

AN OVERVIEW OF
**SWEDISH HIGHER
EDUCATION AND
RESEARCH 2023**

An overview of Swedish higher education and research 2023

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Foreword

Many people in Sweden are involved in the higher education sector. It is one of the largest state-run operations in terms of the number of people it employs, and each year some 450,000 students take a course or study programme offered at one of Sweden's higher education institutions (HEIs). HEIs play an increasingly vital role in lifelong learning and future skills provision.

For over a decade now, an annual report on the state of Swedish higher education institutions has been published in English. While the title, content and format may have varied over the years, the ambition has remained the same: with statistics as a point of departure, to provide interested readers with an insight into Swedish higher education – and, more recently, research as well – and its development over time. Our annual status report in English is an important part of achieving our goal of making the Swedish Higher Education Authority (UKÄ) the go-to source for knowledge on Swedish higher education and research.

Our aim in publishing the report in English is to provide both an understanding of the Swedish system and an overview of higher education and research in Sweden. To this end, we continuously change and renew the annual report. This year, for example, we can show that several of the side-effects of the covid-19 pandemic – such as increased interest in studying, fewer exchange students and fewer conferences – began to subside during 2022.

As stable a system as education and research is, it is nonetheless affected by events in the world around us. I would like to take this opportunity to highlight a few areas that will be of particular significance to the higher education sector over the next few years.

- **National security**

Political tensions increased around the world during 2022. In this altered global situation, national securi-

ty considerations are now present in the operations of HEIs in a way that we have not seen for many decades. The global nature of higher education and research leaves the HEIs vulnerable, at the same time as international relationships and collaborations are such a fundamental part of their activities. Through responsible internationalisation, security concerns need to be balanced against the great value of collaboration.

• Academic freedom

Academic freedom, and the mounting challenges it appears to face, are the subject of increasing debate in Sweden and many other parts of the world. Academic freedom is partly about HEIs shouldering their responsibility to promote and protect it in its activities and in the activities of the individuals who are part of the HEIs. It is a freedom that may be challenged by internal and external forces alike in both education and research. It is also a debate about institutional freedom, that is to say, the relationship between the state and higher education institutions. In 2024, we will present UKÄ's government assignment to provide an in-depth understanding of the work of HEIs to promote and protect academic freedom and a culture that allows the free pursuit and dissemination of knowledge.

• Skills provision

Higher education plays a crucial role in providing society with the skills it needs. We are facing major challenges in skills provision in sectors such as education, healthcare and the built environment. We need more people to choose relevant study programmes, we need to ensure that there are enough placements for them to complete the practical elements of their courses, and we need more students to graduate from the programmes. Recently, the discourse on skills provision has focused increasingly on lifelong learning, switching careers and contin-

uing professional development. Making it easier to move between the different parts of the education system – between higher education and higher vocational education, for example – has also climbed the agenda.

• Teacher training

Teacher training is always a cause for much debate when it comes to higher education policy, now more so than for many years given the extensive change processes taking place in primary and secondary education concerning structure, grading, teaching and the competence of teachers. This year, the Government appointed a commission of inquiry to make recommendations on raising entry requirements for and developing the content of teacher training programmes. The commission is due to report in 2024.

• Artificial intelligence (AI)

The rapid advance of AI into the wider realm of higher education was probably a surprise to many. For HEIs, it is a matter of AI as a subject and object in education as well as research. Research and development in the field is progressing at an astonishing rate and it is making demands on the content of courses and programmes in order to meet the needs of the labour market and research. AI-based technology is also a tool that may have a major impact on education, teaching, research and administration at HEIs.

With that, I would like to wish you pleasant reading!



Annika Pontén

Deputy Director General

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**FACTS ABOUT
HIGHER EDUCATION
AND RESEARCH IN
SWEDEN**



The road to today's Swedish system for higher education and research

This background chapter provides an overall understanding of the Swedish higher education system. We begin with a description of how the present system for higher education and research developed, with focus on some major reforms that defined the development over the last 50 years. In the second part we describe in more detail the current Swedish higher education system, that is to say, the basis for operations at higher education institutions (HEIs) and the results and analyses presented in the following chapters of the overview.

The oldest university both in Sweden and the Nordic countries is Uppsala University, founded in 1477. Initially, university studies were open only to a small, elite group of men. This is far from the reality of 2021, where higher education is offered throughout the country and women are the majority of students, but where it is still more common for men to be professors. In 1945, at the end of World War II, there were 14,000 students at a few universities and technical schools. In 2022, 450,000 students attended one of the country's 50 higher education institutions (HEIs).

Expansion and development 1945–1970

The post-war period saw economic growth in Sweden, and politicians realised the importance of raising the educational level of the population. In the following decades, higher education expanded and the governance and organisation of universities changed, often after extensive official reports.

The booming economy of the 50s and 60s, with increasing tax revenues, allowed the expansion of the public sector. Many of these jobs required higher education, and the lack of skills threatened both the medical care sector and industry. At the same time, students flocked to universities and university col-

leges. To meet the demand for higher education from students and the labour market's needs, politicians decided to reform how public-sector HEIs were organised and to expand higher education.

Massive expansion of higher education in the 1960s and 1970s

Between 1955 and 1965, the number of students increased from 23,000 to 70,000, and in 1970 HEIs had 120,000 enrolled students. A contributing factor to this increase in student numbers was the expansion of public student finance. In the 1960s, several university colleges and technical schools were also converted to public-sector universities and several university colleges were founded. With this expansion, the modern mass university began to take shape.

The faculties of arts and the faculties of theology and law had a tradition of open admissions. Everyone who met the general entry requirements were accepted and were registered at the faculties. Other faculties, however, had admission limits, and upper-secondary grades determined which applicants were accepted if there was competition for the available openings.

The expansion triggered changes

The expansion of higher education, together with the open admissions to the faculties of arts, was not without its problems. The students took a long time to complete their studies, and the completion rate was low, which made it difficult to plan teaching. More teachers were needed, so the new staff category senior lecture was introduced as a purely teaching position. Lecturers were to have both doctoral degrees and good teaching qualifications.

The resource allocation system for the faculties of arts also needed changing, and what was known as the "university automatic system" was introduced. This meant that as more students were accepted, the

universities could expand their teaching organisation and recruit teachers without the Riksdag having to approve more funding. Funding for education was linked to a predefined lowest acceptable teaching standard. Inspiration for the system came from other such sources as the student organisations, which wanted the Government to take measures to improve the quality of university teaching.

The 1969 reform of third-cycle education was intended to meet the growing need for teachers at HEIs.

Major reforms and developments 1977–1990

The system with automatic allocation of funding for the faculties of arts was used until the 1977 higher education reform, which resulted in considerable changes for HEIs and higher education. Sweden shared several of the same reasons for the reforms with other western countries that wanted to raise their level of education, reduce social disparities and meet the needs of the labour market for trained workers. By establishing several new, regional, university colleges, the Government wanted to make higher education available to individuals beyond traditional student groups.

Decentralisation was also intended to facilitate an adaption of the education system to the regional economic structures and labour needs. The State's funding to HEIs went from being micromanaged to being focused on the intended purpose that the funding was to be used for. This gave the HEIs greater influence over how funding was used and enabled local priorities. Government funding was now allocated separately for education and research. One part to undergraduate education (first- and second-cycle education) and one part to research and postgraduate education (third-cycle education). At the same time, centralised control of undergraduate education increased through the Government determining what national study programmes were offered, the national programme syllabuses and the size of programmes. Students' right to have influence over their education, which began to emerge in the 1960s, was regulated and formalised with this reform.

Higher education was also expanded to include most post-secondary education, including vocation-

al programmes. Nursing programmes, pre-school and teacher training programmes, fine arts programmes and others were incorporated into higher education. Open admissions were eliminated from the faculties of arts.

A more diverse student body

As HEIs expanded their range of offerings, the number of students increased by nearly 50,000. This also changed the composition of the student body. For the first time in Sweden, women became the majority of students in higher education. The social composition also changed, and the percentage of students from families with highly educated parents decreased, while the percentage of students from working-class families increased.

Regular research bills introduced in 1977

A system with regular research bills was introduced in 1977 to ensure a long-term approach to research policy. This involves the sitting government presenting a research bill once per term of office. In this way, the Riksdag was able to discuss research policy in its entirety once per term of office. The first research bill was submitted in 1982. This system is still in use.

During the late 1990s, the smaller and medium-sized university colleges were allocated permanent research funding, which was previously only available to universities. One reason was that courses and programmes were to be research-based; another was to support regional development. Since 2010, all university colleges have been able to apply for third-cycle degree-awarding powers within areas of research that they excel in, such as within their research specialisation fields.

The reform period starting 1993

The next reform period began in 1993 and was characterised by the HEIs gaining greater freedom, or autonomy, in several areas. For example, the centrally determined study programmes and national programme syllabuses were replaced with a system of qualifications. This system included learning outcomes, knowledge requirements and specialisations for different qualifications. The HEIs were now allowed to determine what education they offered (programmes and freestanding courses), how the

education was organised and admission of students (within the framework defined by the Higher Education Act). At the same time, a national system was developed to assess quality in undergraduate education (first- and second-cycle education). A central idea was that student demand would determine the courses and programmes offered and that the HEIs would compete with each other through their offerings and high standards in their courses and programmes.

Management by objectives was instituted throughout the entire central government administration (even within higher education). With increased autonomy, the HEIs also gained greater responsibility for attaining high quality and making efficient use of available resources. The resource allocation system was completely reorganised, and a new performance-based system was introduced for direct government funding of HEIs. The HEIs gained significantly greater control over internal resource allocation and how direct government funding was used. At the same time, the State's demands on HEIs increased for reporting results from their operations.

Several new foundations established in the 1990s

Over the years, some reforms and political decisions on research have been of extra importance. One such political decision was when the Government ended the wage-earner investment funds 1993–1994. The wage-earner investment funds were a type of collectively owned and administered investment funds that were financed with the profits of companies. The profits from the wage-earner investment funds were used to establish new research foundations. Mistra, the Swedish Foundation for Strategic Research and the Knowledge Foundation are three examples. A total of just under SEK 18 billion was transferred to the new research foundations.

The wage-earner investment funds were also used to convert two public-sector HEIs into foundation universities: Chalmers University of Technology and Jönköping University. The Government wanted the foundation universities to contribute to increased diversity and competition and to revitalise the Swedish higher education system.

Another important reform came in 2001, when

several subject-based government research funding bodies were combined into the Swedish Research Council, which was tasked with funding research within all scientific disciplines. Some of the sector-specific research was ended, and Vinnova was instead created as a broader innovation agency.

Reforms in the 2000s

With the 1999 reform, the previous faculty disciplines were replaced with four broader disciplinary domains as the basis for allocating direct government funding. The purpose was to provide the HEIs greater opportunities for making their own prioritisations within research and third-cycle education and to create better conditions for interdisciplinary and interfaculty research.

Ten years later, in 2009, the disciplinary domains were eliminated as the basis for allocating funding. HEIs, instead, received a single allocation for research and third-cycle education. At the same time as the HEIs gained greater freedom in how research funding was used internally, a performance-based resource allocation was introduced.

The qualifications framework revised in 2007

In 2007, Sweden's education and qualifications framework was adapted to the Bologna Process' system with qualifications at three levels: first, second and third cycles. The Bologna Process, an intergovernmental collaboration among around 50 countries (2022) in Europe, is intended to improve comparability between education systems and thereby increase mobility between the participating countries.

Three reforms in 2011 to improve quality

Two reforms were implemented in 2011 to raise the quality of Sweden's higher education system: the autonomy reform and the quality reform. The autonomy reform increased the freedom of HEIs to decide over their internal organisation, staff categories, hiring procedures and promotion opportunities. The quality reform meant a national framework for quality assurance that focused on the results instead of processes and measured quality based on whether students achieved the education's qualitative targets. UKÄ was responsible for external quality assurance

at the national level.

In 2015, UKÄ was tasked with development of the national quality assurance framework, since it was judged to not be in line with the agreements in the Bologna Process. Since 2021, the national quality assurance framework also includes reviews of the HEIs' internal quality assurance processes for research.

Quality, and strengthening quality, was also one of the reasons behind the Government's proposal to introduce tuition fees in higher education. The rationale being that Sweden should compete globally through high quality education, and not the lack of tuition fees. The reform came into effect in July 2011 and applies to studies at first and second cycle for students who are not citizens of a country in the EU/EEA or Switzerland.

Present day

Since the turn of the millennia, decentralisation within the higher education sector has continued; autonomy and competition have been central in this development. Instead of the approach of previous decades with wide-ranging and comprehensive reforms, changes have instead been made to parts of the system separately. The labour market's need for access to skills continues to be a driver for political decisions for developing and investing in higher education. Demand from students also continues to influence what courses and programmes are offered.

While national needs have influenced how the sector has developed, the operations of HEIs have increasingly been internationalised, both within education and research, and collaboration with the EU has grown. That Sweden and Swedish higher education and research are part of something greater, something global, is now fully accepted.

The Swedish system for higher education and research

Compared with the higher education systems of many other countries, the Swedish higher education system is relatively flexible. Educational offerings are largely course-based. Most higher education institutions (HEIs) offer freestanding courses and programmes also as distance education, some of which can be completely online.

Traditionally, Swedish higher education is not limited to educating youth after completing upper-secondary education. It also includes education later in life, continuing professional development, and that individuals take courses for personal development without necessarily having the intention of receiving higher education credits. Thus, higher education in Sweden has a clear role in lifelong learning.

HEIs also provide third-cycle education and conduct most of the publicly funded research in Sweden. This means that Swedish higher education is relatively heavily based on research. Measured in terms of monetary value, more than half of the activities at HEIs consist of research and third-cycle education.

Post-secondary education

Higher education is the largest form of tertiary education in Sweden in terms of volume. There is also higher vocational education.

Education within the framework of higher vocational education providers

The purpose of higher vocational education is to meet the needs of the labour market, and theoretical studies are combined with courses given at workplaces. Programmes offered through higher vocational training are at level 5 and 6 in SeQF (The Swedish National Qualifications Framework) and are between six months and three years long. In total, they equal just under 16 per cent of post-secondary education.

Higher vocational education and higher education are separate systems. This report focuses on higher education.

Universities, university colleges and other education providers

The vast majority of higher education is provided by public-sector HEIs. The Swedish Parliament (Riksdag) establishes public-sector HEIs. There are also several independent (non-state) higher education providers, of which the majority are small and only have programmes in one or two subject areas. Of the total 50 HEIs in Sweden (2022), 31 are public-sector HEIs. They account for approximately 90 per cent of the total number of students. A list of Sweden's HEIs is found at the end of this chapter. This list includes 18 universities, 12 university colleges, and 5 art academies. The remaining 15 are independent education providers.

Sweden has a uniform system for higher education with the same legislation, by and large regardless of provider. HEIs primarily differ in that universities have been granted general degree-awarding powers at the third-cycle level, while university colleges must apply for entitlement to award degrees at the third-cycle level in specific areas. Both universities and university colleges conduct research and provide higher education at various levels, but they vary in how much focus is given to research. Swedish higher education programmes are at levels 6–8 of the SeQF.

The Swedish terms “universitet” (university) and “högskola” (university college) are not reserved designations by law and can be used by anyone. The institution's executive organisation determines when the designation is used. The state determines what designation is used by public-sector HEIs. What is protected in law, however, is degree-awarding powers, that is to say, who may award a qualification within higher education (read more about degree-awarding powers in the sections *Accreditation* and *Quality assurance*).

The size of HEIs varies greatly. Measured in number of enrolled students, the largest university had more than 50,000 students in the 2021/22 academic year, while the smallest HEIs had less than 50 registered students.

Governance of higher education

Overall responsibility for higher education and research rests with the Riksdag and the Government. They decide on the regulations that apply to the higher education sector, primarily the Higher Education Act and the Higher Education Ordinance (see fact box). The Government determines what qualifications may be offered and requirements for qualifications in the form of scope and learning outcomes (qualitative targets).

Public-sector HEIs are government agencies, answering directly to the Government. Within the Government, the Ministry of Education and Research is responsible for most matters relating to the HEIs, higher education and research.

The Ministry of Education and Research defines how the HEIs are to work, and how much resources they may use, in annual public service agreements, except for the Swedish University of Agricultural Sciences, which is assigned its public service agreement by the Ministry of Rural Affairs and Infrastructure. The public service agreement defines allocations for the HEI's operations and includes any special assignments that the Government may give HEIs. In Sweden, ministerial intervention is not permitted, which means that ministers may not intervene directly in a government agency's daily work or decision-making.

The operations of independent education providers are regulated through a specific law and in some cases through contracts with the Government. For education, however, the same rules primarily apply as for public-sector HEIs. Independent education providers also receive their allocations and any special assignments through an annual public service agreement.

Allocation of resources to HEIs

The state has a significant commitment for financing HEIs. Higher education is for the most part free-of-charge, and the state allocates considerable resources for research conducted by the HEIs.

The Riksdag determines the allocation of resources for education and research for each HEI through the annual budget bill. The HEIs receive separate allocations for education and for research and third-cycle education.

Resources for first- and second-cycle education

Funding for first- and second-cycle education (bachelor's and master's levels) is based partly on the number of enrolled students (converted to full-time equivalents, FTE) within the different disciplinary domains, and partly on credits earned by students (converted to annual performance equivalents, APE). The allocation of resources is thus primarily based on performance (the number of enrolled students and the credits they earn). The funding per FTE and APE varies for different disciplinary domains. Engineering and technology, for example, receive more than social sciences.

Each year, the Government determines the highest reimbursement for FTEs and APEs that a HEI can receive in total for a budget year, known as the funding cap. The funding cap is defined in the HEI's public service agreement. For more information, see the fact box *Resource allocation for first- and second-cycle courses and programmes* in the chapter *The economy and financing of higher education*.

Resources for research and third-cycle education

The funding for research and third-cycle education (doctoral studies) that HEIs receive from the Government is in the form of a base grant that may be used freely within different fields of research. The base grant is defined in the HEI's public service agreement. Only a small part of the funding is performance-based. This part is based on scholarly production, external funding and collaboration with the surrounding community. The HEIs are also guaranteed a minimum level of research funding based on the number of students registered in first- and second-cycle education.

Beyond this direct government funding, significant state funds are allocated through research funding agencies and are applied for in competition. Research and third-cycle education are also funded to a considerable extent by other research funding bodies, such as private foundations or the European Union. Read more about funding for research and third-cycle education in the chapters *The economy and financing of higher education* and *Research at higher education institutions*.

The mission and independence of HEIs

The mission of the HEIs is to provide education based on scholarship or artistic practice and on proven experience. HEIs are also to carry out scholarly and artistic research and development work. The Higher Education Act specifies that the general principle for higher education is to promote and protect academic freedom.

There is to be a close relationship between research and education in HEIs' operations. The HEIs' mission also includes mutual exchanges with the surrounding community, as well as ensuring that the knowledge and expertise found at the higher education institution bring benefit to society.

In Sweden, public-sector HEIs have considerable autonomy within a system of management by objectives. Within the framework of the overall legislation, HEIs take most decisions themselves. These decisions cover such areas as organisation; internal allocation of resources; educational offerings; educational content and design and how many students are admitted. There is thus no nationally planned volume of higher education or nationally regulated course content. The HEIs determine independently what research to conduct.

HEIs have significant freedom in determining their staffing. There are, however, two forms of employment for teachers that is regulated through legislation and regulations: professors and senior lecturers. Beyond these, there are many other forms of employment for research and teaching staff. Doctoral students are generally employed and contribute both research and teaching to the HEIs. Read more about staff in the chapter *Staff in higher education*.

The Government has given the Swedish Higher Education Authority (UKÄ) responsibility for issues related to quality assurance, supervision, and monitoring and analysis of the HEIs' operations (both education and research). The sections *Accreditation*, *Quality assurance*, and *Supervision and monitoring of HEI operations* describe how UKÄ works with this assignment.

Research at HEIs

The bulk of publicly funded research in Sweden is undertaken at the HEIs. Only a small amount of research is conducted by research institutes. The HEIs vary,

Regulation of the higher education sector

Higher education in Sweden is governed by the Higher Education Act (SFS 1992:1434) and the Higher Education Ordinance (SFS 1993:100). They may be found in English translation on the website of the Swedish Council for Higher Education (www.uhr.se).

The Higher Education Act is enacted by the Riksdag and regulates the HEIs' operations. The Act contains basic regulations about education offered by HEIs. For instance, it sets out what should characterise courses and programmes at different levels and stipulates academic freedom and freedom of research. It provides a framework for the organisation and governance of the HEIs, and it states that every HEI must have a board of governors and a vice-chancellor. It also contains regulations about the duties of teachers and provisions about student influence. In addition, the Act specifies that HEIs must promote equality of opportunity, widened recruitment and lifelong learning. The Act now also specifies that the collective international activities of each HEI are to both enhance the quality of its research and education, and make a national and global contribution to sustainable development.

Further provisions are specified in the Higher Education Ordinance, issued by the Government. For instance, the Ordinance states that students must be given the opportunity to influence their studies. The Ordinance contains regulations on entrance qualifications, the selection for courses and programmes and the appointment of teachers and doctoral students. It also includes regulations on requirements in course and programme syllabuses, on grades and on qualifications. Annex 2 of the Ordinance contains a System of Qualifications, which includes descriptions of scope and learning outcomes (qualitative targets) for all degrees.

HEIs also are governed by the Government's annual public service agreements with each HEI. The public service agreement specifies such requirements as that educational offerings are to correspond to demand from students and the needs of the labour market, and the size of the state funding for first- and second-cycle education and for research and third-cycle education. They can also include specific assignments given to HEIs.

Since the public-sector HEIs are public authorities, they are also governed by other regulations, such as the Administrative Procedures Act, the Annual Reports and Budget Documentation Ordinance and the Environmental Management Ordinance. Naturally, the Discrimination Act also applies to HEIs.

however, in how research-focused they are. The large, broad-based universities and the specialised universities conduct more research than the newer HEIs.

Research is much less regulated than higher education. The Higher Education Act specifies that the general principle for research is that research problems may be freely selected, research methods may be freely developed and research results may be freely published. Additionally, academic credibility and good research practice are to be upheld in research. The Higher Education Act also stipulates that higher education institutions must operate under the general principle that academic freedom must be promoted and protected.

Higher education

Higher education refers to post-secondary education that is regulated by higher education legislation. Higher education is defined by, among other things, its placement in the education system (post-secondary) and by the requirement that the education be based on scholarly or artistic practice.

All courses, programmes and qualifications are placed in one of three cycles: first, second or third. There is progression, that is to say, each cycle is based on the one before. The formal requirements that distinguish these cycles are specified in the Higher Education Ordinance. Swedish higher education's division into cycles is part of the adaptation to the Bologna Process, which aims to make higher education more comparable to those countries participating in the process.

All first- and second-cycle education consists of courses. They may be combined to form programmes. In addition to programmes that lead to the award of qualifications, higher education in Sweden offers a wide range of freestanding courses, many of them offered through distance education. Students may select their own combination of courses and many students take courses without the intention to earn credits. The third-cycle level includes, in addition to courses, writing a scholarly dissertation equivalent to at least half of the programme length.

The scope of a programme is expressed as higher education credits. One academic year is typically two semesters and normally 40 weeks, which corresponds to 60 higher education credits with full-time study. Higher education credits in the Swedish educational system can be compared to the European

Credit Transfer and Accumulation System credits (ECTS credits), in which 60 credits are the equivalent of one year of full-time study.

Qualifications

There are three categories of qualifications which all have the same academic status:

1. general qualifications
2. qualifications in the fine, applied and performing arts
3. professional qualifications.

Both general qualifications and qualifications in the fine, applied and performing arts are awarded within the first, second or third cycles. Professional qualifications are awarded within the first and second cycles and mainly in the regulated professions. There are some 50 different programmes leading to a professional qualification, of which barely half lead to a qualification at the master's level (second cycle). Most professional qualifications awarded in the second cycle do not require a previous first-cycle qualification and the programmes leading to their award cover both cycles (Figure 1.1).

Accreditation

The Riksdag decides on the establishment of public-sector HEIs, while the Government decides whether an HEI should be granted full university status. Those that do not have full university status have only limited powers to award third-cycle qualifications and somewhat limited powers to award second-cycle qualifications. There is no difference, however, in the status of the qualifications awarded.

Independent education providers are entitled to offer higher education courses and programmes if they are granted degree-awarding powers. In Sweden, there are seven independent HEIs entitled to award either all or some third-cycle qualifications. There are also several independent education providers with limited entitlement to award first-cycle, and in some cases second-cycle, qualifications.

Degree-awarding powers

In Sweden, accreditation of higher education takes the form of granting degree-awarding powers (Table 1.1). The regulations that apply vary depending on what types of HEI and qualifications they refer to: public-sector HEIs that do not have full university

Figure 1.1. Qualifications framework within Swedish higher education.

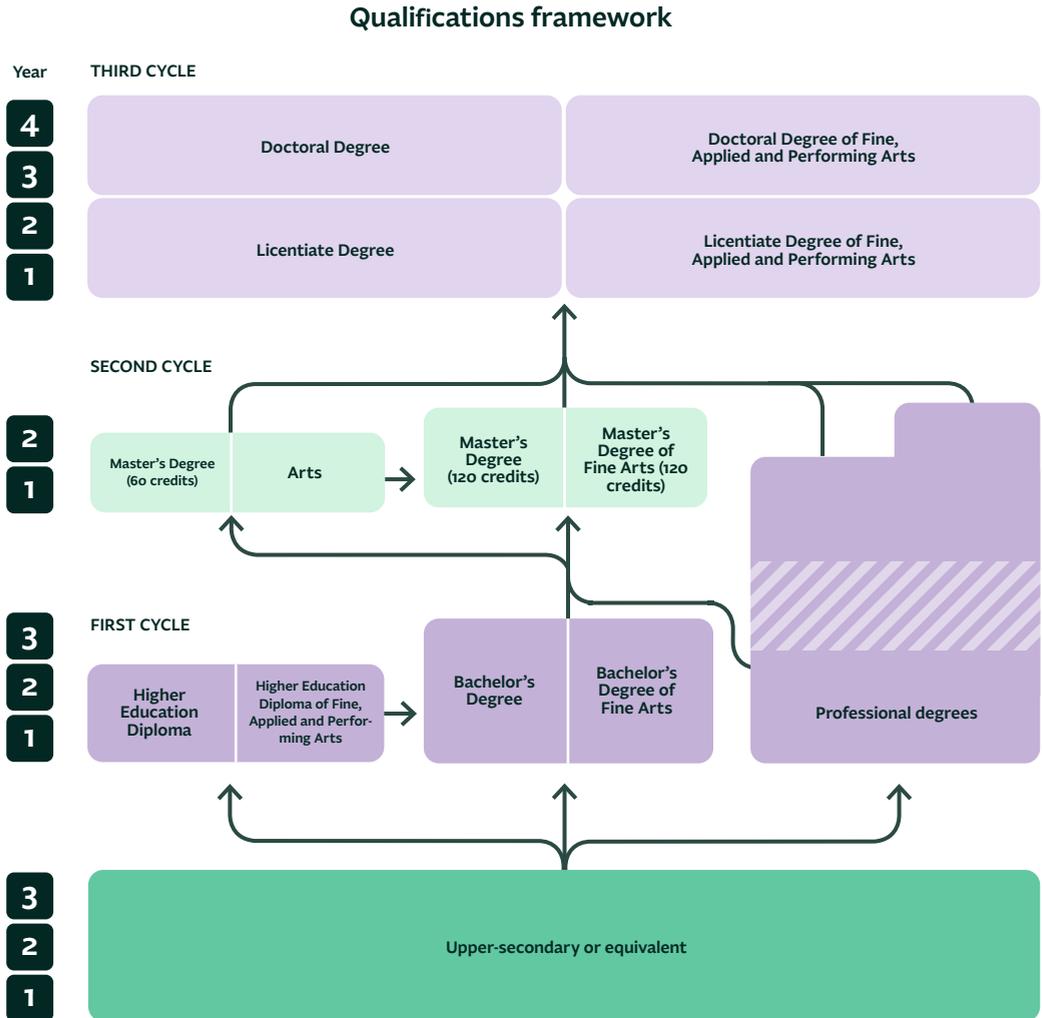


Table 1.1. Degree-awarding powers according to type of HEI.

Type of HEI	Degree-awarding powers
Universities	Generally have independent powers to issue: higher education diplomas, Bachelor's degrees, 60-credit and 120-credit Master's degrees, Licentiate degrees, and Doctoral degrees. Must apply to be able to issue professional degrees and degrees in the fine arts.
Public university colleges	Generally have independent powers to issue: higher education diplomas, Bachelor's degrees and 60-credit Master's degrees. Must apply to be able to issue professional degrees, degrees in the fine arts, 120-credit Master's degrees, Licentiate degrees and Doctoral degrees.
Public fine arts university colleges	Generally only have powers to issue higher education diplomas and Bachelor's degrees. Must apply for degree-awarding powers to issue all other degrees.
Independent HEIs	Generally have no independent degree-awarding powers. Must apply for degree-awarding powers to issue all types of degrees.

status have less extensive powers, but are not as restricted as independent higher education providers, which have to apply separately for each qualification they wish to award. However, all public and independent higher education providers must apply for entitlement to award professional qualifications and qualifications in the fine, applied and performing arts.

Public-sector universities and university colleges apply to UKÄ for degree-awarding powers. UKÄ assesses these applications and decides independently whether to approve them. Independent education providers apply to the Government for degree-awarding powers. The Government usually sends the application to UKÄ for appraisal. Degree-awarding powers are granted indefinitely, unless there are grounds for revoking them. One such ground is failure to meet quality standards.

Quality assurance

In accordance with the Higher Education Act, HEIs must ensure that high standards are attained in courses, study programmes and research and that resources are used efficiently to this end. Furthermore, HEIs' internal quality assurance procedures are the shared concern of staff and students. In its role as national quality assurance agency, UKÄ is responsible for the external quality assurance of both public and independent higher education providers.

For independent HEIs, the Award of Certain Degrees Licensing Act provides regulations that they are required to follow to be allowed to award specific degrees. This includes that independent HEIs must follow the requirements of the Higher Education Act and that they are required to participate in external follow-ups and evaluations of their programmes. Independent HEIs must therefore align to the same national regulations on quality assurance as public HEIs.

The national framework for quality assurance

The national framework for quality assurance of higher education and research consists of four external quality assurance activities or components: institutional reviews (assessments of HEIs' quality assurance processes), programme evaluations, appraisal of applications for degree-awarding powers, and thematic evaluations.

The purpose of the components is partly to assess the performance of study programmes and partly to contribute to the HEIs' quality enhancement work in education and research.

The external quality assurance activities are based on the Higher Education Act, the Higher Education Ordinance, and the ESG (Standards and Guidelines for Quality Assurance in the European Higher Education Area). Alignment with ESG principles provides a shared point of departure for HEIs' and UKÄ's quality assurance responsibilities and a clear focus on student-centred learning. Another important aspect of the national framework is the emphasis on providing support for the HEIs in their own internal procedures, as most quality assurance activities are to be conducted by the HEIs.

All reviews and evaluations are carried out by independent assessment panels appointed by UKÄ, based on a nomination procedure in which HEIs, students' unions and employee/employer organisations propose assessors. The assessment panels consist of experts from the higher education sector, student representatives (students and doctoral students) and employer and labour market representatives.

The assessment panel's report indicates whether the HEI meets the assessment criteria for the reviewed assessment areas, identifies what is not deemed satisfactory, and highlights strengths and examples of good practice. UKÄ's decision is then based on the assessment panel's review.

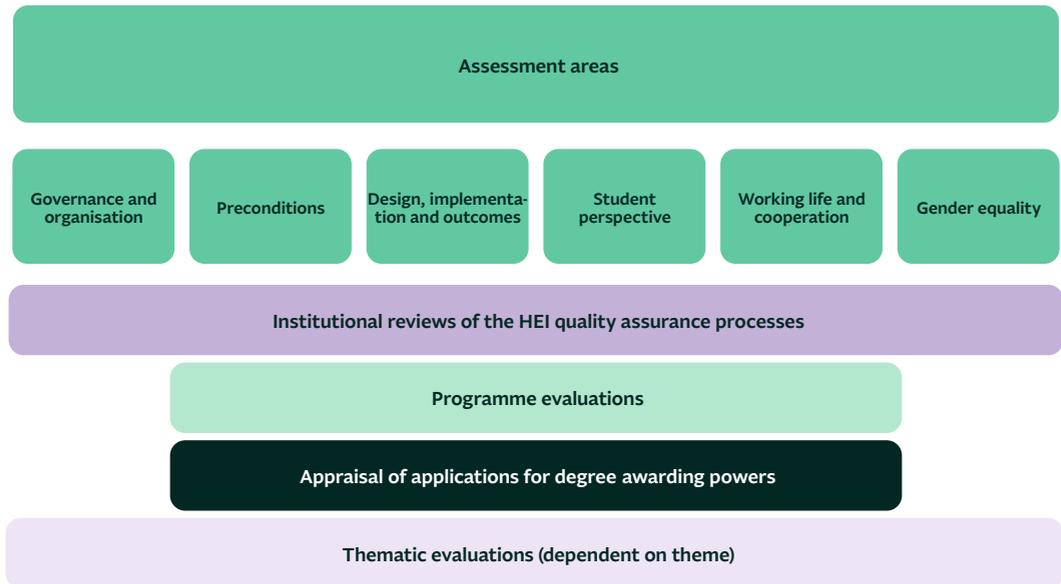
The current national framework applies from 2017 through 2022, including follow-up reviews during 2023. In 2021, UKÄ initiated the further development of the system, in preparation for a following assessment cycle. The revised methodology will be implemented as from spring 2024.

The interlinked design of the national quality assurance framework is further illustrated in Figure 1.2. The coloured bars represent the four external quality assurance activities and shows which of the six assessment areas are covered by each activity.

Institutional reviews of HEIs' quality assurance processes for research

As from autumn 2021, the national quality assurance framework also includes reviews of the HEIs' internal quality assurance processes for research. UKÄ is

Figure 1.2. The interlinked national quality assurance framework.



also responsible for this assignment.

UKÄ reviews whether HEIs ensure that their research fulfils the quality criteria defined in the Higher Education Act and the Higher Education Ordinance. The reviews are also based on the international research guidelines formulated in the European Charter for Researchers and Code of Conduct for the Recruitment of Researchers, and the national framework for quality assurance of research as developed by the Association of Swedish Higher Education Institutions (SUHF).

The external quality assurance of HEIs' quality processes for research comprises for the most part the same assessment areas as for education. The main differences are that the assessment areas 'Governance and organisation' and 'Design, implementation and outcomes' have been merged into a single assessment area called 'Governance, organisation and implementation'. In addition, assessment criteria for gender equality and collaboration have been included in the assessment area 'Preconditions'.

The focus of the reviews is on how well the HEIs' quality assurance processes, including follow-up, measures and feedback procedures, help to ensure and develop the quality of research. The reviews also aim to contribute to the HEIs' quality development,

since the assessors in their reports highlight both identified examples of good practice and areas in need of improvement.

Supervision and monitoring of HEI operations

As previously noted, the Government, in addition to responsibility for quality assurance, has tasked UKÄ with responsibility for monitoring, analysing and supervising the operations of the public-sector HEIs and, to some degree, those of the independent education providers. The assignment also includes reviewing the efficiency of higher education institutions in their operations.

Supervision of whether the HEIs follow the rules

UKÄ conducts supervision of public-sector HEIs and has a special focus on students' legal rights. Supervision includes the government agency ensuring that the HEIs follow applicable laws and regulations, such as the Higher Education Act, the Higher Education Ordinance, and the Administrative Procedures Act. UKÄ also assesses whether the HEIs follow their own rules and regulations. The assignment also includes a certain degree of supervision of independent education

providers that have degree-awarding powers.

Different methods are used as part of this supervision. Students can submit complaints that UKÄ administers and decides on. Another method is HEI supervision, which is connected to UKÄ's review of the HEIs' quality assurance processes. For example, this includes reviewing student influence, course and programme syllabuses, hiring of employees, and research misconduct. UKÄ also conducts targeted inspections of HEIs as needed and investigates matters of particular interest. The inspection reports and some decisions are published on the agency's website.

Follow-up of HEIs' operations

UKÄ also follows up and analyses topics within its areas of responsibility – higher education and research – both on its own initiative and through special assignments from the Government. This responsibility includes analysing developments in the HEIs' operations, monitoring and reporting on the labour market's future skill set requirements relative to education offered, and reporting on the establishment of graduates on the labour market.

The law requires that official statistics for general information, investigation and research be kept. UKÄ is one of some 30 government agencies that the Government has tasked with responsibility for the official statistics in their respective fields. UKÄ collects statistics on such aspects as applicants, enrolled students, first-, second- and third-cycle graduates, international student mobility, HEI staff and finances, and research at HEIs.

The results of follow-ups and statistics are published in reports and analyses, in databases and as open source material on UKÄ's website. The Government uses this data in budget bills and to follow up policy, the HEIs use the data for benchmarking, and the media use the information in articles and in TV and radio reports.

UKÄ also participates in international statistics collaborations related to education within the EU and the OECD, and the government agency reports statistical data to the UN's follow-up of the 2030 Agenda for Sustainable Development.

Admission to higher education

Sweden has a more uniform system of admission to higher education than many other countries.

National admission regulations are defined in the Higher Education Act and the Higher Education Ordinance, and in regulations issued by the Swedish Council for Higher Education. The vast majority of admissions is pooled. The Swedish Council for Higher Education is responsible for pooled admissions on behalf of the HEIs, but the individual HEI makes the official decision to admit the student.

An individual who wants to apply to international programmes in English at Swedish HEIs can find all necessary information on a single shared official website, www.universityadmissions.se. Information in Swedish about studying in higher education and the HEIs' educational offerings is available at the website: www.studera.nu.

Many roads into higher education

Detailed national regulations apply mainly to the admission of higher education entrants to first-cycle education. There are also regulations on admission to second- and third-cycle education, but these are less comprehensive.

From 2022, a new system for general entry requirements applies for courses or study programmes that begin in the first cycle and that are intended for new entrants. It comprises of six areas of expertise (competencies), including knowledge of Swedish and English, the ability to examine issues from multiple perspectives, and the ability to draw conclusions and motivate them. General entry requirements are considered met through an upper-secondary programme preparatory for higher education, but there are several other roads into higher education in Sweden. Upper-secondary vocational programmes can also provide qualification, and there are good options for meeting entry requirements through studies in municipal adult education for upper-secondary qualifications. Prior learning through some other circumstance can also be used to meet basic entry requirements if the person is judged to be able to benefit from the education.

Selection rules and procedures

Fulfilment of the entry requirements does not guarantee admission. If there are more applicants than can be admitted, selection criteria are used. All first-cycle courses and programmes, apart from those that lead to the award of qualifications in the fine,

applied and performing arts, use more or less the same criteria. These are based mainly on final school grades or results from the Swedish Scholastic Aptitude Test (*högskoleprovet*). The Higher Education Ordinance lists what selection criteria may be invoked beyond these. It also contains regulations on the evaluation of final school grades, even those from other countries and older Swedish grade systems.

When the student has fulfilled the requirements for a qualification, he or she must apply for a degree certificate – it is not issued automatically by the HEI.

Read more about applicants, enrolled students and graduates in first- and second-cycle education in the chapter *First- and second-cycle education*.

Admission to third-cycle education

The HEI may only accept as many doctoral students as it can offer supervision and acceptable conditions of study in general and that have funding, normally a doctoral studentship. To be admitted to third-cycle education, the applicant must have obtained a second-cycle degree or second-cycle credits, or have equivalent knowledge, and must also fulfil the specific entry requirements.

Normally, funding can only be provided for the official period of study. This means that doctoral programmes have to be completed in four full years, licentiate programmes in two. A doctoral student, however, may work with teaching first- and second-cycle students, research and administration up to 20 per cent of their studies. The doctoral studies are then extended an equivalent period.

Read more about new entrants, doctoral students and graduates in third-cycle education in the chapter *Third-cycle education*.

Cost of studying

Tuition fees

For a long time, Sweden was one of the few countries in Europe in which higher education was completely free of charge. In 2011, the Higher Education Act was changed to the effect that while higher education is free for Swedish citizens and for citizens of the EU/EEA countries and Switzerland, incoming students from other countries have to pay an application fee and tuition fees for first and second-cycle studies, unless they are taking part in an exchange programme. In calculating tuition fees for courses and programmes,

the HEIs must ensure that they cover the full cost of the instruction provided as well as counselling, health services and other types of student service.

Student finance

Most students in Sweden finance their studies with the help of financial support from the state to cover their living expenses. All domestic students are entitled to student finance, but there are minimum performance requirements, in terms of the number of credits achieved, for continued financial support.

Student finance consists of a combination of study grants and study loans at low interest rates. In 2022, the grant portion of student finance for an academic year of 40 weeks amounted to SEK 33,600 and the loan ceiling to SEK 77,280. There are also possibilities for receiving larger grants or to borrow more, for example, for students with children or for studies abroad. Students may receive state-sponsored student finance for a maximum of twelve semesters or six academic years. The upper age limit for receiving student financing is currently 60.

It is relatively common for students to work during their studies. An income over the earned income allowance leads to a reduction in student finance.

Repayment of the loan element is based on an annuity system and in normal cases the total debt should be repaid in 25 years or less, or before the borrower reaches the age of 64.

Incoming students have to finance their studies themselves. Students required to pay tuition, however, may apply for scholarships for full or partial financing of their tuition fees. In some cases, they can also apply for grants to cover cost of living.

International cooperation on the evaluation of higher education

Sweden plays an active role in international cooperation on the evaluation of higher education, particularly in the European Higher Education Area (EHEA). Compliance with the national framework for quality assurance with the ESG is acknowledged by UKÄ's membership in the European Association for Quality Assurance in Higher Education (ENQA) and inclusion on the European Quality Assurance Register for Higher Education (EQAR).

Government agencies in the higher education sector

Read more about higher education and research in Sweden at www.sweden.se. The Eurydice website (an EU initiative to explain European education systems) has information and studies that compare the Swedish education system with other European education systems. In the OECD publication *Education at a Glance Swedish education-related statistics are analysed and compared with other countries*.

Many government agencies under the Ministry of Education and Research work within higher education and research, such as with follow-ups and evaluations, analysis and statistics:

Universitetskanslersämbetet (the Swedish Higher Education Authority (UKÄ), www.uka.se) evaluates the quality of higher education and research, is responsible for official statistics about higher education and monitors compliance with laws and regulations among universities and university colleges.

Universitets- och högskolerådet (the Swedish Council for Higher Education (UHR), www.uhr.se) provides information prior to higher education studies, manages the Swedish Scholastic Aptitude Test and coordinates the admissions process to higher education. UHR also recognises foreign qualifications and promotes equal rights and opportunities in higher education. UHR is the national agency for Erasmus+, and the national office for ENIC-NARIC and the Eurydice network in Sweden.

Centrala studiestödsnämnden (the Swedish Board of Student Finance (CSN), www.csn.se) approves and distributes state financial support for students, including both grants and loans.

Svenska institutet (the Swedish Institute (SI), www.si.se) is tasked with disseminating knowledge about Sweden abroad and manages exchanges with other countries within culture, education, research and society at large.

Vetenskapsrådet (the Swedish Research Council (VR), www.vr.se) is the largest governmental funding body and supports research within all scientific fields, in addition to serving as an advisor to the Government on research policy.

Överklagandenämnden för högskolan (the Higher Education Appeals Board (ÖNH), www.onh.se) reviews decisions on admission to higher education and other issues. The board is hosted by the Swedish Higher Education Authority (UKÄ).



Higher education institutions

Universities

Uppsala University **1, 2**
 Lund University **3, 4**
 University of Gothenburg **5**
 Stockholm University **6**
 Umeå University **7**
 Linköping University **8, 9**
 Karolinska Institutet **6**
 KTH Royal Institute of Technology **6**
 Chalmers University of Technology (independent) **5**
 Luleå University of Technology **10**
 Stockholm School of Economics (independent) **6**
 Swedish University of Agricultural Sciences **1, 7, 11, 12**
 Karlstad University **13**
 Linnaeus University **14, 15**
 Örebro University **16**
 Mid Sweden University **17, 18**
 Malmö University **29**
 Mälardalen University **30, 31**

University colleges

Blekinge Institute of Technology **19**
 Dalarna University **21, 22**
 Halmstad University **24**
 Jönköping University (independent) **25**
 Kristianstad University **26**
 Swedish Defence University **6**
 Swedish School of Sport and Health Sciences **6**
 Södertörn University **6**
 University of Borås **20**
 University of Gävle **23**
 University of Skövde **27**
 University West **28**

Art, design and music academies

Beckmans College of Design (independent) **6**
 Konstfack University of Arts, Crafts and Design **6**
 Royal College of Music in Stockholm **6**
 Royal Institute of Art **6**
 Stockholm University of the Arts **6**

Other independent education providers

ALT School of Theology **16**
 Brunnsvik Folk High School **22**
 Erica Foundation **6**
 Evidens **5**
 Gammelkroppa School of Forestry **32**
 Johannelund School of Theology **1**
 Marie Cederschiöld University **5, 6**
 Newman Institute **1**
 Scandinavian Academy of Psychotherapy
 Development **6**
 Sophiahemmet University **6**
 Stockholm University College of Music Education **6**
 Swedish Institute for CBT & Schema Therapy **6**
 Swedish Red Cross University **6**
 University College Stockholm **6**
 World Maritime University **29**

The numbers refer to the locations on the map for each HEI. Some HEIs also have smaller campuses not indicated on the map.

A number of HEIs changed their names during 2022. The Government decided to grant university status to Mälardalen University (formerly Mälardalen University College) from 1 January 2022. The Ersta Sköndal Bräcke University College has changed its name to the Marie Cederschiöld University. The name Örebro School of Theology is no longer used in relation to higher education at the ALT School of Theology.

The Government has granted degree-awarding powers in the field of maritime studies to the World Maritime University, which is thereby included as a new HEI in the annual report. In June 2022, the Government revoked the degree-awarding powers of Evidens AB, which has not conducted any operations during the year.

TRENDS AND DEVELOPMENTS



First- and second-cycle education

In the autumn semester 2022, just over 370,000 students were enrolled on first- and second-cycle courses and programmes at Swedish higher education institutions (HEIs). Although this figure is lower than during the pandemic, interest in higher education remains great. In the academic year 2021/22, a total of 454,000 students were enrolled at the HEIs.

While the number of students graduating with a first- or second-cycle qualification declined slightly in the academic year 2021/22, the number of graduates remained at a historic high.

The social bias in recruitment to higher education persists. People whose parents have a low level of education were still underrepresented among students enrolled for the academic year 2021/22. That said, people from a foreign background now enter higher education at roughly the same rate as their peers from a Swedish background. The group with the highest percentage transitioning to higher education is those born in Sweden to two foreign-born parents.

The level of education in Sweden is rising: 31 per cent of those turning 40 in 2022 had a higher education qualification.

All students in first- and second-cycle education

The Swedish Higher Education Authority (UKÄ) keeps detailed statistics on applicants, admitted and enrolled students and graduates from first- and second-cycle courses and programmes. The following data for the academic year 2021/22 may help to orientate readers of this chapter:

- A total of just over 445,000 people applied to either a study programme or freestanding course offered at a Swedish HEI in the autumn semester 2022. Among their number were nearly 392,000 qualified first choice applicants.
- Of these qualified first choice applicants, 275,700 (70%) were admitted, note though that not all commenced their studies.
- In the academic year 2021/22, a total of just

over 450,000 students were enrolled on first- and second-cycle courses and programmes.

- Of the total number of enrolled students, 93,700 (25%) had not previously studied at an HEI.
- Among enrolled students, in the academic year 2021/22, some 276,000 chose study programmes and some 200,000 freestanding courses.
- A total of 73,500 students graduated in the academic year 2021/22, of whom nearly 43,000 were awarded a first-cycle qualification and just over 32,000 a second-cycle qualification.

Applications and admissions

Applications and admissions to higher education are analysed using statistics on factors such as whether students meet entry requirements, whether they are new entrants to higher education, gender, age and which programmes prospective students apply for and are admitted to. As not all applicants meet the entry requirements and the number of places on most courses and programmes is lower than the number of applicants, not every applicant is admitted to higher education. You can learn more about the admission system in the chapter *The Swedish system for higher education and research*.

Number of applications still higher than before the pandemic

During the pandemic, the Government allocated additional funds to HEIs so they could increase the number of places on courses and programmes. This led to an increase in admissions during the first year of the pandemic. The latest statistics show that the total number of applicants to higher education declined in the autumn semester 2022. In the peak year 2021, there were 486,200 applicants to courses and programmes at Swedish HEIs. The corresponding figure for autumn semester 2022 was 445,200, a decrease of approximately 10 per cent. There were fewer applicants in all age groups. Despite this reduction, more people applied to study at HEIs in autumn semester 2022 than before the pandemic. Women constituted 53 per cent of all applicants and

men 47 per cent.

Most students at HEIs read a study programme that either leads to a general qualification, a qualification in the fine, applied and performing arts, or a professional qualification. To the autumn semester 2022, 176,300 qualified first choice applicants applied for a study programme.

Many programmes leading to a professional qualification received significantly fewer applications for the autumn semester 2022 than for the autumn semester 2021, including the various teacher training programmes and the social work programme. Interest in many other programmes remained high, including nursing, engineering, law and business and economics. Master of Science in Engineering programmes had the highest number of qualified first choice applicants (13,400), followed by nursing (9,700) and social work (6,900) programmes. Between them, the four teacher training programmes (pre-school, primary, secondary and vocational education) had 15,500 applicants, equivalent to 16 per cent of all qualified first choice applicants to programmes leading to a professional qualification for autumn semester 2022.

More applicants in 20 years' time

New entrants to higher education accounted for just under 30 per cent of all applicants, or 128,400 individuals. While this was a decrease compared to the previous autumn semester, it was still above pre-pandemic levels. Numbers declined in all age groups but the largest decrease (17% respectively) in new entrants was in the 25–29 and over 35 age groups.

Demographic changes play a part in the number of applicants for higher education. According to Statistics Sweden's population forecast, the number of 19-year-olds in Sweden will increase from the present 118,000 to almost 130,000 by 2030. After that, it is estimated that the number will fall to around 125,000 by 2043. The number of 25-year-olds is expected to remain relatively constant over the next few years before starting to increase from 2026 onwards, reaching close to 140,000 by 2043. As the number of both 19-year-olds and 25-year-olds is expected to increase over the next 20 years, applications to HEIs can also be expected to rise, given that the level of interest in obtaining a higher education remains unchanged.

70 per cent of qualified applicants admitted

While somewhat fewer applicants were admitted to autumn semester 2022 than autumn semester 2021, the total remained above pre-pandemic levels. Of the total of 391,800 qualified first choice applicants, 275,700, or 70 per cent, were admitted.

Of the admitted qualified first choice applicants, 183,100 chose to study only freestanding courses. Women accounted for 64 per cent of those admitted to freestanding courses and men 36 per cent. A further 92,600 admitted qualified first choice applicants chose a programme, 58 per cent of whom were women and 42 per cent men.

Approximately half of those admitted to a study programme were admitted to a programme leading to a professional qualification and the rest to general programmes. As in the previous year, the highest numbers of applicants per place for programmes leading to a professional qualification were for psychology, medicine and architecture. Of those admitted to a general programme, 30,300 (33%) were admitted to a first-cycle programme and 11,400 (12%) to a second-cycle programme.

Enrolled students

Recent years have seen fluctuations in terms of the number of students in first- and second-cycle courses and programmes. The explanation for this is that a temporary expansion of higher education, to meet increased demand during the pandemic, meant HEIs could educate more students. These additional places are being gradually phased out during the period 2022–2025.

In addition to new entrants to higher education, the student population also consists of students who are already enrolled and those returning to higher education after doing other things for some time. For statistical purposes, students are also classified as either Swedish or incoming students from other countries. All are included in the total number of enrolled students.

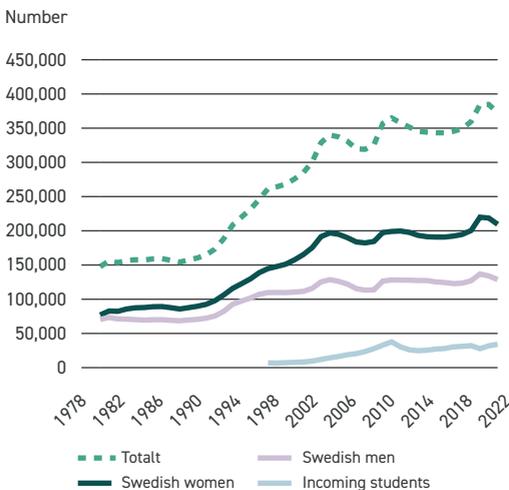
Number of students in higher education at a historic high

After five consecutive years of growth, the number of students enrolled at Swedish HEIs declined in the

autumn semester 2022 (Figure 2.1). In total, 372,400 students were enrolled on a first- or second-cycle course or programme at some point during the semester. Compared to autumn semester 2021, the number of Swedish students declined by 14,400, while the number of incoming students increased by 2,200. In autumn semester 2022, 61 per cent of enrolled students were women and 39 per cent men. Despite the overall reduction, from a long-term perspective the number of students in higher education remained high. In total 450,400 students were enrolled in higher education in the academic year 2021/22.

There were 338,300 enrolled Swedish students and 34,100 enrolled incoming students in autumn semester 2022. This was the highest number of incoming students to Swedish HEIs since autumn semester 2010, the year before tuition fees were introduced. Incoming students accounted for 9 per cent of the student population in the academic year 2021/22. National and global restrictions imposed due to the pandemic had a severe impact on the number of incoming students, which declined sharply in autumn semester 2020. This was particularly true of international exchange students. Since then, they have returned to Swedish HEIs in large numbers. Learn more about international student mobility in the chapter *Internationalisation and mobility*.

Figure 2.1. Students enrolled on first- and second-cycle courses and programmes in the autumn semester 1978–2022. In total and divided by Swedish women, Swedish men and incoming students.



Many students study remotely

While the most common way to undertake higher education is to study on campus, many students choose distance education for all or part of their studies. In the academic year 2021/22, 112,600 students took courses and programmes solely as distance education. A further 57,100 students combined distance learning courses with on-campus courses.

The number of enrolled distance students reached a peak of 170,000 in the 2020/21 academic year, this despite of the fact that the temporary, large-scale transition to distance education during the pandemic was not noted in the statistics. A significantly higher percentage of women than men choose distance learning courses. This was especially true among those who only took courses and programmes as distance education, 69 per cent of whom were women and 31 per cent men.

More new entrants

The number of new entrants to higher education rose for the sixth academic year in a row in 2021/22. A total of 93,700 people entered a Swedish HEI for the first time. This large number was made possible by additional Government funding to increase the number of places in first- and second-cycle courses and programmes to meet increased demand in the wake of the pandemic. The Government took similar measures during the 2008/09 financial crisis, and only then was the number of new entrants to higher education greater.

Of new entrants in the academic year 2021/22, 69,900 were Swedish and 23,900 incoming students. Development in these two groups differed during the pandemic and this continued to be the case in the latest academic year. Between the academic years 2020/21 and 2021/22, the number of incoming students increased by 7,000, while the number of Swedish new entrants decreased by 5,400.

Women are in a clear majority among new entrants to higher education. Although in the last academic year the number of men increased slightly more than the number of women, this did not significantly affect the gender balance; in 2021/22, 59 per cent of new entrants to higher education were women and 41 per cent men.

Programmes leading to a professional qualification remain popular

For many Swedish new entrants, the route into higher education is a programme leading to a professional qualification. In the academic year 2021/22, 44 per cent of Swedish new entrants enrolled in a programme leading to a professional qualification. In number, they were slightly fewer than the previous academic year. The percentage of Swedish new entrants was lower in programmes leading to a general qualification, at about a quarter.

The sharpest decrease in the number of Swedish new entrants (3,600 fewer) was on freestanding courses, where they accounted for just under 30 per cent of students in the academic year 2021/22.

Many incoming new entrants to second-cycle studies

Another category in the statistics is new entrants to second-cycle studies (but not necessarily new to higher education). This category includes both Swedish and incoming students.

A total of 59,900 students started a first- or second-cycle programme for the first time in the academic year 2021/22. Just under half studied on a programme leading to a general qualification. This represented a year-over-year decrease of 3 per cent. The majority of students beginning a programme for the first time (27 000) were studying for a Degree of Bachelor.

At second cycle, Master's programmes for 120 credits were the most common choice, with 18,500 programme new entrants (students registering for the first time for a given programme) during the academic year 2021/22. Master's programmes for 60 credits attracted 4,600 programme new entrants.

Over 40 per cent of new entrants to second-cycle programmes leading to a general qualification were incoming students. This was a significantly higher percentage than in programmes leading to a professional qualification.

In total, 55 per cent of new entrants to programmes leading to a general qualification were women and 45 per cent men. Gender balance did however differ from one programme to the next.

Since their introduction in 2007/08, programmes in fine, applied and performing arts have attracted increasing numbers of programme new entrants, ris-

ing to 1,100 in the academic year 2021/22, the highest number thus far.

Half of programme new entrants were studying for a professional qualification

In the academic year 2021/22, 52,500 programme new entrants were studying for a professional qualification, slightly more than the number studying for a general qualification. As with programmes leading to a general qualification, the number of programme new entrants studying for a professional qualification declined year-over-year by 3 per cent. In 2021/22, Master of Science in Engineering programmes attracted the highest number of programme new entrants, 8,200 in total. Programmes leading to teaching qualifications were also popular, as were nursing programmes.

In total, 64 per cent of programme new entrants studying for a professional qualification were women and 36 per cent men. Only 6 of 50 programmes leading to a professional qualification had an even gender balance (defined as being within the range 40 to 60%).

The number of 19-year-olds entering higher education continued to rise

In Sweden, a relatively low percentage of students enter higher education immediately after leaving upper-secondary school. During the pandemic, however, the percentage of 19-year olds going directly to higher education increased, from 13 per cent in 2019 to 16 per cent in 2020. This level was maintained in 2021.

The transition to higher education differs between women and men. In 2021, 18 per cent of women entered higher education immediately after leaving upper-secondary school compared to 13 per cent of men.

Various factors affecting the transition to higher education combined to lower the median age of Swedish new entrants from 21.6 years in the academic year 2019/20 to 21.4 years in 2020/21. Since then, the median age has remained at this lower level.

Volume of education

As not all students study full-time throughout the year, calculating the number of full-time equivalents (FTEs) provides a useful metric for describing the volume of education produced. FTEs are calculated

Sweden has the oldest first-cycle students

The average Swedish student is older than in many other OECD countries; in 2020, the average age on entering first-cycle studies was 25. At 67 per cent, Sweden also had the lowest percentage of new entrants to first-cycle studies under 25 years of age. The average for OECD countries was 84 per cent. The age profile of Swedish new entrants to second-cycle studies was closer to the OECD average, and the average for the 22 EU Member States that belong to the OECD.

Generally speaking, the gender balance is more even at first-cycle level than second-cycle level. On average for OECD countries, 55 per cent of new entrants to first-cycle studies were women and 45 per cent men. The corresponding figures for second-cycle studies were 58 per cent women and 42 per cent men. While the gender balance in second-cycle courses and programmes is roughly the same in Sweden as the OECD average, Sweden is one of the countries with the highest percentage of women entering first-cycle studies.

Table 2.1. Profiles of new entrants to first- and second-cycle studies in selected OECD countries, 2020.

Percentage of women and men, average age, and percentage of new entrants under 25 and 30 years of age. Please note that incoming exchange students are not included in the statistics. Source: OECD.

Country	First cycle			Second cycle		
	Women/men (%)	Average ages (%)	New entrants under 25 years of age (%)	Women/men (%)	Average ages (%)	New entrants under 30 years of age (%)
Denmark	58/42	25	74	56/44	26	86
Finland	56/44	24	74	62/38	32	48
France	58/42	21	91	55/45	24	87
Netherlands	54/46	20	94	56/44	25	92
Norway	58/42	23	81	60/40	26	79
Germany	48/52	23	77	53/47	24	89
United Kingdom	56/44	22	84	60/40	27	78
Sweden	61/39	25	67	57/43	27	76
EU22 – average	55/45	22	86	59/41	26	80
OECD – average	55/45	22	84	58/42	28	73

by dividing the total number of credits for which all students have been registered by 60 (60 credits correspond to full-time study for one academic year).

Programmes continue to dominate

After reaching record levels in the academic year 2020/21, the number of FTEs on first- and second-cycle courses and programmes declined in 2021/22. Swedish HEIs had a total of 325,800 FTEs, 4,200 fewer than during the previous academic year. From a long-term perspective, however, the volume of education produced remains very high. One long-term trend is the increase in the total number of FTEs at

second-cycle level.

Students in programmes leading to a professional or general qualification constituted 76 per cent of the education volume in the academic year 2021/22. Programmes leading to a professional qualification accounted for 146,400 FTEs and programmes leading to a general qualification 101,400, a slight increase compared to 2020/21.

The greatest year-over-year change in education volume was in freestanding courses, where the number of FTEs decreased by 7 per cent, to just over 74,000 FTEs during the academic year 2021/22.

As in previous years, the single largest subject area

in 2021/22 was social sciences and law, with 137,900 FTEs. The distribution of FTEs among subject areas has not changed significantly over recent years. The largest percentages of FTEs at second-cycle level are found in medicine and odontology and engineering and technology, which each have approximately one third of the total.

Student completion

One metric for student completion rate is retention, i.e., how many students remain in a programme in its second academic year. This metric provides an early and clear indication of student completion rates. It also has the advantage of having a relatively short follow-up time and therefore describes the current situation more accurately than, for example, graduation rate.

Graduation rate describes the percentage of new entrants in a given academic year who have graduated within the stated programme length plus three years.

In Sweden, students must apply for the award of a qualification, it does not happen automatically once all qualitative targets are achieved or credits registered. In certain professions, such as those requiring a license to practice, it is important to be able to prove that one has been awarded a qualification; in others, such as IT-related professions, less so. This is one of many factors that affect the graduation rate for individual programmes and qualifications.

Retention high in the medicine programme

In total, 78 per cent of those who started a programme leading to a professional qualification in 2020/21 were still enrolled in the programme in the second academic year. The retention rate among women was 80 per cent and among men 75 per cent.

The programme leading to a Degree of Master of Science in Medicine is among the most difficult to gain admittance to. It also has high retention rates: 88 per cent of students starting the medicine programme in 2020/21 were still enrolled in the programme in the second academic year. The next highest retention rate was found in programmes leading to a Degree of Master of Science in Business and Economics, where 86 per cent of students continued their studies in year two. The lowest retention rates (66%) were found among students studying for a

bachelor's degree in pharmacy or biomedical science or a master's degree in education.

Highest graduation rate in the midwifery programme

Up to and including the 2020/21 academic year, students in the midwifery programme had the highest graduation rate, with 94 per cent graduating within the programme length plus three years. The medicine programme also had a high graduation rate, at 89 per cent. The lowest graduation rate was found among students studying for a Degree of Bachelor of Science in Engineering, just under half of whom had graduated within the programme length plus three years.

In follow-ups up to and including the 2020/21 academic year, with the exception of programmes leading to a Postgraduate Diploma in Specialist Nursing, men had a lower graduation rate than women in all programmes leading to a professional qualification. The greatest differences between women and men were found in programmes leading to a Postgraduate Diploma in Special Needs Training or Degree of Bachelor of Arts in Pre-School Education, at 27 and 25 percentage points respectively.

Graduates

A total of 73,500 students were awarded a first- or second-cycle qualification by a Swedish HEI in the 2021/22 academic year (Figure 2.2). While this was slightly fewer than the previous academic year, it remained at a historically unprecedented level. The decline was more apparent among men, with 900 fewer graduates than in 2020/21,

A clear majority of graduates in the 2021/22 academic year were women, 64 per cent compared to 36 per cent men. The discrepancy was greater at first-cycle level than at second-cycle level: at first cycle, 65 per cent of graduates were women and 35 per cent men, while the corresponding figures at second cycle were 61 per cent and 39 per cent.

General qualifications more common

It was more common for students to take a general qualification: 45,100 students took either a higher education diploma, bachelor's degree or master's degree in 2021/22, somewhat fewer than the previous academic year. A Degree of Bachelor was awarded to

Graduation rates higher for master’s programmes than bachelor’s programmes

On average in the 24 countries included in the OECD’s data, 68 per cent of first-cycle students had graduated within three years of a completed programme (2020). Generally speaking, graduation rates are higher at second cycle than first cycle. On average in the nine countries included in the OECD’s data, 77 per cent of second-cycle students had graduated within three years of a completed programme. Sweden is among the countries with the lowest first- and second-cycle graduation rates. In most countries, women were more likely to graduate than men.

Table 2.2 Graduation rate (%) at first and second cycle within three years of a completed programme, in selected OECD countries, 2020. In total and divided by gender (%). Source: OECD.

Country	Degree of Bachelor			Degree of Master		
	Within 3 years of completing the programme (%)			Within 3 years of completing the programme (%)		
	Total (%)	Women (%)	Men (%)	Total (%)	Women (%)	Men (%)
Estonia	64	73	53	70	80	59
Lithuania	65	73	56	78	81	71
Netherlands	71	78	64	..	..	..
Norway	74	79	67	84	87	80
Poland	69	77	60	75	69	75
Spain	72	79	64	87	90	82
United Kingdom	85	87	82	..	..	..
Sweden	61	69	49	71	78	64
Austria	60	65	54	62	66	57
Average*	68	..	..	77	..	..

* Average for the 24 countries that supplied data at first-cycle level and 9 countries that supplied data at second-cycle level.

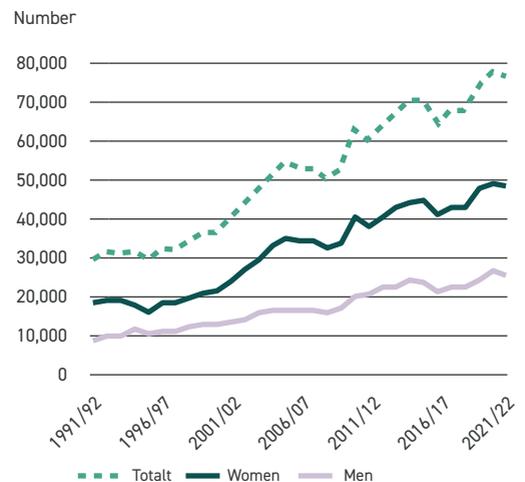
28,000 students and a Degree of Master to 12,200 students. Of those awarded a general qualification, 61 per cent were women and 39 per cent men.

In the same academic year, 36,500 students were awarded a professional qualification. This figure was largely the same as the previous academic year. A Degree of Master of Science in Engineering was awarded to the largest number of students (4,400), followed by a Degree of Bachelor of Science in Nursing (4,400) and a Degree of Master of Arts/Science in Secondary Education (3,100).

Only two of the ten largest programmes leading to a professional qualification had an even gender balance among graduates (defined as being within the range 40 to 60%): Degree of Master of Arts/Science in Secondary Education and Degree of Master of Science in Medicine.

Qualification in the fine, applied and performing

Figure 2.2. Number of graduates, academic years 1991/92–2021/22. In total and divided by gender.



arts were introduced as a separate category in 2007. In 2021/22, 1,100 students were awarded a qualification in the fine, applied and performing arts, 9 per cent fewer than in the previous academic year. The gender balance among those awarded a qualification in the fine, applied and performing arts was the same as among those awarded a general qualification, 61 per cent women and 39 per cent men.

The length of studies has been extended

Since 2007, when the Swedish system was adapted to the overarching framework of qualifications of the European Higher Education Area, with first-, second- and third-cycle qualifications, the number of qualifications has increased and length of studies has been extended. Up until the academic year 2006/07, the percentage of graduates with an aggregated period of study of five years or more remained fairly constant at around 4 per cent. The percentage has gradually increased since then and by the academic year 2018/19 it had reached 27 per cent, where it has remained. For our purposes, *length of study* refers to the planned length of programmes rather than the actual time it takes to complete studies.

Educational attainment among the Swedish population

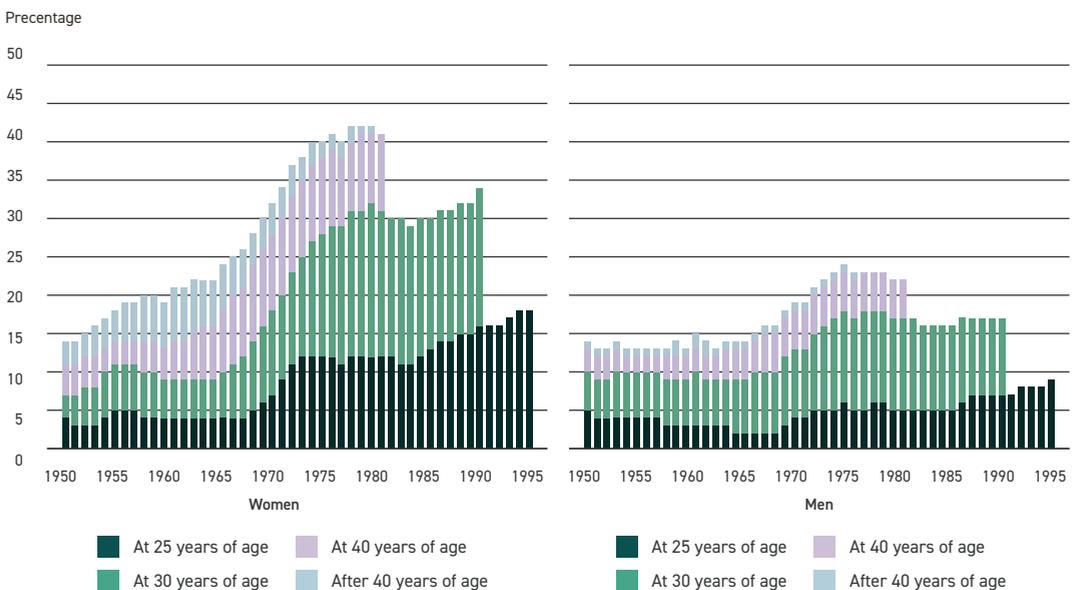
The level of education in Sweden is rising: 31 per cent of those turning 40 in 2022 had a higher education of at least three years, placing them in the highly educated category. Figure 2.3 shows the percentage of cohorts achieving this level of education when followed up in the academic year 2021/22.

With each year, the discrepancy between women and men increases. Among those who were 40 years of age in 2022, 41 per cent of women were highly educated compared to 22 per cent of men.

Widening participation

Since 2001, the Higher Education Act (SFS 1992:1434) requires HEIs to actively promote and widen recruitment to higher education. Official statistics allow us to monitor the composition of the student population at Swedish HEIs based on social background – i.e., the educational attainment of the highest educated parent– and whether students are from a Swedish or foreign background.

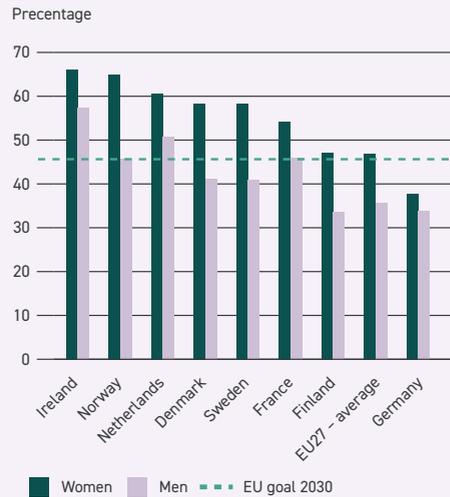
Figure 2.3. Percentage of population born between 1950 and 1997 graduating from higher education after a programme of at least three years at 25, 30 and 40 years of age or later when followed up in the academic year 2021/22. Divided by gender (%).



Almost half of EU Member States reach EU target

The EU has set the target that, by 2030, at least 45 per cent of 25–34 year-olds should have a tertiary education. Thus far, 13 Member States have reached the target, Sweden among them. There is a clear gender imbalance: a larger percentage of women have a tertiary education than men. In Sweden, 58 per cent of women and 41 per cent of men in this age group have a tertiary education. Eight Member States have reached the EU target both in total and for women and men.

Figure 2.4. Percentage of the population between 25 and 34 years of age completing tertiary education in selected EU/EEA countries, 2021. Divided by gender, compared to the EU’s target of 45 per cent. Source: Eurostat.



The social bias in recruitment persists

The social bias in recruitment to higher education remains high and students whose parents have a low level of education are underrepresented. The Swedish Higher Education Authority (UKÄ) uses data on the educational attainment of the highest educated parent as a metric for social background.

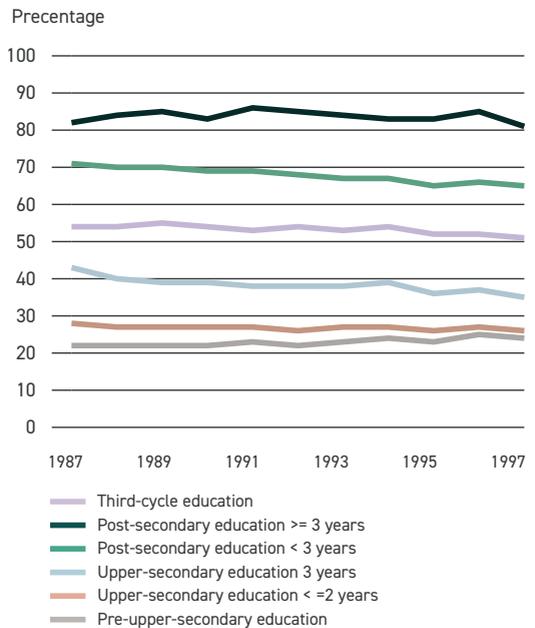
Of those born in 1997, 45 per cent had entered higher education no later than 25 years of age (Figure 2.5). The level of their parents’ education plays an important role in an individual’s pursuit of a higher education: 81 per cent of those with at least one parent with a third-cycle qualification go on to higher education compared to 24 per cent of those whose parents have at most a lower-secondary education.

While women are more likely to transition to higher education than men in all social groups, the basic pattern remains the same regardless of gender: the higher the parents’ level of education, the more likely someone is to enter higher education. However, as women and men tend to enrol in different types of courses and programmes, differences arise in the distribution of social background between women and men. Among new entrants to higher education in the academic year 2021/22, 41 per cent of women and 50 per cent of men had highly educated parents.

The same pattern of social bias in recruitment repeats in all cohorts from 1987 to 1997: the higher

the parents’ level of education, the more likely someone is to enter higher education. During this period,

Figure 2.5. Percentage of the population born 1987–1997 who had entered higher education in Sweden no later than 25 years of age, by parents’ level of education. Individuals in the Swedish Population Register at both 12 and 25 years of age are included.



the percentage going on to higher education has declined in almost all groups. It is only among those whose parents have at most a lower-secondary education that it has become slightly more common to enter higher education.

More common for new entrants to have highly educated parents

The social composition of new entrants to higher education is affected by two main factors: the social composition of the population at the corresponding age, and the extent to which people with different social backgrounds enter higher education.

Of those entering higher education in the academic year 2021/22, 45 per cent had highly educated parents (at least a three-year tertiary education), 35 per cent parents with a medium-high education (a three-year upper-secondary education or tertiary education of less than three years) and 20 per cent parents with a low level of education (maximum of two years upper-secondary school education).

Compared to the population as a whole, the percentage of people in higher education with highly educated parents was higher, while the percentage whose parents have a low level of education was lower.

Since the academic year 2012/13, the percentage of new entrants with highly educated parents has increased from 36 to 45 per cent, while the percentage whose parents have a low level of education has decreased from 26 to 20 per cent. The changing social composition of HEIs reflects a similar change in the population: the percentage of people with highly educated parents increased from 23 to 31 per cent between 2012 and 2021, while the percentage whose parents have a low level of education decreased from 40 to 31 per cent.

That said, at no point in time has the social composition of new entrants to higher education reflected the population as a whole. The percentage of people studying at HEIs with highly educated parents is higher, while the percentage whose parents have a low-level of education is lower. This discrepancy is largely due to social bias in recruitment to higher education.

New entrants in medicine often have highly educated parents

In the academic year 2021/22, of the main pro-

grammes leading to a professional qualification (those with at least 200 programme new entrants), those leading to a Degree of Master of Science in Medicine had the highest percentage (73%) of new entrants with highly educated parents. Programmes leading to a Degree of Master of Science in Psychology came next with 70 per cent, closely followed by programmes leading to a Degree of Master of Architecture or a Degree of Master of Science in Engineering. The lowest percentages of new entrants with highly educated parents were among those studying for a Higher Education Diploma in Vocational Education (17%), Degree of Bachelor of Arts in Pre-School Education (20%) or Higher Education Diploma in Dental Hygiene (20%), all programmes in which the group with highly educated parents was underrepresented.

Highest transition among those with two foreign-born parents

People are roughly as likely to enter higher education regardless of whether they have a Swedish or foreign background, with the exception of those migrating to Sweden between the ages of 7 and 18. Women are more likely to transition to higher education than men in all social groups.

For statistical purposes, the term *Swedish background* applies to anyone born in Sweden to at least one parent born in Sweden, or born abroad to two Swedish-born parents. The term *foreign background* applies to anyone born abroad (unless to two Swedish parents) or born in Sweden to two foreign-born parents. The group born abroad can also be subdivided into those migrating to Sweden before 7 years of age and those arriving between the ages of 7 and 18.

Of those born in 1996, approximately 44 per cent had entered higher education no later than 25 years of age. The group with the highest percentage (51%) transitioning to higher education was those born in Sweden to two foreign-born parents. The corresponding figure for those migrating before 7 years of age was 47 per cent. Of those with a Swedish background, 45 per cent had entered higher education no later than 25 years of age.

The percentage transitioning to higher education is significantly lower (27%) among those born abroad who migrated before the age of 18 and after

the start of primary education (7 years of age). This is the lowest percentage recorded for this group during the last decade, a negative development that is not reflected in any other group.

Long-term trend: new entrants with a foreign background increasing

The percentages of new entrants to higher education with a Swedish and foreign background is a function of both demographics and the extent to which these groups enter higher education.

Among new entrants to higher education in the academic year 2021/22, 71 per cent came from a Swedish background and 29 per cent a foreign background, figures that reflect the population as a whole. The division is roughly the same for women and men. The percentage of new entrants with a foreign background increased from 26 per cent in the academic year 2020/21. This is a long-term trend: in the academic year 2012/13, only 19 per cent of new entrants to higher education came from a foreign background. This increase is consistent with demographic changes over the same period, during which the percentage of the population with a foreign

Difficult for HEIs themselves to further widen participation

UKÄ has studied the conditions for HEIs to widen participation in higher education by recruiting members of underrepresented groups, based on social background, who have good grades from upper-secondary school. Social background was measured by parents' highest level of education.

UKÄ's analysis revealed that a high percentage of those with good upper-secondary grades and a university entrance qualification already transition to higher education, irrespective of social background. Social bias in recruitment is not limited to HEIs, it is already happening at upper-secondary schools, where those from non-academic homes are more likely to choose vocational programmes rather than programmes that prepare them for higher education, and consequently are far less likely to transition to higher education. UKÄ confirms that measures must be taken to widen participation in higher education earlier in the education chain.

background has increased from 23 per cent in 2012 to 30 per cent in 2021.

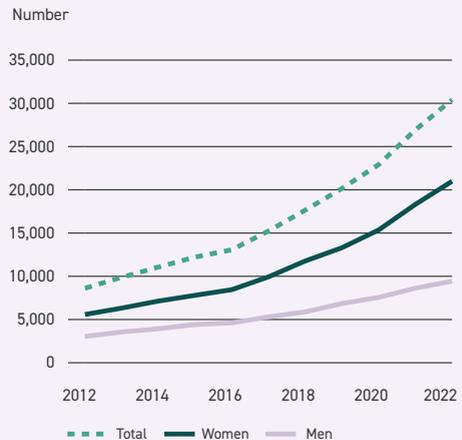
Study support for students with disabilities

In September 2021, UKÄ was given the 10-year government assignment of following up disability policy in higher education and research. Sweden's policy is to "achieve equitable living conditions and full participation in a diverse society for people with disabilities".

The most common support offered to students is for dyslexia or other specific reading and writing difficulties. Many students also receive support for intellectual disabilities. The number of students with disabilities receiving study support has steadily increased over the last decade, from 8,600 in the academic year 2012 to 30,400 in 2022, an increase of over 250 per cent. During the same period, the number of students in higher education increased by 6 per cent.

During this period, more women than men have received study support for students with disabilities, a gender disparity that has increased somewhat towards the end of the period. Of those receiving study support in 2022, 69 per cent were women and 31 per cent men. In the student population as a whole in the academic year 2021/22, 62 per cent were women and 38 per cent men.

Figure 2.6. Number of students receiving study support for students with disabilities, 2012–2022. In total and divided by gender.



The percentage of students with a foreign background differs significantly from one programme to the next. The programmes leading to a professional qualification (with at least 200 programme new entrants) with the highest percentages of students with a foreign background were programmes leading to a Degree of Bachelor of Science in Pharmacy (82%), Higher Education Diploma in Dental Hygiene (80%) or Degree of Master of Science in Dental Surgery (just under 80%). The lowest percentages (less than 10%) of students with a foreign background were found in programmes leading to a Degree of Bachelor of Science in Military Studies and agricultural and forestry programmes.

Higher education and skills provision

Employment prospects are good for graduates of Swedish higher education institutions (HEIs): 84 per cent of those awarded a qualification in the academic year 2019/20 were well established on the labour market 12–18 months after graduating. Although this represented a year-over-year decrease, the percentage remained high from a long-term perspective. Those awarded a professional qualification were more likely to be established than those awarded a general qualification or qualification in the fine, applied or performing arts.

A follow-up of bridging programmes for graduates with foreign qualifications wishing to continue their careers in Sweden, shows that 73 per cent of graduates were established on the labour market after 12–18 months. After three years, this group was equally well established as those with an equivalent Swedish qualification.

A number of forecasts predict a shortage of qualified teachers, healthcare professionals and engineers. Although the number of graduates has gradually increased within all three sectors, demand still outstrips supply.

Establishment after graduating with a first- or second-cycle qualification

Higher education contributes to skills provision in various ways and HEIs have a number of assignments related to meeting the needs of the labour market. In Sweden, HEIs are responsible for more major programmes leading to a professional qualification – teaching and nursing, for example – than is the case in many other countries. As there is a labour shortage in many of these professions, the courses and programmes offered by HEIs are a vital part of skills provision.

One way to illuminate the role of higher education in skills provision is to study the establishment of graduates on the labour market. Another is to follow up the number of students in and graduates

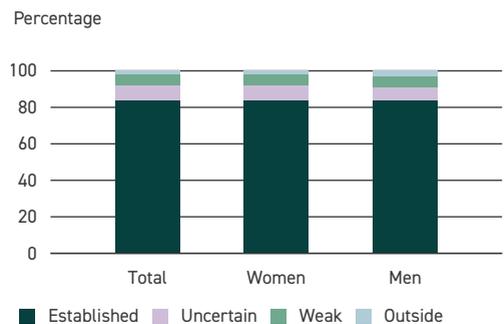
from programmes leading to a professional qualification that is in great demand on the labour market.

A majority established 18 months after graduating

Graduates with a first- or second-cycle degree are often in a good position to find a job: 84 per cent of those awarded a qualification in the academic year 2019/20 were established on the labour market 12–18 months after graduating (Figure 3.1). The percentage was the same for women and for men. Those awarded a professional qualification were more likely to be established than those awarded a general qualification or qualification in the fine, applied or performing arts.

Still, not all graduates succeed in establishing themselves on the labour market: 8 per cent of those awarded a qualification in the academic year 2019/20 had uncertain status, while a further 6 per cent had weak status. A small group (2%) of graduates were outside the labour market. A slightly higher percentage of women than men had uncertain status, while a slightly higher percentage of men were outside the labour market.

Figure 3.1. Labour market status in 2021 for graduates awarded a first- or second-cycle qualification in the academic year 2019/20. In total and divided by gender (%).



Who is considered established?

To be considered established on the labour market, the individual needs to meet the following criteria:

- Employed in the month of November in the current follow-up year (2021) according to the definition that SCB uses in its employment register.
- Total annual income from work during the year exceeds SEK 260,300 (2021).
- No events indicating periods of unemployment (part-time or full-time) or that the person has been the subject of labour market policy measures.

There are several conditions that must be met during the follow-up year for a person to be considered established, and the definition is intended for individuals who have a good position on the labour market.

The cohort is divided into four categories based on how good their position is on the labour market:

- **Established:** Good position on the labour market
- **Uncertain:** Relatively low earnings or experiencing some unemployment
- **Weak:** Low earnings and experiencing full-time unemployment much of the year
- **Outside:** No earnings

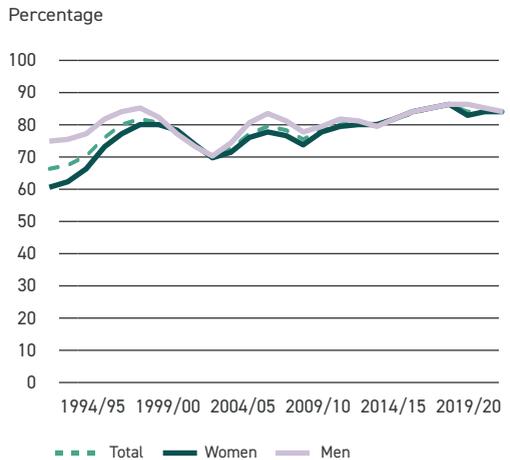
Men slightly less likely to be established

The vast majority of graduates from Swedish HEIs establish themselves on the labour market. For men, however, the level of establishment has declined slightly: 84 per cent of men graduating during the academic year 2019/20 were established 12–18 months after graduating, 1 per cent less than the previous year. The establishment rate for women remains unchanged at 84 per cent. A slightly higher percentage of women as well as men graduating during the academic year 2019/20 had uncertain status on the labour market compared to those graduating during 2018/19.

Graduates during the academic year 2019/20 were followed up in 2021, the second year of the pandemic. The increase in the percentage with uncertain status may be partly attributable to the decline of the economy due to the pandemic.

Figure 3.2 illustrates variations in establishment over a twenty-five-year period, from 1996 to 2021. External factors such as economic cycles or decreased or increased public spending may make it easier or more difficult to establish oneself in any given year.

Figure 3.2. Level of establishment 12–18 months after graduating in the academic years 1994/95–2019/20. In total and divided by gender (%).



Graduates with a professional qualification did better

There are distinct variations in the level of establishment between graduates from different programmes. Of those awarded a professional qualification in the academic year 2019/20, 89 per cent were established 12–18 months after graduating.

Degree of Bachelor of Science in Nursing and Degree of Master of Science in Engineering are the most common professional qualifications. Graduates from these programmes also have the highest level of establishment on the labour market: 90 per cent of those awarded a Degree of Bachelor of Science in Nursing and 92 per cent of those awarded a Degree of Master of Science in Engineering in the academic year 2019/20 were established 12–18 months after graduating. In the case of some professional qualifications – Degree of Bachelor of Arts in Pre-School Education, a Degree of Bachelor of Arts in Primary Education and a Degree of Bachelor of Science in Nursing, for example – men had a higher level of establishment than women.

At 98 per cent, those awarded a Postgraduate

Diploma in Special Needs Training had the highest level of establishment. As this is a postgraduate diploma, it is likely that those awarded the qualification were already established on the labour market before entering the programme. This is also true of similar qualifications, such as the Postgraduate Diploma in Midwifery.

Lowest level of establishment among those awarded a qualification in the arts

The level of establishment tends to be lower among those awarded a general qualification than those awarded a professional qualification. Of those awarded a general qualification in the academic year 2019/20, 77 per cent were established 12–18 months after graduating. Here too there are major discrepan-

cies between programmes. Graduates in the category health and welfare had the highest level of establishment at 82 per cent, followed by agriculture, forestry and veterinary, and education science and teacher training, each with 80 per cent. At 53 per cent, the lowest level of establishment was among graduates with a general qualification in humanities and the arts.

The level of establishment was significantly lower among graduates awarded a qualification in the fine, applied or performing arts: 39 per cent. This can be partly explained by the fact that many graduates who go on to work in the arts and culture support themselves through scholarships and grants. As this type of income is tax-free, it is not counted as income in official statistics. The level of establishment of graduates with a qualification in the fine, applied or

A higher education improves the chances of obtaining work

Data from the OECD show that someone with a higher education has a better chance of obtaining work than someone whose highest level of education is upper-secondary. In fact, the employment rate among those between 25 and 64 years of age increases with every level of education. Women in particular benefit from a higher education.

Sweden is among the countries with the highest employment rate and the disparities between levels of education are less than in many other countries. The employment rate for women is also high in Sweden compared to other countries. Among those with a Degree of Doctor, however, the employment rate for both women and men in Sweden is close to the OECD average.

Table 3.1. Percentage of the population between 25 and 64 years of age with an upper-secondary or higher education who are in work, 2021. In total and divided by gender (%). Source: OECD.

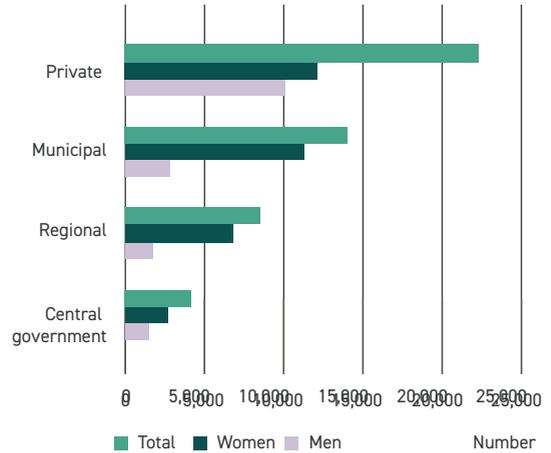
	Upper-secondary education		Degree of Bachelor		Degree of Master		Degree of Doctor	
	Total (%)	Women/men (%)	Total (%)	Women/men (%)	Total (%)	Women/men (%)	Total (%)	Women/men (%)
Denmark	82	77/86	86	85/88	90	88/92	93	92/94
Finland	76	73/78	88	86/90	90	89/91	..	..
Netherlands	83	78/88	87	84/90	91	88/94	96	95/96
Norway	81	75/85	90	89/93	93	92/93	95	92/97
Spain	71	64/77	80	79/82	84	81/87	87	86/88
United Kingdom	82	78/85	87	84/90	88	86/90	91	90/91
Sweden	85	80/88	89	89/89	93	92/95	94	92/95
Germany	80	76/84	87	84/90	89	86/92	93	91/95
USA	67	60/72	80	75/86	85	82/88	88	86/91
OECD – average	75	67/82	84	81/88	89	86/91	93	91/94
EU22 – average	76	70/82	84	82/87	89	87/82	93	91/95

performing arts did however increase compared to the previous year, especially for women.

Men more likely to work in the private sector

There are considerable gender differences on the Swedish labour market, reflecting gendered study choices. Most men awarded a higher education qualification in the academic year 2019/20 who were established on the labour market 12–18 months after graduating worked in the private sector. Although the private sector was also the largest employer of women, it was not as dominant. A significantly higher percentage of women than men worked for local or regional authorities (Figure 3.3). This discrepancy is explained by gendered study choices. For example, men are in the majority among graduates in the natural sciences, mathematics and computer sciences, all programmes that are more likely to lead to employment in the private sector. Women are in the majority in teacher training and many healthcare

Figure 3.3. Number of graduates awarded a first- or second-cycle qualification in the academic year 2019/20 who were established in 2021. Divided by private sector, local and regional authorities and central government. In total and divided by gender.



Men earn more than women at all levels of education

While Sweden undoubtedly has a gender pay gap, it is narrower than in many other OECD countries and EU Member States. The average woman in Sweden with an upper-secondary education in the age group 25–64 earns 84 per cent of the average salary for a man with the same level of education. The corresponding figure for women with a first-, second or third-cycle qualification is 80 per cent.

Data from OECD countries show that the gender pay gap does not necessarily narrow with a higher level of education. In many countries, Sweden included, the gender pay gap is actually wider for those with a first-, second- or third-cycle qualification than an upper-secondary education.

Table 3.2. The gender pay gap in the age group 25–64 at three levels of education in selected countries, 2020. Percentage. Source: OECD.

	Women's percentage of men's salary (%)		
	Upper-secondary	First-cycle	Second- or third-cycle
Denmark	82	77	79
Estonia	66	73	84
Netherlands	84	77	74
Norway	79	77	78
Poland	82	74	72
Sweden	84	80	80
United Kingdom	70	75	83
USA	76	71	65

programmes, which tend to lead to employment by municipalities, which are responsible for schools in Sweden, or regional health authorities.

Graduates with foreign qualifications who complete a bridging programme

Graduates with foreign qualifications wishing to continue a career in their chosen profession in Sweden may need to complete a bridging programme at a Swedish HEI. They can then apply for a certification or licence to practice from the relevant authority, such as the Swedish National Agency for Education or the National Board of Health and Welfare. In 2017, the Government invested to increase the number of bridging programmes for graduates with foreign qualifications from 5 to 14. Among others, teachers, lawyers, doctors, nurses, dentists, psychologists, pharmacists, economists and engineers with foreign qualifications can now take bridging programmes.

Three out of four established after 18 months

A total of 1,000 people completed a bridging programme for graduates with foreign qualifications during the academic years 2017/18 and 2018/19, the latest academic years available for follow-up. Of these, 73 per cent were established on the labour market after 12–18 months. While there is no significant difference between women and men, there are variations between programmes.

At 87 per cent, dentists had the highest level of establishment, while doctors and psychologists were at the significantly lower level of 61 per cent. The dentists and pharmacists who completed bridging programmes during the academic years in question, represented a significant reinforcement of the labour market, accounting for 14 and 11 per cent of all graduates in their respective fields. Approximately half of all graduates completing a bridging programme were teachers. Their level of establishment was 71 per cent.

The gap to Swedish graduates closed within three years

The level of establishment gradually increases for most bridging programmes. After two years, the av-

Student finance for transition and retraining: Policies to promote life-long learning

Student finance for transition and retraining is part of a transition package of reforms to the labour market introduced in October 2022. It is a new kind of student finance targeted at adults who are already in the workforce but who wish to develop their skills in their chosen field or to start out on a new career path. Student finance for transition and retraining consists of a grant of 80 per cent of current salary (up to a maximum amount) for up to 44 weeks, or longer if studying part-time. Higher education is included in the training that employees can undertake through the initiative.

The aim of the transition package is to improve long-term flexibility, adaptability and security on the labour market. It is based on a proposal from the trade unions and employers within the private sector. The agreement also covers central government employees.

erage level of establishment for all graduates who completed a bridging programme had increased from 73 to 82 per cent. The level of establishment increased more for women than for men.

Graduates from Swedish HEIs had a higher level of establishment after 12–18 months than those completing bridging programmes, but after three years the gap had closed.

The National Board of Health and Welfare issued 2,450 licences

On request, the Swedish Council for Higher Education (UHR) will evaluate foreign qualifications to assist people looking for work in Sweden, people who wish to continue studying, or employers who wish to employ someone with foreign qualifications. During 2022, UHR issued 7,200 recognition statements indicating the equivalent Swedish qualification to a foreign qualification.

If a foreign qualification relates to a healthcare profession that requires a licence to practice, the National Board of Health and Welfare is responsible for assessing the qualification and issuing a licence. The National Board of Health and Welfare issued 2,450

licences to people with foreign qualifications during 2021, some 1,100 of which were licences to practice medicine and 540 to practice nursing. By way of comparison, that same year the board issued just over 10,500 licences to people with Swedish qualifications. The Swedish National Agency for Education performs a similar task in certifying teachers. During 2022, the Swedish National Agency for Education issued certificates to 750 teachers and preschool teachers with foreign qualifications.

Sectors in which labour market demand outstrips the supply

Swedish HEIs have a number of government assignments related to meeting the labour market’s skills needs. Certain professional qualifications relate to occupations that the Government has designated as occupations with a great shortage of skilled labour and has therefore decided to appropriate funds specifically to secure skills provision.

High demand for graduates in certain fields

A large proportion of graduates from HEIs are well-placed on the labour market and there are certain professions in which the demand for graduates outstrips supply, and is expected to continue to do so. Forecasts and other data from Statistics Sweden, the Swedish National Agency for Education and the National Board of Health and Welfare show that this is the case for teachers and pre-school teachers, many licenced healthcare professions and in the engineering sector. That said, how great the need will be is difficult to quantify.

Teacher training programmes

If combined, the four teacher training programmes would be the largest of the programmes leading to a professional qualification. Despite this, the demand for graduate teachers outstrips the supply.

UKÄ has had a dialogue with HEIs concerning the obstacles to increasing the number of graduates from teacher training programmes within the framework of a succession of government assignments. One factor highlighted by HEIs is that a great many people already apply to teacher training programmes and that most qualified applicants are already admitted to a programme, especially since the Government’s

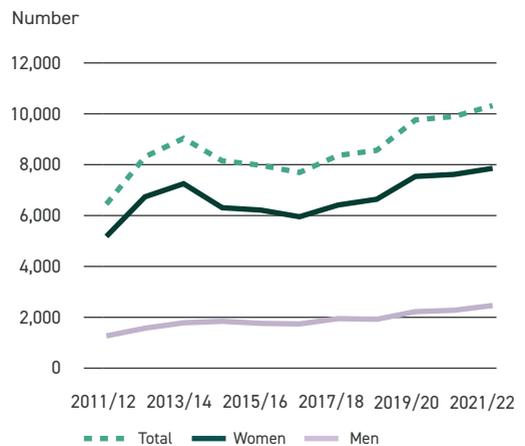
previous increases in funding to expand the number of places. This means that the only way to increase the number of admitted students is if the number of qualified applicants increases as well.

Increasing numbers of graduate teachers

In the academic year 2021/22, 10,300 students graduated from a programme leading to a Degree of Bachelor of Arts in Pre-School Education, Degree of Master of Arts in Primary Education, Higher Education Diploma in Vocational Education or Degree of Master of Arts/Science in Secondary Education, or an earlier teaching qualification. This figure was only exceeded in the academic year 2010/11, when an unusually high number graduated due to the introduction of teacher certification. In 2011/12, the first academic year with the current teacher training programmes, the number of graduate teachers was lower than during almost any year during the 2000s (Figure 3.4). The number of graduate teachers has increased significantly over the last decade.

In the academic year 2021/22, programmes leading to a Degree of Master of Arts/Science in Secondary Education produced most graduates, in particular those specialising in upper-secondary education. Almost as many students graduated with a Degree of Bachelor of Arts in Primary Education or Degree of Bachelor of Arts in Pre-School Education.

Figure 3.4. Number of graduates from the four teacher training programmes or an equivalent older qualification during the academic years 2011/12–2021/22. In total and divided by gender.



Women in the majority in teacher training

In most teacher training programmes women are in a majority, a gender imbalance that has not changed over the past ten years. The gender imbalance is greatest in the programme leading to a Degree of Bachelor of Arts in Pre-School Education, in which 96 per cent of graduates were women and 4 per cent men in the academic year 2021/22. In that same academic year, it was only the programmes leading to a Degree of Master of Arts/Science in Secondary Education or a Higher Education Diploma in Vocational Education that met the definition for even gender balance (within the interval 40 to 60%).

Fewer new entrants since 2020

The number of graduates is dependent on a number of factors, not least the number of new entrants during previous years and student completion rates. A total of 12,800 students began one of the four teacher training programmes for the first time in the academic year 2021/22. This was less than the previous academic year, when there was an unusually large number of new entrants due to the pandemic.

From a longer-term perspective, teacher training programmes have greatly expanded. The number of new entrants to the four programmes increased significantly between the academic years 2011/12 and 2015/16. Several of the programmes are long and the increase in the number of graduates over recent years is probable attributable to the large number of new entrants a few years earlier.

In the early stages of the pandemic, and particularly autumn semester 2020, there were both more applications and more admissions to higher education. Since then, there has been a widespread decrease. Data for the four programmes in autumn semester 2022 shows that the increased interest in teacher training observed at the start of the pandemic does not seem likely to be sustained. Rather, the number of qualified first choice applicants, admissions and new entrants has declined, or remained basically unchanged, compared to autumn semester 2019.

Healthcare programmes

There are currently shortages of labour in a number of healthcare professions that require a higher education. For this reason, over recent years the Government has

given HEIs, UKÄ, the National Health Competence Council and other stakeholders assignments related to the size of higher education and the need for graduates within the sector. The healthcare programmes described in this section have either been the subject of the expansion that began between 2015 and 2018 or are covered by the government assignment on targets for the number of qualifications awarded.

Interest in healthcare programmes has increased over recent years. Despite a rise in the number of applicants and the additional funds allocated by the Government to expand relevant programmes, HEIs have found it difficult to admit more students.

Increasing number of graduates from healthcare programmes

The largest healthcare programmes are those leading to a Degree of Bachelor of Science in Nursing or Postgraduate Diploma in Specialist Nursing. In the academic year 2021/22, 4,400 students were awarded a Degree of Bachelor of Science in Nursing and 2,600 a Postgraduate Diploma in Specialist Nursing. In the same academic year, 1,500 students were awarded a Degree of Master of Science in Medicine.

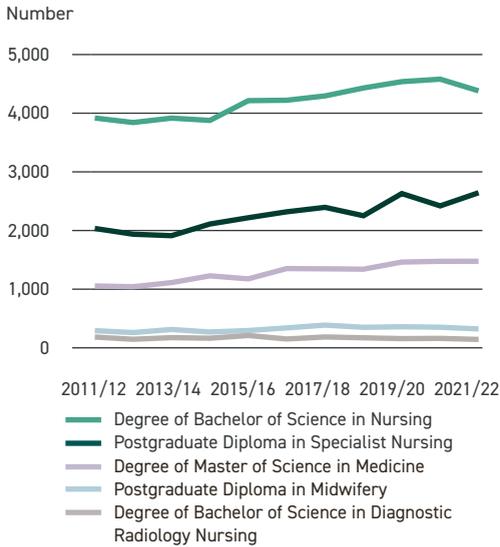
There has been a gradual increase in the number of graduates from healthcare programmes during the period 2011/12–2021/22 (Figure 3.5). The largest numerical increase was in the number of Postgraduate Diplomas in Specialist Nursing awarded, followed by Degrees of Bachelor of Science in Nursing. Degrees of Master of Science in Medicine saw the largest percentage increase, with over 40 per cent more qualifications awarded than a decade earlier.

Women are in the majority among graduates from most healthcare programmes. The highest gender gap was in the programme leading to a Postgraduate Diploma in Midwifery, where 99 per cent of the graduates were women in the 2021/22 academic year. Only the medicine programme had an even gender balance: 58 per cent women and 42 per cent men.

Graduation rates remain high

Most healthcare professions require a licence to practice and the award of a qualification is a prerequisite for obtaining a licence. The number of graduates is dependent not only on the number of admissions and new entrants to a programme in previous

Figure 3.5. Number of graduates from a selection of healthcare programmes in the academic years 2011/12–2021/22.



years, but also on how many students complete the programme. One metric for student completion is graduation rate, i.e., the percentage of new entrants in a given academic year who have graduated within the stated programme length plus three years.

Graduation rates for healthcare programmes have remained relatively stable over time. Programmes leading to a Postgraduate Diploma in Midwifery, a Degree of Master of Science in Medicine or a Postgraduate Diploma in Specialist Nursing all have high graduation rates; at the last follow-up, 93, 86 and 83 per cent respectively. In comparison, programmes leading to a Degree of Bachelor of Science in Nursing or a Degree of Bachelor of Science in Diagnostic Radiology Nursing had somewhat lower graduation rates, at 74 and 62 per cent respectively.

Many obstacles to expanding programmes

Several factors have combined to make it difficult for HEIs to increase the number of students they admit to healthcare programmes. One is that many HEIs find it hard to recruit teachers with a doctoral degree, especially senior lecturers and professors. Another is finding enough clinical placements for students with healthcare providers. The National Health Competence Council has made proposals to improve this

situation. The Government also appointed a special investigator in June 2022 with the assignment of co-ordinating work to find more clinical placements for nursing students.

Engineering programmes

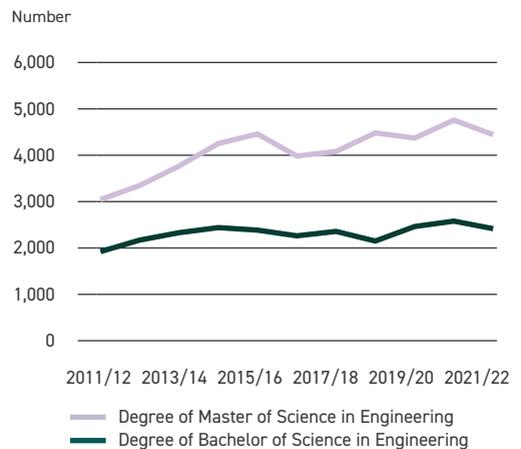
Engineering programmes in general distinguish themselves from other study programmes in as much as the majority of students are men. However, the gender gap differs depending on specialisation.

More graduate engineers

The number of graduates from engineering programmes has increased over the last decade. In the academic year 2021/22, 6,900 students graduated from engineering programmes, 4,400 of whom were awarded a Degree of Master of Science in Engineering and 2,400 a Degree of Bachelor of Science in Engineering. Women accounted for 35 per cent of master's graduates and men 65 per cent. The corresponding figures for bachelor's programmes was 30 per cent women and 70 per cent men.

The number of students awarded a Degree of Master of Science in Engineering has increased by 46 per cent since the 2011/12 academic year, while the number awarded a Degree of Bachelor of Science in Engineering increased by 26 per cent (Figure 3.6).

Figure 3.6. Number of graduates from programmes leading to a Degree of Master in Engineering or Degree of Bachelor in Engineering in the academic years 2011/12–2021/22.



The number of graduates has fluctuated

The increase in the number of Degrees of Master in Engineering awarded should be viewed in light of the sharp decrease over the previous years. After a period of significant expansion during the 1990s, the number reached a peak in the early 2000s, after which it declined sharply. The number of graduates has increased once again over the last decade. In 2020/21, 4,800 students graduated with a Degree of Master of Science in Engineering, a record number. The largest increases have been in electrical engineering, computer science and automation.

The number of students awarded a Degree of Bachelor in Engineering has also increased. While the number of graduates increased in the five largest specialisations over the last decade, in other specialisations the number of qualifications awarded decreased. The largest percentage increase was in industrial economics and management.

Increased interest in master's programmes in engineering

The number of people applying and being admitted to programmes leading to a Degree of Master of Science in Engineering has increased. The percentage of qualified first choice applicants increased by more (23%) than the percentage of admitted students (11%). This demonstrates that competition for places has increased, making it more difficult to get admitted.

For programmes leading to a Degree of Bachelor of Science in Engineering, on the other hand, the number of applicants has declined. HEIs have also admitted fewer applicants to these programmes.

Significant differences in gender balance between specialisations

Engineering programmes in general distinguish themselves from other study programmes in as much as the majority of students are men. Many stakeholders have taken initiatives to increase the number of female applicants to engineering programmes, trade unions and employer organisations among them.

The percentage of women admitted to programmes leading to a Degree of Master of Science in Engineering has increased marginally over the last decade, from 30 per cent in autumn semester 2012 to 31 per cent in autumn semester 2022. The per-

centage of women admitted to programmes leading to a Degree of Bachelor of Science in Engineering is somewhat lower and has not changed over the last decade: in the autumn semester of both 2012 and 2022, women constituted 25 per cent of those admitted and men 75 per cent.

The gender gap deviates significantly from one specialisation to the next. At master's level, among the five largest fields it was only in chemical technology and biotechnology that women outnumbered men. It is also mainly in specialisations in this field that the percentage of women among admitted students has increased over the last decade, from 51 per cent in autumn semester 2012 to 61 per cent in autumn semester 2022. Among the five largest fields, the percentage of women was lowest in electronics, computer engineering and automation, in which 21 per cent of admitted students were women in autumn semester 2022 and 79 per cent men.

Proposal to improve the provision of cutting-edge digital skills

In October 2022, UKÄ and the Swedish Agency for Economic and Regional Growth were given the joint government assignment of ensuring access to cutting-edge digital expertise. Among the characteristics of digital expertise are the ability to combine technical skills with other types of knowledge and to keep expertise up to date given the rapid development of digital technology.

According to the final report on this assignment, in the assessment of the two agencies a lack of digital expertise is hampering innovation and growth in Sweden. In order to ensure access to cutting-edge digital expertise, among other things UKÄ and the Swedish Agency for Economic and Regional Growth recommended investment in education and research environments, as well as structures to increase collaboration between education providers, employer organisations, trade unions, regional development agencies, relevant government agencies and student representatives.

Internationalisation and mobility

World events have a significant impact on the international mobility of students, doctoral students and staff at higher education institutions (HEIs). One consequence of the COVID-19 pandemic was a sharp decline in international travel that affected student mobility to and from Sweden. Statistics for the academic year 2021/22 show that student mobility has largely recovered.

Swedish HEIs welcomed a total of 39,800 incoming students in the academic year 2021/22, a significant increase on the previous academic year.

While there was also a year-over-year increase in outgoing students from Sweden in the academic year 2021/22, their numbers had not recovered from the pandemic to the same extent as incoming students. In 2021/22, 20,000 Swedish students studied abroad, most of them in Europe.

Of the students and doctoral students graduating from Swedish HEIs in the academic year 2021/22, 9 and 28 per cent respectively completed part of their studies abroad. While these figures were lower than previous years, Sweden still exceeded the EU's target of 20 per cent of doctoral students.

The internationalisation of education and research

The Higher Education Act (SFS 1992:1434) states that the collected international activities of each higher education institution must enhance the quality of its research and education, and make a national and global contribution to sustainable development. These international activities include mobility for students, doctoral students and staff as well as international cooperation and collaboration.

Internationalisation also takes place at home in course syllabuses, course literature and global perspectives in teaching activities, thus ensuring that graduates from Swedish HEIs may develop their intercultural understanding and competence.

One metric for following up international student mobility is the number of incoming students from other countries who study at Swedish HEIs,

whether as part of an exchange programme or having arranged their own studies. Another is the number of Swedish students who complete all or some of their studies abroad. Statistics on the mobility of doctoral students and research and teaching staff are compiled from surveys.

Mobility affected by global events

The international mobility of students, doctoral students and staff at HEIs was curtailed by the pandemic, especially in the initial stages when restrictions made international travel difficult. This was readily apparent in the Erasmus+ programme, where the number of exchange students was halved. The number of students on placement to and from Sweden also declined sharply. During the academic year 2021/22, incoming student mobility exceeded pre-pandemic numbers, while outgoing student mobility was well on the way to recovery.

European Universities alliances open the way for collaboration and flexible mobility

In Sweden, internationalisation and mobility within higher education and research are supported by various national initiatives. Sweden also participates in ambitious EU projects designed to increase collaboration and exchanges between Member States, as well as other initiatives such as the SIREUS platform for increased talent mobility and knowledge exchange between Sweden and the United States. The EU also places great emphasis on increasing collaboration between Europe and Africa, both through Erasmus+ and other initiatives.

European Universities alliances are a flagship initiative of the European strategy for universities, the European Education Area (EEA). In 2023, 13 Swedish HEIs were members of European University alliances. The initiative was launched after the Gothenburg Summit in November 2017, to ensure that education, research and collaboration would not be limited by national borders. The project is highly prioritised within the EU and will have a significant impact on education and research over the coming years. The

initiative is intended to increase both long- and short-term exchanges of students, doctoral students, researchers and other staff, including through Erasmus+. One goal of the European Universities is to support mobility as a standard feature of higher education, with at least 50 per cent of students benefiting from physical, virtual or blended mobility.

Incoming students to first- and second-cycle education

For statistical purposes, incoming students are usually divided into two groups: exchange students and those who arrange their own studies in Sweden. The latter are designated as freemover students. Exchange students are enrolled at an HEI in their homeland and take courses abroad via exchange agreements between universities. Joint EU initiatives such as Erasmus+ and European Universities are by far the largest programmes.

Freemover students are divided into two sub-groups: tuition-paying and non-tuition-paying stu-

dents. In 2011, Sweden introduced tuition fees for students from countries outside the EU/EEA taking first- and second cycle courses and programmes at Swedish HEIs, unless as part of an exchange agreement. Incoming students from EU/EEA countries and Switzerland are not subject to tuition fees.

Strong recovery in the number of incoming exchange students

A total of 39,800 incoming students were registered at Swedish HEIs in the academic year 2021/22, a year-over-year increase of 20 per cent and roughly the same number as the last academic year before the pandemic (Figure 4.2).

The pandemic affected the different groups of incoming students to various extents. The greatest impact was felt by exchange students, whose numbers plummeted by 53 per cent between the academic years 2019/20 and 2020/21. After a strong recovery in the academic year 2021/22, incoming student mobility returned to pre-pandemic levels. This de-

Incoming and outgoing students – definitions

Exchange students are students participating in exchange programmes between Swedish and foreign higher education institutions. *Freemover students* arrange their own studies in Sweden or abroad. Incoming freemover students from countries outside the EU/EEA and Switzerland pay application and tuition fees to study in Sweden. This means that freemover students can be divided into *fee-paying* and *non-fee-paying* students. Outgoing freemover students, who arrange their own studies, are entitled to student grants and loans from the Swedish Board of Student Finance (CSN) while studying abroad.

Figure 4.1. Different groups of international mobile students from a Swedish perspective.

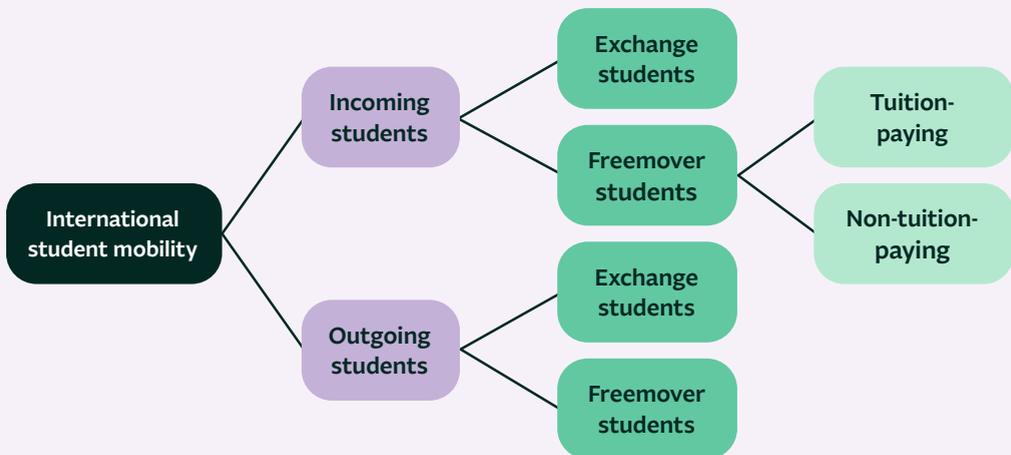
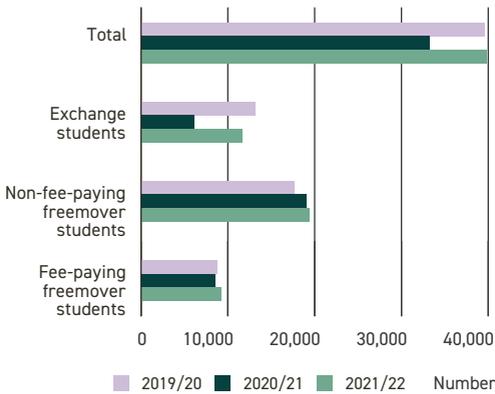


Figure 4.2. Incoming students during the academic years 2019/20, 2020/21 and 2021/22. In total and divided by exchange students, non-fee-paying freemover students and fee-paying freemover students.



spite global concern throughout the academic year 2021/22 about continued infection and how the pandemic would develop.

The number of incoming freemover students continued to rise

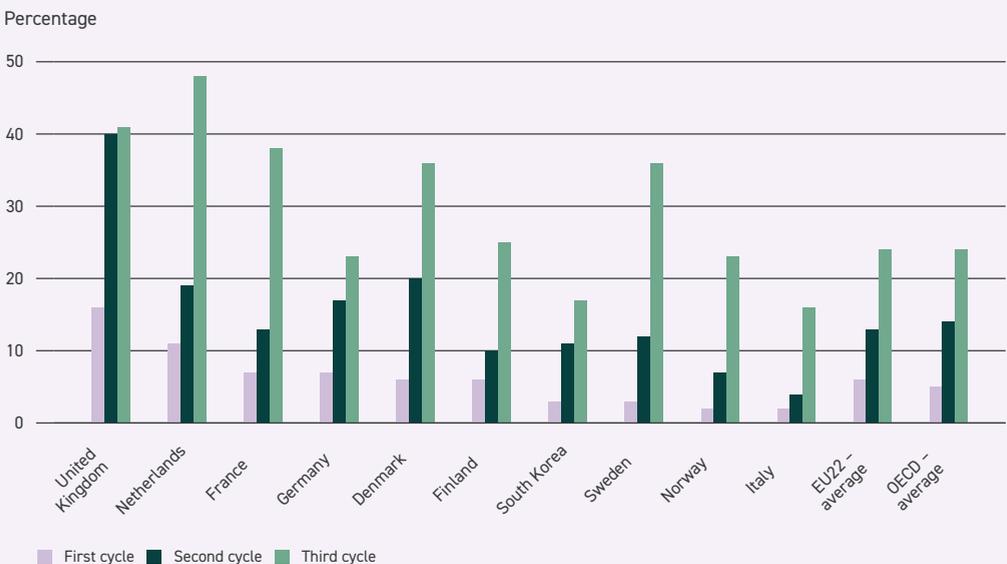
The pandemic had only a marginal effect on the number of students arranging their own studies in Sweden. This was true of both fee-paying and non-fee-paying freemover students. There was no decline in the total number of freemover students during the pandemic, and the number of non-fee-paying freemover students even increased slightly.

The increase in incoming students in the academic year 2021/22 is in line with the long-term trend. The number of incoming students plummeted in the

Low percentage of incoming first-cycle students in Sweden

In most OECD countries, the percentage of incoming students rises for each cycle of education, and Sweden is no different. In 2020, incoming students accounted for 3 per cent of students enrolled in first-cycle courses and programmes at Swedish HEIs. This is below the OECD average of 5 per cent. By the third cycle, however, incoming doctoral students account for 36 per cent of all doctoral students in Sweden, a significantly higher percentage than the OECD average.

Figure 4.3. Incoming students as a percentage of all enrolled students at each cycle in selected OECD countries, 2020. Please note that incoming exchange students are not included in the statistics. Source: OECD.



first two years after the introduction of application and tuition fees for third-country students in July 2011. Since then, the number of incoming students has gradually increased and by the academic year 2021/22, their numbers had returned to roughly the same level as 2010/11, the last academic year before fees were introduced.

Another long-term trend among incoming students is the increasing percentage of women. In the academic year 2021/22, 55 per cent were women and 45 per cent men. The corresponding figures for the academic year 2011/12 were 47 per cent women and 53 per cent men. This also means that the gender balance among incoming students is more even than among the student population as a whole.

Most exchange students came from Europe

Incoming exchange students and freemover students come from different parts of the world. In the 2021/22 academic year, a majority of freemover students were from Asia, mostly from India and China. Sweden also received many freemover students from Finland. Germany and France were the main points of origin for exchange students; between them, these two countries accounted for 36 per cent of incoming exchange students in the academic year 2021/22. A relatively large percentage of exchange students also came from China.

The bounce-back of incoming exchange students during the academic year 2021/22 was largely attributable to European students and Erasmus+. More European exchange students arrived in Sweden during the academic year 2021/22 than in the academic year immediately prior to the pandemic, 2019/20. The number of exchange students from third-countries remained below pre-pandemic levels.

Freemover students most often take master's programmes

Unlike exchange students, who mainly take freestanding courses, most incoming freemover students take first- and second-cycle programmes leading to a general qualification, meaning they remain in Sweden for a longer period than exchange students.

In the academic year 2021/22, 79 per cent of all incoming freemover students were enrolled in a study

programme, most commonly a master's programme. Just over 50 per cent of all incoming freemover students were studying for a 120-credit master's degree and 8 per cent for a shorter 60-credit master's degree, while 11 per cent were studying for a bachelor's degree. Few incoming freemover students chose a programme leading to a professional qualification (6%) or a qualification in the fine, applied or performing arts (2%) during the 2021/22 academic year. Roughly 20 per cent took a freestanding course.

Outgoing students

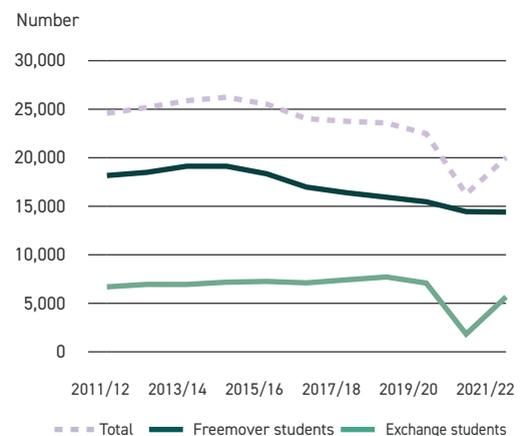
Outgoing students too are subdivided into exchange students and freemover students. Statistics on outgoing freemover students are based on data from the Swedish Board of Student Finance (CSN) concerning grants and loans for studies outside Sweden.

More outgoing students than the previous academic year

In the academic year 2021/22, 20,000 Swedish students studied abroad (Figure 4.4), a year-over-year increase of 23 per cent, but still below pre-pandemic levels. Exchange students accounted for 28 per cent of the total number and freemover students 72 per cent.

Both incoming and outgoing students were affected when HEIs in Sweden and other countries paused exchanges during the pandemic. As with incoming students, the number of outgoing exchange

Figure 4.4. Number of outgoing students in the academic years 2011/12–2021/22. In total and divided by exchange students and freemover students.



students dropped significantly, by 74 per cent between the academic years 2019/20 and 2020/21. Despite some recovery, 20 per cent fewer exchange students travelled from Swedish HEIs in 2021/22 than in 2019/20, the academic year prior to the pandemic.

Still fewer travelling beyond Europe

The number of outgoing students from Sweden increased to most parts of the world in 2021/22 compared to the previous academic year (Table 4.1). However, with the exception of the EU and Nordic countries, the number of outgoing students remained below pre-pandemic levels. As in previous years, the EU and Nordic countries were the most popular destinations for outgoing students.

In the academic year 2021/22, 45 per cent of outgoing Swedish students studied in the EU but outside the Nordic region, an increase of 19 per cent compared to the academic year 2019/20. During the same period, the total number of outgoing students declined by 11 per cent.

The percentage of outgoing students studying outside Europe had remained steady between 40 and 42 per cent during most academic years until 2018/19, but fell to 24 per cent in 2020/21 and 26 per cent in 2021/22. Pandemic restrictions were still in force in many countries during the academic year 2021/22, a factor that may have influenced the choice of study destination.

Swedish exchange students and freemover students choose different parts of the world in which to study. In the academic year 2021/22, the United States and United Kingdom were by far the most common destinations for freemover students, while France and Italy were the most popular choice for outgoing exchange students.

Previously popular destinations among both exchange and freemover students, such as North America and Oceania (including Australia and New Zealand), accepted significantly fewer students during the pandemic. In the 2021/22, 46 per cent fewer Swedish exchange students travelled to North America and 93 per cent fewer to Oceania compared to the 2019/20 academic year. The corresponding figures for freemover students were 13 and 54 per cent.

Fewer graduates had studied abroad

One of the targets of the EU's joint strategy for smart, sustainable and inclusive growth, Europe 2020, is that at least 20 per cent of higher education graduates should have had a period of higher education-related study or training (including work placement) abroad representing a minimum of 15 ECTS credits or lasting a minimum of three months. Between the academic years 2015/16 and 2019/20, approximately 14 to 15 per cent of Swedish graduates had studied abroad. This figure decreased to 12 per cent in 2020/21 and only 9 per cent in 2021/22.

Table 4.1. Number of outgoing students by geographic area, academic year 2021/22. In total and divided by gender, and percentage change compared to academic years 2019/20 and 2020/21.

	Number of outgoing students 2021/22				
	Total	Women	Men	Change from 2019/20 (%)	Change from 2020/21 (%)
All areas	20,020	11,880	8,140	-11	23
Africa	130	90	50	-42	71
Asia	1,010	530	480	-54	74
EU excluding the Nordic countries	8,980	5,290	3,690	19	42
Europe excluding the EU and Nordic countries	3,880	2,480	1,400	-15	-8
North America	3,450	1,890	1,560	-22	39
The Nordic region excluding Sweden	2,080	1,290	790	7	11
Oceania	520	340	180	-67	-25
South America	110	50	60	-53	50

Some study programmes offer greater scope for studying abroad than others. Generally speaking, programmes leading to a professional qualification such as a Degree of Bachelor of Science in Nursing or Degree of Bachelor of Arts in Primary Education are less likely to involve studying abroad. Only 1 per cent of graduates from these programmes in the academic year 2021/22 had studied abroad during the programme. Among those graduating with a Degree of Bachelor of Arts in Pre-School Education or Higher Education Diploma in Vocational Education, the figure was 0 per cent.

Many other programmes offer greater opportunities to study abroad. In the academic year 2021/22, the highest percentages of graduates who had studied abroad were in programmes leading to a Degree of Master of Science in Business and Economics (34%), other master's degrees in the category social sciences, law and business administration (31%) or a Degree of Master of Science in Engineering (30%).

Post-pandemic development of internationalisation

Restrictions imposed during the pandemic had a major impact on internationalisation and mobility. During the summer and early autumn of 2022, the Swedish Higher Education Authority (UKÄ) conducted a study to investigate potential long-term impact of the pandemic for internationalisation and mobility in higher education, which included sending surveys to experts on the subject. The conclusions of the study include that:

- digitisation will continue to be a positive influence on international collaboration;
- increasing unrest around the world may reroute student flows, with more Swedish exchange students choosing to study in Europe;
- digital mobility is viewed as a viable alternative to physical mobility and is something that can widen participation in exchange programmes; and
- there will be greater emphasis on internationalisation at home.

International mobility among doctoral students

Doctoral students are included in the EU's target of 20 per cent of higher education graduates completing part of their studies abroad. The target has been followed up since 2017 through a survey of HEIs and via register data.

Of the 2,700 graduates awarded a Degree of Doctor in 2021, 28 per cent had completed part of their third-cycle studies abroad. The corresponding figure in 2020 was 33 per cent. The gender balance of those studying abroad was even, at 48 per cent women and 52 per cent men.

International mobility among staff

Data on the mobility of staff are collected every other year through a sample survey from a population consisting of all research and teaching staff employed at Swedish HEIs during the year. Of those surveyed, 11 per cent had been abroad on official business during 2021, including short trips of less than a week and extended visits.

Third-cycle education

In autumn 2022, there were 17,450 doctoral students in third-cycle education at Swedish higher education institutions (HEIs). This was roughly the same number as the previous year. Among their number were 2,900 new entrants to third-cycle studies. For the second consecutive year, women outnumbered men among doctoral students.

The international element of third-cycle education remains large. In autumn 2022, 6,300 foreign doctoral students were enrolled at Swedish HEIs, corresponding to 37 per cent of all doctoral students.

Of the 2,800 doctoral students awarded a third-cycle qualification during 2022, 1,050 were foreign doctoral students. This is equivalent to 38 per cent of all third-cycle qualifications awarded.

Although bias in recruitment to third-cycle education has gradually decreased, both in terms of doctoral students' social backgrounds and whether they are from a Swedish or foreign background, it remains significantly more common for new entrants to third-cycle studies to have parents with a higher education than among the general population in the 25–29 age group as a whole.

The transition to third-cycle studies

It is in the nature of first- and second-cycle study programmes that the percentage of graduates who move onto third-cycle studies will differ. Many programmes are primarily designed to prepare students for a career outside higher education, while others have a more obvious connection to an academic career and thus to third-cycle studies.

The nature of a programme affects the transition

Three per cent of students awarded a first- and second-cycle qualification between the academic years 2013/14 and 2016/17 had begun third-cycle studies by the start of the 2021/22 academic year. A higher percentage of men (5%) transitioned to third-cycle studies than women (3%).

Third-cycle degree-awarding powers

All Swedish universities are entitled to award general third-cycle qualifications. Since 2010, university colleges can apply for third-cycle degree-awarding powers. These applications are made for a specific field and are appraised and approved by UKÄ. The Government decides whether to award degree-awarding powers to independent education providers.

Both universities and university colleges must apply for degree-awarding powers (licentiate and doctoral degrees) in the fine, applied and performing arts. Applications are appraised and approved by UKÄ.

In total, 18 HEIs had general and another 16 specific third-cycle degree-awarding powers in 2023.

More students with degrees in health and welfare entered third-cycle studies than in other categories. However, while they were more in number, they represented only 4 per cent of all graduates in this category. The highest percentage (9%) of students entering third-cycle studies was found in the category natural sciences, mathematics, and information and communication technology (ICT). The lowest percentage (1%) of graduates transitioning to third-cycle studies was in the category education science and teacher training.

Doctoral students

Doctoral students at Swedish HEIs can study either two years full-time for a Degree of Licentiate or four years full-time for a Degree of Doctor. The majority of doctoral students study for a Degree of Doctor.

It is a statutory requirement that doctoral students must have secured funding for the entirety of their third-cycle studies. This requirement is usually fulfilled through a doctoral studentship.

In addition to graduates from Swedish HEIs, many students also arrive from other countries to undertake third-cycle studies in Sweden. Swedish HEIs do not charge tuition fees to foreign doctoral students.

Downward curve for doctoral students since 2014

In autumn 2022, there were 17,450 doctoral students enrolled at Swedish HEIs. This is a preliminary figure as reporting generally lags behind; in fact, it is likely that the actual number exceeds that for autumn 2021 (18,200). The highest number of doctoral students, 19,600, was recorded in autumn 2013, since then the number has gradually decreased (Figure 5.1).

The number of new entrants to third-cycle studies as a subset of all doctoral students provides a picture of the latest development in third-cycle education. A total of 2,900 new doctoral students enrolled in third-cycle studies during 2022. Although this number is preliminary, it seems likely that the true figure will remain lower than in 2021 (3,200).

Figure 5.1. Number of doctoral students 2002–2022. In total and divided by gender.



The number of new entrants has varied over time

The number of doctoral students starting third-cycle studies has fluctuated over time. Over the last two decades, the number has varied between 3,000 and 4,000.

There was a significant decline in the number of new entrants between 2003 and 2004, during a period when many Swedish HEIs were facing financial problems due to deficits arising from research activities. There was another significant decline in 2012 as many HEIs phased out doctoral grants in favour of doctoral studentships. As the cost of a doctoral studentship is higher than the cost of a doctoral grant, HEIs were not able to admit as many new doctoral students.

Another contributory factor was the introduction in autumn 2011 of tuition fees for foreign students taking first- and second-cycle courses and programmes. This led to fewer incoming students at second cycle, thus reducing the recruitment pool for third-cycle education.

An unusually large number of new entrants entered third-cycle studies during 2012 as a number of graduate schools for teachers opened.

Women outnumber men in third-cycle studies

Since 2019, more women than men have entered third-cycle studies. In 2022, 54 per cent of new entrants were women and 46 per cent men. The decline in the total number of new entrants over recent years can largely be explained by the fact that fewer men started third-cycle studies in 2022 than in 2021. This is partly attributable to a decline in numbers in the field of engineering and technology, where men traditionally outnumber women.

Women also outnumber men slightly in third-cycle studies as a whole. In terms of gender balance, the scales tipped in 2021 and in 2022, 52 per cent of doctoral students were women and 48 per cent men (Figure 5.7).

Most doctoral students in medical and health sciences

As in previous years, medical and health sciences was the field of research and development with by far the most doctoral students – 6,200, which corresponds to 36 per cent of all doctoral students enrolled at Swedish HEIs. The next most popular field was natural sciences, with 3,800 doctoral students, or 22 per cent of the total number. The field of research and development (hereafter called field of research) with the lowest number was agricultural and veterinary sciences, with 300 doctoral students or 2 per cent of the total number.

With a few exceptions, the distribution of doctoral students across the various fields of research has remained fairly constant over the last decade.

More common for men to study full-time

It is unusual for doctoral students to dedicate all of their time to their studies, as they often teach or per-

form other departmental duties in parallel with their studies. However, by law, duties of this kind may not comprise more than 20 per cent of a full-time post. For our purposes then, full-time studies is defined as anything between 80 and 100 per cent activity.

During autumn 2022, over half of doctoral students (56%) studied full-time. This percentage remained unchanged from the previous year. At around 70 per cent, the fields of natural sciences and engineering and technology had the highest percentage of full-time doctoral students. Medical and health sciences was the field with the lowest percentage of full-time doctoral students, 41 per cent. This was also the field in which the highest percentage of doctoral students had a degree of activity between 40 and 60 per cent. This is partly explained by the fact that doctoral students studying medical and health sciences can continue to work in healthcare during their studies.

A higher percentage of men than women studied full-time, at 61 and 52 per cent respectively.

The majority held a doctoral studentship

A doctoral studentship is by far the most common form of funding for doctoral students (Table 5.1). In autumn 2022, 70 per cent of all doctoral students were funded in this way. Once a common form of funding for third-cycle studies, doctoral grants have

Impact of the pandemic on doctoral students and junior researchers

In 2022, UKÄ conducted a study to investigate the potential long-term impact of the pandemic on the prospects of doctoral students and junior researchers. The government agency asked senior researchers with good insight into the situations of doctoral students and junior researchers to propose and rate potential long-term consequences of the pandemic.

Above all, these experts agreed that those working as doctoral students or junior researchers during the pandemic may need more time to establish themselves as autonomous researchers. For junior researchers, this was mainly due to delays in their research and less opportunity to acquire further scientific qualifications during the pandemic. The main problem for doctoral students was instead the lack of development of the professional attributes necessary to achieving autonomy as a researcher.

On the other hand, the pandemic may have had positive effects. Some experts suggested that the pandemic has better equipped these doctoral students and junior researchers to deal with future unforeseen events.

Based on the responses of these experts, UKÄ does not believe that the majority of the doctoral students and junior researchers will suffer major long-term repercussions.

Table 5.1. Percentage of doctoral students (FTEs) with different types of funding, autumn 2022.

Total per field of research.

	Total (%)	Natural sciences (%)	Engineering and technology (%)	Medical and health sciences (%)	Social sciences (%)	Humanities and the arts (%)	Agricultural and veterinary sciences (%)
Doctoral studentship	70	86	79	48	74	82	76
Other post in academia	3	3	3	3	4	2	6
Scholarship	4	2	3	4	10	3	3
Externally employed doctoral student	5	6	12	2	3	0	8
Other employment outside academia	4	2	2	6	4	2	6
Other funding	3	2	2	3	4	10	1
Doctoral grant	0	0	0	0	0	0	0
Employed as doctor or other healthcare professional	11	0	0	33	0	0	0

to all intents and purposes been phased out at Swedish HEIs. A small percentage of doctoral students are funded by scholarships, largely in the social sciences.

Many doctoral students (20%) undertake their studies as part of their employment outside academia. These are mainly doctors and other healthcare professionals (11%), although there is also a significant percentage (5%) of other externally employed doctoral students funded by their employers.

Just over one third of doctoral students were foreign

There is a significant international element to third-cycle education. Foreign doctoral students are people who have come to Sweden for the purpose of pursuing third-cycle studies.

In autumn 2022, 6,300 foreign doctoral students were enrolled at Swedish HEIs, corresponding to 37 per cent of all doctoral students. Women accounted for 47 per cent of foreign doctoral students and men 53 per cent.

Most foreign doctoral students are from Asia (2,400). The most common countries of origin were China (850), India (508) and Iran (450). The next largest group was from the EU outside the Nordic region (1,750), with Germany (469) and Italy (314) leading the way.

Third-cycle qualifications

Swedish HEIs awarded 2,800 Degrees of Doctor during 2022, a year-over-year increase of 3 per cent (Figure 5.2). One explanation for this increase may be that the number of new entrants to third-cycle studies began to rise again in 2017 after several years of decline. Of those awarded a Degree of Doctor in 2022, 48 per cent were women and 52 per cent men.

Of the 2,800 doctoral students awarded a third-cycle qualification during 2022, 1,050 were foreign students. This is equivalent to 38 per cent of all third-cycle qualifications awarded.

In 2022, most third-cycle qualifications were awarded in the field medical and health sciences; of the total of 1,020, 1,000 were a Degree of Doctor and

Figure 5.2. Number of Degrees of Doctor awarded, 2012–2022. In total and divided by gender.

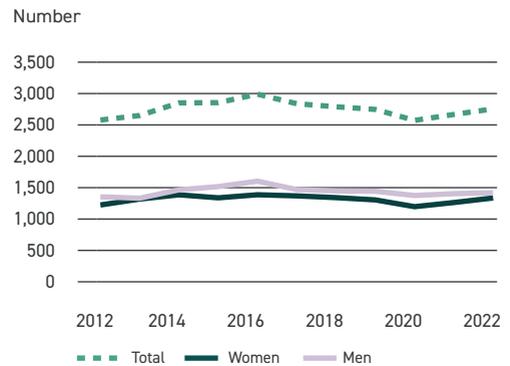


Table 5.2. Number of Degrees of Doctor and Degrees of Licentiate 2022. In total and divided by gender (%), by field of research. Values less than 5 individuals are not reported in the table.

Field of research	Degree of Doctor			Degree of Doctor		
	Total	Women (%)	Men (%)	Total	Women (%)	Men (%)
Total	2,760	48	52	440	36	64
Medical and health sciences	1,000	61	39	20	68	32
Natural sciences	660	37	63	140	32	68
Engineering and technology	510	33	67	240	31	69
Social sciences	380	52	48	40	61	39
Humanities and the arts	150	56	44	10	67	33
Agricultural and veterinary sciences	40	57	43	-	67	33

20 a Degree of Licentiate. (Table 5.2). This was also the field of research with the highest percentage of female graduates, 61 per cent compared to 39 per cent men.

Student completion

Student completion rate in third-cycle studies can be measured by graduation rate, a metric for the percentage of entrants to third-cycle programmes who graduate within a given number of years. The first follow-up is conducted after five years, as it is common for doctoral students to devote 20 per cent of their time to departmental duties, thus extending the length of study to five years.

Just under half of doctoral students graduated within five years

The most recent cohort that can be followed up after five years is those who entered third-cycle studies in 2017, of whom 47 per cent had been awarded a Degree of Doctor by the end of 2022. There has been a long-term rise in the rate of graduation within five years; only 22 per cent of those who entered third-cycle studies in 1990 graduated within five years. In part, this is due to a reform in 1998 that limited HEIs to admitting doctoral students with guaranteed student finance for the entirety of their third-cycle studies.

Graduation rates rise over time: 46 per cent of new entrants to third-cycle studies in 2014 graduated within five years and 76 per cent within eight years (Table 5.3).

Graduation rates also differ between fields of research. The differences are most striking within five or

six years of entering third-cycle studies, but they are still readily apparent within eight years.

Approximately 80 per cent of the 2014 cohort studying in the three fields natural sciences, medical and health sciences and agricultural and veterinary sciences had been awarded a Degree of Doctor within eight years. After eight years, the lowest graduation rates were found among doctoral students in the social sciences and humanities and the arts, at 69 and 71 per cent respectively. However, the percentage of graduates in both these groups had more than doubled at eight years compared to the first measurement point five years after commencing third-cycle studies.

The graduation rate for women within five years has been lower than for men in every cohort since comparisons began in 1990. In the 2017 cohort, 43 per cent of women were awarded a Degree of Doctor within five years compared to 50 per cent of men. One reason for the gender imbalance may be that women take more parental leave than men during third-cycle studies. The gender gap does however narrow over time: 76 per cent of women in the 2014 cohort had been awarded a Degree of Doctor after eight years compared to 77 per cent of men, almost completely closing the gap.

Widening participation

Since 2001, the Higher Education Act (SFS 1992:1434) requires HEIs to actively promote and widen recruitment to higher education. Official statistics allow us to monitor the composition of doctoral students at Swedish HEIs based on their parents' social back-

Table 5.3. Graduation rates (%) for new entrants to third-cycle studies within 5, 6 and 8 years. Number and percentage of third-cycle graduates in total and by field of research, 2014 cohort.

Field of research	Number of new entrants 2014	Percentage awarded a Degree of Doctor within		
		5 years	6 years	8 years
All	3,230	46	63	76
Natural sciences	710	55	72	81
Engineering and technology	690	49	64	73
Medical and health sciences	1,120	47	62	79
Agricultural and veterinary sciences	70	53	68	79
Social sciences	480	32	52	69
Humanities and the arts	170	27	50	71

ground and whether the doctoral students are from a Swedish or foreign background.

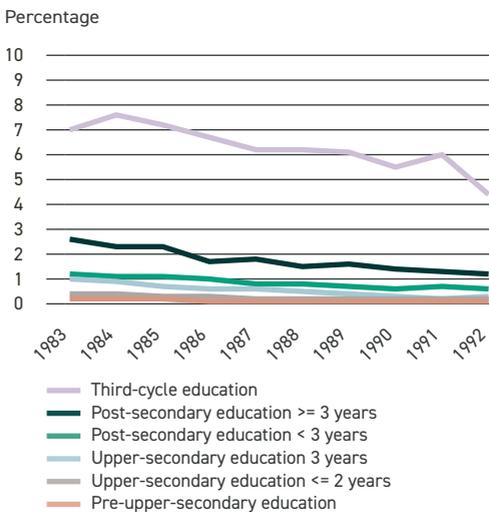
Distinct but decreasing social bias in recruitment

Social background (for our purposes, measured by the educational attainment of the highest educated parent) is a significant factor in whether or not an individual enters third-cycle studies. Among the Swedish population as a whole, 0.6 per cent of those born in 1992 entered third-cycle studies at no later than 30 years of age; however, there was significant variation between groups from different social backgrounds (Figure 5.3).

Those with highly educated parents are more likely to enter third-cycle studies than those whose parents have a low level of education. Of those born in 1992 with at least one parent with a third-cycle qualification, 4.4 per cent went on to third-cycle studies.

The percentage entering third-cycle studies has declined for the cohorts from 1983 to 1992, regardless of their parents' level of education. At the same time, social bias in recruitment has decreased as the gap between the various social groups has narrowed (Figure 5.4). This development has been the same for women and men.

Figure 5.3. Percentage of 1983–1992 cohorts that had entered third-cycle studies in Sweden at no later than 30 years of age. Percentage, divided by parents' level of education.



Doctoral students more likely to have highly educated parents

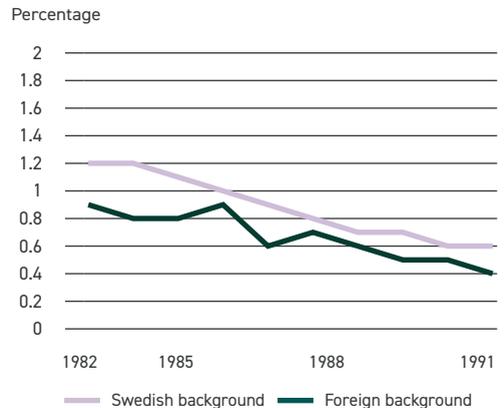
In the academic year 2021/22, 61 per cent of new entrants to third-cycle studies had parents with a tertiary education of at least three years or a third-cycle education, while only 12 per cent had parents whose highest level of education was compulsory school or a maximum of two years of upper-secondary education. The statistics do not include new entrants who gave no information concerning their parents' education (22%), nor foreign doctoral students.

If one compares the 25–29 age group in the general population (the age group most likely to enter third-cycle studies) with new entrants to third-cycle studies, the latter is considerably more likely to have parents with a higher education.

The social composition of new entrants to third-cycle studies is more imbalanced than that of new entrants to first- and second-cycle studies. This is largely because social background is a factor in the choice of higher education study programme. For example, a larger percentage of those admitted to programmes that meet the entry requirements for third-cycle programmes have parents with a higher education. Not only that, but those whose parents have a third-cycle qualification are more likely to enter third-cycle studies themselves than other groups,

Figure 5.4. Percentage of 1982–1991 cohorts that had entered third-cycle studies in Sweden at no later than 30 years of age.

Divided by Swedish and foreign background. Individuals in the Swedish Population Register at both 18 and 30 years of age are included.



even if they study the same programme.

Somewhat fewer with a foreign background enter third-cycle studies

For statistical purposes, someone is considered to have a Swedish background if they were born in Sweden or at least one parent who was also born in Sweden. This category also includes those born abroad to two Swedish-born parents. The group of those with a foreign background consists of those born in Sweden to two foreign-born parents and those born abroad who immigrated to Sweden be-

fore the age of 18. The statistics do not include foreign doctoral students.

Among those born in 1991 who were in the Swedish Population Register at 18 years of age, a larger percentage of those with a Swedish background entered third-cycle studies than those with a foreign background (Figure 5.14). At 30 years of age, 0.6 per cent of those from a Swedish background had done so compared to 0.4 per cent of those from a foreign background. This gap has however narrowed somewhat over time, both among women and men.

A high percentage of foreign new entrants in Sweden

Of those admitted to third-cycle studies at Swedish HEIs in 2020, 43 per cent were foreign doctoral students. This was significantly higher than the corresponding figures for most Nordic countries and the average for OECD countries. While Germany and Spain had a relatively low percentage of foreign new entrants, official statistics in these countries only include those studying to complete the degree in the country. The average age of new entrants in Sweden was 31 years, the same as the OECD average.

Taking an average for OECD countries, there was equal gender balance among those entering third-cycle studies. In Sweden, women outnumbered men. In general, foreign students constituted a higher percentage of male new entrants than female, at 33 and 29 per cent respectively, while in Sweden the corresponding figures were 46 per cent among men and 40 per cent among women.

Table 5.4. Profile of new entrants to third-cycle studies in selected OECD countries, 2020. Percentage of women and men, average age and percentage of foreign new entrants in total and among female and male new entrants. Source: OECD.

	Gender balance			Percentage of incoming new entrants to third-cycle studies		
	Women (%)	Men (%)	Average age (years)	Total (%)	Women (%)	Men (%)
Denmark	50	50	29	35	33	37
Finland	56	44	33	36	29	43
Ireland	54	46	30	41	37	46
Iceland	57	43	34	49	41	60
Netherlands	49	51	27	60	59	61
Norway	53	47	33	34	28	41
Germany	47	53	29	25	25	25
Spain	50	50	33	24	23	26
United Kingdom	51	49	29	43	42	43
Sweden	52	48	31	43	40	46
USA	50	50	31	24	21	27
EU22 – average	49	51	30	32	31	34
OECD – average	49	51	31	30	29	33

Staff at higher education institutions

The number of staff employed at Swedish higher education institutions (HEIs) continues to rise. In 2022, there were some 55,000 full-time equivalents (FTEs), 59 per cent of whom were research and teaching staff and 41 per cent had other duties.

All employment categories of research and teaching staff increased, with the exception of lecturers. The largest category was senior lecturers, who constituted approximately one third of all research and teaching staff in 2022.

The majority of staff with duties other than research and teaching (66%) work in administration. This was also the category that saw the highest increase in numbers.

Staff at HEIs were relatively gender balanced, although there is still a significant difference between research and teaching staff and staff with other duties, as well as within certain employment categories.

All staff at HEIs

Full-time equivalent (FTE) is often used as a metric for the volume of staff employed at an HEI. The number of FTEs is calculated based on working hours and with consideration for staff who may be on leave of absence. For the sake of readability, at times we may use the term *employees* interchangeably with FTEs.

Staff at HEIs are divided into two statistical categories: research and teaching staff, and staff with duties other than research and teaching. Since 2021, the Swedish Higher Education Authority (UKÄ) has also published official statistics on internationally recruited researchers.

Although doctoral students carry out a significant amount of the research and teaching at Swedish HEIs, for statistical purposes they are categorised as students rather than staff. You can learn more about doctoral students in the chapter *Third-cycle education*.

Staff numbers have gradually increased

In 2022, 69,100 people were employed at Swedish

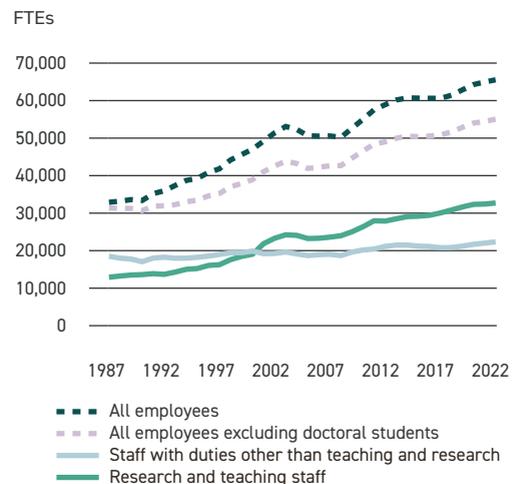
HEIs, with working hours equivalent to 55,050 FTEs. Of these, 59 per cent were teachers and researchers and 41 per cent staff with other duties (Figure 6.1).

The gender balance among staff was relatively even, at 55 per cent women and 45 per cent men. Among research and teaching staff, men had a slight majority, while women were in the majority among staff with duties other than research and teaching.

In 2022 the number of staff employed at Swedish HEIs increased by just over 1 per cent compared to 2021. From a longer-term perspective, the number of staff has been increasing steadily since the 1990s, particularly in the category research and teaching staff. In 1987, 41 per cent of staff had research and teaching duties (excluding doctoral students). This figure has gradually increased, reaching 59 per cent in 2022.

In part, the previous increase in the number of staff is attributable to the expansion of higher education during the 1990s and early 2000s. Another cause – especially during the late 1990s – was the transfer of mid-length nursing programmes, and the associated staff, from nursing colleges run by county councils to public-sector HEIs (learn more in the chapter *The*

Figure 6.1. Number of employees at Swedish HEIs, 1987–2022. By category of staff, FTEs.



road to today's Swedish system for higher education and research). The number of employees decreased considerably between 2003 and 2005 as many HEIs had financial difficulties caused by deficits arising from research activities. Subsequent increases in the number of staff have largely coincided with significant increases in research revenue since 2007.

Research and teaching staff

Staff whose main duties involve research and teaching in higher education are divided into six employment categories:

- Professor
- Senior lecturer
- Career-development position
- Lecturer
- Other research and teaching staff with a doctoral degree
- Other research and teaching staff without a doctoral degree

Regulations concerning research and teaching staff in the Higher Education Act (SFS 1992:1434) and Higher Education Ordinance (SFS 1993:100) have become less comprehensive over time. In addition to the categories of staff still regulated in the Higher Education Act (professor and senior lecturer), an HEI may decide which categories of teacher it wishes to employ and what the career structure for teachers and researchers should look like at their institution.

Overall gender balance

In 2022, 32,700 research and teaching staff were employed at Swedish HEIs, an increase of just under 1 per cent compared to 2021. Numbers increased in all employment categories except lecturer, where numbers decreased slightly (Figure 6.2). Lecturers constitute a large part of the teaching workforce, especially at university colleges and newer universities.

The largest employment category was senior lecturer, which saw a slight year-over-year increase in 2022, to 10,000 or approximately one third of all research and teaching staff.

The gender balance among research and teaching staff was relatively even in 2022, at 47 per cent women and 53 per cent men. The percentage of women in the various employment categories ranged from 32 to 61 per cent, while men ranged from 39 to 68 per

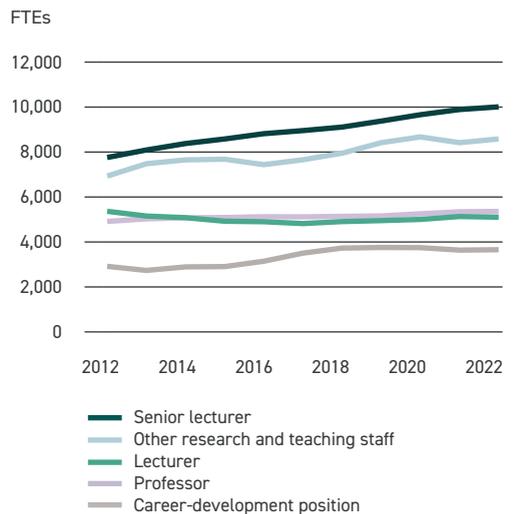
cent. The percentage of women was highest among lecturers and lowest among professors.

More senior lecturers over the last decade

The number of research and teaching staff has increased by 17 per cent over the last ten years. Senior lecturer has long been the largest employment category and it has shown unparalleled growth of 29 per cent during the period. The only category that has decreased in numbers over the last decade is lecturers, whose numbers have declined by 5 per cent.

Since 2012, the percentage of women has increased in five out of six employment categories. The overall increase is 4 percentage points. The only category that has remained largely unchanged is career-development positions, at 45 per cent women and 55 per cent men.

Figure 6.2. Number of research and teaching staff at Swedish HEIs, 2012–2022. By employment category, FTEs.



Recruitment targets for female professors

In 2022, women accounted for 32 per cent of professors and men 68 per cent. Compared to 2012, the number of female professors increased by 46 per cent, from 1,200 to 1,700 FTEs. In combination with a marginal decrease in the number of male professors, this led to a percentage increase in female professors from 24 to 32 per cent during the ten-year period.

To accelerate the process of achieving gender

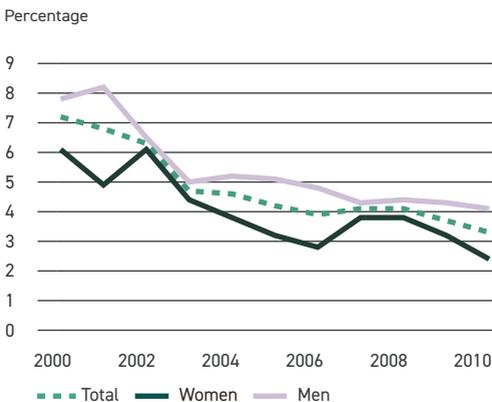
balance in higher education, since 1997, the Government has given each HEI a recruitment target for gender distribution among newly recruited professors. Current recruitment targets relate to the period 2021–2023. Recruitment targets state the percentage of newly recruited professors that must be women during the period. Targets vary from 34 to 60 per cent. They are calculated based on the number of professors working in each field of research and development (hereafter called field of research) at each HEI, as well as the gender balance of doctoral students graduating in the various fields nationally a number of years previously (the recruitment pool).

UKÄ's follow-up of recruitment targets for the period 2017–2019 shows that targets had no effect on the percentage of women among newly recruited professors to HEIs. New recruitment is not, however, the only factor and the overall percentage of female professors still increased thanks to other factors, such as retirements.

Just over 3 per cent appointed to a professorship within 12 years

Relatively few doctoral graduates are promoted to professor within 12 years of being awarded a doctorate degree, and the percentage has decreased over time. Just over 3 per cent of those awarded a Degree of Doctor in 2010 were appointed to a professorship within 12 years (Figure 6.3) compared to 7 per cent of

Figure 6.3. Percentage promoted to professor within 12 years of being awarded a Degree of Doctor, year of graduation 2000–2010. Individuals, men and women as a percentage.



those who graduated 10 years earlier. This decrease may indicate increased competition for appointments.

Of those who have been appointed to a professorship within 12 years, in every year over the past decade a higher percentage have been men than women, although the imbalance has varied over time.

Postdoctoral fellowship the most common career-development position

Career-development positions are fixed-term appointments intended to provide those who have been awarded a doctoral degree to gain both scholarly/artistic and educational qualifications in order to further their academic careers. For statistical purposes, postdoctoral fellowships and appointments as associate senior lecturer, research assistant, or other career-development positions intended to improve qualifications, are considered career-development positions.

While the number of career-development positions has increased over recent decades, the curve has flattened over the last few years. In 2022, a total of 3,700 people held career-development positions at Swedish HEIs, mainly as postdoctoral fellows (73%) or associate senior lecturers (23%).

Among postdoctoral fellows, 44 per cent were women and 56 per cent men, while 47 per cent of associate senior lecturers were women and 53 per cent men.

Tough competition for career-development positions

Despite the gradual increase in the number of career-development positions, there remains stiff competition among doctoral graduates intending to continue their careers in academia. For example, between 2,500 and 3,000 people are awarded a Degree of Doctor at a Swedish HEI each year, while postdoctoral fellowships corresponding to approximately 1,300 FTEs were awarded in 2022, equivalent to around half of the cohort of doctoral graduates. And the further up the career ladder one progresses, the tougher the competition. It is, however, worth noting that it is difficult to estimate the actual recruitment pool, given that HEIs also recruit internationally to career-development positions and many

doctoral graduates from Swedish HEIs continue their careers abroad.

Target for percentage of associate senior lecturers

As part of creating clearer career paths and better conditions for those working in higher education, the Government has the intention to increase the number of associate senior lecturers, a position that provides some job security for early-career researchers. In 2022, there were 860 associate senior lecturers working at Swedish HEIs, corresponding to 3 per cent of research and teaching staff.

To increase this number, in autumn 2021 the Government set specific institutional targets for the percentage of associate senior lecturers to be employed at 15 public-sector HEIs. The target is formulated as the percentage of research and teaching staff that must be associated senior lecturers during the period 2021–2024. The specific percentage varies for each HEI and ranges from 1 to 7 per cent measured in FTEs. The Government has tasked UKÄ with following up and evaluating the outcome of the targets.

More employees in all fields of research

Research and teaching staff are reported in statistics in six fields of research. The three fields with most staff in 2022 were social sciences, medical and health

sciences and natural sciences, each of which employed between 7,000 and 8,000 FTEs. These three fields accounted for 72 per cent of all staff in this category.

Above all the number of employees in the field of medical and health sciences increased, with the equivalent of 3 per cent. The number of employees in the field of agricultural and veterinary sciences decreased.

The number of employees has increased in all fields of research since 2012, by a combined 19 per cent (Table 6.1). The greatest increase (26%) over the decade was in medical and health sciences. The percentage of women in each field has also increased since 2012. In 2022, humanities and the arts was the only field of research with an even gender balance in all employment categories.

Generally good gender balance in senior management positions

Every other year since 2017, UKÄ has conducted a survey of gender balance in senior management positions at Swedish HEIs. The response rate has been high for all surveys; in 2023, 47 of 49 HEIs responded.

In 2023, there was an even gender balance in four of six senior management positions. Women were in the majority among university directors and library directors, occupying approximately two of three such positions. University director was the position

Table 6.1. Number of research and teaching staff at Swedish HEIs, 2012 and 2022. Percentage of women and men and change (percentage), by field of research, FTEs.

	Number of FTEs			Gender balance 2012		Gender balance 2022	
	2012	2022	Change (%)	Women (%)	Men (%)	Women (%)	Men (%)
All	27,880	32,710	17	43	57	47	53
Social sciences	6,780	8,170	20	49	51	55	45
Medical and health sciences	6,470	8,160	26	58	42	60	40
Natural sciences	5,810	7,130	23	28	72	31	69
Engineering and technology	3,770	4,240	13	23	77	29	71
Humanities and the arts	3,420	3,630	6	49	51	52	48
Agricultural and veterinary sciences	870	1,030	18	45	55	51	49
No data available	760	340	-55	50	50	57	43

in which the percentage of women had increased most, from 48 per cent in 2017 to 65 per cent in 2023.

Vice-chancellor was the post with the lowest percentage of women (40%) in 2023, a figure that has remained relatively stable since 2017. That said, the percentage of female pro-vice-chancellors has increased significantly, from 39 per cent in 2017 to 51 per cent in 2023. As in previous surveys, there was a slight imbalance towards men in the post of deputy vice-chancellor in 2023.

Common for men to have a higher salary

The average salary for research and teaching staff varies depending on the employment category. Professors have the highest average salary. Other research and teaching staff without a doctoral degree have the lowest average salary. There was a year-over-year increase in average salary in all employment categories in 2021, ranging from 0.8 to 2.3 per cent.

In 2021, men had a higher average salary than women in four of the six employment categories. The widest gender pay gap was in the senior lecturer category, where men's average salary was 3 per cent higher than the average for women. The only category in which women were better paid than men was career-development positions. There was no gender pay gap among lecturers.

Fixed-term appointments an important part of the career structure

The percentage of fixed-term contracts is higher in the higher education sector than the labour market as a whole. One reason for this is that certain fixed-term appointments are built into the academic career structure or are integral to collaboration with the surrounding community. Examples of such appointments include career-development positions, adjunct posts and visiting professorships.

In 2022, 8,700 of a total of 32,700 research and teaching staff had fixed-term appointments. Around half of fixed-term appointments were part of the HEI's established career structure.

The percentage of staff on a fixed-term contract has decreased over the last ten years. This is due to an increase in the number of staff rather than a decrease in the number of fixed-term appointments, which has remained relatively stable. Between 2012 and

2022, the percentage of fixed-term appointments decreased by 6 percentage points, from 33 to 27 per cent. The decrease has been greater among women than men, meaning that the gender gap has gradually narrowed.

By their very nature, virtually all career-development positions are for a fixed term. In 2022, most staff with a fixed-term appointment held either a career-development position (42%) or were in the category other research and teaching staff without a doctoral degree (27%). The lowest percentages of fixed-term appointments in 2022 were among senior lecturers (7%) and professors (6%).

A significant increase in internationally recruited researchers

The percentage of researchers recruited internationally has gradually increased. In 2022, some 6,200 individual internationally recruited researchers were working at Swedish HEIs, a year-over-year increase of 4 per cent. Among internationally recruited researchers, 1,900 held career-development positions and approximately 1,500 were in the employment categories senior lecturer or other research and teaching staff. The number of researchers recruited internationally has almost doubled since 2012. They have also increased as a percentage of all researchers, from 15 per cent in 2012 to 23 per cent in 2022.

Men are in the majority among internationally recruited researchers; in 2022, 39 per cent were women and 61 per cent men. The percentage of women has increased by 5 percentage points since 2012.

Half of all career-development positions held by international recruits

While the total number of internationally recruited researchers has increased every year since 2012, this development has varied depending on the employment category. During the pandemic years of 2020 and 2021, generally speaking international recruitment was limited to the employment categories senior lecturer and other research and teaching staff, where it increased by 8 and 7 per cent respectively. In the category career-development position, international recruitment declined. In 2022, the number of internationally recruited researchers increased once again in all four categories.

Who is considered an internationally recruited researcher?

For our purposes, staff in the following employment categories are considered researchers:

- Professor
- Senior lecturer
- Career-development position
- Other research and teaching staff with third-cycle education

A researcher who only has qualifications awarded by a foreign higher education institution is considered to be internationally recruited. Unlike the other statistics in this chapter, data refers to individuals rather than FTEs.

There are major differences between categories in terms of the percentage of international recruits. In 2022, just under half of all career-development positions were held by internationally recruited researchers, who also accounted for 26 per cent of other research and teaching staff with third-cycle education. The corresponding figures for professors and senior lecturers were 19 and 14 per cent respectively. Over the last ten years, the employment category career-development position has seen the highest percentage increase in internationally recruited researchers and professors the lowest.

Natural sciences has the most internationally recruited researchers

The percentage of internationally recruited researchers also varies between fields of research. In

2022, the field of natural sciences had both the highest number and highest percentage of internationally recruited researchers. The lowest percentage was found in the field of social sciences, while agricultural and veterinary sciences had the lowest number of internationally recruited researchers (Table 6.2).

Staff with duties other than teaching and research

For statistical purposes, staff with duties other than teaching and research are divided into four employment categories:

- Administrative staff
- Technical staff
- Library staff
- Temporary staff

Staff with research and/or teaching duties may also have duties that fall into one of these categories, but they are not included in the statistics in this section.

Administrative staff by far the most common

In 2022, staff with duties other than teaching and research were equivalent to 22,300 FTEs, or 41 per cent of the total workforce at Swedish HEIs, an increase of 1 per cent compared to 2021.

Administrative staff was by far the largest employment category with 13,900 FTEs, or 62 per cent of all staff with duties other than teaching and research. Administrative staff included administrators, financial officers, communication officers, student counsellors and managers working at universi-

Table 6.2. Number of researchers recruited internationally, 2022. Individuals by field of research. Percentage of women and men and internationally recruited researchers as a percentage of all researchers.

	Number of internationally recruited researchers	Women (%)	Men (%)	Percentage of internationally recruited researchers (%)
Total	6,120	39	61	23
Social sciences	870	51	49	13
Medical and health sciences	1,440	49	51	21
Natural sciences	2,240	31	69	37
Engineering and technology	960	28	72	26
Humanities and the arts	410	49	51	17
Agricultural and veterinary sciences	180	36	64	22

ty administrations. The next largest category was technical staff with 6,800 FTEs, or 30 per cent of all staff with duties other than teaching and research. Technical staff work in various roles, such as project managers, laboratory technicians, caretakers and in IT. Both administrative and technical staff increased compared to 2021, while library staff and temporary staff decreased.

Unlike research and teaching staff, women are in the majority among staff with other duties. In 2022, 66 per cent of staff with duties other than teaching and research were women and 34 per cent men.

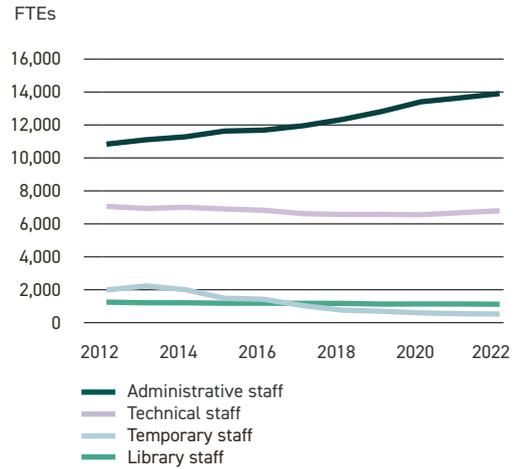
Women were in the majority in three of four categories. Administrative staff and library staff were the categories with the largest percentages of women. The gender balance has remained relatively stable over the past ten years.

The number of administrative staff has gradually increased

The number of staff with duties other than teaching and research increased by 6 per cent between 2012 and 2022. This was a significantly lower increase than among research and teaching staff.

The number of administrative staff has increased by 28 per cent since 2012 (Figure 6.4). During the same period, the number of technical and library staff decreased by 4 and 10 per cent respectively, gradually changing the composition of the workforce.

Figure 6.4. Number of staff with duties other than teaching and research, 2012–2022. By employment category, FTEs.



The economy and financing of higher education

The total expenditure on education and research at Swedish higher education institutions (HEIs) during 2022 amounted to SEK 84.2 billion, which is equivalent to 1.4 per cent of Sweden's gross domestic product (GDP). This was a year-over-year increase of 5 per cent at current prices, largely attributable to an increase in operating costs. Revenue also increased, although not at the same rate. However, as a whole the higher education sector showed a positive financial result.

Income from first- and second-cycle education increased by 1 per cent in 2022 compared to the previous year, to a total of SEK 34.7 billion.

Income from research and third-cycle education increased by 4 per cent in 2022 compared to the previous year, to a total of SEK 49.5 billion.

The financing of higher education

In Sweden, a large part of the operations of HEIs is state funded. The Riksdag decides on the allocation of resources to each HEI in the annual Budget Bill. HEIs receive separate allocations for first- and second-cycle education and for research and third-cycle education.

The funding of these two areas differs. While direct government funding is an HEI's main source of revenue from first- and second-cycle education, it represents a significantly lower percentage of revenue from research and third-cycle education. The state also channels significant funds to research activities at HEIs through research councils and other government agencies. This funding is usually applied for in competition between researchers and research groups at different HEIs.

You can learn more about how higher education and research are funded in the chapter *The Swedish system for higher education and research* and in the fact box *Resource allocation for first- and second-cycle courses and programmes* in this chapter.

How much did higher education cost in 2022?

The total expenditure of operations at Swedish HEIs during 2022 was SEK 84.2 billion. This is equivalent to 1.4 per cent of Sweden's gross domestic product (GDP), compared to 1.7 per cent of GDP a decade ago. This implies that growth in the higher education sector has been somewhat lower than in the Swedish economy as a whole.

Another way of putting the economy of the higher education sector in perspective is to compare the allocations to HEIs with the total central government budget. In 2022, direct government funding to HEIs was equivalent to 4.1 per cent of total central government appropriations. This percentage has decreased somewhat over the last decade. In addition to direct government funding, the state also finances operations at HEIs with other funds, including those channelled through government agencies for research.

To estimate the total expenditure of the higher education sector, one should also include the state's costs for student finance and the government agencies that work on issues related to higher education. In 2022, the state's expenditure for student finance for higher education was SEK 11.3 billion. Appropriations to government agencies with responsibility for matters related to higher education were estimated at SEK 1.4 billion. The total expenditure for the higher education sector was therefore SEK 96.9 billion.

Costs increased by 5 per cent

The total expenditure of operations at Swedish HEIs in 2022 increased by 5 per cent between 2021 and 2022 (Table 7.1). This is a larger than usual increase; over the last ten-year period, costs have risen by an average of 3 per cent per annum.

The main driver of increased expenditure was above all an increase in other operating costs, which accounted for SEK 13.7 billion of the total expenditure of SEK 84.2 billion at current prices. These costs decreased during the pandemic due to a reduction

Table 71. Compilation of HEIs' income statements, 2021 and 2022. SEK million (current prices). Change between 2021 and 2022.

	2021	2022	Change
Total revenue	82,562	84,758	2,196
Revenue from direct government funding	50,447	50,365	-82
Revenue from fees and other remuneration	8,194	8,981	786
Revenue from grants	23,738	25,019	1,281
Financial revenue	183	394	211
Total expenditure	80,310	84,196	3,886
Staff costs	52,915	54,228	1,313
Costs for premises	9,875	10,338	463
Remuneration for clinical training and research	2,719	2,751	32
Other operating costs	11,794	13,660	1,865
Financial costs	80	263	182
Depreciation	2,926	2,957	31
Operating result	2,252	563	-1,690
Annual change in capital	2,253	563	-1,690

in travel, but increased by 16 per cent in 2022 compared to 2021. The main increase was in operating costs for research and third-cycle education.

There was also a 3 per cent increase in staff costs. This was partly due to a slight increase in the number of staff employed at HEIs, but also salary increases and higher pension costs.

Revenue also increased, although not at the same rate as costs

The total revenue of HEIs in 2022 was SEK 84.8 billion, an increase of 3 per cent on 2021 in current prices. This increase was mainly due to increased grant revenue for research and third-cycle education and increased revenue from fees for both education and research. At the same time, the revenue of HEIs from direct government funding decreased, the first year-over-year decrease in current prices in over 20 years. This was largely due to reductions in direct government funding for first- and second-cycle education.

However, total revenue from first- and second-cycle education increased by SEK 0.2 billion in current prices, to SEK 34.7 billion. Also revenue from research and third-cycle education increased, by SEK 1.9 billion in current prices, to SEK 49.5 billion. In

fixed prices, HEIs' revenue has increased by 10 per cent over the last ten-year period.

A positive financial result in 2022

All in all, revenue exceeded expenditure at Swedish HEIs in 2022. The surplus for 2022 was SEK 0.6 billion or just under 1 per cent of turnover. Several years of positive results over the last decade have left HEIs in a significantly stronger economic position.

Funding for first- and second-cycle education

First- and second-cycle education is mainly financed through direct government funding allocated to HEIs by the Riksdag when passing the annual Budget Bill. Most direct government funding is appropriated for first- and second-cycle education.

For most public-sector HEIs – as well as a few independent education providers – there is a cap on the direct government funding each HEI can claim for the courses and programmes it produces during an academic year (learn more in the fact box *Resource allocation for first- and second-cycle courses and programmes*).

Underproduction in education operations 2022

The financial value of the volume of education produced at each HEI is calculated at the end of the year and deducted from the funding cap. In 2022, the total funding cap for all HEIs was SEK 26.8 billion, which was lower than in 2021. This was due to the phasing out of measures taken by the Government in response to the pandemic. The financial value of the volume of education produced in 2022 – i.e., the total remuneration paid out based on the number of FTEs and APEs – was SEK 26.0 billion. This means that, between them, the HEIs educated fewer students during 2022 than the allocations actually were intended to cover.

Increased interest in studying – overproduction of education

Interest in higher education increased sharply in 2008/09 in conjunction with Sweden’s last recession. This increased interest persisted, and up until 2017 the financial value of the volume of education was greater than the combined funding caps (Figure 7.2). As HEIs cannot overproduce for any length of time without receiving additional funding, measures were taken to adapt the volume of education to the funding cap. In 2017, production was at the level of the funding cap and in 2018 it fell below, resulting in underproduction. This situation continued in 2019.

The pandemic and increasing unemployment have led to a sharp increase in interest in higher

A high percentage of research at Swedish HEIs

One common metric for comparing education costs in different countries is to divide total cost for education providers by number of full-time equivalents (FTEs). Total cost includes the cost of courses and programmes, student services and research and development (R&D). In 2019, the education providers in the OECD countries spent on average USD 18,900 on tertiary education per FTE. The cost was significantly above average in Sweden, at USD 26,000. One explanation for this is the extensive research conducted by Swedish HEIs, which accounts for over half of the total cost per FTE the other statistics in this chapter, data refers to individuals rather than FTEs.

Figure 71. Education providers’ total expenditure per FTE for tertiary education (ISCED 5–8) in selected OECD countries, 2019. Divided by area of activity and adjusted for purchasing power in US dollars.

Source: OECD.

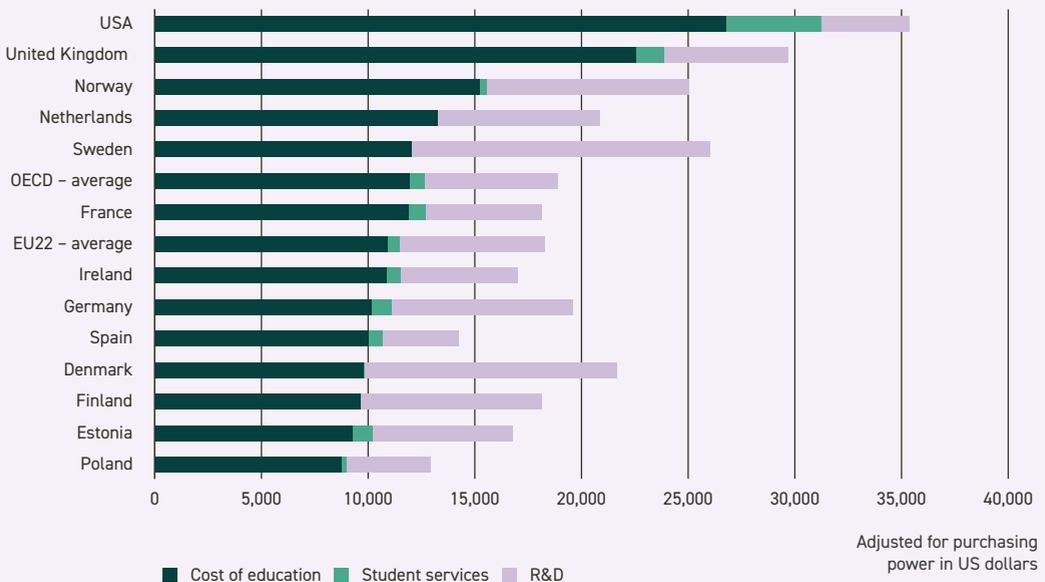
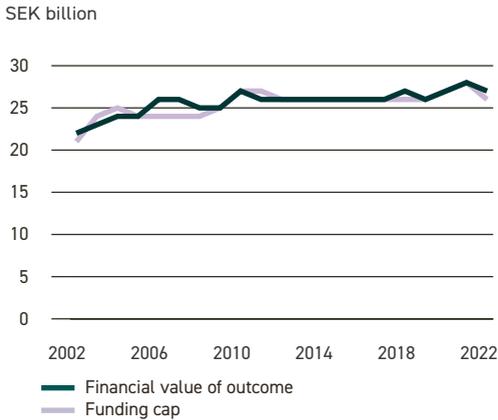


Figure 7.2. Total funding cap for all HEIs and the financial value of education production, 2002–2022. SEK billion, 2022 prices.



education. The Government subsequently allocated additional funds so that HEIs could increase the volume of education, but production continued to exceed the funding cap once again in 2020. During 2021, the situation reversed again and HEIs underproduced, failing to spend all allocated funds. This trend has continued and in 2022 HEIs underproduced by SEK 0.8 billion.

The system for allocating resources permits HEIs to carry over unused funds up to the funding cap, as well as the financial value of FTEs and APEs (over production) into the next financial year. This allows them to balance direct government funding between financial years and to cope with changing demand for higher education. At the end of 2022, HEIs had a combined surplus of SEK 0.9 billion and a saved overproduction of almost the same amount.

Government control through earmarked funds

Within the limits of its funding cap and degree-awarding powers, an HEI has a relatively free hand to decide on the education volume of courses and programmes. The Government can however influence these choices by earmarking additional funds for a specific course or programme, something that it did to offset the effects of the pandemic and the anticipated recession. This resulted in several expansions, temporary as well as permanent. The

single largest was a permanent expansion of degree programmes related to occupations experiencing labour shortage. However, most additional funding

Resources for first- and second-cycle courses and programmes

Direct government funding for first- and second-cycle courses and programmes is based on the number of enrolled students (recalculated as full-time equivalents, FTEs) and the number of credits awarded to students (recalculated as annual performance equivalents, APEs) within different disciplinary domains. While all HEIs covered by this system receive equivalent funding based on the number and performance of their students, some disciplinary domains receive more per capita funding than others.

All study programmes are divided into courses, each of which is classified as belonging to one or more disciplinary domains. The Government decides which disciplinary domains each HEI may include when calculating FTEs and APEs. The number of FTEs and APEs that an HEI can claim for courses in the fine, applied and performing arts is limited. Otherwise, it is for the HEI to decide which disciplinary domain(s) a course belongs to. The allocation of resources to HEIs is based on these classifications.

For 2023, remuneration per FTE ranged from SEK 34,271 (for the disciplinary domain the humanities, social sciences, theology and law) to SEK 340,461 (for the disciplinary domain opera). In the same year, remuneration per APE ranged from SEK 22,332 (for the disciplinary domain the humanities, social sciences, theology and law) to SEK 269,123 (for the disciplinary domain media studies).

The resource allocation system with funding cap applies to all public-sector HEIs, with the exception of the Swedish University of Agricultural Sciences (SLU) and the Swedish Defence University, as well as to the foundation institutions Chalmers University of Technology and Jönköping University.

The funding cap according to the public service agreement defines the maximum total amount each HEI may receive as framework funding and sets, together with the way in which the education is divided among the different disciplinary domains, the limits for the number of students at each HEI. Unused funds up to the funding cap may be carried over to subsequent years.

has been temporary, to meet an anticipated increase in demand for higher education during the pandemic. These are now being phased out, thus reducing direct government funding for first- and second-cycle education.

Since 2018, there has been an ongoing expansion of various courses and programmes that the Government considers essential for society. The final stage of the permanent expansion is carried out in 2023, by which time a total of SEK 730 million of additional allocations to first- and second-cycle education will have been paid out. Most of this is targeted at engineering, medicine and summer courses, the latter mainly for prospective teachers.

No longer an increase in revenue from tuition fees

When tuition fees were introduced for incoming students from countries outside the EU/EEA and Switzerland prior to autumn semester 2011, the initial result was a steep decline in incoming students from third-countries. Consequently, HEIs earned little from application and tuition fees. Revenue from fees from paying students has increased over the last decade, to the point where it is now a significant percentage of total revenue from first- and second-cycle education (Figure 7.3). This increase has however

levelled off over the past three years – something that can be viewed in light of the pandemic – breaking the upward trend in the number of fee-paying students, at least temporarily.

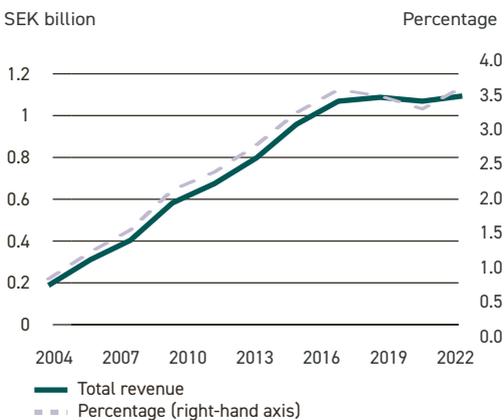
Over the last decade, HEIs revenue from application and tuition fees has increased from 1 to 4 per cent of allocations for first- and second-cycle education. Learn more about incoming students in the chapter *Internationalisation and mobility*.

Sharp increase in contract education

In addition to first- and second-cycle education funded directly by the Government, HEIs also offer contract education to private- and public-sector clients. Contract education is financed by fees, which must cover the HEI's costs in full. In 2022, HEIs' revenue from contract education was SEK 2.1 billion, an increase of 14 per cent on 2021.

The majority of assignments come from government agencies. Several in volume large programmes are arranged and financed based on an assignment to an HEI from the responsible government agency, most notably the Police Programme and the Officer's Programme, but also school leadership programmes. Continuing professional development on behalf of clients in the private sector accounts for a significantly smaller percentage of contract education.

Figure 7.3. Revenue from application and tuition fees during the period 2012–2022. SEK billion (2021 prices), application and tuition fees as a percentage of revenue from allocations for first- and second-cycle education and application and tuition fees.



Funding for research and third-cycle education

Research and third-cycle education at HEIs are largely state-funded, either through direct government funding or via other government agencies. Most private research funding comes from various foundations and non-profit organisations. Business enterprise funding of research at HEIs is less extensive.

Revenue increased by 4 per cent

HEIs' combined revenue from research and third-cycle education during 2022 was SEK 49.5 billion (Table 7.2), an increase of 4 per cent compared to 2021. Just over 70 per cent of combined revenue from research and third-cycle education came from the Swedish state, either through direct government funding or via research councils and other government agencies.

Direct government funding was SEK 21.6 billion,

Table 7.2. HEIs' revenue from research and third-cycle education, 2021 and 2022. By category of financier, SEK million (current prices) and change between 2021 and 2022.

Category of financier	2021	2022	Change
State	33,593	34,602	1,009
Direct government funding	21,607	21,566	-40
External state funding	11,986	13,035	1,049
Private financiers in Sweden	7,341	7,958	617
Non-profit organisations	6,050	6,539	488
Business enterprises	1,291	1,420	129
EU and international	3,433	3,648	214
Other public sector	2,754	2,692	-61
Municipalities and regions	1,423	1,412	-12
Public research foundations	1,330	1,281	-50
Other	284	326	41
Financial revenue	162	287	124
Total	47,568	49,512	1,944

Table 7.3. HEIs' revenue from research grants, 2021 and 2022. By category of financier, SEK million (current prices) and change between 2021 and 2022.

Category of financier	2021	2022	Change
Research councils	6,842	7,542	699
Private foundations and other non-profit organisations in Sweden	5,852	6,287	435
Government agencies (excl. research councils)	3,550	3,826	276
EU	2,162	2,149	-12
Public research foundations	1,330	1,281	-50
Other international grants	821	966	146
Business enterprises in Sweden	574	636	62
Regions	495	458	-37
Municipalities	167	156	-11
Other	49	82	33
Total	21,843	23,384	1,541

most of which was basic financing that HEIs can largely use as they see fit for research and third-cycle education within different fields of research and development. External funding channelled through research councils and other government agencies totalled SEK 13.0 billion.

Research grants continued to increase

Research grants account for 85 per cent of external funding. This funding is usually applied for in competition between researchers and research groups at different HEIs. Grants are awarded by a large number of public and private organisations (Table 7.3).

In 2022, HEIs' total revenue from grants for research and third-cycle education was SEK 23.4 billion, an increase of SEK 1.5 billion in current prices compared to 2021. Much of this increase was attributable to increased grant revenue from research councils and other government agencies that fund research, although there was also some increase in grants from private research foundations and non-profit organisations.

Revenue from grants decreased during the pandemic, while at the same time more grants than usual remained unspent. The decrease in grant revenue was not due to fewer calls for funding but rather that HEIs did not spend awarded grants at the usual rate. This trend shows signs of reversing.

Marginal increase in revenue from contract research

In addition to research grants, HEIs also have revenue from contract research. Besides research, this may involve R&D work or studies on behalf of an external stakeholder. Most contract research is conducted on behalf of government agencies and private companies. Combined revenue from such activities in 2022 was SEK 1.8 billion, a marginal increase in current prices compared to 2021.

Sweden's three major governmental funding bodies

The Swedish Research Council is Sweden's largest governmental research funding body and supports research in all scientific fields (www.vr.se). The Swedish Research Council funds research at HEIs for about SEK 5 billion annually. It also publishes *The Swedish Research Barometer*, which provides an overall description of the state of Swedish research and development (R&D) in international comparison.

Formas is the Swedish Government's research council for sustainable development. It supports research in areas such as the environment, agricultural sciences and spatial planning (www.formas.se). Formas funds research at HEIs for just over SEK 1 billion annually.

Vinnova is Sweden's innovation agency. Its mission is to strengthen Sweden's innovative capacity and contribute to sustainable growth (www.vinnova.se). Vinnova funds research and innovation at HEIs for just over SEK 1 billion annually.

Research at higher education institutions

Most publicly funded research in Sweden is conducted at higher education institutions (HEIs). HEIs' total revenue from research and third-cycle education during 2021 was SEK 47.6 billion. Around one third of this revenue was generated in the research and development field of medical and health sciences.

The most common form of publication at Swedish HEIs is scholarly articles, which constituted 62 per cent of all research publications in 2021.

Just under 3,000 licentiate and doctoral theses were published during 2021. This was roughly the same number as in 2020, and meant the decline that started in 2016 continued.

English was the dominant language of publication in theses. In all fields of research and development a majority of theses were written in English. While Swedish has a stronger position as the language of publication in social sciences and humanities and the arts, here too the majority of theses published in 2021 were in English.

Research resources

Most publicly funded research in Sweden is conducted at HEIs. Research is conducted in many different fields of research and development (hereafter fields of research) and the revenue generated varies considerably from one field to the next. You can learn more about how research at HEIs is funded in the chapter *The economy and financing of higher education*.

Revenue continued to increase

HEIs' total revenue from research and third-cycle education during 2021 was SEK 47.6 billion (Table 8.1). Data concerning revenue from different fields of research is taken from a survey conducted by Statistics Sweden every other year. Since the last survey in 2019, revenue has increased in all fields of research by between 5 and 11 per cent at current prices. The highest revenue in 2021, around one third of revenue, approximately SEK 15.5 billion, was generated

in the research field of medical and health sciences.

External funding accounted for over half of all research-related revenue, SEK 25.8 billion. This primarily comes from private and public foundations, non-profit organisations and Sweden's three governmental research councils: the Swedish Research Council, Forte and Formas. In 2021, the highest percentages of external funding were found in engineering and technology (59%) and medical and health sciences (58%). Humanities and the arts had the lowest percentage of external funding (34%).

The higher education sector's share of R&D varies from one country to another

As in the majority of OECD countries, most R&D in Sweden is conducted in the private sector. The percentage conducted in the higher education sector varies from one country to the next. It is higher within the EU than the OECD. In Sweden, the higher education sector accounts for 23 per cent of R&D, which is less than in Denmark and Norway but above average for the OECD and EU.

Figure 8.1. Percentage of R&D conducted by the higher education sector in selected countries, 2021. Percentage of total R&D spending. Source: OECD. Some data is preliminary.

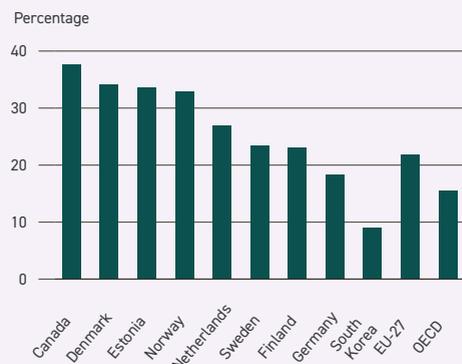


Table 8.1. HEIs' revenue from research and third-cycle education, 2021. By field of research, total and divided into direct government funding and external funding, SEK billion, and percentage of external funding. Source: Statistics Sweden.

Field of research	Revenue (SEK billion)			Percentage of external funding (%)
	Total revenue	Direct government funding	External funding	
All	47.57	21.61	25.8	54
Natural sciences	11.89	5.21	6.65	56
Engineering and technology	7.74	3.14	4.58	59
Medical and health sciences	15.49	6.45	8.96	58
Agricultural and veterinary sciences	2.86	1.35	1.51	53
Social sciences	6.6	3.51	3.06	46
Humanities and the arts	2.99	1.95	1.03	34

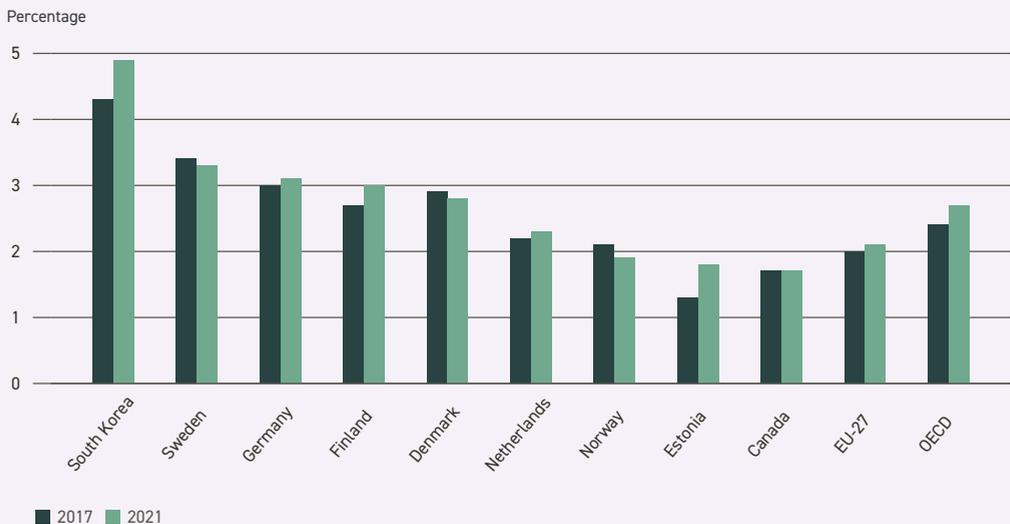
Investment in R&D continues to increase within the EU and OECD

The European Union has set the target of Member States investing 3 per cent of gross domestic product (GDP) in research and development (R&D). Sweden is one of the countries that invests most in R&D relative to GDP. Over recent years, Sweden's spending on R&D has been around 3.4 per cent of GDP.

The average investment in R&D for the OECD countries, is somewhat higher and increasing more rapidly than in EU Member States. Certain OECD countries continued to invest in R&D during the pandemic as part of their emergency management.

Figure 8.2. R&D expenditure as a percentage of GDP in selected countries, 2017 and 2021.

Source: OECD. Some data is preliminary.



Research publications

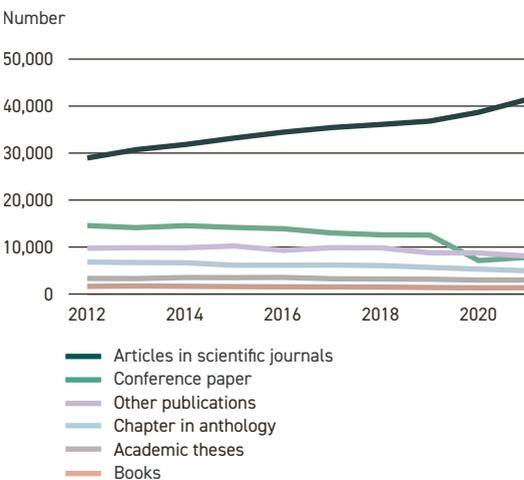
The Swedish Higher Education Authority (UKÄ) publishes annual statistics on research publications. These statistics are compiled from the National Library of Sweden’s SwePub database, an important source of data on scientific production (www.swepub.kb.se). The database is a national resource in Swedish and English containing data on academic publications at Swedish HEIs, including scholarly articles, conference papers and doctoral and licentiate theses. The database is compiled from data deliveries from HEIs. SwePub has good coverage of all fields of research.

Increasingly common to publish in scientific journals

Although scientific production at Swedish HEIs increased slightly in 2021 compared to 2020, the number of publications remains below pre-pandemic levels. To a large extent, this can be explained by the significant reduction in the number of conference papers presented during the pandemic, which had an impact on scientific production in both 2020 and 2021.

One obvious trend over the last decade has been the increasing percentage of research results being communicated through articles published in scientific journals (Figure 8.3). Articles have been the most common form of research publication throughout the period 2012–2021, continuously increasing both in number and as a percentage of all research publi-

Figure 8.3. Number of research publications by type, 2012–2021.



cations. In 2021, scholarly articles constituted 62 per cent of all research publications.

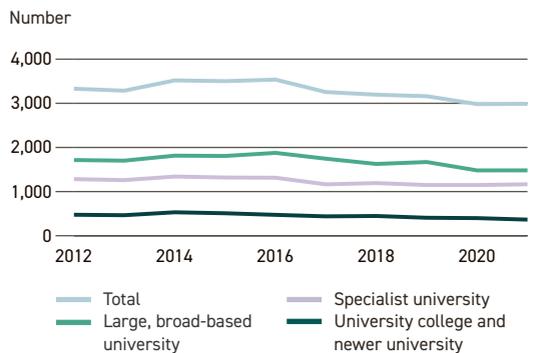
Using number of publications as a metric, medical and health sciences accounted for the largest volume of research in Sweden during 2021, followed by natural sciences and social sciences.

Articles published in scientific journals were particularly dominant in the fields natural sciences and medical and health sciences. Research results in humanities and the arts were more likely to be published in book form than those in the other fields of research.

Most theses written at large, broad-based universities

Third-cycle studies are most extensive at large, broad-based universities and specialist universities, and it is there that most licentiate and doctoral theses are written (Figure 8.4). Just under 3,000 licentiate and doctoral theses were published during 2021. While this was roughly the same number as in 2020, it represents a decline of approximately 15 per cent since 2016.

Figure 8.4. Number of theses by category of HEI, 2012–2021.



English the dominant language among published theses

English is the most common language of publication in theses. In 2021, 95 per cent of theses published at Swedish HEIs were written in English.

The language of publication differs somewhat between fields of research. In 2021, virtually all theses in the fields of natural sciences, engineering and technology, medical and health sciences and agricultural and veterinary sciences were written in English.

While Swedish has a stronger position as the lan-

guage of publication in social sciences and humanities and the arts, here too the majority of theses published in 2021 were in English. Since 2012, the number of theses in humanities and the arts written in English has increased by almost 20 per cent, to just under 70 per cent.

KEY FIGURES



Key figures for higher education institutions

Swedish higher education institutions (HEIs) vary in both size and specialisation. The tables on the following pages show a selection of quantitative data that describes in various ways the activities of the universities, university colleges and independent education providers.

First- and second-cycle education

Number of new entrants to higher education.

The data per HEI indicates the number of individuals who have begun studies at the first- or second-cycle level at the relevant HEI in academic year 2021/22 and who have not previously studied at another Swedish HEI.

Number of enrolled students. The data per HEI indicates the number of individuals who were enrolled for first- or second-cycle studies at the relevant HEI in academic year 2021/22. Students can be enrolled at more than one HEI in the same year. The total national number shows the net number of individuals, i.e., each individual is only counted once.

Number of graduates. Total number of first- or second-cycle graduates in academic year 2021/22, per HEI.

Number of graduates per programme. Number of graduates in academic year 2021/22 on general programmes, on programmes in the fine, applied and performing arts, on the largest programmes leading to professional qualifications, and on programmes leading to a professional qualification in total. A student can graduate from multiple programmes in the same year. The total national number shows the net total, i.e., each individual is only counted once.

HEIs' education profiles. Percentage of students (FTEs) at first- and second-cycle education per subject area academic year 2021/22, per HEI.

Third-cycle education

Number of new entrants. Number of third-cycle new entrants in 2021, per HEI.

Number of doctoral students. Total number of doctoral students in the 2021 autumn semester, per HEI.

Doctoral degrees. Number of awarded doctoral degrees in 2021, per HEI.

Research and teaching staff

Research and teaching staff. The number of research and teaching staff (in FTEs) 2021, per HEI. The figures include professors, senior lecturers, lecturers, career development positions, and other research and teaching staff.

Number of professors. Number of professors (in FTEs) 2021, per HEI.

Funding

Total funding. Total funding (SEK million) 2021, per HEI.

Percentage of total funding for research and third-cycle education. Percentage of total funding in 2021 for research and third-cycle education, per HEI.

Funding for research and third-cycle education. Total funding for research and third-cycle education (SEK million) 2021, per HEI.

Percentage direct government funding. Percentage of direct government funding of the HEI's total funding for research and third-cycle education 2021 (excluding financial revenues).

FTEs stands for full-time equivalents.

APE stands for annual performance equivalent.

ECTS stands for European Credit Transfer and Accumulation System.

R&D stands for research and development.

Table 1. Number of new entrants, enrolled students and graduates at first- or second-cycle education academic year 2021/22, percentage of women and men per HEI, and the percentage of FTEs at the second cycle.

	Number of new entrants	Percentage of women and men (%)
Universities		
Uppsala University	8,683	60/40
Lund University	8,330	59/41
University of Gothenburg	7,586	67/33
Stockholm University	9,250	65/35
Umeå University	4,715	61/39
Linköping University	5,681	55/45
Karolinska Institutet	1,421	73/27
KTH Royal Institute of Technology	4,223	34/66
Chalmers University of Technology (independent)	2,911	31/69
Luleå University of Technology	2,771	46/54
Stockholm School of Economics (independent)	781	40/60
Swedish University of Agricultural Sciences	1,192	66/34
Karlstad University	2,742	60/40
Linnaeus University	5,432	60/40
Örebro University	2,571	63/37
Mid Sweden University	2,292	62/38
Malmö University	3,790	66/34
Mälardalen University	2,350	61/39
University colleges		
Blekinge Institute of Technology	1,092	35/65
Swedish Defence University	318	35/65
Swedish School of Sport and Health Sciences	228	35/65
University of Borås	2,171	68/32
Dalarna University	1,844	60/40
University of Gävle	1,872	59/41
Halmstad University	2,204	55/45
Kristianstad University	1,667	69/31
University of Skövde	1,604	55/45
University West	1,538	57/43
Jönköping University (independent)	2,704	59/41
Södertörn University	2,020	69/31

KEY FIGURES FOR HIGHER EDUCATION INSTITUTIONS

Number of enrolled students	Percentage of women and men (%)	Number of graduates	Percentage of women and men (%)	Percentage of FTEs at the second cycle
47,378	61/39	6,121	62/38	26.5
40,706	58/42	6,705	59/41	27.0
47,017	66/34	6,226	70/30	24.9
54,848	64/36	6,445	69/31	19.4
30,547	64/36	3,748	65/35	21.3
31,528	57/43	4,834	60/40	25.1
10,584	75/25	2,191	78/22	40.8
16,857	35/65	3,177	37/63	42.9
12,041	33/67	2,130	33/67	37.8
15,770	51/49	1,479	56/44	16.8
2,250	43/57	559	43/57	55.8
6,846	70/30	910	73/27	34.8
16,508	65/35	2,004	66/34	16.4
34,974	65/35	3,057	66/34	13.2
13,501	64/36	2,450	68/32	17.5
18,228	68/32	1,430	70/30	9.7
20,466	68/32	3,068	71/29	17.4
14,346	66/34	2,017	75/25	16.2
5,475	40/60	614	43/57	24.7
1,375	40/60	367	34/66	19.4
1,354	41/59	193	48/52	16.6
15,670	68/32	1,629	73/27	14.9
12,607	64/36	1,228	70/30	11.3
12,654	64/36	1,306	73/27	10.0
9,984	62/38	1,307	63/37	14.9
11,458	72/28	1,267	75/25	9.6
9,078	58/42	982	63/37	9.8
9,113	67/33	1,313	68/32	15.2
11,208	65/35	1,877	65/35	17.5
10,813	69/31	1,683	73/27	9.5

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KEY FIGURES FOR HIGHER EDUCATION INSTITUTIONS

	Number of new entrants	Percentage of women and men (%)
Art, design and music academies		
Beckmans College of Design (independent)	28	54/46
Konstfack University of Arts, Craft and Design	123	80/20
Royal Institute of Art	44	80/20
Royal College of Music in Stockholm	151	41/59
Stockholm University of the Arts	163	75/25
Brunnsvik Folk High School (independent)		
Other independent education providers		
University College Stockholm (EHS)	97	65/35
Erica Foundation	1	
Marie Cederschiöld University	159	83/17
Gammelkroppa School of Forestry	10	30/70
Johannelund School of Theology	29	59/41
Newman Institute	25	40/60
Swedish Red Cross University	147	83/17
Scandinavian Academy for Psychotherapy Development	1	
Sophiahemmet University	113	89/11
University College of Music Education in Stockholm	16	63/38
Swedish Institute for CBT & Schema Therapy	1	
ALT School of Theology	39	51/49
World Maritime University	132	34/66
Total	93,741	59/41

KEY FIGURES FOR HIGHER EDUCATION INSTITUTIONS

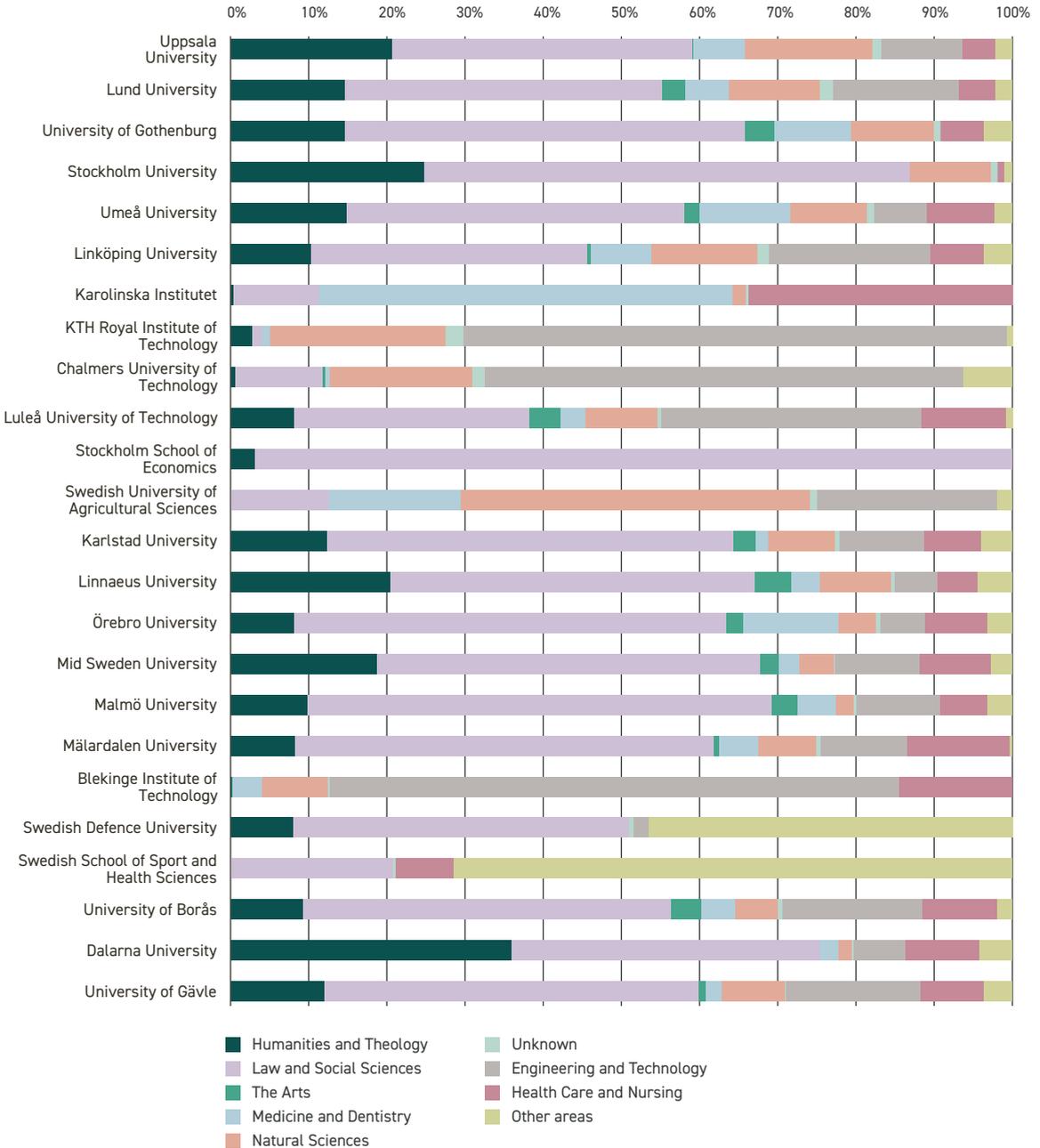
Number of enrolled students	Percentage of women and men (%)	Number of graduates	Percentage of women and men (%)	Percentage of FTEs at the second cycle
124	63/37	34	68/32	0.0
833	77/23	190	77/23	38.6
245	66/34	24	67/33	63.1
928	47/53	177	41/59	28.5
782	72/28	98	74/26	31.9
				0.0
707	62/38	67	75/25	24.5
63	86/14	9	67/33	100.0
1,337	84/16	372	89/11	10.3
11	36/64	-		0.0
221	52/48	13	23/77	10.0
226	35/65	-		7.7
870	83/17	211	81/19	12.3
69	75/25	15	80/20	100.0
1,194	88/12	342	86/14	26.8
183	68/32	17	65/35	0.0
87	83/17	25	76/24	100.0
313	57/43	26	58/42	7.5
132	34/66			100.0
450,405	62/38	73,543	64/36	22.1

KEY FIGURES FOR HIGHER EDUCATION INSTITUTIONS

Table 2. Number of graduates at first- or second-cycle education academic year 2021/22, percentage of women and men, per category of qualification and qualification. Of professional degrees, only programmes with more than 500 graduates are included in the table.

Category of qualification and qualification	Number of graduates per programme academic year 2021/22	Percentage of women and men (%)
General qualifications (net)	45,119	61/39
Higher Education Diploma	1,104	41/59
Degree of Bachelor	27,963	64/36
Degree of Master (60 HE credits)	5,718	70/30
Old Degree of Master (60 HE credits)	57	66/34
Degree of Master (120 HE credits)	12,152	51/49
Qualifications in the fine, applied and performing arts (net)	1,077	61/39
Higher Education Diploma	12	42/58
Degree of Bachelor in Fine Arts	700	58/42
Degree of Master in Fine Arts (60 HE credits)	30	77/23
Degree of Master in Fine Arts (120 HE credits)	349	65/35
Professional qualifications (total number, net)	36,504	69/31
Degree of Master of Science in Engineering	4,443	35/65
Degree of Bachelor of Science in Nursing	4,381	88/12
Degree of Bachelor of Arts in Pre-School Education	2,916	96/4
Degree of Master of Arts/Science in Secondary/Upper Secondary Education	3,109	57/43
Degree of Bachelor of Arts/Degree of Master of Arts in Primary Education	2,943	80/20
Degree of Bachelor of Science in Engineering	2,416	30/70
Postgraduate Diploma in Specialist Nursing	2,644	87/13
Degree of Bachelor of Science in Social Work	2,471	85/15
Degree of Master of Science in Medicine	1,476	58/42
Degree of Master of Laws	1,402	66/34
Degree of Master of Science in Business and Economics	806	52/48
Degree of Bachelor of Arts/Degree of Master of Arts in Education	734	77/23
Degree of Master of Science in Psychology	540	69/31
Higher Education Diploma in Vocational Education	619	58/42
Degree of Bachelor of Science in Physiotherapy	568	63/38
Postgraduate Diploma in Special Educational Needs	572	93/7
Postgraduate Diploma in Special Needs Training	521	93/7
Total number of graduates	73,543	64/36

Table 3. The HEIs' education profile. Percentage of students (FTEs) at first- and second-cycle education, per subject area, academic year 2021/22, per HEI.



KEY FIGURES FOR HIGHER EDUCATION INSTITUTIONS

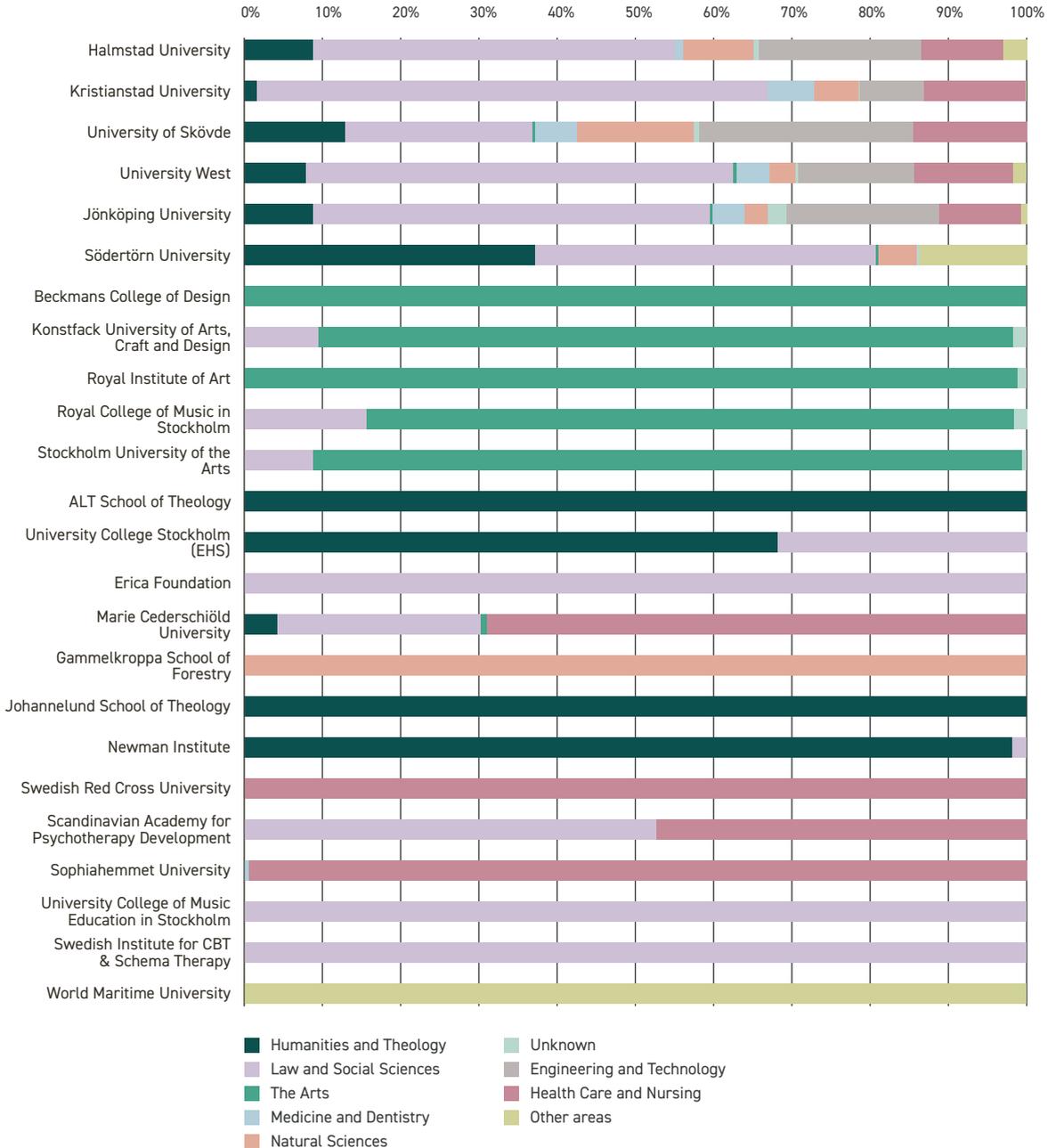


Table 4. Number of new entrants in third-cycle education 2022 and total number of doctoral students autumn 2022, percentage of women and men, per HEI.

	Number of new entrants	Percentage women/men (%)	Total number of doctoral students	Percentage women/men (%)
Universities				
Uppsala University	337	54/46	2,146	52/48
Lund University	404	52/48	2,431	49/51
University of Gothenburg	278	55/45	1,744	60/40
Stockholm University	157	53/47	1,125	53/47
Umeå University	166	61/39	846	56/44
Linköping University	182	48/52	1,054	51/49
Karolinska Institutet	386	63/37	2,060	62/38
KTH Royal Institute of Technology	216	38/62	1,520	34/66
Chalmers University of Technology (independent)	147	33/67	990	34/66
Luleå University of Technology	81	41/59	498	42/58
Stockholm School of Economics (independent)	21	52/48	150	49/51
Swedish University of Agricultural Sciences	103	59/41	492	60/40
Karlstad University	26	62/38	221	58/42
Linnaeus University	38	61/39	264	60/40
Örebro University	73	68/32	451	58/42
Mid Sweden University	31	58/42	147	54/46
Malmö University	41	61/39	250	62/38
Mälardalen University	32	47/53	183	45/55
University colleges				
Blekinge Institute of Technology	14	21/79	94	31/69
Swedish Defence University	2	100/0	22	36/64
Swedish School of Sport and Health Sciences	10	70/30	26	54/46
University of Borås	26	69/31	84	62/38
Dalarna University	15	60/40	67	64/36
University of Gävle	10	50/50	62	55/45
Halmstad University	11	45/55	66	56/44
Kristianstad University	5	80/20	39	33/67
University of Skövde	7	71/29	23	87/13
University West	9	78/22	66	65/35
Jönköping University (independent)	29	59/41	155	59/41
Södertörn University	30	77/23	92	65/35

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KEY FIGURES FOR HIGHER EDUCATION INSTITUTIONS

	Number of new entrants	Percentage women/men (%)	Total number of doctoral students	Percentage women/men (%)
Art, design and music academies				
Beckmans College of Design (independent)				
Konstfack University of Arts, Craft and Design				
Royal Institute of Art				
Royal College of Music in Stockholm				
Stockholm University of the Arts			21	62/38
Other independent education providers	39	59/41	86	64/36
Total	2,926	54/46	17,475	52/48

Table 5. Number of licentiate degrees and doctoral degrees, percentage of women and men, per HEI, in 2022.

	Number of doctoral degrees	Percentage women/men (%)	Number of licentiate degrees	Percentage women/men (%)
Universities				
Uppsala University	314	47/53	45	42/58
Lund University	418	53/47	25	28/72
University of Gothenburg	288	59/41	15	53/47
Stockholm University	224	47/53	32	47/53
Umeå University	98	45/55		
Linköping University	150	42/58	37	30/70
Karolinska Institutet	390	59/41	2	100/0
KTH Royal Institute of Technology	251	28/72	38	29/71
Chalmers University of Technology (independent)	167	32/68	137	28/72
Luleå University of Technology	57	33/67	37	35/65
Stockholm School of Economics (independent)	12	17/83		
Swedish University of Agricultural Sciences	84	51/49	3	67/33
Karlstad University	18	50/50	5	60/40
Linnaeus University	41	66/34	4	50/50
Örebro University	59	53/47	4	50/50
Mid Sweden University	27	56/44	14	50/50
Malmö University	24	58/42	4	25/75
Mälardalen University	32	41/59	8	25/75
University colleges				
Blekinge Institute of Technology	9	44/56	7	29/71
Swedish Defence University				
Swedish School of Sport and Health Sciences	7	14/86		
University of Borås	12	75/25	2	100/0
Dalarna University	5	60/40	1	0/100
University of Gävle	6	33/67	2	50/50
Halmstad University	9	33/67	1	0/100
Kristianstad University				
University of Skövde	7	43/57	1	100/0
University West	5	40/60	3	33/67
Jönköping University (independent)	23	74/26	7	43/57
Södertörn University	10	40/60	2	100/0

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KEY FIGURES FOR HIGHER EDUCATION INSTITUTIONS

	Number of doctoral degrees	Percentage women/men (%)	Number of licentiate degrees	Percentage women/men (%)
Art, design and music academies				
Beckmans College of Design (independent)				
Konstfack University of Arts, Craft and Design				
Royal Institute of Art				
Royal College of Music in Stockholm				
Stockholm University of the Arts	3	100/0		
Other independent education providers	5	60/40		
Total	2,755	48/52	436	36/64

Table 6. Total number of research and teaching staff (FTEs) and number of professors (FTEs), percentage of women and men, in 2022, per HEI.

	Total research and teaching staff		Professors	
	FTEs	Percentage women/men (%)	FTEs	Percentage women/men (%)
Universities				
Uppsala University	3,233	44/56	637	34/66
Lund University	3,580	43/57	637	30/70
University of Gothenburg	2,956	54/46	553	39/61
Stockholm University	2,322	47/53	521	34/66
Umeå University	2,006	49/51	312	33/67
Linköping University	1,695	41/59	321	26/74
Karolinska Institutet	2,444	55/45	346	35/65
KTH Royal Institute of Technology	1,736	30/70	346	21/79
Chalmers University of Technology (independent)	1,312	28/72	226	20/80
Luleå University of Technology	647	39/61	151	28/72
Stockholm School of Economics (independent)	117	35/65	30	13/87
Swedish University of Agricultural Sciences	1,554	49/51	179	33/67
Karlstad University	688	50/50	94	33/67
Linnaeus University	984	49/51	142	29/71
Örebro University	679	51/49	97	35/65
Mid Sweden University	554	53/47	74	39/61
Malmö University	944	60/40	93	37/63
Mälardalen University	562	52/48	69	41/59
University colleges				
Blekinge Institute of Technology	230	37/63	38	15/85
Swedish Defence University	264	31/69	16	19/81
Swedish School of Sport and Health Sciences	75	53/47	7	27/73
University of Borås	420	57/43	36	31/69
Dalarna University	411	60/40	36	45/55
University of Gävle	433	53/47	45	25/75
Halmstad University	332	46/54	41	35/65
Kristianstad University	336	63/37	30	34/66
University of Skövde	277	43/57	30	36/64
University West	356	58/42	41	37/63
Jönköping University (independent)	501	53/47	50	42/58
Södertörn University	414	53/47	68	40/60

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KEY FIGURES FOR HIGHER EDUCATION INSTITUTIONS

	Total research and teaching staff		Professors	
	FTEs	Percentage women/men (%)	FTEs	Percentage women/men (%)
Art, design and music academies				
Beckmans College of Design (independent)	9	44/56		
Konstfack University of Arts, Craft and Design	84	61/39	13	61/39
Royal Institute of Art	51	55/45	8	58/42
Royal College of Music in Stockholm	86	33/67	20	28/72
Stockholm University of the Arts	93	61/39	14	56/44
Brunnsvik Folk High School (independent)	5	10/90		
Other independent education providers				
ALT School of Theology	10	39/61	2	67/33
University College Stockholm (EHS)	18	44/56	6	27/73
Erica Foundation	17	77/23		
Marie Cederschiöld University	81	69/31	10	65/35
Gammelkroppa School of Forestry	3	36/64		
Johannelund School of Theology	9	22/78		
Newman Institute	8	39/61	1	0/100
Swedish Red Cross University	38	75/25	2	91/9
Scandinavian Academy for Psychotherapy Development	2	67/33		
Sophiahemmet University	65	88/12	7	94/6
University College of Music Education in Stockholm	11	47/53	0	100/0
Swedish Institute for CBT & Schema Therapy	2	50/50		
World Maritime University	53	33/67	12	6/94
Total	32,706	47/53	5,358	32/68

Table 7. Total funding (SEK million), and the percentage of total funding for research and third-cycle education, 2022 (%), per HEI. The table also shows the funding for research and third-cycle education (SEK million) and the percentage of direct government funding for research, 2022 (%), per HEI.

	Total funding 2022 SEK million	Percentage of total funding for research and third-cycle education (%)	Funding for research and third-cycle education 2022 SEK million	Percentage direct government funding for research (%)
Universities				
Uppsala University	8,046	70	5,618	44
Lund University	9,921	69	6,880	40
University of Gothenburg	7,492	61	4,568	48
Stockholm University	5,973	61	3,640	48
Umeå University	4,977	57	2,841	49
Linköping University	4,598	57	2,639	43
Karolinska Institutet	7,863	84	6,610	34
KTH Royal Institute of Technology	5,289	70	3,719	38
Chalmers University of Technology (independent)	4,154	71	2,966	34
Luleå University of Technology	1,928	56	1,085	39
Stockholm School of Economics (independent)	560	41	230	
Swedish University of Agricultural Sciences	4,182	70	2,915	44
Karlstad University	1,341	34	454	63
Linnaeus University	2,229	29	655	60
Örebro University	1,631	41	668	59
Mid Sweden University	1,177	40	468	61
Malmö University	1,925	26	504	59
Mälardalen University	1,283	40	514	55
University colleges				
Blekinge Institute of Technology	536	36	191	57
Swedish Defence University	695	21	149	48
Swedish School of Sport and Health Sciences	205	33	68	51
University of Borås	944	23	213	49
Dalarna University	770	21	161	68
University of Gävle	774	24	186	62
Halmstad University	733	28	204	51
Kristianstad University	646	20	127	78
University of Skövde	538	25	135	49
University West	706	26	183	53
Jönköping University (independent)	1,147	26	302	48
Södertörn University	1,062	36	378	33

KEY FIGURES FOR HIGHER EDUCATION INSTITUTIONS

	Total funding 2022 SEK million	Percentage of total funding for research and third-cycle education (%)	Funding for research and third-cycle education 2022 SEK million	Percentage direct government funding for research (%)
Art, design and music academies				
Beckmans College of Design (independent)	38			
Konstfack University of Arts, Craft and Design	225	12	27	82
Royal Institute of Art	98	21	21	64
Royal College of Music in Stockholm	214	15	33	69
Stockholm University of the Arts	291	21	61	93
Other independent education providers				
ALT School of Theology	16	12	2	82
University College Stockholm (EHS)	36	25	9	44
Erica Foundation	11			
Marie Cederschiöld University	206	20	42	37
Gammelkroppa School of Forestry	3			
Johannelund School of Theology	15			
Newman Institute	9			
Swedish Red Cross University	121	12	15	32
Scandinavian Academy for Psychotherapy Development				
Sophiahemmet University	137	22	30	18
University College of Music Education in Stockholm	18			
Swedish Institute for CBT & Schema Therapy				
Total	84,758	58	49,512	43

