 employers.

www.careers.dept.shef.ac.uk/pdf/employersurvey.pdf

What do researchers do? First destinations of doctoral graduates by subject (2009) is an analysis of a large scale survey of doctoral graduates employment destinations and demonstrates that doctoral graduates continue to be highly employable across the economy in a wide range of occupations.

www.vitae.ac.uk/CMS/files/upload/Vitae-WDRD-by-subject-Jun-09.pdf

What do researchers do? Career profiles of doctoral graduates (2009) is a collection of 40 career profiles. These career stories provide insights into the paths that doctoral graduates take beyond their first destination.

www.vitae.ac.uk/CMS/files/upload/Vitae-WDRD-career-profiles-Jun-09.pdf

This appendix sets out the background to the survey and details the methodology and sample.

Background

In 2002 Gareth Roberts' 'SET for Success' review of postgraduate research and training argued that universities should focus on providing doctoral researchers with the skills that they needed in order to pursue a wide range of careers. The higher education sector responded energetically to these recommendations earmarking funding to support their implementation and developing new programmes to support the training and development of researchers. In many places these training programmes explicitly referenced the needs of non-higher education employers and frequently involved employers in the training programmes.

The ongoing investment in high level skills, science and innovation has recently been echoed in the report 'New Industry, New Jobs. Building Britains future' (HM Government, 2009). This report highlights the economic impact of research in higher education institutions and industry as a key element of a strategy for UK economic growth after the recession.

Britain is, and will continue to be, an economy driven by the creation and exploitation of knowledge.... Encouraging closer ties between the UK's growing pool of scientific and engineering researchers and industry and private investors is now key to ensuring that we are able to benefit economically from groundbreaking science. ('New Industry, New Jobs, 2009)

There is then a strong and enduring policy agenda that highlights the value of high level skills and encourages higher education and other sectors to look for ways to collaborate and support the transition of employees between sectors to aid knowledge exchange and innovation.

This study will focus on how non-higher education employers relate to this section of the labour market. In particular it will examine how aware they are of the group's skills (and any perceived skills deficits), how actively they target this group during recruitment and how they then go on to train, develop and retain doctoral graduates once they are employed.

This study builds on the work of a number of previous pieces of research which have examined employer attitudes to doctoral graduates. In 2007, the Rugby Team (a higher education sector body focusing on the impact of researcher development initiatives) published 'Employers' views of researchers' skills' a literature review which identified over fifty studies. Key messages from this literature review included the following.

- There is a concern over the level of research and training collaboration between universities and business
- There is a need to bridge the communication gap between employers and researchers
- There is a need to understand and develop recruiting processes
- There is a need to continue to develop the career management skills of researchers

This report is invaluable in providing an overview of literature in the field, but concludes that the 'range of studies could not be easily compared' (Rugby Team, 2007). However, it also helped to identify two key studies (University of Leeds, 2005 and University of Sheffield, 2006) that take a similar approach to the one detailed in this publication. It is therefore valuable to quickly review the findings of these surveys.

'EMPRESS – Employers' Perceptions of Recruiting Research Staff and Students' (University of Leeds, 2005) is based on responses from 47 employers. Key findings are that:

- most employers surveyed recruited doctoral graduates only as part of their general graduate intake
- knowledge about doctoral graduates within employer organisations was generally poor
- there were some concerns about doctoral graduates skills and attitudes e.g. that they were over-specialised and narrow in their approach
- employers in the engineering sector were most interested in the recruitment of doctoral graduates.

Following on from the EMPRESS study was the 'Survey of employer attitudes to postgraduate researchers' (University of Sheffield, 2006). This study is based on responses from 104 employers. The survey highlighted that:

- a higher degree will not guarantee entry into commercial organisations
- a number of employers felt that although doctoral graduates were not necessarily recruited at a higher level they tended to have a faster career trajectory once recruited
- some employers also felt that researchers lacked a range of skills.

These conclusions clearly set out the need for a new study to examine the situation of doctoral graduates in the labour market.

The development of the survey

During 2009 Vitae produced two linked publications in the 'What do researchers do' series. The first of these publications provided a statistical analysis of the first destinations of researchers while the second looked more longitudinally at the career histories of forty researchers. The sector's knowledge of the doctoral labour market and the motivation and career decision making of researchers has been enhanced by these studies. However, it was recognised that knowledge of the attitudes and practices of the employers who were clearly employing researchers in large number needed to be developed. It was therefore determined that a survey should be conducted to fill this knowledge gap around how employers were orientating themselves to the researcher labour market.

In detail, Vitae undertook this survey to accomplish the following aims:

- to increase the UK's knowledge base around the employment of those with research training
- to provide a mechanism to enable employers to share practice and learn from each others successes
- to raise employers' awareness of the value of doctoral graduates value
- to collect information from employers that can be fed back into the higher education sector to inform training and development practice
- to develop Vitae's relationship with employers and to support the growth of the Vitae employer network.

An initial draft of the survey was developed in March 2009 based on a review of the literature and examination of previous similar surveys. Feedback on the survey was sought from within CRAC and through the Vitae Hub network. In April the team at the University of Sheffield who had been responsible for the 'Survey of employer attitudes to postgraduate researchers' (2006) joined as partners in the development of the survey. Their feedback and experience was invaluable in the development of the questionnaire.

In June 2009 a paper-based version of the survey was piloted with ten organisations. Further adjustments were made to the survey based on the piloting before creating an online survey using the BOS system.¹

The survey was designed to be short and mainly based on multiple choice questions as it was recognised that employers were likely to be time pressured. The survey was seen as the first stage in building knowledge and relationships rather than attempting to create a definitive picture of employer practice. Correspondingly a sub-set of issues concentrated around recruitment of doctoral graduates was focused upon. As discussed in the 'Recommendations and future work' section of the report there are a range of opportunities to build on this survey.

In detail, the research aims for the survey were as follows:

- to collect information (qualitative and quantitative) about the position of doctoral graduates in the labour market
- to identify the recruitment practice of those sectors/employers that are already recruiting doctoral graduates for their subject-specific knowledge and skill or for their advanced generic skills
- to analyse the data to identify issues around recruitment processes, awareness of the value of doctoral graduates, the range of roles undertaken by doctoral graduates, salary range and employer's expectations.

¹ Bristol Online Survey (BOS) is an online survey tool. BOS was written by the University of Bristol and is used by a large number of higher education institutions throughout the UK.

The complete questionnaire is given below.

Questionnaire

Company data

1. *Name of the company*

2. *Contact details*

- a. Forename
- b. Surname
- c. Job title
- d. Telephone
- e. E-mail

Size of organisation

3. *Number of employees*

Sector

4. *Please choose one of the following sectors:*

Animals, plants and agriculture
Banking and finance
Business and management
Charities and voluntary work
Creative arts and culture
Energy and utilities
Engineering and manufacturing
Environment and conservation

Health and social care
Hospitality, tourism and sport
IT and information services
Law
Marketing, advertising and PR
Media
Property and construction
Public sector

Recruitment and HR
Retail and sales
Science and pharmaceuticals
Teaching and education
Transport and logistics
Other (please specify):

Employees qualifications

5. *Does your organisation employ candidates for job positions in which having a doctorate is stated in the job description to be either an essential or a desirable requirement?*

Yes No

a. If Yes please provide a list of those job positions. Please indicate the job position and the function area(*)

b. (*) Please choose one of the following functions areas:

Administration
Human resources
Manufacturing
Engineering
Information
Technology
Research and development
Finance
Logistics and purchasing
Sales
General management
Marketing
Other
(Optional)

c. Approximately how many of your employees have a doctoral qualification?

Attraction and retention

6. *Does your organisation do anything specifically to attract and retain doctoral recruits? This might include enhanced starting salaries (higher than a standard graduate starting salary) or specific/accelerated pathways through graduate recruitment schemes.*

Yes No

- a. If 'yes', please give further details
- b. If your organisation offers an enhanced starting salary, please provide salary range (e.g. £21,000-£32,000)
- c. Does your organisation have specific placement programmes or internships for doctoral researchers? **Yes No**
- d. If yes please specify
- e. Does your recruitment process for doctoral researchers differ from that for other university applicants? **Yes No**
- f. If 'yes', please elaborate
- g. Would your organisation welcome more applications from postgraduate researchers? **Yes No**
- h. Any comments about applications from doctoral researchers? (Optional)
- i. There are 40,000 professional researchers who are employed by UK universities. Would you consider targeting this group in your recruitment? **Yes No** Need more information about this group

University links

7. *Does your organisation have any collaborations, links or partnerships with any university involving doctoral researchers?*

Yes No If yes, please specify

Competencies

8. *How would you expect an employee with a doctoral qualification to perform in the following areas?*

1 Very low 2 Low 3 Medium 4 High 5 Very High

- a. Interpersonal skills
- b. Data analysis
- c. Drive and motivation
- d. Problem solving
- e. Leadership
- f. Commercial awareness
- g. Project management

9. *Are there any other skills or competencies that you look for when recruiting doctoral researchers?*

Yes No If yes, please specify (Optional)

10. *What specific competencies do you look for when recruiting doctoral researchers in terms of its importance to your organization?*

1 Very unimportant 2 Unimportant 3 Neither important or unimportant 4 Important 5 Very important

- a. Interpersonal skills
- b. Data analysis
- c. Drive and motivation
- d. Problem solving
- e. Leadership
- f. Commercial awareness
- g. Project management

Case Studies

11. *Would any of the doctoral researchers who work for your organisation be willing to be profiled in a Vitae publication?*

Yes No If yes please give contact details for the people concerned and we will contact them to provide further details.

More information

12. *Vitae provides information for employers about what doctoral researchers might be able to offer for your organisation. Would you like more information about the Vitae employer network?*

Yes please No thank you

Additional comments

13. *Is there anything else that we should have asked or which you would like to tell us. (Optional)*

Sampling

The sample was built through a range of partnerships, direct marketing and publicity techniques. Appendix two identifies the ways in which people were contacted. In summary any employer organisation that it was feasible to contact was contacted. Over 1,500 emails were sent inviting participation, follow-up phone calls were made and the survey was also publicised via our website and through face-to-face contact with employers. Employers with a stated interest in Vitae or doctoral graduates were not targeted, instead the respondents formed a general sample of UK employers.

The survey was sent to over 1500 contacts through the following organisations

- Vitae employer network
- AGR – Association of Graduates Recruiters
- CRAC members
- GRADschools' tutors
- University of Sheffield career service
- University of Cambridge career service
- University of Oxford career service
- UCL career service
- Imperial University career service
- Bioindustry Association members
- Science Parks and UKSPA Affiliates
- PhDjobs.com

Organisations identified the individual who was to complete the questionnaire. Typically this was a senior manager (usually in SMEs), a HR manager or a recruitment specialist.

The following list shows the range of different roles:

Recruitment	37%
HR	17%
Director	15%
Development	10%
Other	9%
Consultant	6%
Research manager	3%
CEO	3%

Roles held by respondents within their organisation.

Around 13% of the people who participated in this survey have a doctorate.

We received 104 responses making the survey comparable in size to the University of Sheffield study (2006). Percentages given in this report should be read as percentages of the respondents rather than as representative of a wider situation in the labour market. However, it is important to note that the respondents to the survey were very diverse and include a range of company sizes, sectors and current levels of engagement with doctoral graduates.

Through discussion with employers during the telephone interviews a number of factors were identified as contributing to non-response. As anticipated employers were time pressured and unwilling to be involved in a survey if they did not perceive direct organisational value. This problem was exacerbated by the fact that Vitae often needed to make contact through a third party to ensure maximum reach of the survey. While using a range of third parties increased the coverage of the survey it made it more difficult to make the case for participation. All of these factors contributed to non-response rates. These are generally issues faced by any survey and are also likely to be improved if the survey is repeated as the Vitae employer network grows.

Factors that affected response rates which were more particular to this survey included the difficulty faced by survey staff in identifying an appropriate contact to answer the questions in the survey. Often the recruitment of doctoral graduates sits outside the remit of traditional graduate recruitment teams and it is likely that many organisations simply do not collect data on doctoral graduates. This means that this cohort is often not visible as a discreet cohort within many organisations.

Another issue around non-participation was the economic climate within which the survey was conducted. It was found that some organisations were not currently focused on recruitment and were therefore unwilling to complete the survey. A related issue was that in some cases HR and recruitment contacts seemed to be 'moving on' very rapidly meaning that companies knowledge base on these issues was depleted.

Participation

104 employer organisations were recruited to participate in the survey. The list of participating organisations is given below.

Abcam plc	Egbert H Taylor & Company Ltd	NSK Europe LTD
Abintegro	Ely Lilly	Office Depot
Accenture	EMB Consultancy LLP	Analytica Ltd
Allen & York Ltd	emnos UK Limited	Ordnance Survey
Altran UK and Ireland	Enterprise Rent A Car	Oxford PharmaGenesis
AMEC	ESR technology	Parker Hannifin
Arcadia Group Limited	Eversheds	Performance-Essentials Ltd
Associated Independent Stores Ltd	Financial Services Authority	Pfizer
AstraZenica	Galson Sciences Limited	PGL Travel Ltd
Audit Commission	Granta Design	Pilkington Group Limited
AXA UK	Harris Watson	Procter & Gamble
Baker Richards Consulting	HM Forces/The Army: Headquarters Recruiting Group	Procter & Gamble Technical Centres Limited
Bank of America	hsbc	QinetiQ
Bank of England	Interserve Project Services	Quintessa Limited
Belzona Polymerics Limited	Jaguar Land Rover	RAND Europe
BG Group	JBA Consulting	Rolls-Royce PLC
BMT Group Ltd	Kaplan Higher Education	Simon Mort Reports Ltd
BP	KPMG	Southside Thermal Sciences (STS) Ltd
BP Research & Technology, Refining & Marketing in the UK	Leeds Building Society	Space Northwest
British Sugar Plc	LINE Communications	SQW Group
Business Research Group (UK) Ltd	Liquid Capital	Sunray7 Ltd
Byrne Looby Partners Ltd	Logica	The Cambridge Crystallographic Data Centre
Cambridge Design Partnership	London Borough of Tower Hamlets	The Co-operative
Capita Hartshead	MBDA Systems	The Foundation
CellAura Technologies Ltd	MC2 (Manchester) Ltd	The National Physical Laboratory
Corus	Medical Research Council	The Shephard Group
CRAC	Mewburn Ellis	The Work Foundation
Credit Suisse	Microdec	Thinktank Trust
Curtis+Cartwright Consulting Ltd	Morrisby	UBS Investment Bank
Detica	Mott MacDonald	Unilever
DLA Piper	Mycorrhizal Systems Ltd	Vesuvius UK Limited
Doosan Babcock Energy Ltd	NaREC	Volterra
Draeger Safety	Nelsons Solicitors LLP	Waymont Consulting Limited
DSDL	NHS Institute for Innovation and Improvement	Wigan Council
E.ON Engineering Ltd	North Somerset Council	

Participation by size of organisation

The survey was completed by a wide range of organisations of different sizes. 41% of the sample is represented by SME's (less than 250 employees), 25% by medium-size companies (between 250 and 2,500 employees) and 35% by large-size companies (over 2,500 employees).

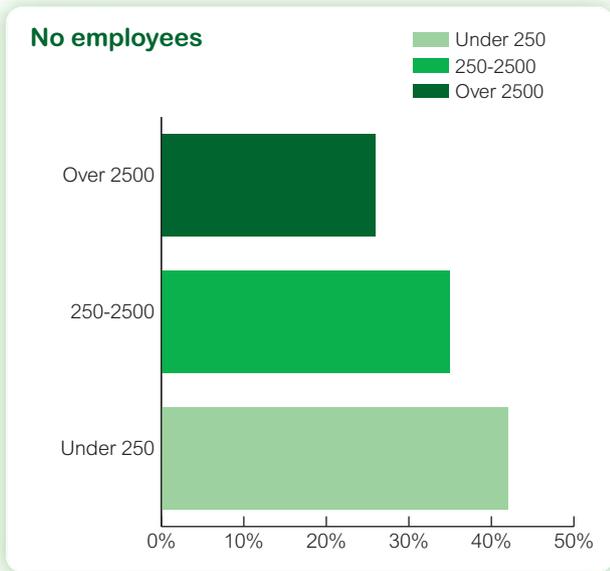


Figure 1: Sample of participants by number of employees

Participation by sector

The main sectors represented in the sample are as follows

- 18% Engineering and manufacturing
- 11% Banking and finance
- 8% Energy and utilities
- 8% Public sector
- 7% Science and pharmaceuticals
- 7% Other: consultancy activities

The chart below provides a full breakdown of the sample by sector

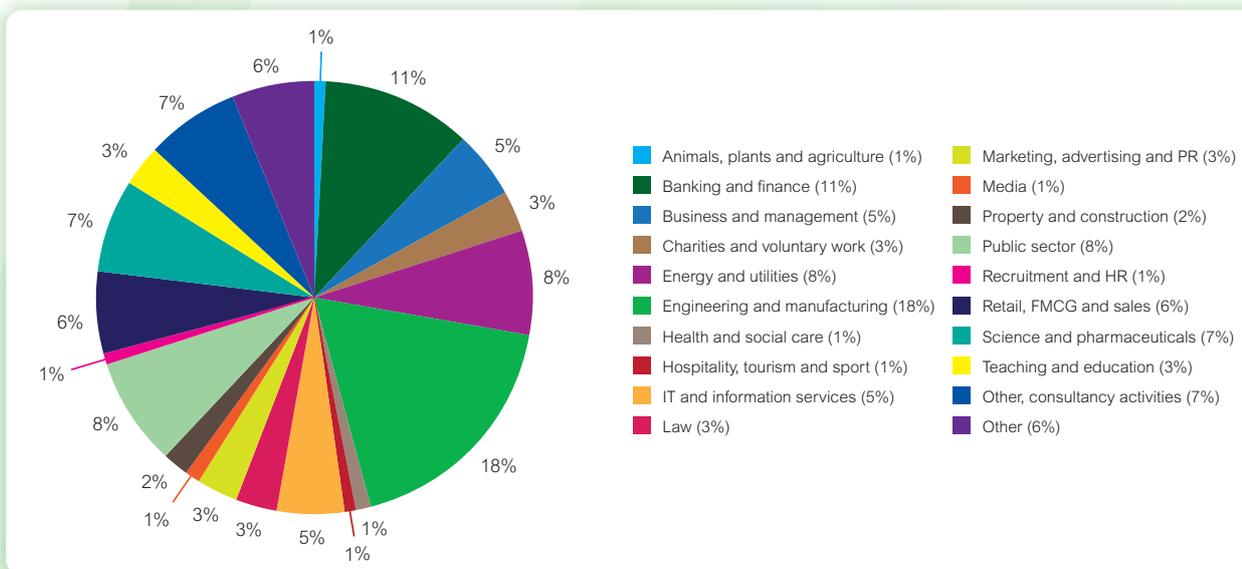


Figure 2: Sample of participants by industry sector

'Other' includes: defence, science and engineering, social media analysis, technical consultancy and technology development.

It is interesting to compare the spread of participants in this survey with what we know about researchers first destinations. 'What do researchers do? First destinations of doctoral graduates by subject' (2009) shows the following distribution of first destinations.

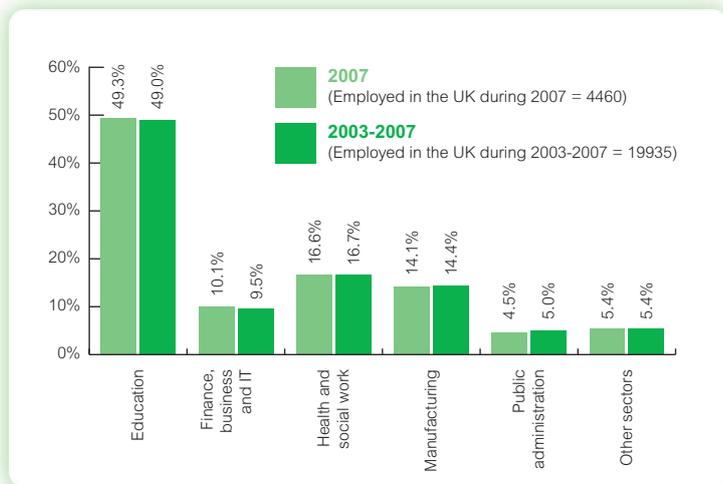


Figure 3: Employment sectors entered by UK-domiciled doctoral graduates 2003–2007 and 2007, based on Standard Industrial Classifications: respondents in all disciplines

Note: While 'Education' is the single largest first destination of doctoral graduates the majority of these destinations are within higher education and were not covered by this survey.

A comparison of the participants in the employer survey (figure 2) with the destinations from 'What do researchers do?' (figure 3) shows some strong alignment between the coverage of each survey across many of the sectors. This survey did not cover the higher education sector and recruited low numbers in the health and social work sector. However in other areas which are major employers of researchers the survey achieve good coverage eg banking and finance, business and management, IT and information services, and engineering and manufacturing sector.



Vitae is supported by Research Councils UK,(RCUK), managed by CRAC: The Career Development Organisation and delivered in partnership with regional Hub host universities.

The role of Vitae is to work with UK higher education institutions (HEIs) to embed professional and career development in the research environment. Vitae plays a major role in innovating, sharing practice and enhancing the capability of the higher education sector to provide professional development and training of researchers.

Our vision is for the UK to be world-class in supporting the personal, professional and career development of researchers.

To achieve our vision we have four aims:

- **Building human capital** by influencing the development and implementation of effective policy relating to researcher development
- **Enhancing higher education provision** to train and develop researchers
- **Empowering researchers** to make an impact in their careers
- **Evidencing the impact** of professional and career development support for researchers

For further information about the range of Vitae activities go to www.vitae.ac.uk or contact website@vitae.ac.uk

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