

## Studentships and fellowships

Studentships and fellowships play a key role in funding doctoral and post-doctoral programmes and candidates. They facilitate the training of students by providing financial support during their study period so as to allow them to focus on their research. They support in this way the preparation of young researchers for careers in public sector research and industry, and the training of highly skilled workers for employment in occupations other than research. Several factors should be considered when implementing PhD studentships and post-doctoral fellowships, including appropriate and sustainable funding, granting rights to doctoral students, other sources of funding for doctoral and post-doctoral programmes, and more generally, the attractiveness of academic careers (e.g. career prospects and value of holding a PhD).

### What are studentships and fellowships?

Doctoral programmes play an essential role in preparing young researchers for careers in public sector research and industry. They also contribute to training highly skilled workers for employment in occupations other than research per se, both in the public and private sectors. Ensuring appropriate and sustainable funding of doctoral programmes and doctoral candidates through PhD studentships and other funding mechanisms is critical if people are to pursue such training.

The main responsibility of research universities is to develop and deliver high quality doctoral programmes. Providing training in and through research is one of their main missions, both to prepare young researchers for careers in academia but also increasingly to train young highly skilled workers for research and non-research careers in industry through inter-sectoral mobility. Doctoral students also directly contribute to the scientific record and occasionally to technological development. They may also be active in setting-up spin-off firms.

Acquired after doctoral education, the post-doctoral experience is primarily a period of apprenticeship for early stage researchers to gain scientific and technological knowledge as well as professional skills that are necessary and sometimes indispensable for a future career, mainly in the public research sector. Post-doctoral fellowships and other related funding mechanisms offer researchers with PhDs financial support over a fixed time period (typically 2–3 years) to undertake a period of supervised apprenticeship.

Although they vary greatly by field and sector, post-doctoral positions are often seen as a precondition for academic careers and many other research positions in various fields of science and technology. They enable early stage researchers to broaden and deepen their cognitive knowledge in their field of science and technology, to engage in focused R&D activities, and to develop confidence and leadership skills. In many OECD countries, post-doctoral researchers contribute significantly to the scientific record of research universities and public research institutes and are essential to increase the stock of researchers.

### What is the impact of studentships?

PhD studentships facilitate the training of new researchers by providing financial support for students through the time of their studies, permitting them to focus on and complete their research in a timely manner. Most research universities have limited resources to provide this sort of support on their own and have typically required doctoral students to work part-time—on teaching duties or research projects—to benefit from any available organisational funding. Such arrangements can slow the progress of doctoral students, however, and, moreover, most are available to only a few students. They are inadequate in the face of a growing demand for doctorate holders, not only to fill research positions, but also to meet the demand for highly-skilled workers in non-academic sectors of employment. The growing availability of PhD studentships, granted by a range of government and non-government bodies, including public research funding organisations, industry and third sector organisations, has sought to fill the gap.

In different OECD countries, PhD studentships vary in salaries, scholarships, fellowships, grants, and teaching assistantships. These forms are not mutually exclusive since different types of studentship can be used to fund doctoral students. Studentships can be awarded directly to students on a competitive basis or can be included as part of discretionary organisational funding to research universities.

While they benefit from an employment premium, doctoral graduates encounter a number of difficulties on the labour market, notably in terms of working conditions. These difficulties are to some extent linked to the changes affecting research systems, where employment conditions have become less attractive. For example, over recent years, the labour market of researchers in research universities has witnessed a lower availability of tenured positions and an increase in less stable types of posts. This means that many doctorate holders are on temporary contracts for longer periods and the transition to full employment may take up to four or five years. Post-doctoral fellowships cannot overcome this structural shift to temporary contracts but can help to alleviate some of the uncertainty with regard to funding. At the same time, different sources of funding can have implications for the status and conditions of post-doctoral positions. Funding mechanisms operate in the following ways:

- Many post-doctoral researchers are supported on the grant of a principal investigator while a smaller number undertake post-doctoral research with their own funding, e.g. through the award of a post-doctoral fellowship. Consequently, post-doctoral researchers are paid by different funding sources, including policy-making organisations, public research funding organisations, research universities, public research institutes, industry and third-sector organisations. In fact, it is not unusual for a mix of funding sources to finance a single post-doctoral position.
- Post-doctoral fellowships typically provide financial support to PhD holders to undertake post-doctoral research in research universities and public research institutes, but also occasionally in industry. However, the status and rights of post-doctoral researchers vary significantly according to the funding source, even though their experiences may be similar. While some post-doctoral researchers receive few social security or pension rights, others may receive benefits similar to those granted to regular employees such as health insurance, life insurance and pension rights.
- Post-doctoral fellowships also influence the experience of post-doctoral researchers because they orientate them to different sectors of performance. In research universities, for example, post-doctoral researchers usually have opportunities to teach and mentor undergraduate and graduate students, which can be valuable for an academic career, although a significant part of their time is dedicated to research. However, their status and salaries can be unfavourable. Post-doctoral researchers in industry often have a similar status to regular employees, focus on more applied research, and receive higher salaries. Finally, those in public research institutes can benefit from having access to large-scale R&D infrastructures.

### **What factors should be considered when implementing studentships?**

The following factors should be considered when implementing PhD studentships:

- **Attractiveness of academic careers.** PhD studentships on their own will be insufficient incentive to attract young people to doctoral programmes. Career prospects will be a central concern for those looking to remain in research, while for those looking to work in other occupations, the value of holding a PhD will be a factor. The attractiveness of a research

career will also be shaped by research performing organisations' endowments, including research infrastructures, the funding available for conducting research, the presence of leading human resources and the perceived roles and status of such organisations. The competitiveness of salaries will also be an important consideration.

- **Appropriate and sustainable funding.** PhD studentships should be sufficiently attractive to provide incentive to all suitably qualified students to undertake doctoral studies. They should also be stable, covering the full duration of the doctoral programme and providing sufficient means to live and work in decent conditions.
- **Granting rights to doctoral students.** PhD studentships can be particularly attractive for a wide range of students wishing to access doctoral education if they provide them with rights similar to those of workers, including social security and pensions.

PhD studentships are closely related to other core policy instruments, including post-doctoral fellowships that provide opportunities for academic career progression and inter-sectoral mobility schemes that encourage PhD students and other researchers to take temporary and/or part-time appointments outside of academia.

The factors that should be considered when implementing post-doctoral fellowships are as follows:

- **PSR funding regimes.** The extent to which existing PSR funding regimes already support the employment of post-doctoral graduates is important to consider. For example, if it is already common practice to use parts of competitive R&D project grants to cover the costs of post-doctoral researchers or if discretionary organisational funding is used for this purpose, then the fit and additionality of a dedicated scheme to support post-doctoral fellowships should be considered carefully.
- **Academic career paths.** In some countries, academic career paths are relatively fixed, with the acquisition of certain types of experiences and qualifications expected at key points of career development. The design of post-doctoral fellowship schemes should be sensitive to these conditions, although they might also be used as an opportunity to reform them.

Post-doctoral fellowships are closely related to other core policy instruments, including but not limited to, PhD studentships, competitive R&D project grants, discretionary organisational funding and inter-sectoral mobility schemes.

## References

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