

NATIONAL STATISTICAL PROFILES

FOR

EU MEMBER STATES & ASSOCIATED COUNTRIES

COLLECTING SEX-DISAGGREGATED DATA ON WOMEN IN SCIENCE

Introduction

In order to respond to the Research Council's Resolution¹, the Commission has developed a *double-track strategy*, which has been pursued through:

- on the one hand, a *“top-down” approach*, i.e. developing every effort to promote, as far as possible, the gendering of statistical collections at national and European level, in order to get harmonised and comparable sex-disaggregated data for R&D and/or S&T human resources;
- on the other hand, a *“bottom-up” approach*, i.e. exploiting sex-disaggregated data which exist at national level to develop the needed gender(ed) indicators, and which at the same time would enable us to take into account the respective national contexts and situations of women scientists.

This annex is the very first result of this bottom-up approach for all the 30 countries participating in the Helsinki Group.

The “bottom-up” approach

The rationale for this approach is that discrimination (whether horizontal or vertical segregation) faced by women in science, in each European country, can be represented with statistical data already available at national level. For this approach to be statistically valid the data used have been assessed against international standards (such as those of the Frascati Manual²) with all useful related footnotes to avoid any unwanted comparisons and/or misinterpretations.

Before entering into an exercise of national data collection, the Commission made a review of existing data to see if they could feed information needs for the under-representation of women in science.

The first step taken by the Commission was therefore to monitor, from February 1999 until June 2000, a survey on *“Women and scientific Employment: Mapping the European data”* carried out by Dr Judith Glover, assisted by Dr Diane Bebbington, from University of Surrey Roehampton in London. The overall aim of the survey was to scrutinise 61 national and European Union data sets in terms of their potential to answer a series of research questions³ of key interest to the study of women's scientific employment in each EU Member State.

The main findings of this survey, which resulted in a Directory⁴ of more than 300

¹ already cited

² the Frascati Manual is devoted to the measurement of technical-scientific activities and identifies three categories of R&D personnel: researchers, technicians and supporting staff.

³ these included: hierarchical sex segregation; the relationship between scientific qualifications and occupational outcomes; attrition (the higher the level of scientific education and employment, the lower the level of women's representation); fine differences between the scientific and applied scientific disciplines; differentials between women's and men's salaries; distinctions between public sector and business sector employment; the relationship of women scientists' domestic situation to their employment status; and the availability of the data (published data and secondary analysis).

⁴ A hard copy of which can be requested at the following e-mail address: brigitte.degen@cec.eu.int

pages, were that both “general purpose” data sets (e.g. Labour Force Surveys) as well as more dedicated surveys had little potential⁵ for understanding the dynamics of women's scientific employment as it changes over time.

These conclusions allowed the Commission to propose to the Helsinki Group members to take part in a new project on the “*Design and collection of statistical indicators on women in science*”⁶ carried out by Eurogramme, a consultancy firm established in Luxembourg.

Since the beginning of the project in May 2000, Eurogramme has been completing a **global database with primary sex-disaggregated data** covering five areas⁷. At the end of 2000, the Commission proposed to the Helsinki Group delegates to set up a sub-group of Statistical Correspondents⁸ to provide technical support for data validation and updating. This sub-group, monitored by the Commission, met for the 1st time in March 2001, again in October 2001, and are due to meet for a third time in March 2002.

It should be underlined that several of these Statistical Correspondents, especially in the Eastern and Central European countries, are also members of the Eurostat R&D Working Party and of the OECD Network of Experts on Science, Technology and Innovation (NESTI). This allows them to promote the Women and Science issue, and the gendering of statistical data, in these relevant fora.

National Statistical Profiles

The 30 national statistical profiles⁹ presented hereafter on the presence of women in science in the 15 Member States and in the 15 associated countries are the first outcome of the wider data collection exercise. Each profile has four sections:

⁵ On the one hand, most “general purpose” data sets have one common problem: the numbers of women scientists are too small for anything but the most basic analyses; on the other hand, some of the dedicated surveys tend to be narrowly focused on one particular area of scientific employment or on one of the sciences. They tend also to lack coverage – either from the point of view of national Representativeness or in terms of focusing on public sector academic employment. A further problem with almost all of the data sets is that there is a clear lack of data, which includes a longitudinal or work-history element. This means that only a 'snapshot' can be obtained.

⁶ This project was launched through an open call for tenders in February 1999, long before the Helsinki Group format was decided; therefore, it only covered, in its 1st year, the EU Member States. It was extended to all associated countries in April 2001.

⁷ which members of the Helsinki Group identified, during their first meeting on November 1999, as their minimum common denominator for which available data could be provided to the Commission, i.e.:

- 1) Number of students by gender and by scientific disciplines (with a description of each discipline's coverage);
- 2) Number of graduates by gender and by scientific disciplines;
- 3) Research staff in the universities and research centres by level (i.e. pre-doc, post-doc, assistants, associate professors, full professors, or any other framework applicable in the country), by gender and by scientific disciplines;
- 4) Number of applicants and beneficiaries of research public funds by type of grants and by gender;
- 5) Gender distribution of the boards of public research bodies (research councils, research centres, and universities), academies and other research institutions.

⁸ List of members in Annex 5.

⁹ For Belgium, 2 sub-profiles are presented for Flanders and French-speaking Community of Belgium

- the ‘bar chart’, which gives a first glimpse of the representation of women scientists in the public domain, as compared to their presence in the population and in the labour force;
- two ‘pie charts’, which show the distributions of women as undergraduate students and as working researchers by scientific field;
- the ‘scissors diagram’, which gives a graphic impression of the ‘leaky pipeline’ as described in the ETAN report¹⁰;
- the ‘funding table’, which tells us, for some countries, how many research funding applications were made by and granted to men and women.

The ‘bar chart’

The patterns of distribution here are surprisingly homogenous. The exceptions occur for countries such as Luxembourg, Cyprus, Iceland and Malta, which send many higher education students abroad. The statistics, given at the foot of this graph, reflect the number of women and men researchers, in each of the public sectors as a percentage of the total workforce. It is similar to the indicator “*Number of Researchers in relation to the total workforce*” presented in Theme 1 of the Benchmarking of national research policies. However, the results here are different since the Head Count figure is used in the denominator instead of the FTE figure – and, of course, the results are further broken down by gender and institutional sector.

The ‘pie charts’

The intention of the pie charts is to give an impression of how the concentrations of women differ between education and employment. This is by no means intended to be a conclusive analysis. For example, one of the striking commonalities across many countries is the fact that a much smaller proportion of women have graduated in natural sciences in the most recent year available than are currently represented among Higher Education research staff. This could mean that research in the natural sciences is concentrated in the Higher Education sector or that women’s interest in the natural sciences is tailing off.

The ‘scissors diagram’

This report also presents scissors diagrams for 30 countries. This graphic concept, which was introduced in the ETAN report¹¹, shows that women are not moving up through the echelons of scientific careers as much as their male counterparts. It does not tell us about rates of mobility, but instead serves to provide a cross-sectional picture of the status quo and therefore an inkling of the career opportunities faced by today’s women graduates, if nothing is to change between now and their retirement. Although this trend is largely similar for all countries, the stages at which the divergence begins vary. It is clear that secondary analysis is needed now, to test these patterns longitudinally, using retrospective data, when they become available, and to measure the impact of activities to promote women scientists.

¹⁰ already cited

¹¹ already cited

Producing these data was not without its technical challenges, many of which are explained in the methodological notes¹². There are two main areas that are still under development:

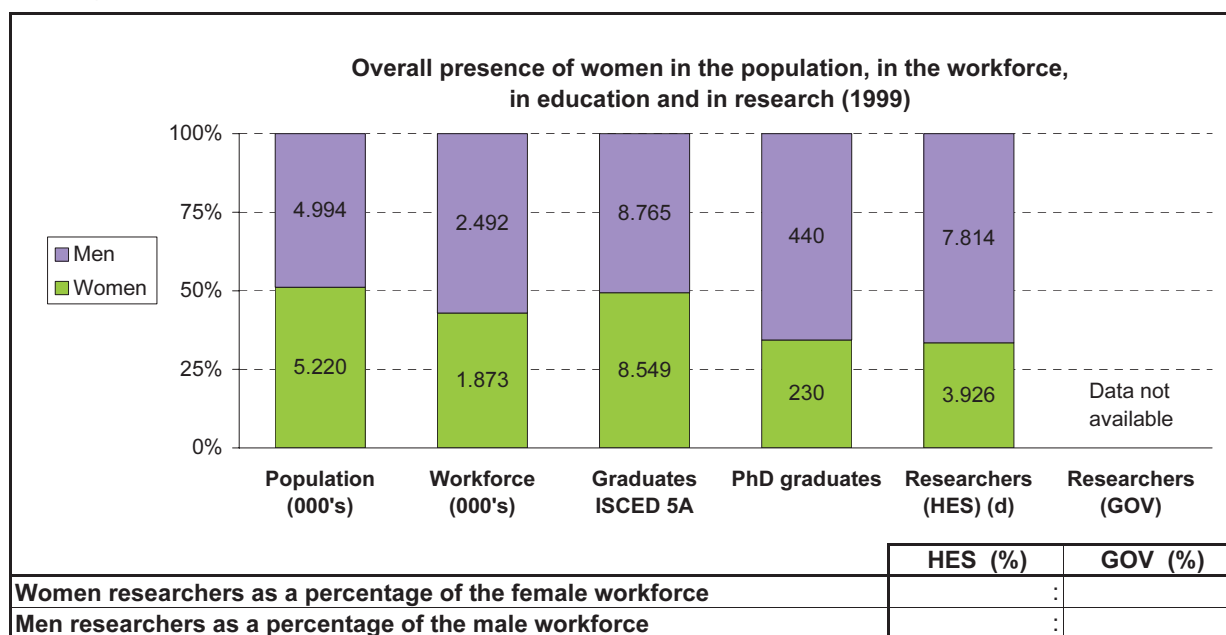
- the use of graduates from ISCED 5A *first degree programmes only* in the first of the two pie charts. This is intended to show the disciplines that are of interest to girls and young women who have decided to remain in education at the completion of compulsory education. However, for some countries, such as Finland, France, Estonia, Poland and Latvia, the *second degree programme* is also meaningful.
- the use of nationally defined steps to describe mobility in academic careers in the scissors diagrams. The coverage of academic staff that can be reported as ‘*Professors*’ by countries varies widely, the most notable differences being between Spain, whose broad definition extends to a total of 73,320 academic researchers (of whom 23,182 are women) as opposed to Germany, who only reports 36,916 (of whom 3,459 are women) of their most senior staff. The reader is therefore asked to interpret these profiles with caution.

The ‘funding table’

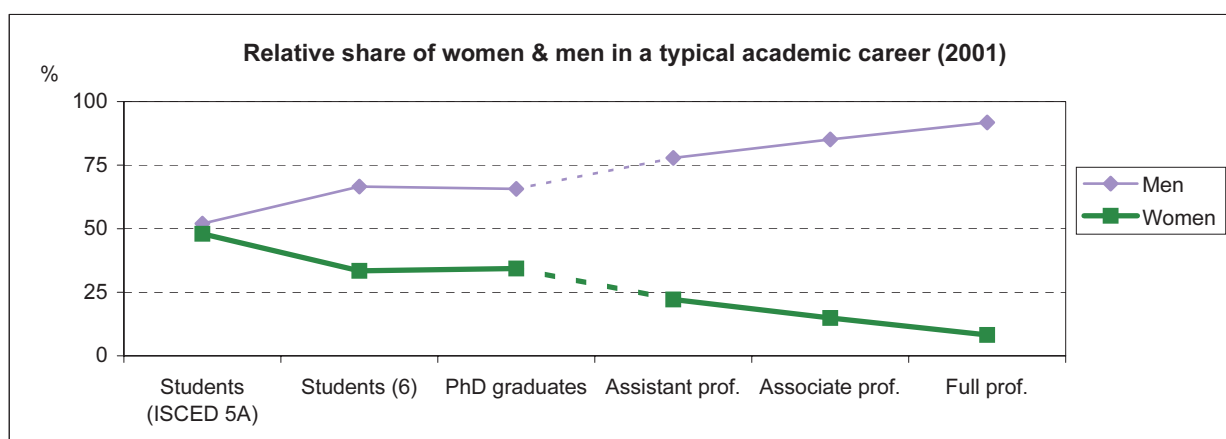
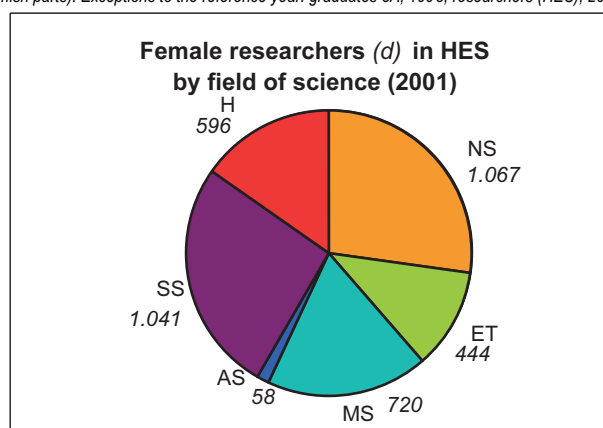
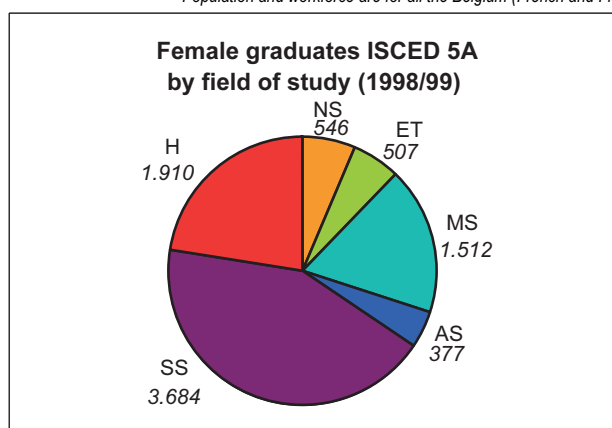
There is some diversity in countries’ ability to report on funding applications and beneficiaries at national level, and it has not yet been possible to run any checks on the completeness of these data. However, this first glimpse confirms that women are less likely to apply for funding than men are. To what extent this is due to their lower representation in research remains, however, the object of further analysis. Nevertheless, it is striking that success rates are more or less the same in most countries for both women and men.

¹² To be found at the end of this annex

Belgium - Flanders



Population and workforce are for all the Belgium (French and Flemish parts). Exceptions to the reference year: graduates 5A, 1998; researchers (HES), 2001.

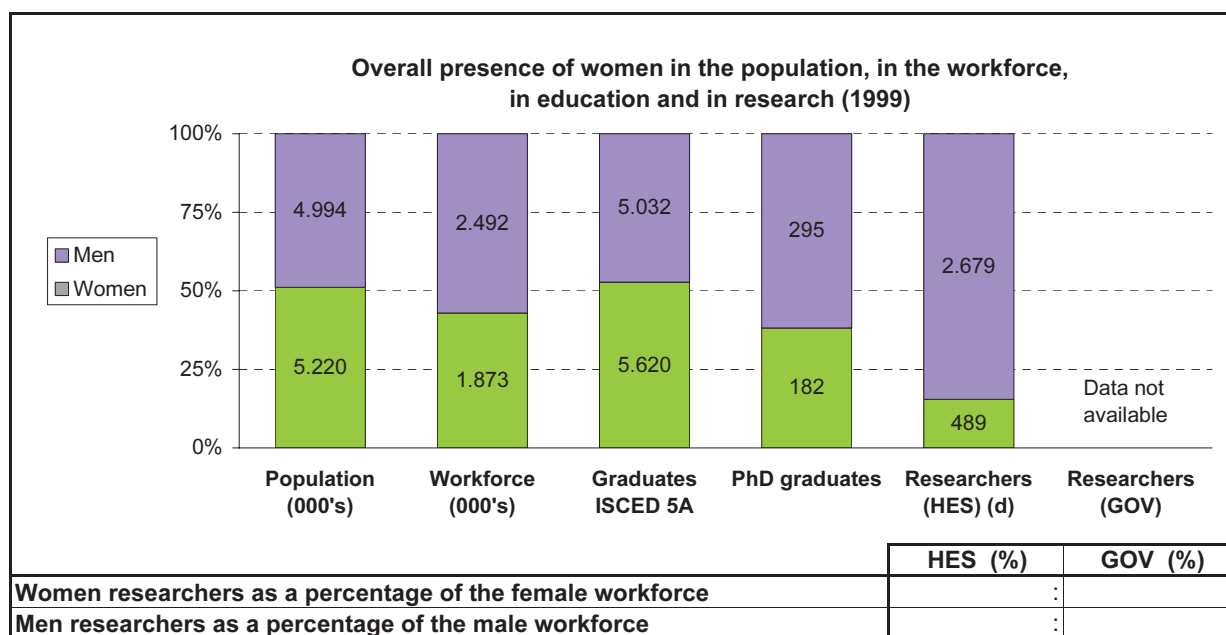


Exceptions to the reference year: students, 1998; PhD graduates, 1999

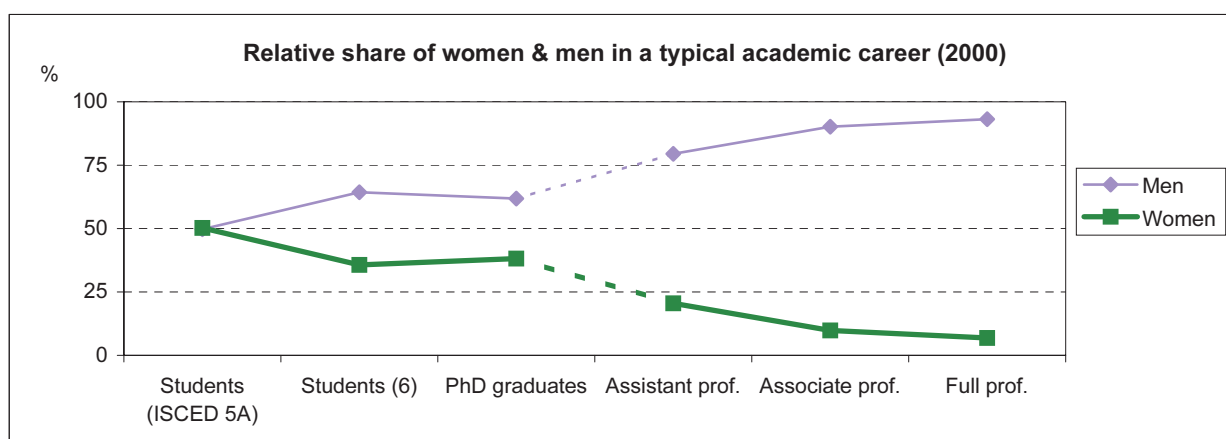
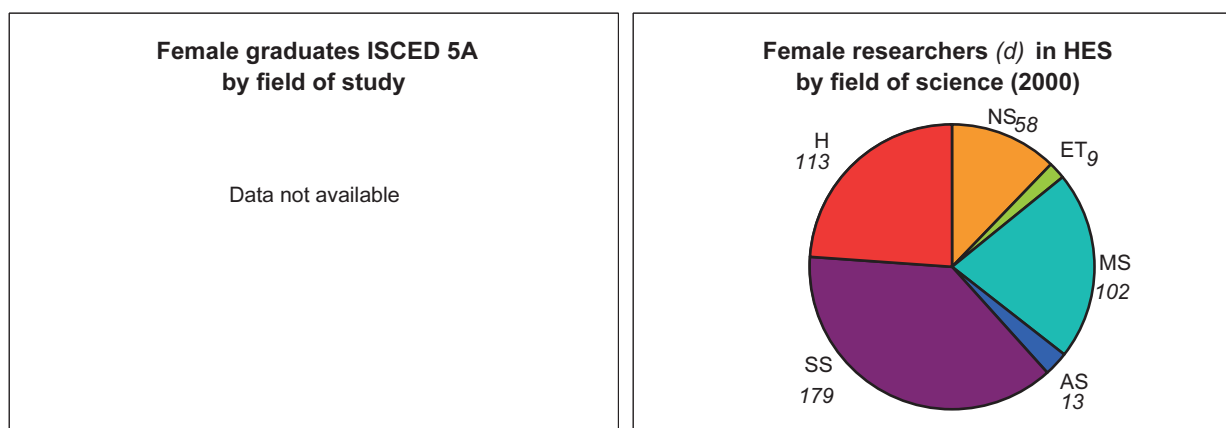
Funding and Success Rates (2000)

	Women	Men	Percentage Women
Funding applications	425	686	38,3
Funding beneficiaries	210	338	38,3
Funding success rate (%)	49,4	49,3	

Belgium - French Speaking Community



Population and workforce are for all the Belgium (French and Flemish parts). Exceptions to the reference year: researchers (HES), 2000

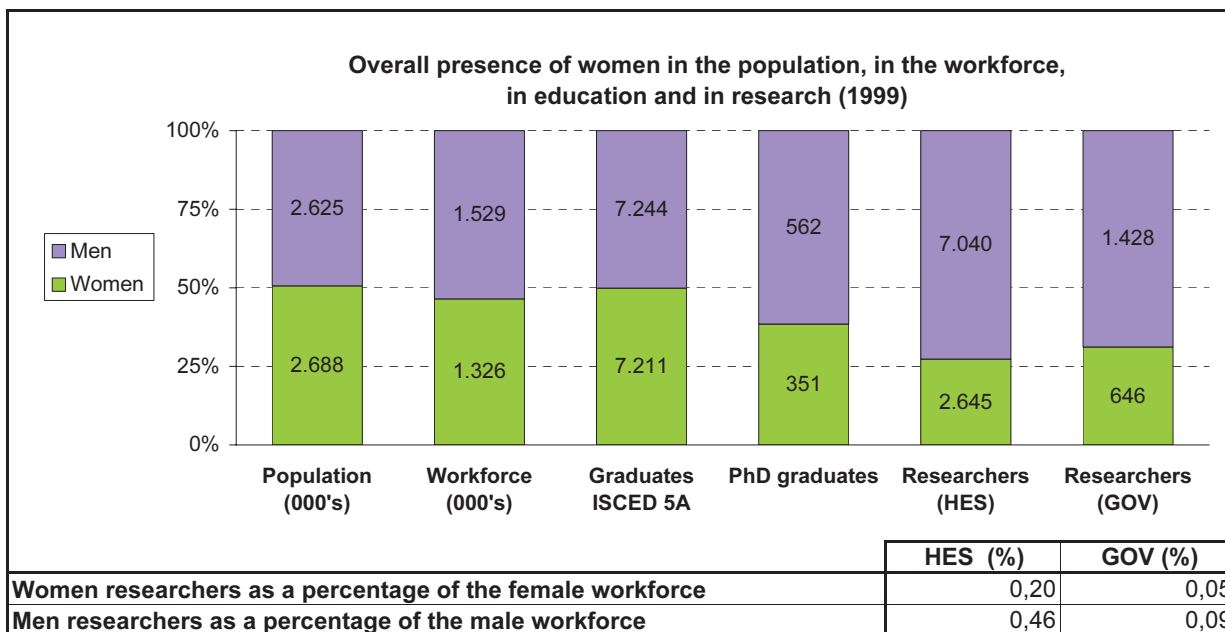


Exceptions to the reference year: students and PhD graduates, 1999

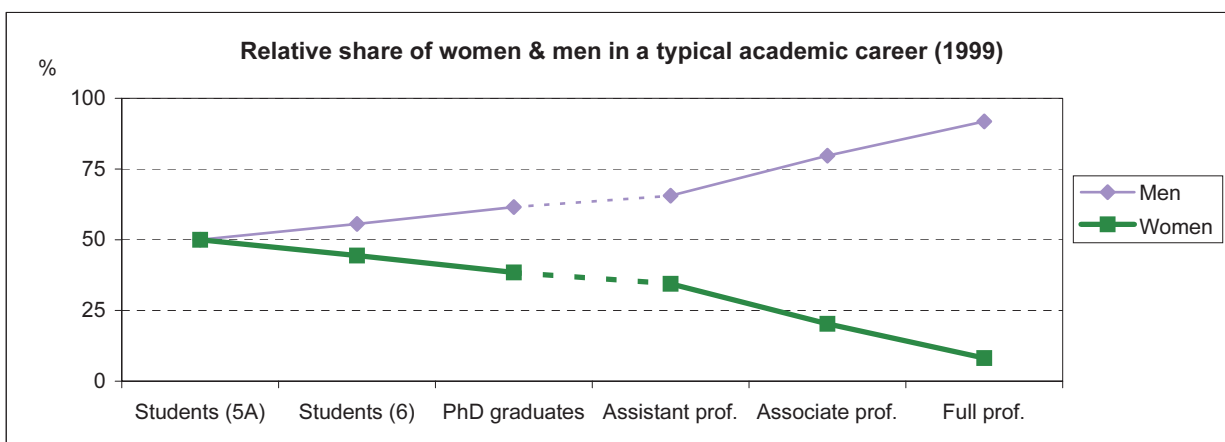
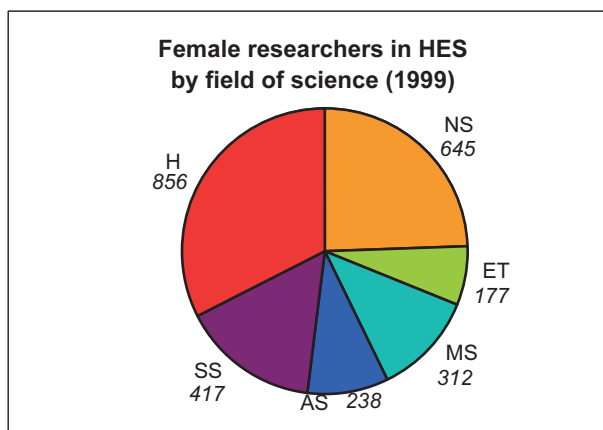
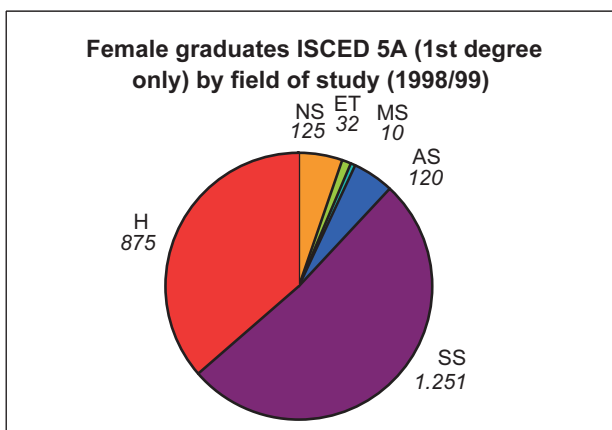
Funding and Success Rates (1998)

	Women	Men	Percentage Women
Funding applications	462	2171	17,5
Funding beneficiaries	486	1593	23,4
Funding success rate (%)	57,1	56,6	

Denmark



Exceptions to the reference year: graduates, 1998

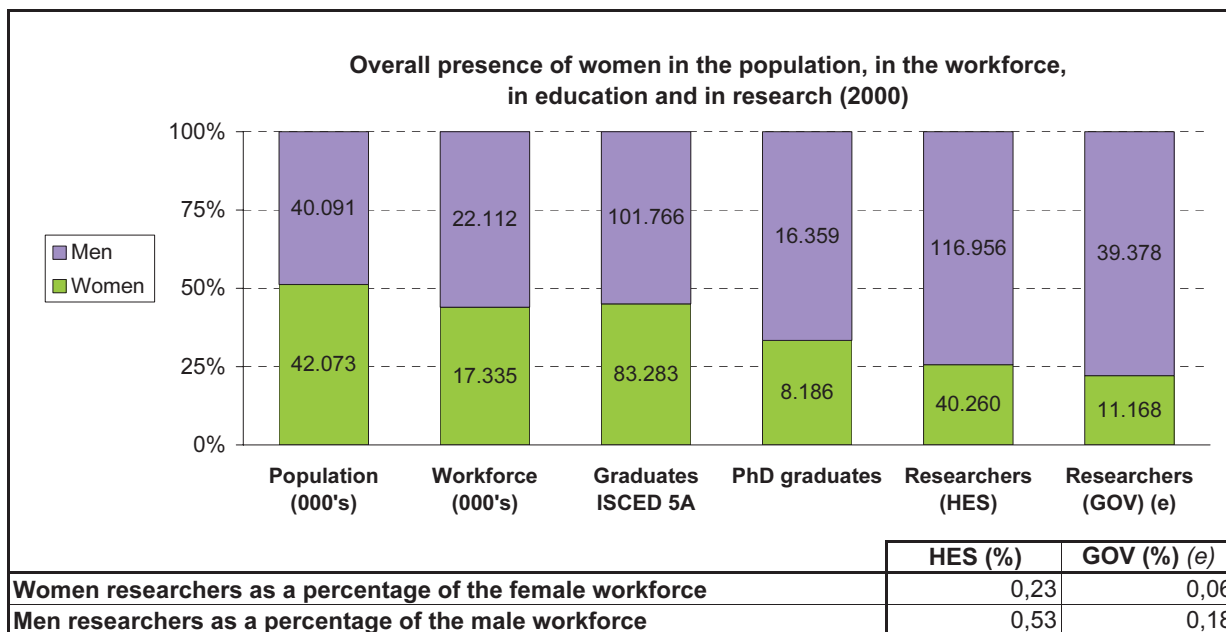


Exceptions to the reference year: students and PhD graduates, 1998

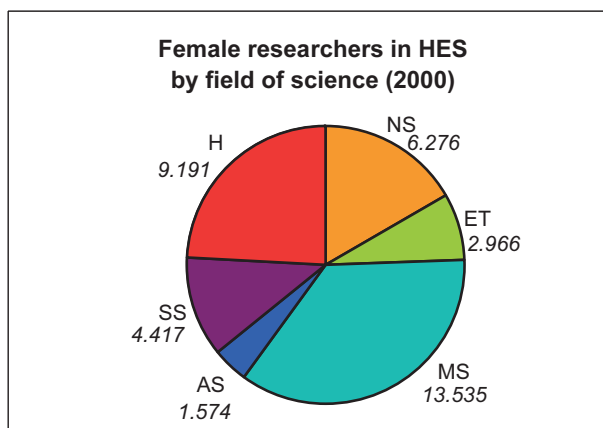
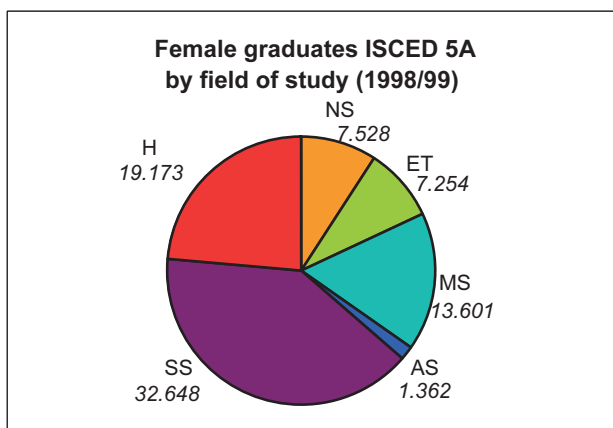
Funding and Success Rates (2000)

	Women	Men	Percentage Women
Funding applications	745	2038	26,8
Funding beneficiaries	205	748	21,5
Funding success rate (%)	27,5	36,7	

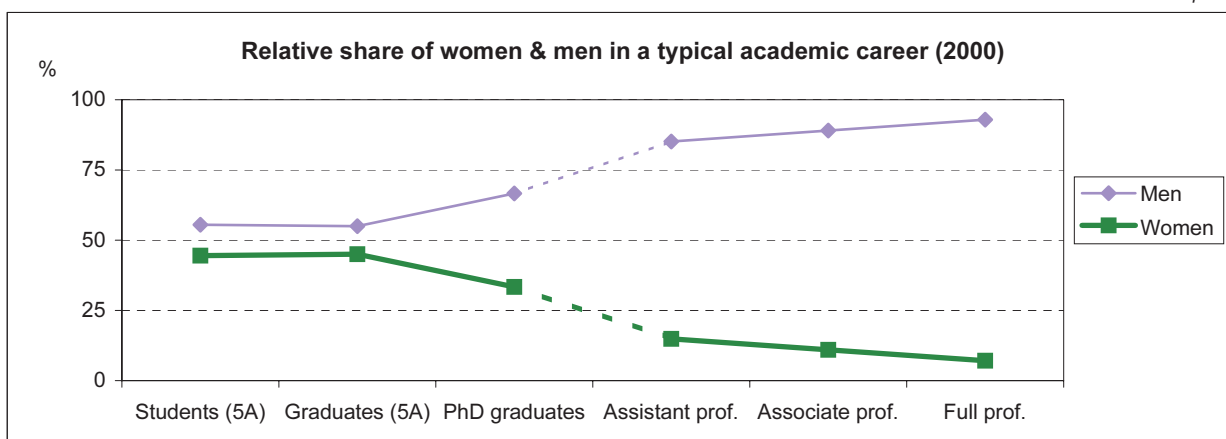
Germany



Exception to the reference year: graduates, 1998 researchers GOV, 1999



Humanities include Sport

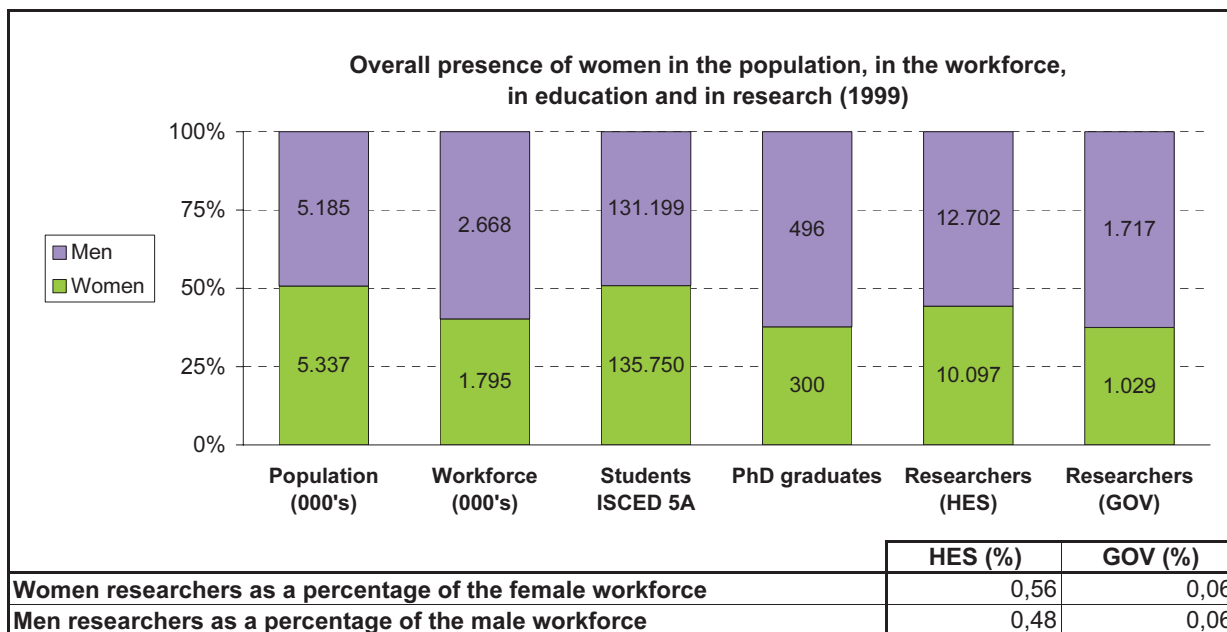


Exceptions to the reference year: students and graduates, 1998

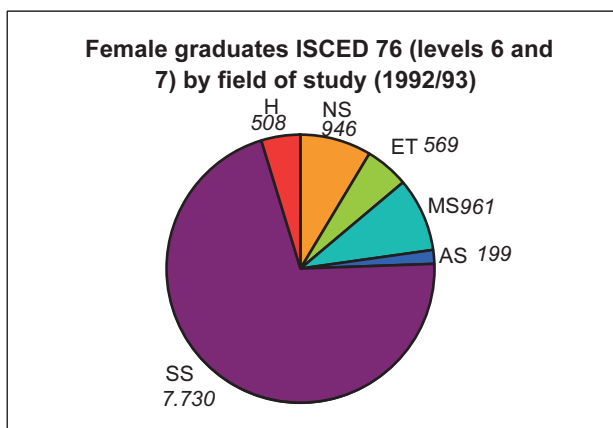
Funding and Success Rates

	Women	Men	Percentage Women
Funding applications	:	:	-
Funding beneficiaries	:	:	-
Funding success rate (%)	-	-	

Greece

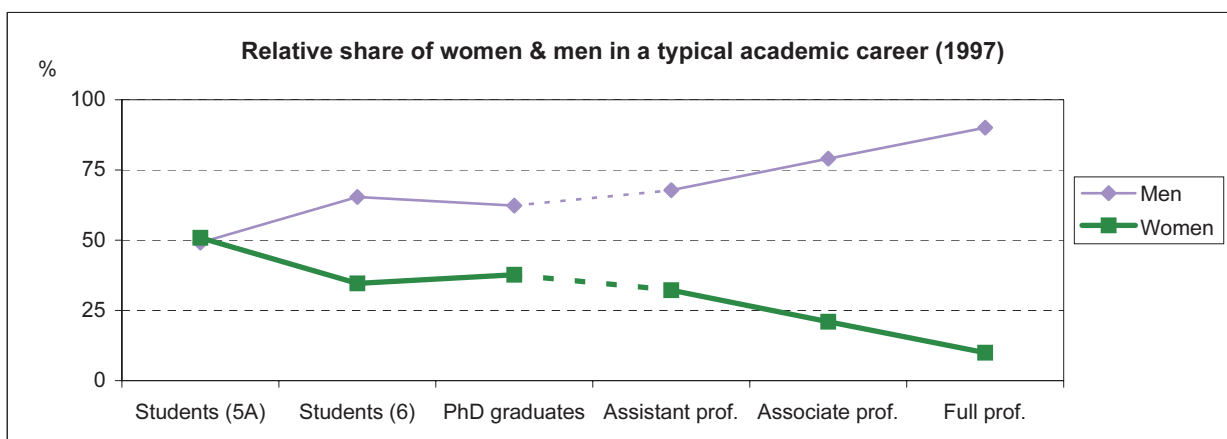


Exceptions to the reference year: students 5A, 1997; PhD graduates, 1998



Female researchers in HES by field of science

Data not available

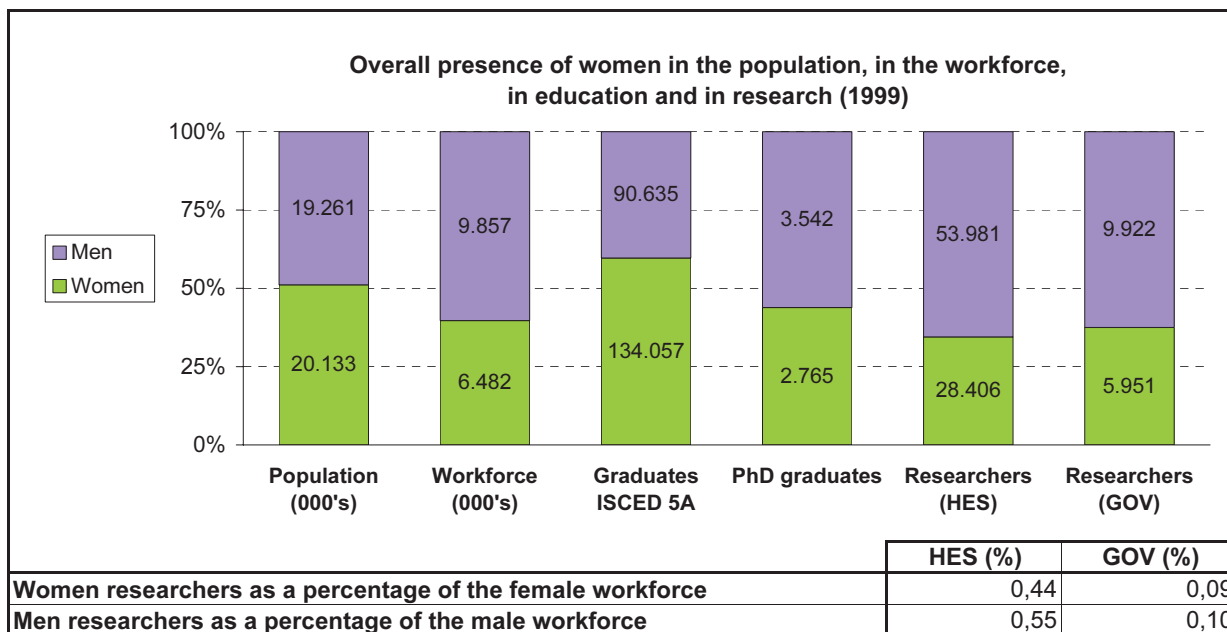


Exceptions to the reference year: PhD graduates, 1998

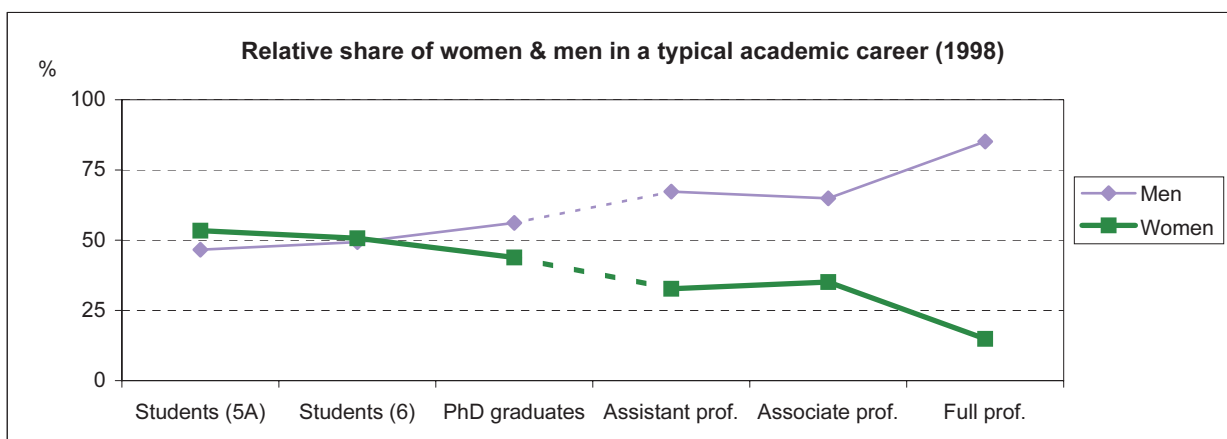
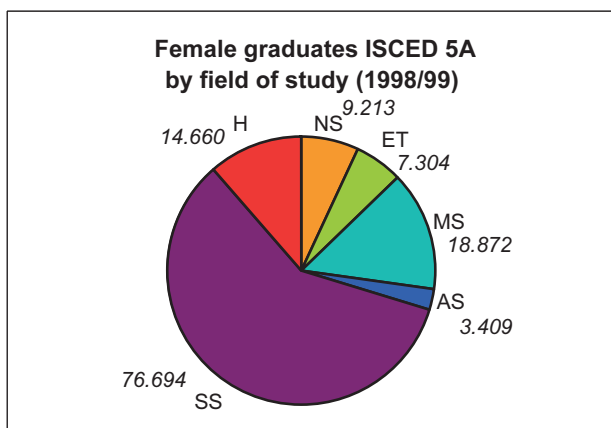
Funding and Success Rates (2000)

	Women	Men	Percentage Women
Funding applications	971	759	56,1
Funding beneficiaries	227	233	49,3
Funding success rate (%)	23,4	30,7	

Spain



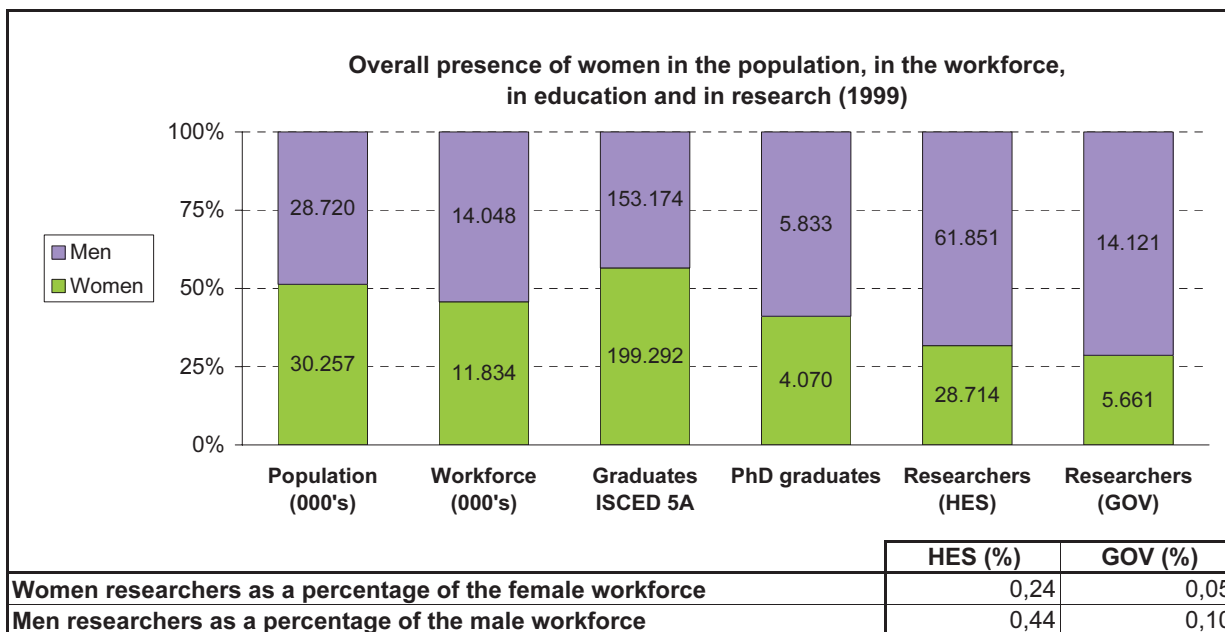
Exceptions to the reference year: graduates, 1998



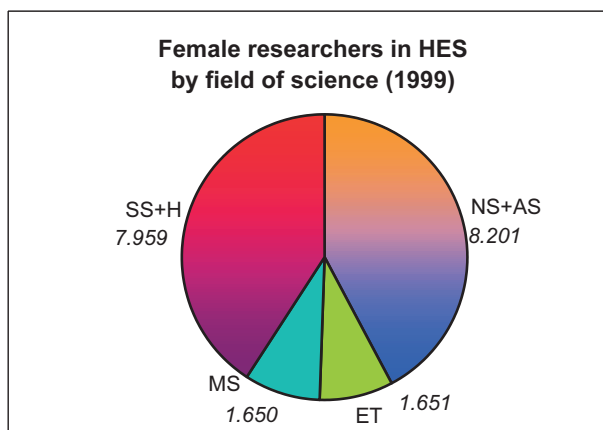
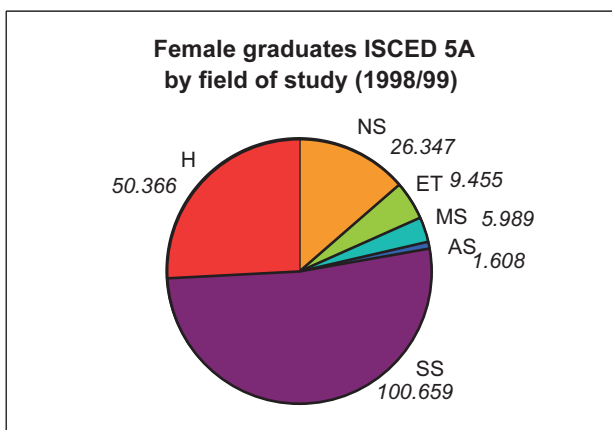
Funding and Success Rates (1999)

	Women	Men	Percentage Women
Funding applications	:	:	-
Funding beneficiaries	712	669	51,6
Funding success rate (%)	-	-	

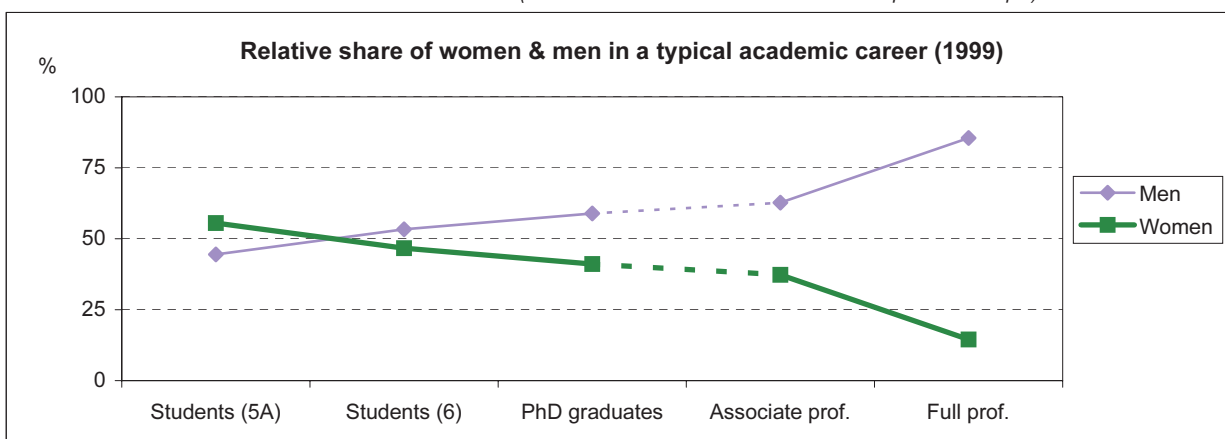
France



Exceptions to the reference year: graduates, 1998; sex of some researchers is unknown; CNRS is included in HES



EPST (Etablissements Publics à caractère Scientifique et Technique) are included in HES

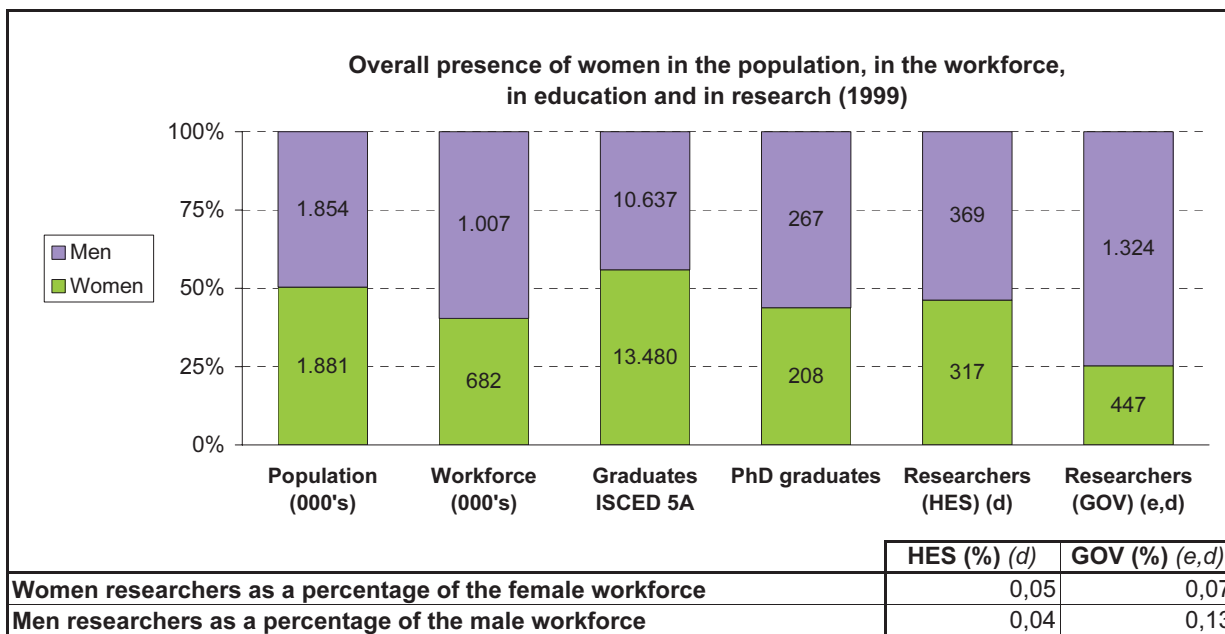


Exceptions to the reference year: students and PhD graduates, 1998

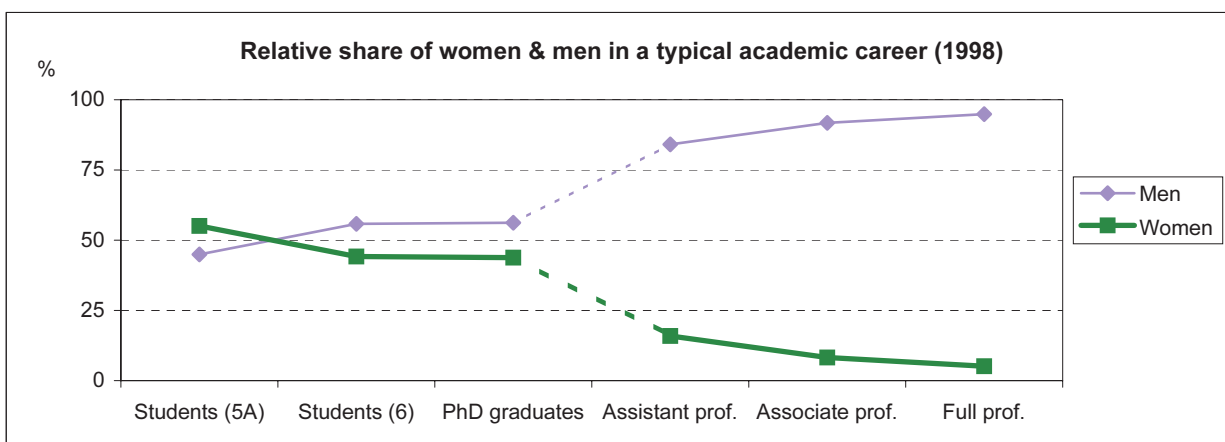
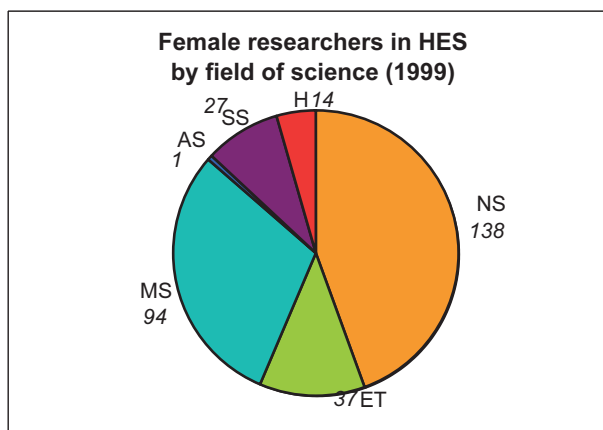
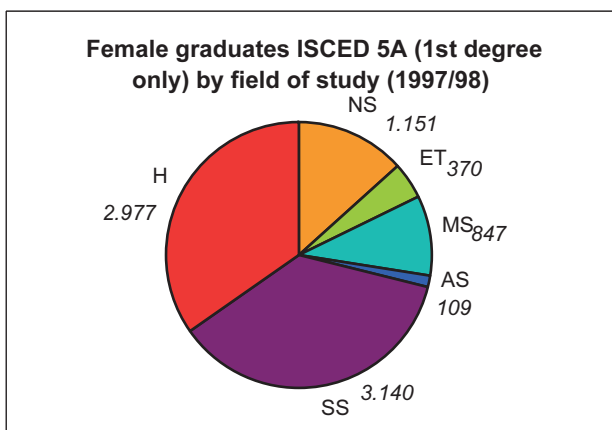
Funding and Success Rates (2000)

	Women	Men	Percentage Women
Funding applications	:	:	-
Funding beneficiaries	1547	2353	39,7
Funding success rate (%)	-	-	

Ireland



Exceptions to the reference year: graduates, 1997

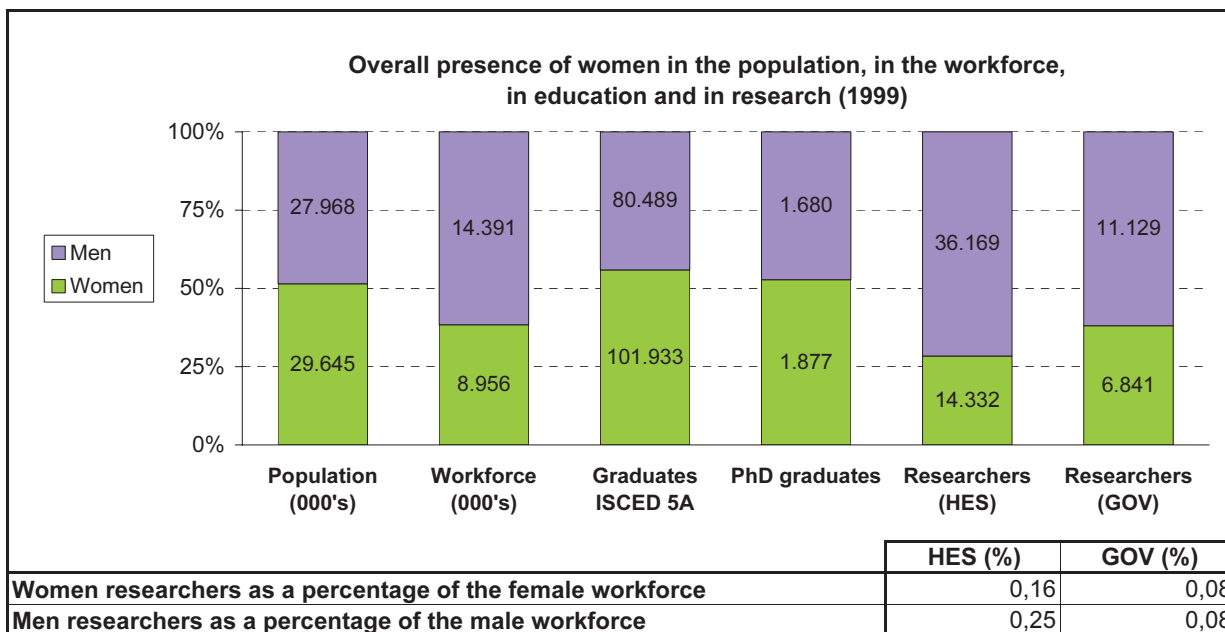


Exceptions to the reference year: PhD graduates, 1997

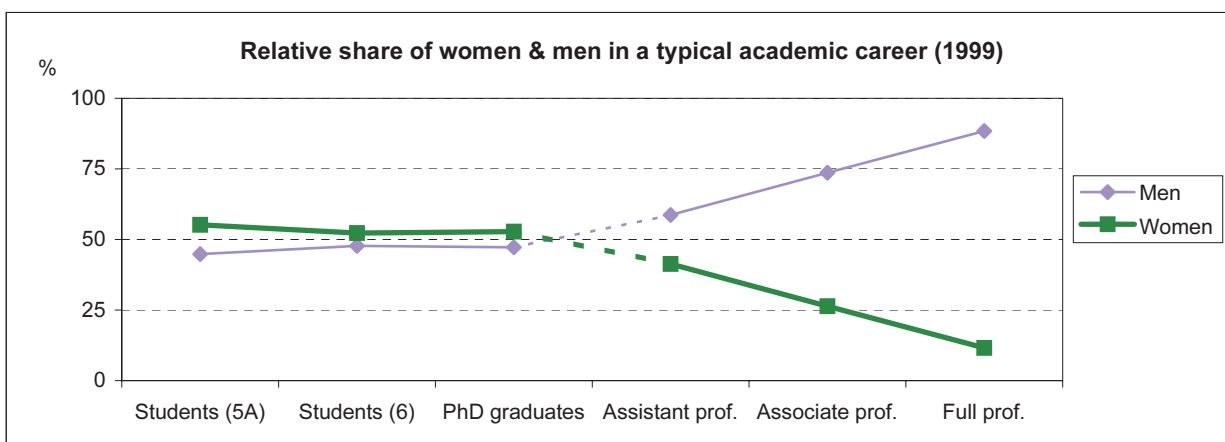
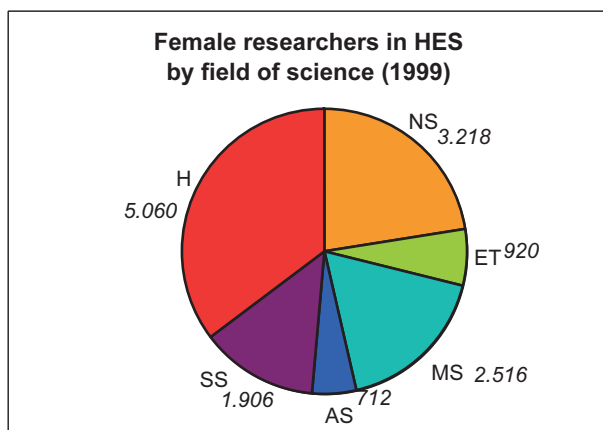
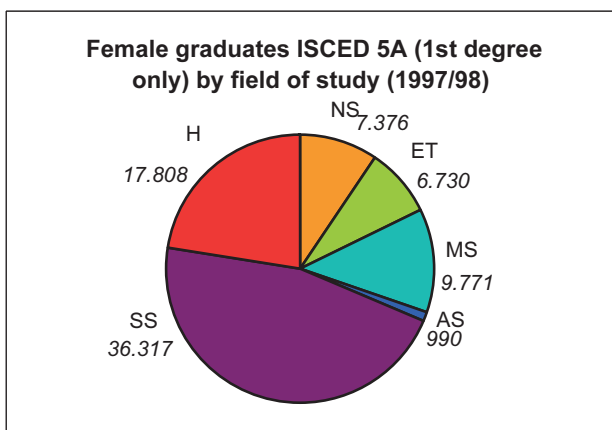
Funding and Success Rates

	Women	Men	Percentage Women
Funding applications	:	:	-
Funding beneficiaries	:	:	-
Funding success rate (%)	-	-	

Italy



Exceptions to the reference year: graduates, 1998

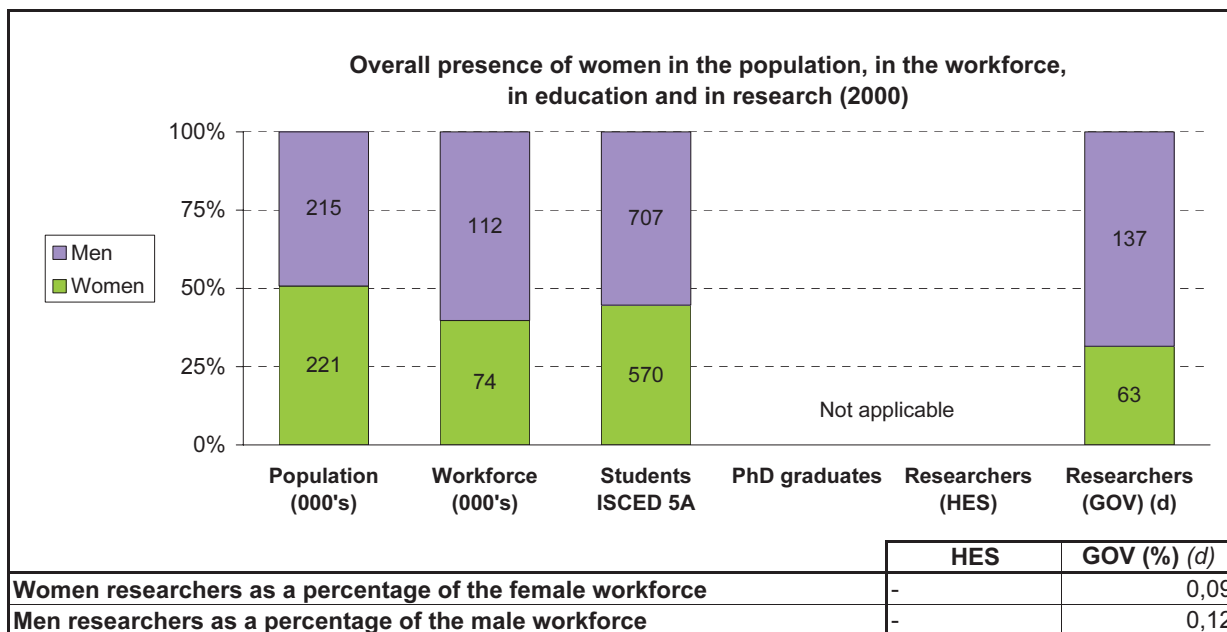


Exceptions to the reference year: PhD graduates and students, 1998

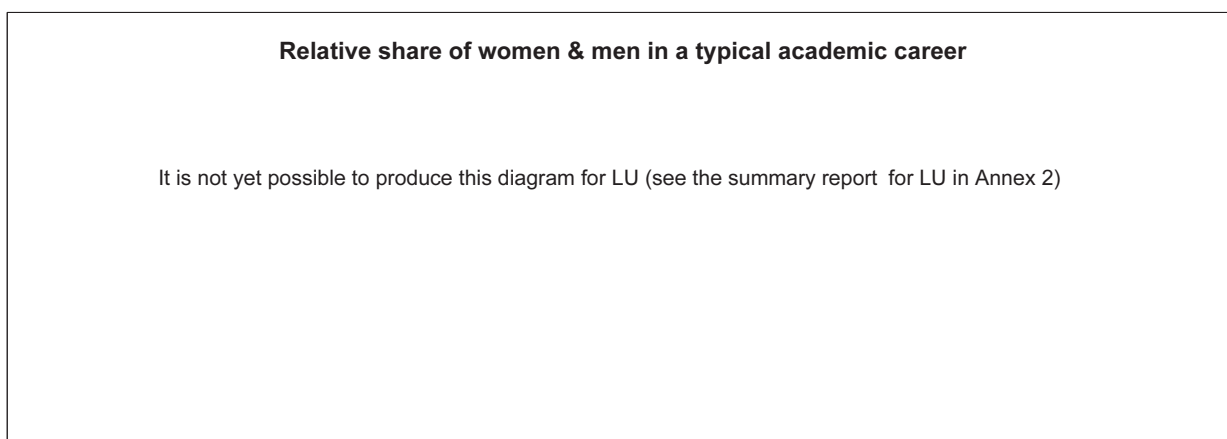
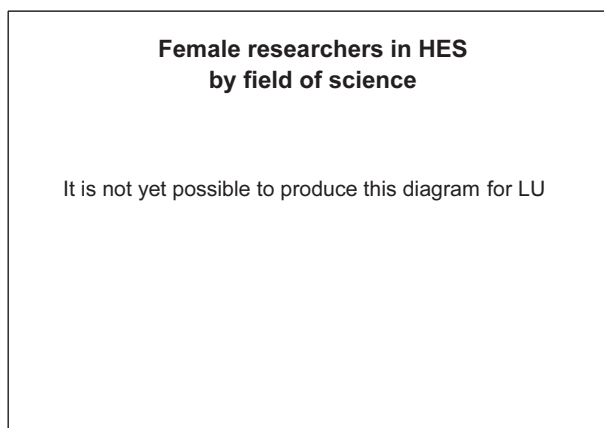
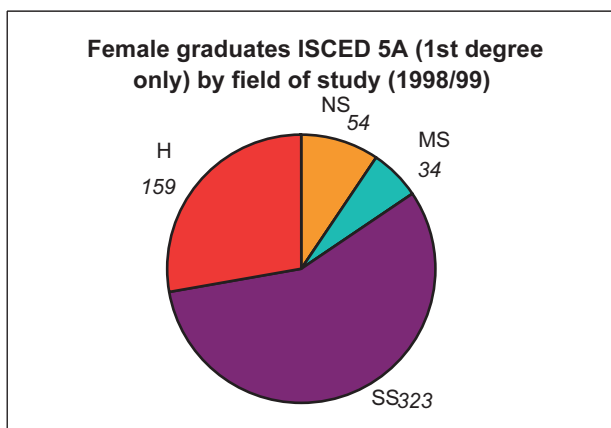
Funding and Success Rates

	Women	Men	Percentage Women
Funding applications	:	:	-
Funding beneficiaries	:	:	-
Funding success rate (%)	-	-	

Luxembourg



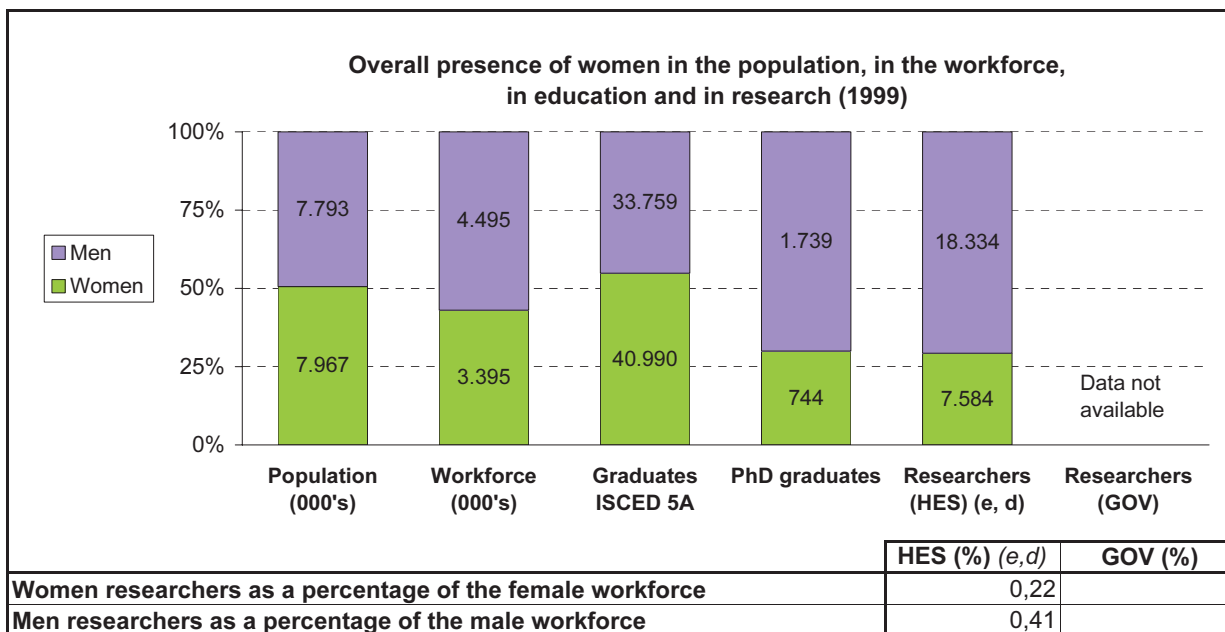
Exceptions to the reference year: students 5A, 1998



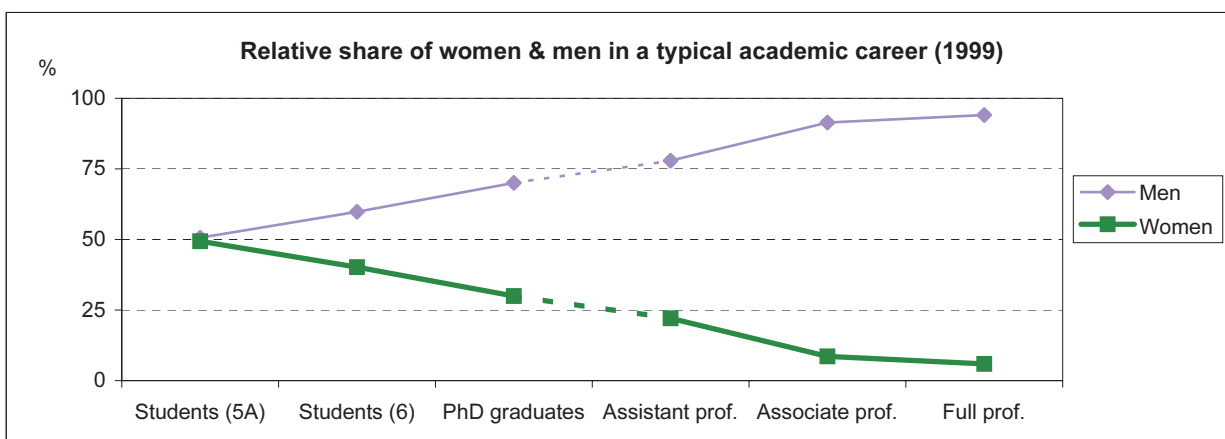
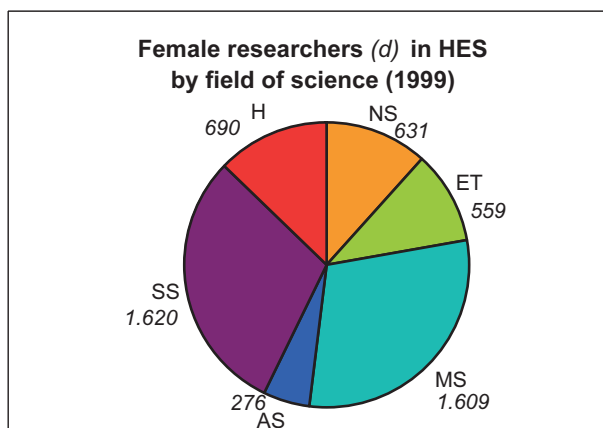
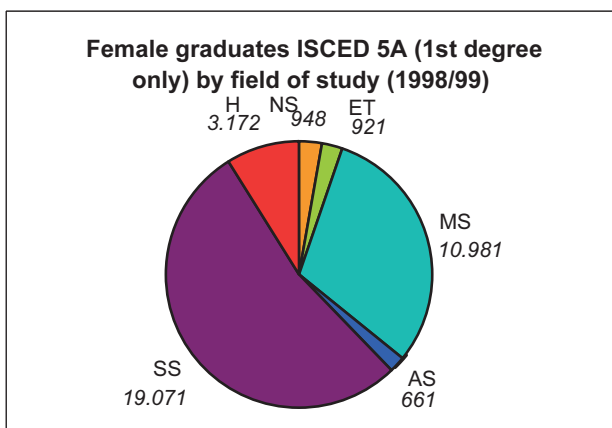
Funding and Success Rates (2000)

	Women	Men	Percentage Women
Funding applications	22	30	42,3
Funding beneficiaries	16	22	42,1
Funding success rate (%)	72,7	73,3	

The Netherlands



Exceptions to the reference year: PhD graduates, 1998

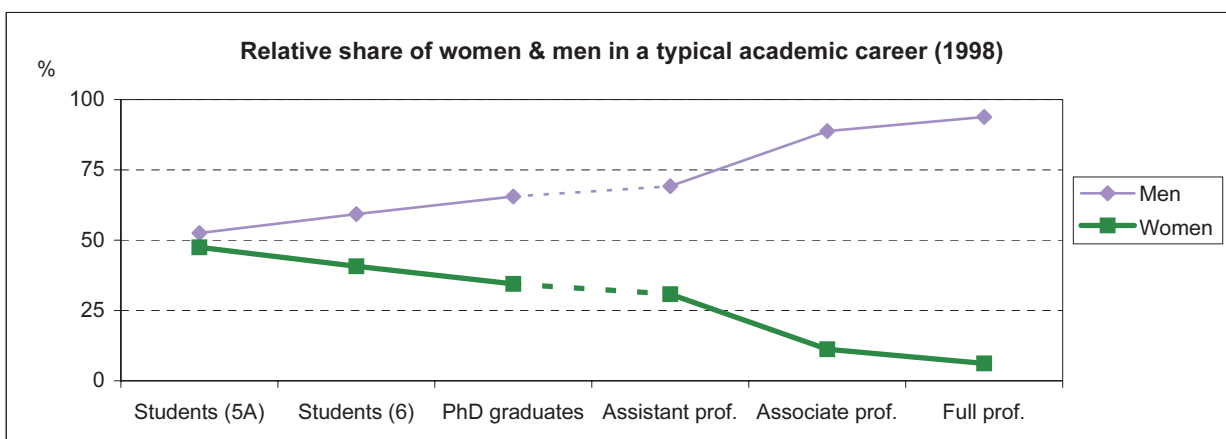
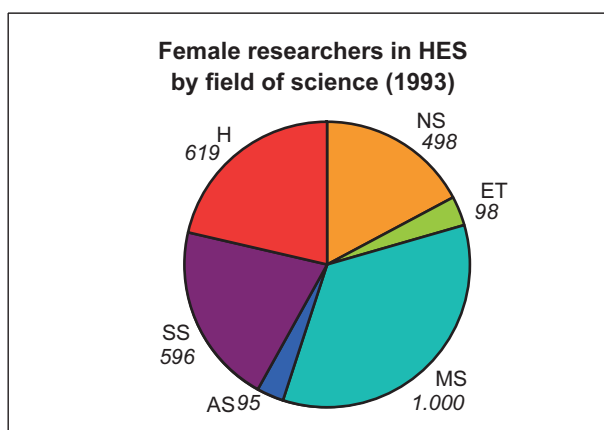
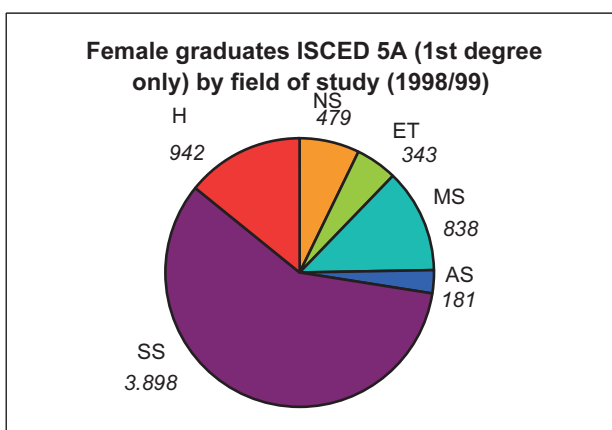
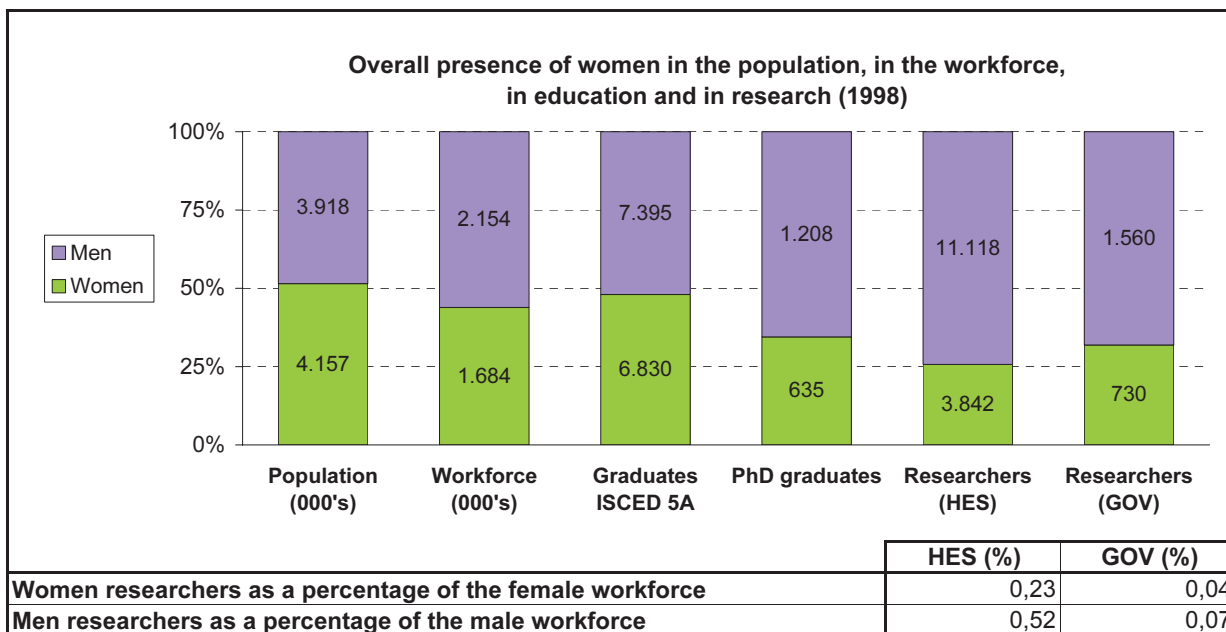


Exceptions to the reference year: students and PhD graduates, 1998

Funding and Success Rates (1999)

	Women	Men	Percentage Women
Funding applications	260	2090	11,1
Funding beneficiaries	78	551	12,4
Funding success rate (%)	30,0	26,4	

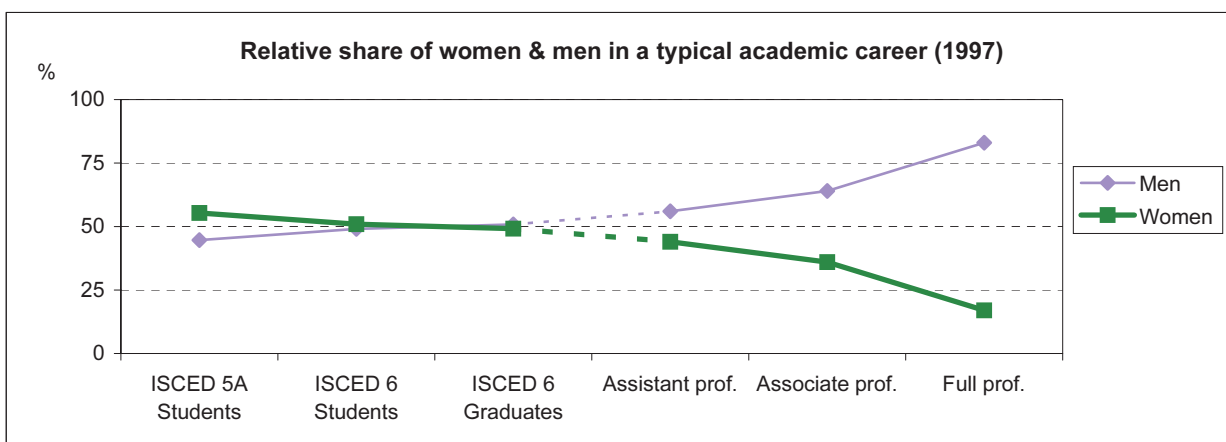
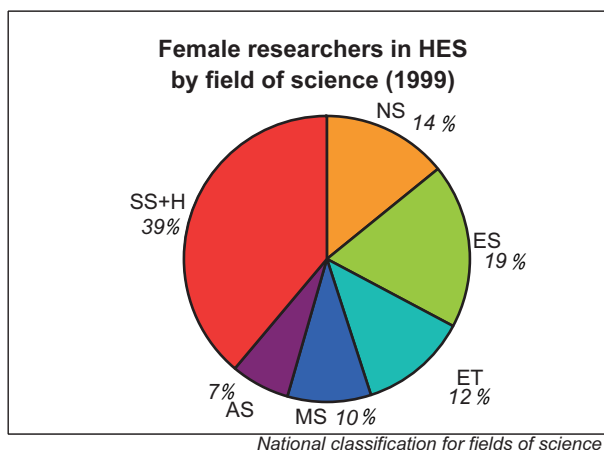
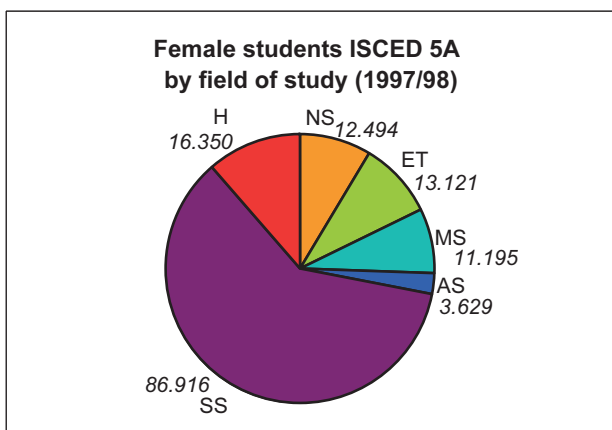
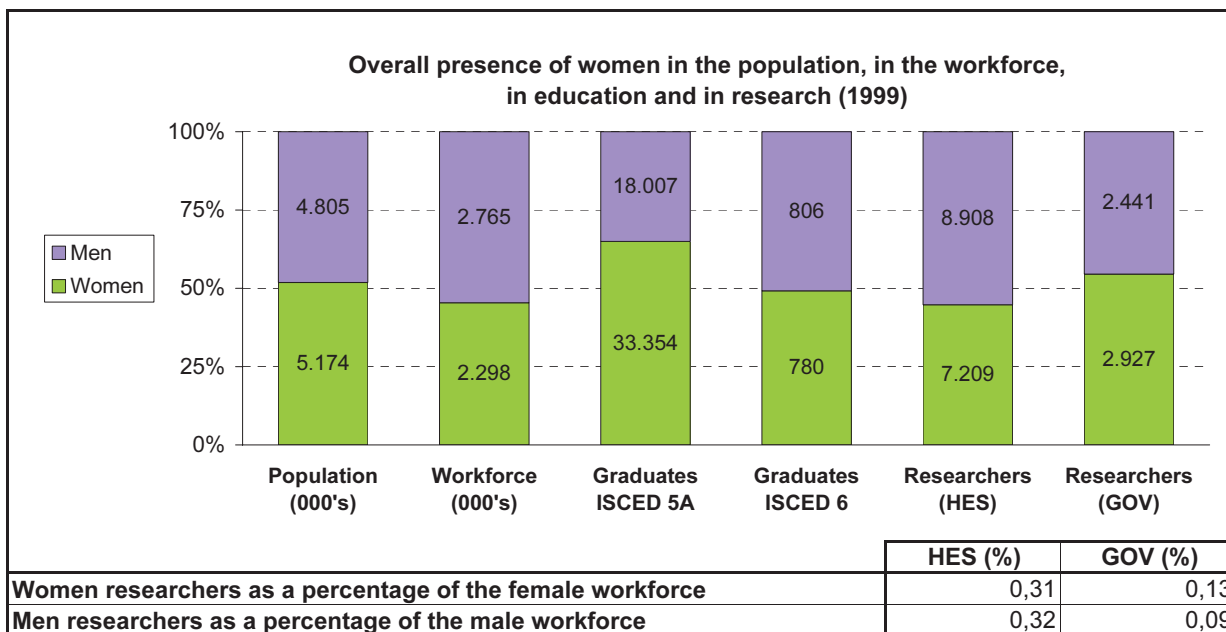
Austria



Funding and Success Rates (1999)

	Women	Men	Percentage Women
Funding applications	207	891	18,9
Funding beneficiaries	85	464	15,5
Funding success rate (%)	41,1	52,1	

Portugal

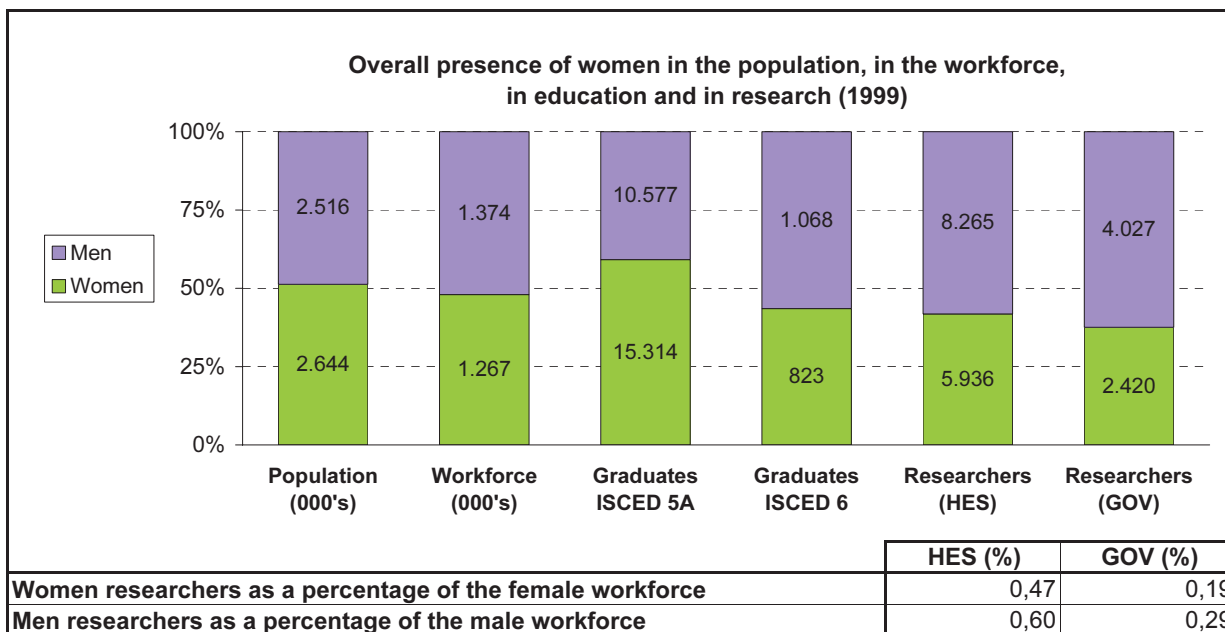


Exceptions to the reference year: students, 1998; PhD graduates, 1999

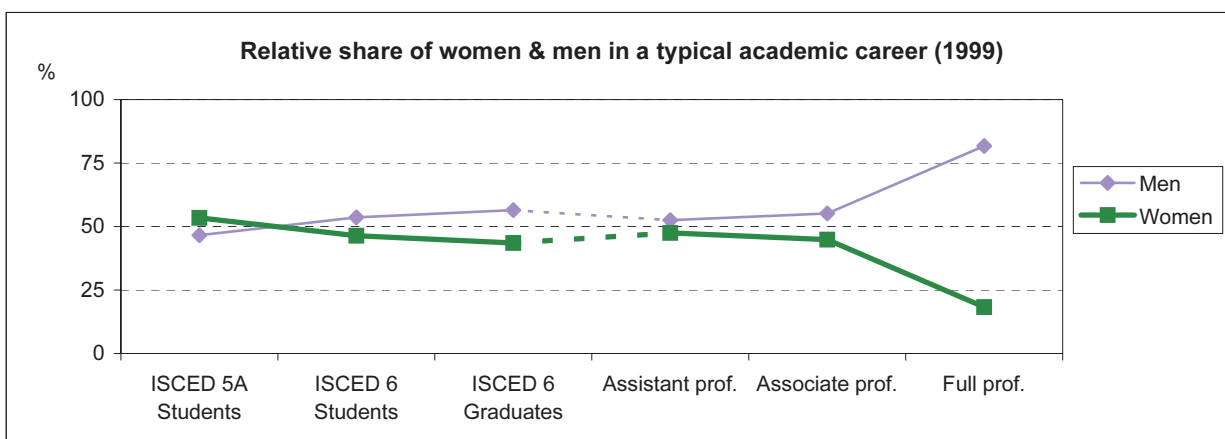
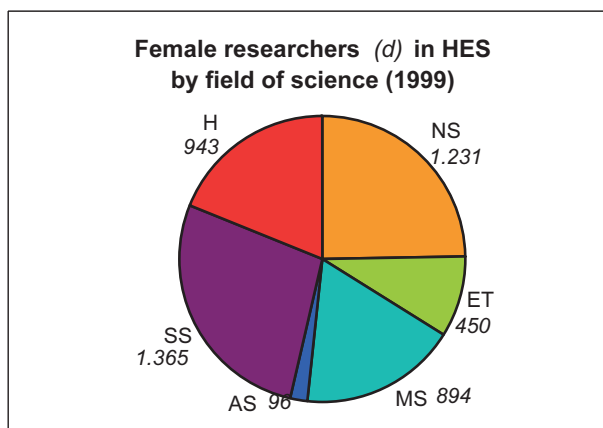
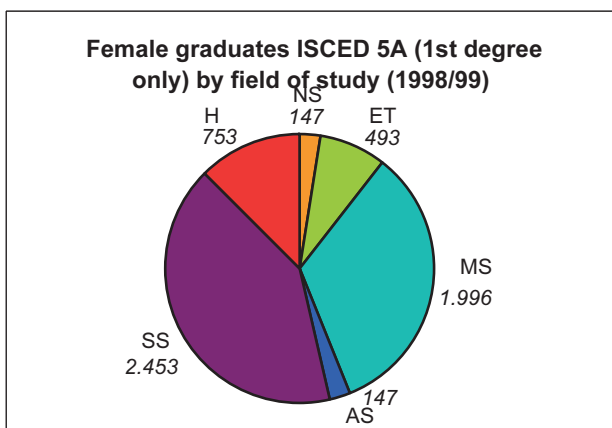
Funding and Success Rates

	Women	Men	Percentage Women
Funding applications	:	:	-
Funding beneficiaries	:	:	-
Funding success rate (%)	-	-	

Finland



Exceptions to the reference year: graduates, 1998

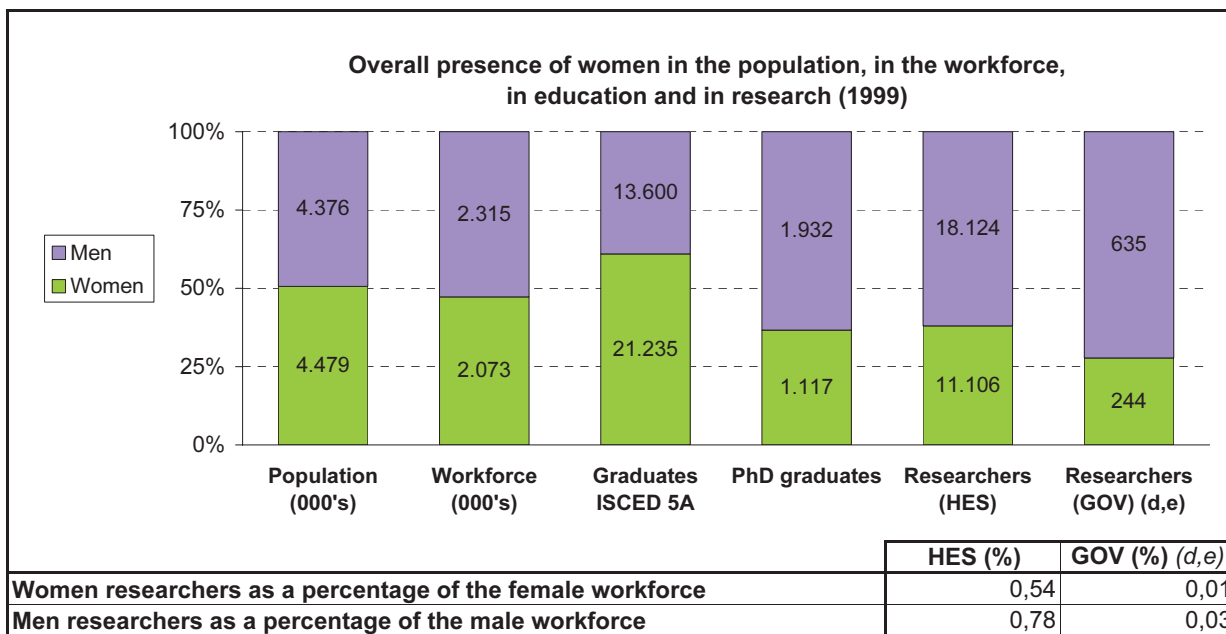


Exceptions to the reference year: students and PhD graduates, 1998

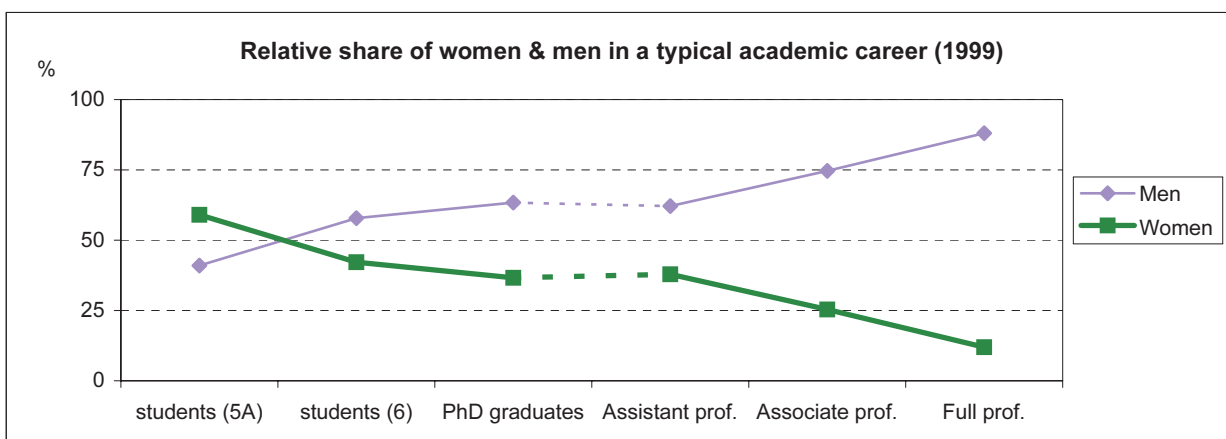
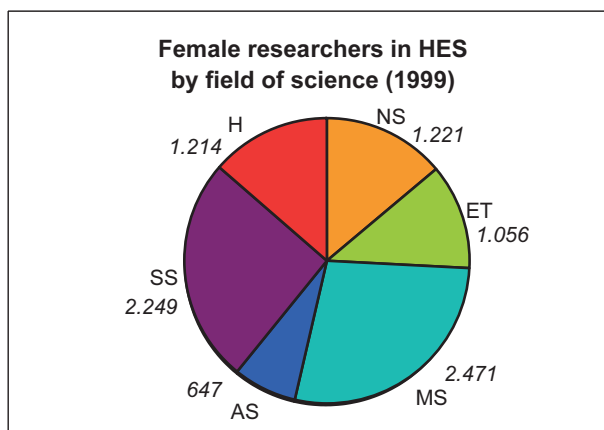
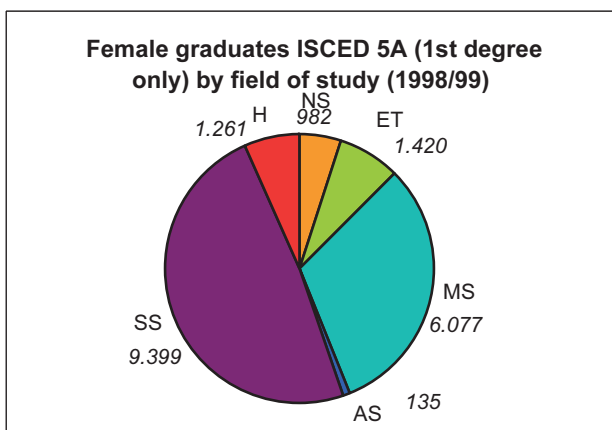
Funding and Success Rates (2000)

	Women	Men	Percentage Women
Funding applications	169	435	27,9
Funding beneficiaries	45	85	34,6
Funding success rate (%)	26,7	19,5	

Sweden



Sex of some researchers is unknown

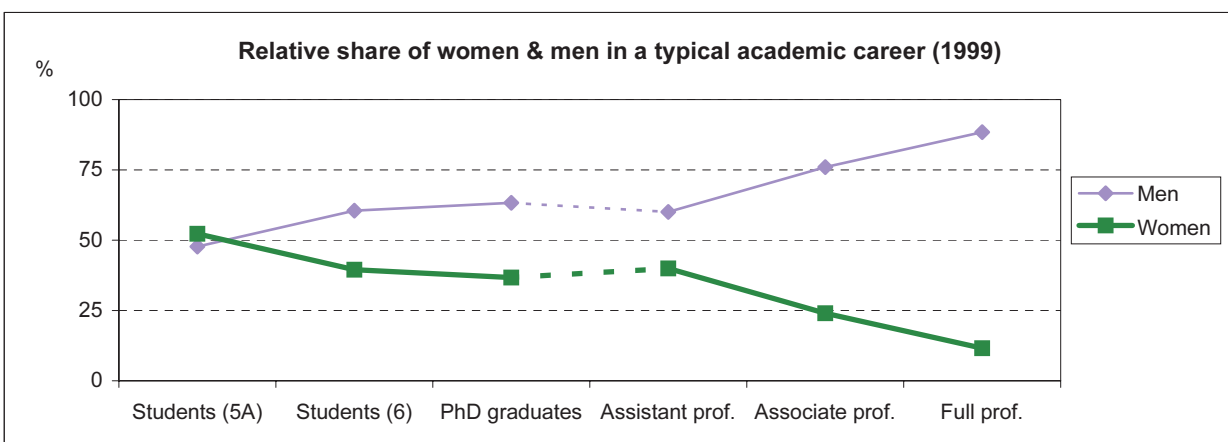
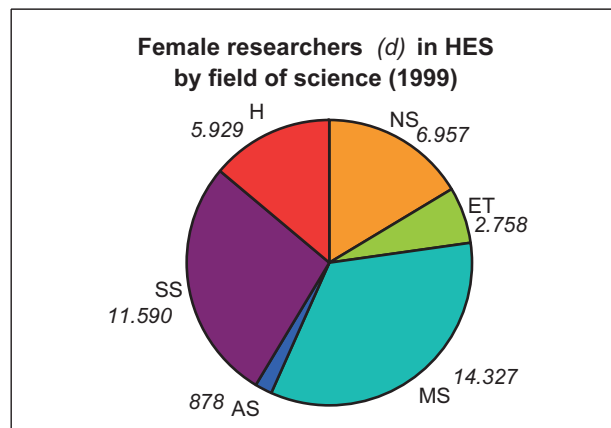
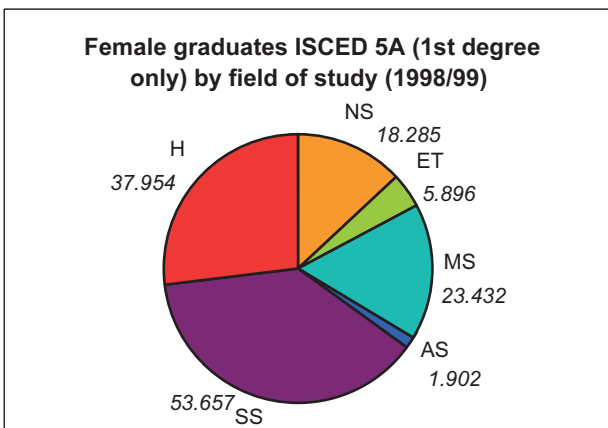
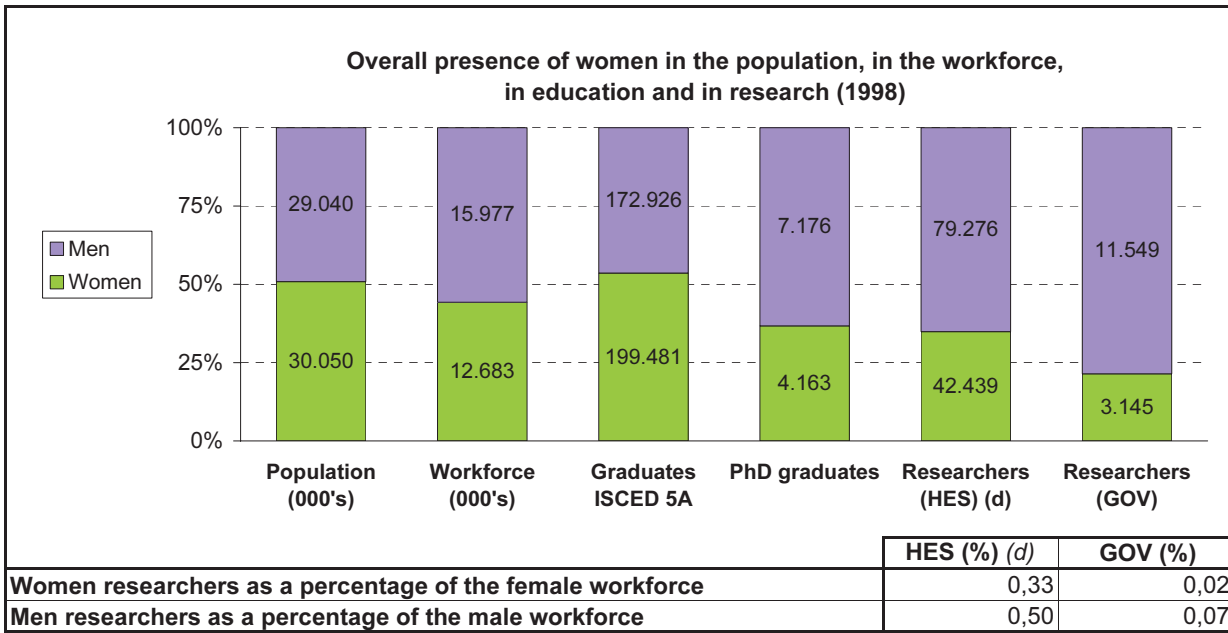


Exceptions to the reference year: students, 1998

Funding and Success Rates (1999)

	Women	Men	Percentage Women
Funding applications	1206	4039	23,0
Funding beneficiaries	632	2111	23,0
Funding success rate (%)	39,1	45,2	

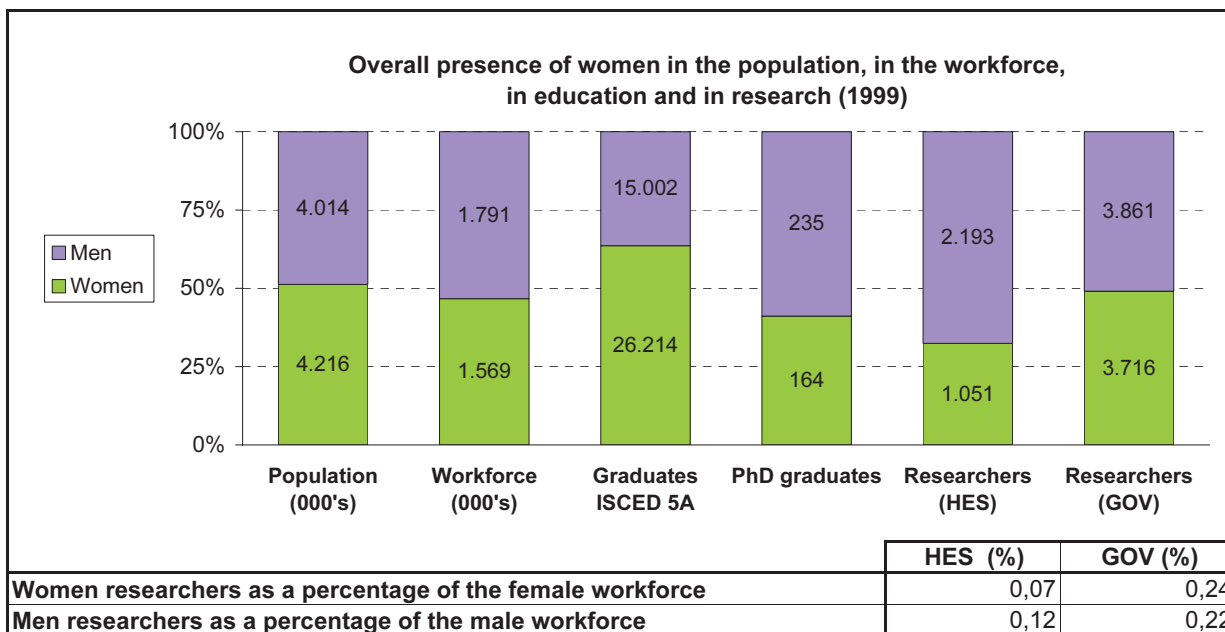
United Kingdom



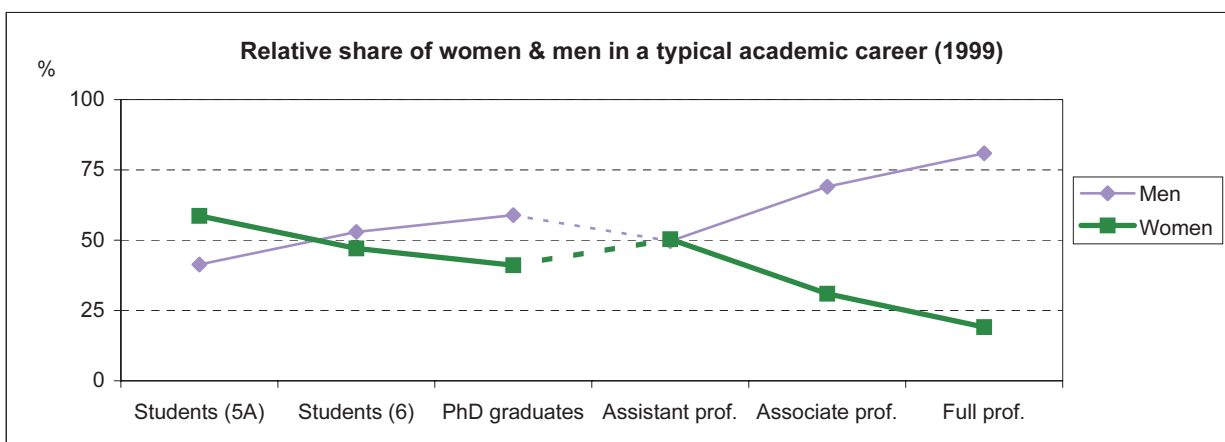
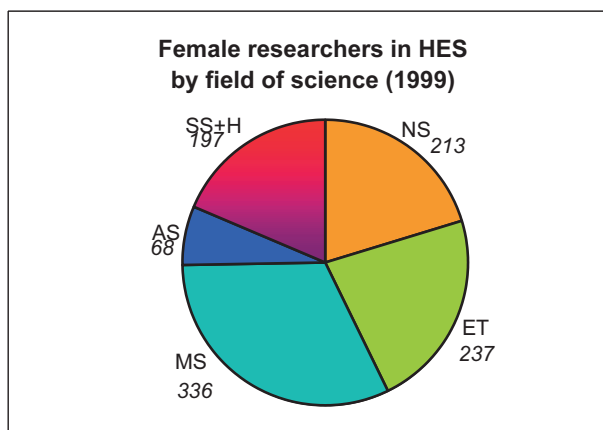
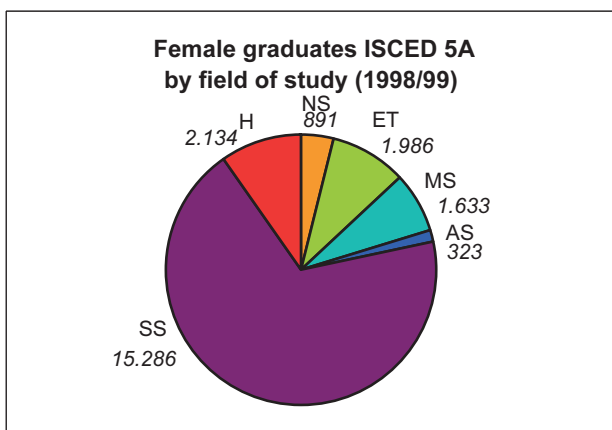
Funding and Success Rates (1998)

	Women	Men	Percentage Women
Funding applications	670	1976	25,3
Funding beneficiaries	1398	5082	21,6
Funding success rate (%)	27,0	27,3	

Bulgaria



Exceptions to the reference year: workforce, 2000

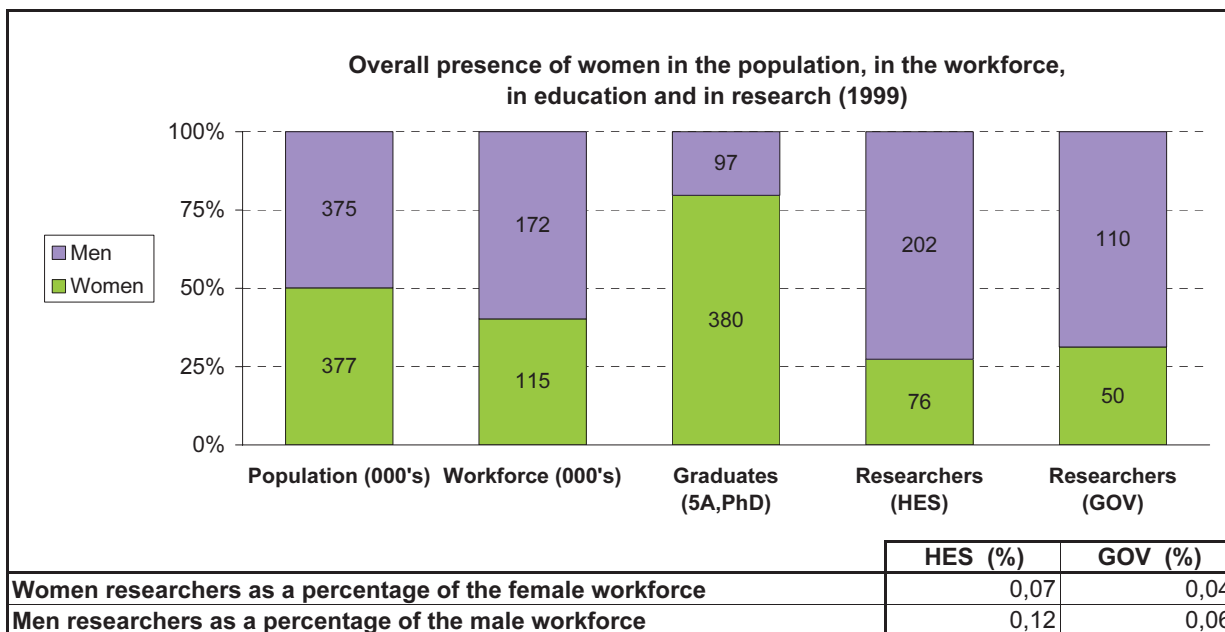


Exceptions to the reference year: students, 1998

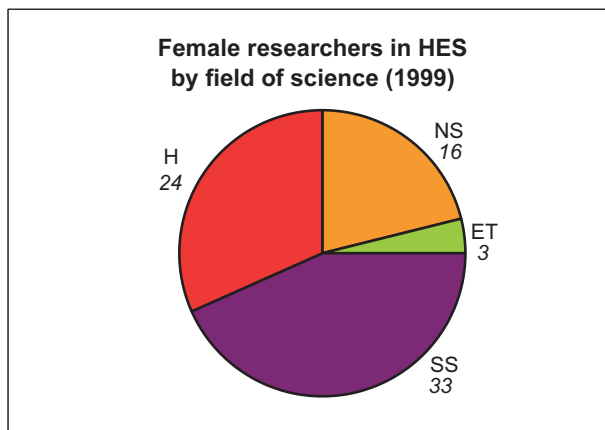
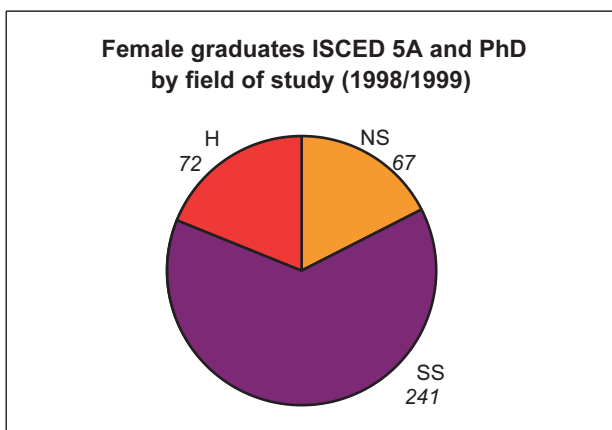
Funding and Success Rates

	Women	Men	Percentage Women
Funding applications	:	:	-
Funding beneficiaries	:	:	-
Funding success rate (%)	-	-	

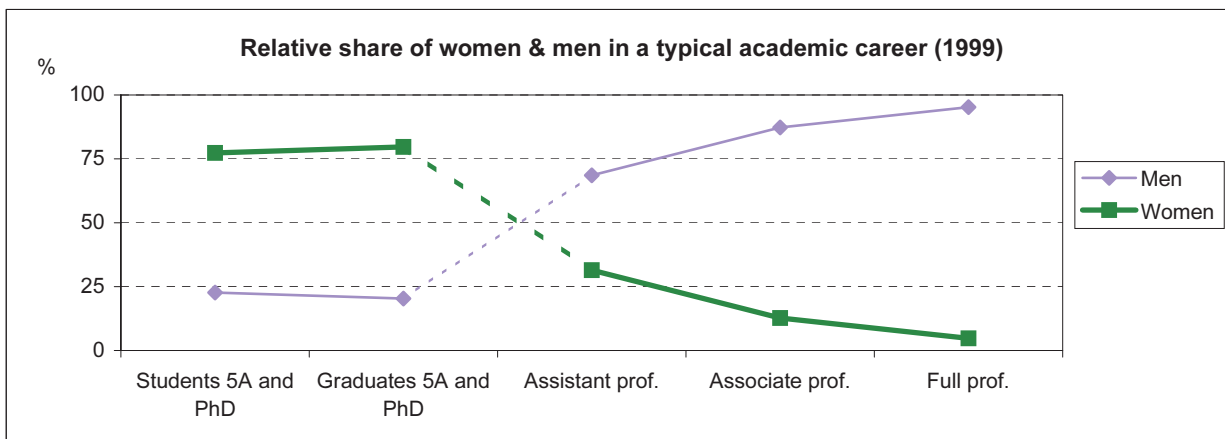
Cyprus



Data refer to the Government controlled area only, with the exception of data on population. Exceptions to the reference year: graduates, 1998



Percentage are calculated on less than 100 persons

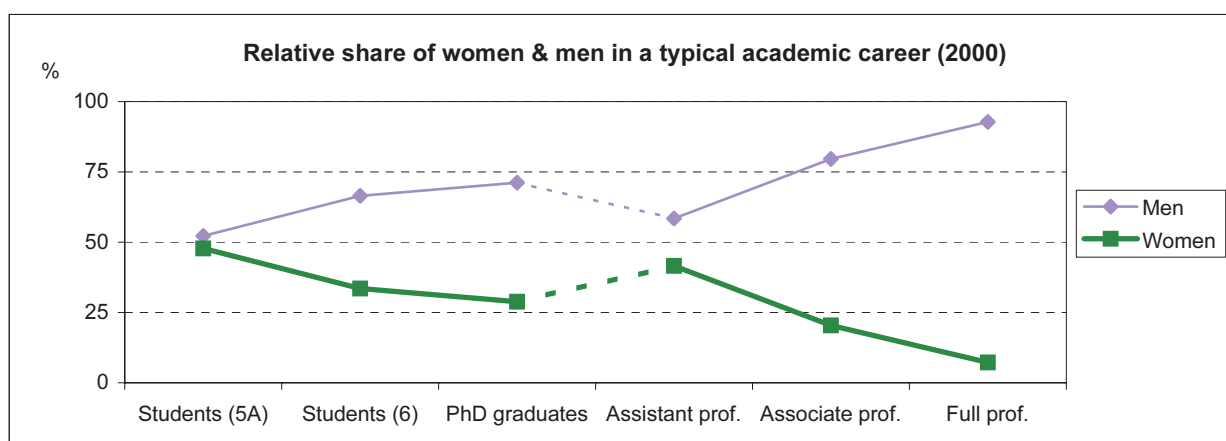
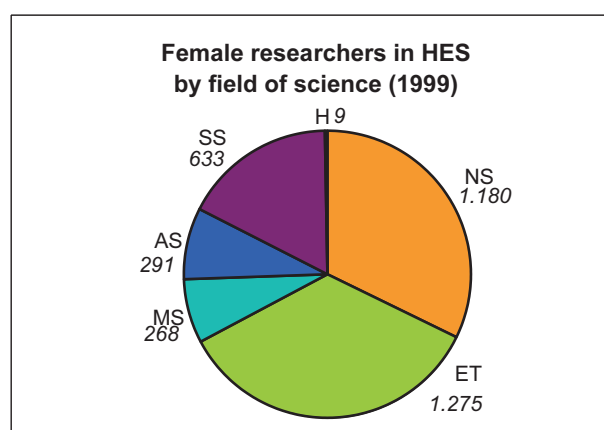
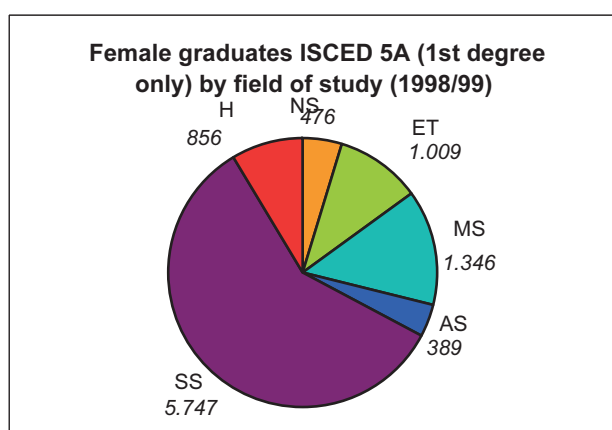
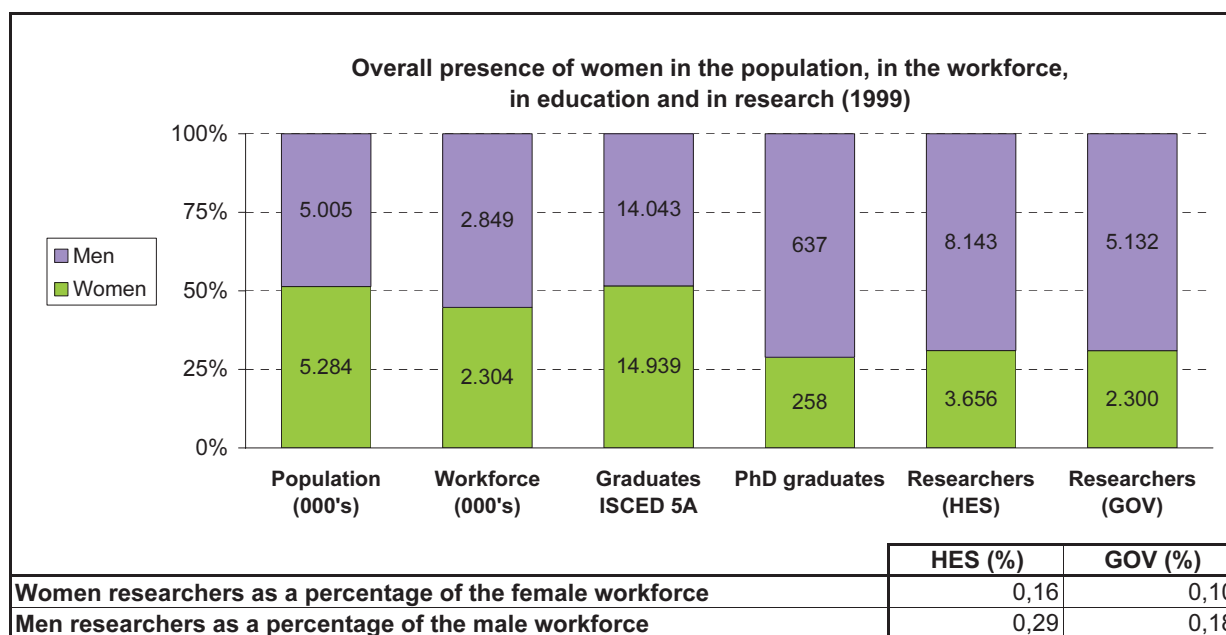


Percentage for full and associate professors are calculated on less than 100 persons; Exceptions to the reference year: graduates, 1998

Funding and Success Rates (2000)

	Women	Men	Percentage Women
Funding applications	20	74	21,3
Funding beneficiaries	5	18	21,7
Funding success rate (%)	25,0	24,3	

Czech Republic

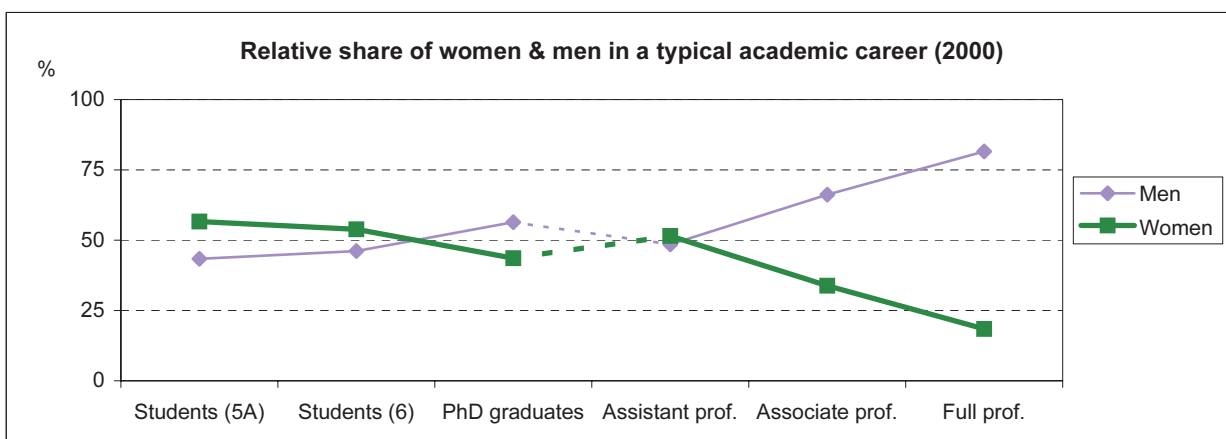
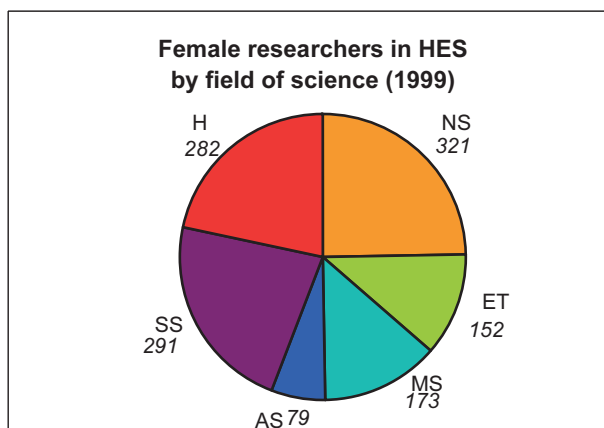
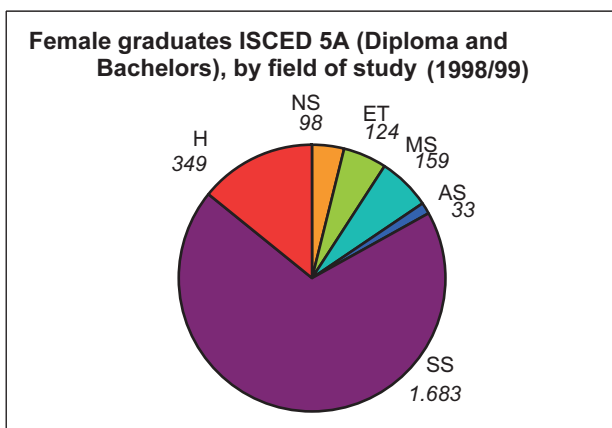
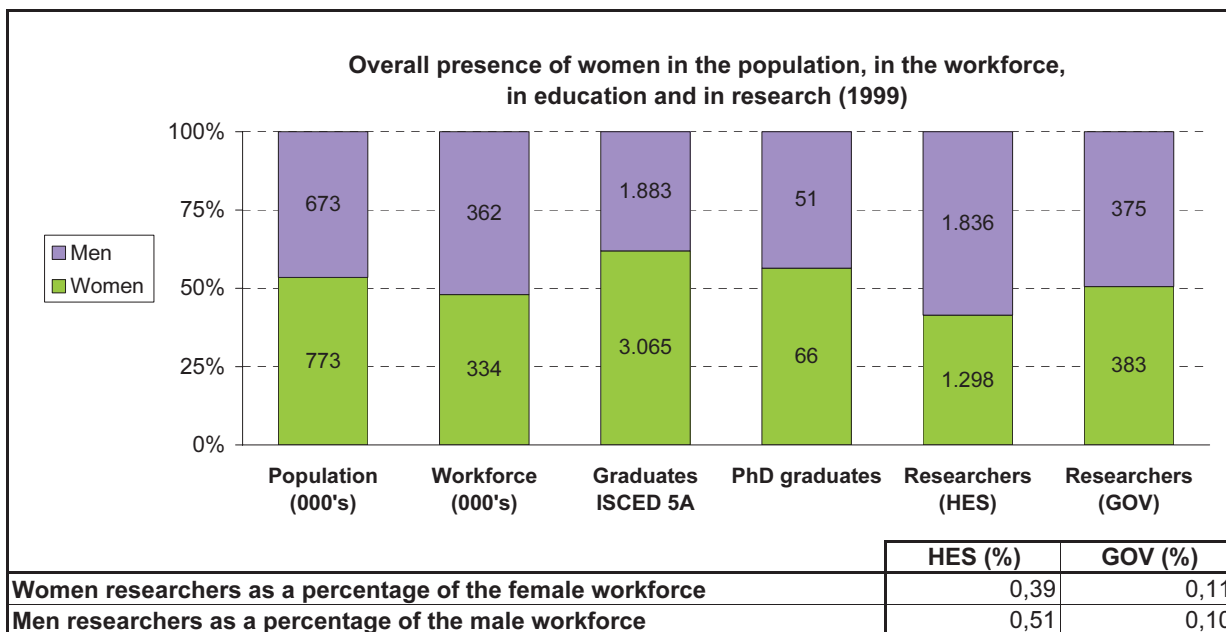


Exceptions to the reference year: students, 1998; PhD graduates, 1999

Funding and Success Rates (2000)

	Women	Men	Percentage Women
Funding applications	21	138	13,2
Funding beneficiaries	12	79	13,2
Funding success rate (%)	57,1	57,3	

Estonia

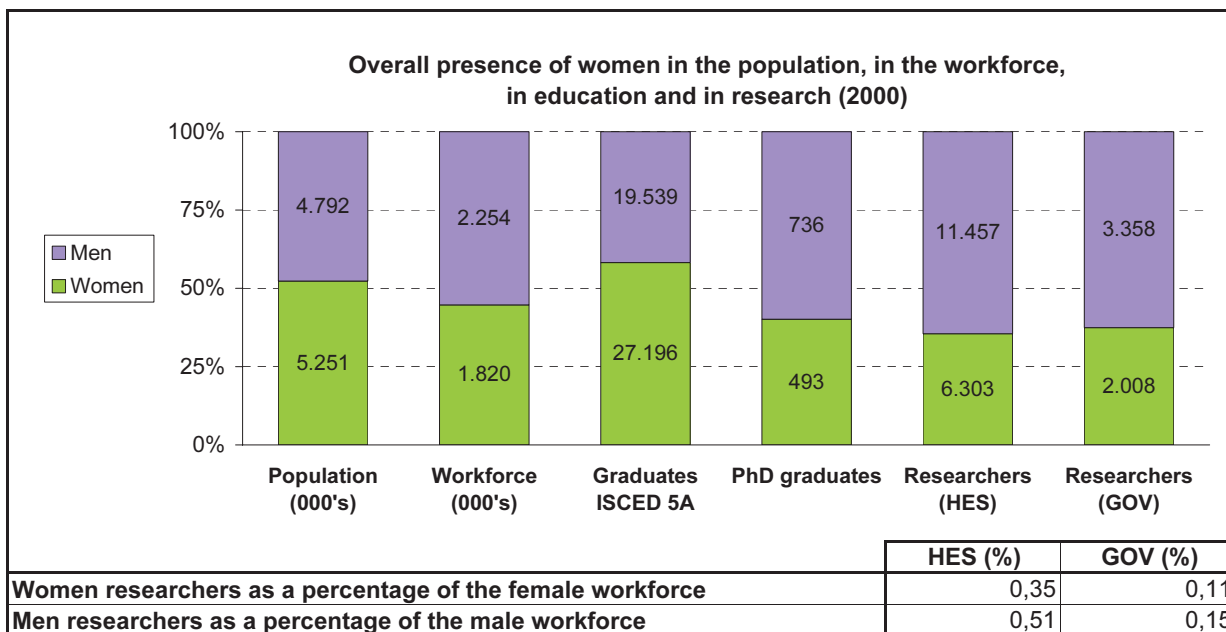


Exceptions to the reference year: students, 1998; PhD graduates, 1999

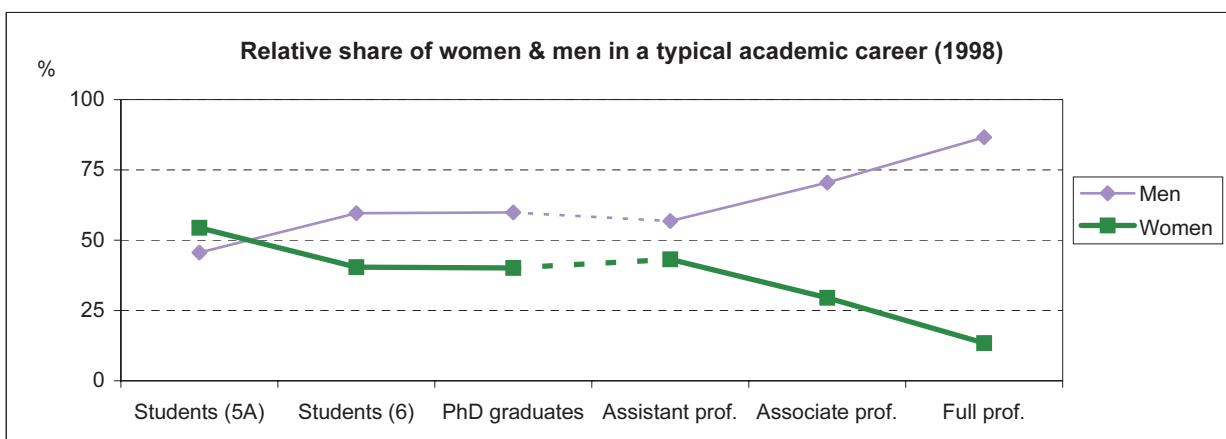
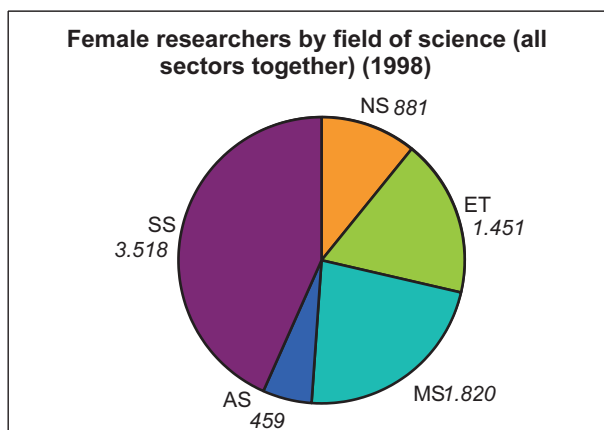
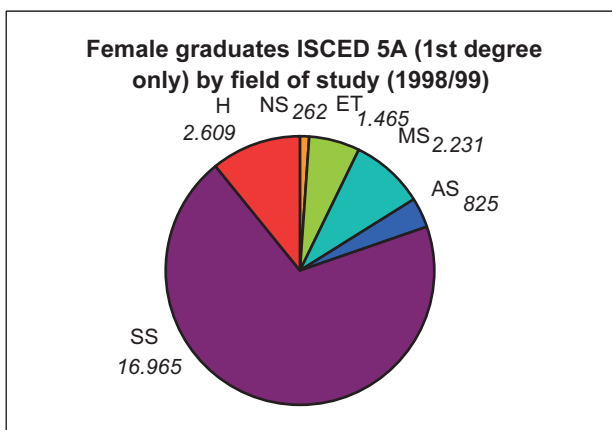
Funding and Success Rates (2000)

	Women	Men	Percentage Women
Funding applications	274	708	27,9
Funding beneficiaries	202	561	26,5
Funding success rate (%)	73,7	79,2	

Hungary



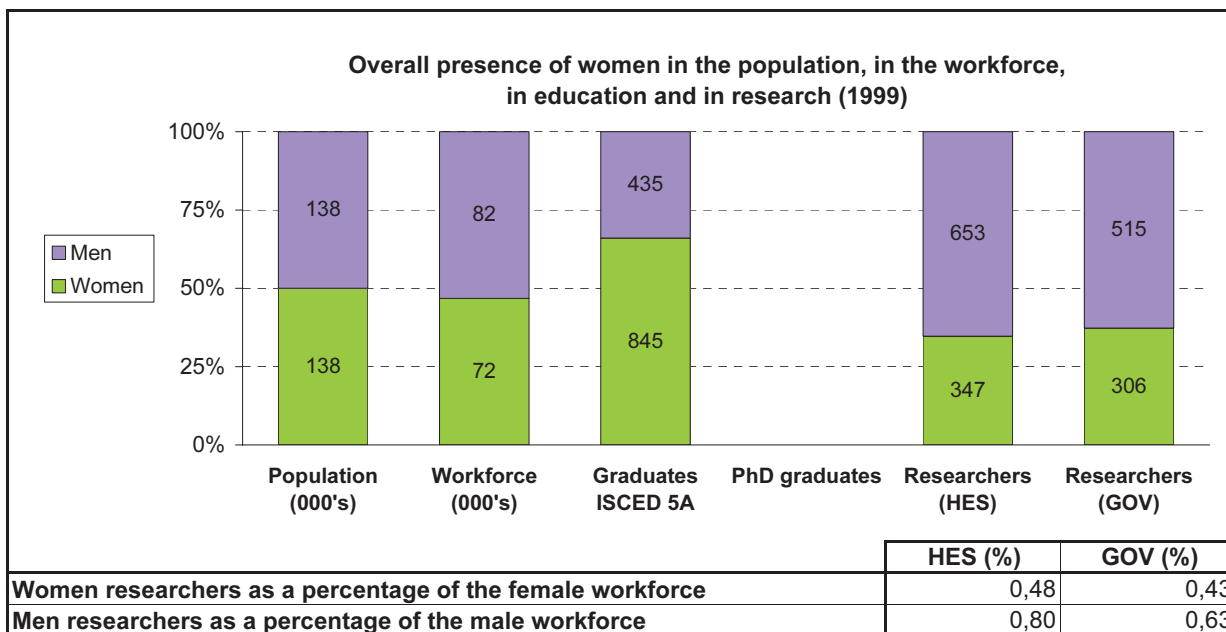
Exceptions to the reference year: graduates, 1998



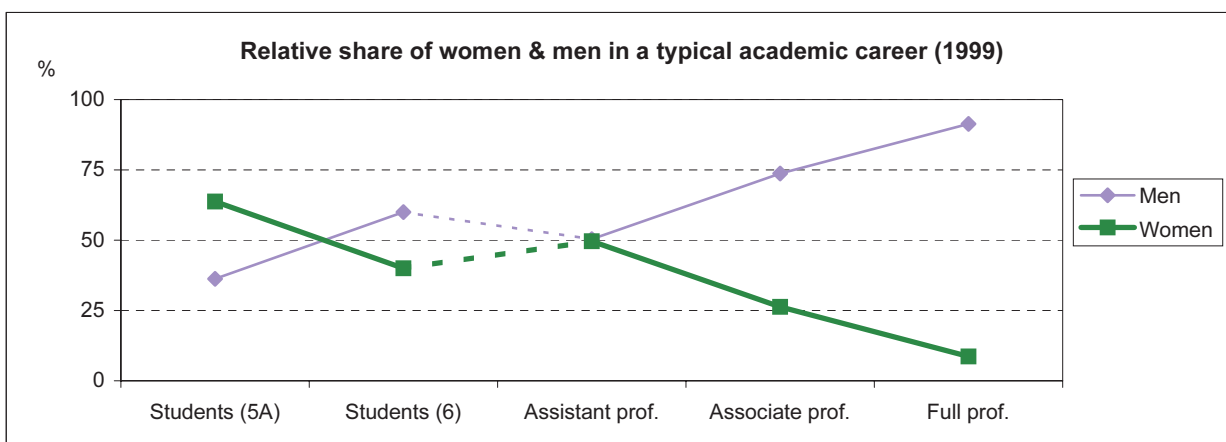
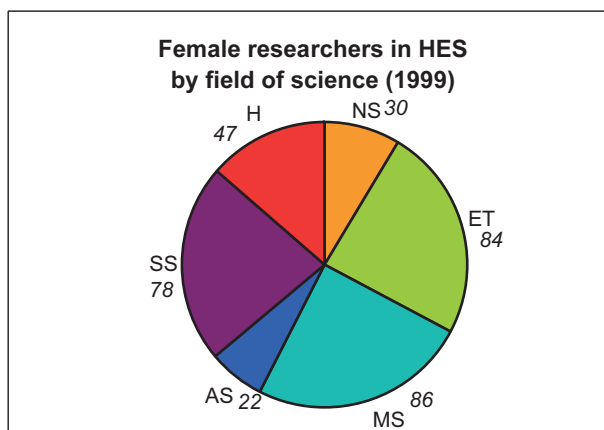
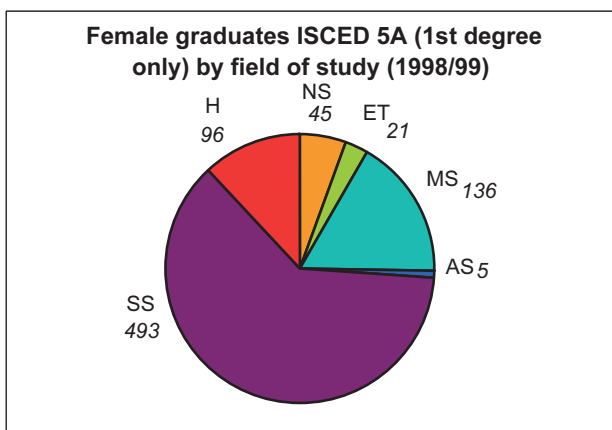
Funding and Success Rates (2000)

	Women	Men	Percentage Women
Funding applications	265	934	22,1
Funding beneficiaries	157	602	20,7
Funding success rate (%)	59,2	64,5	

Iceland



Exceptions to the reference year: graduates, 1998; apart from one male PhD graduate in 1999, all the Icelandic PhD graduates studied abroad.

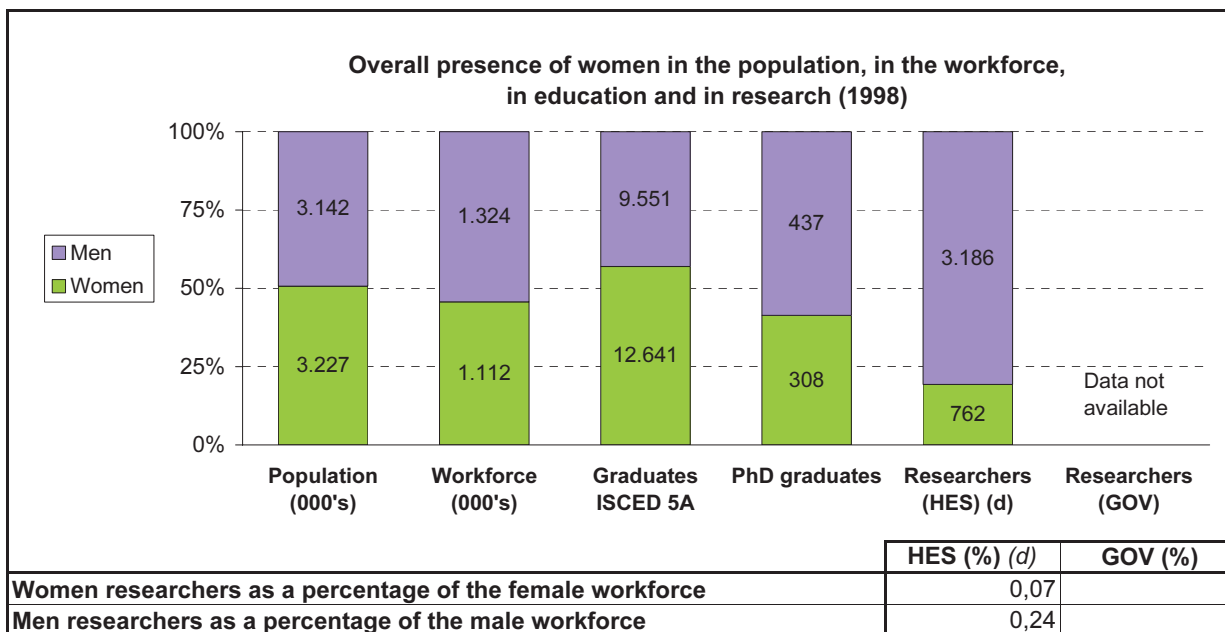


Exceptions to the reference year: students, 1998; very few PhD students as most study for PhD abroad

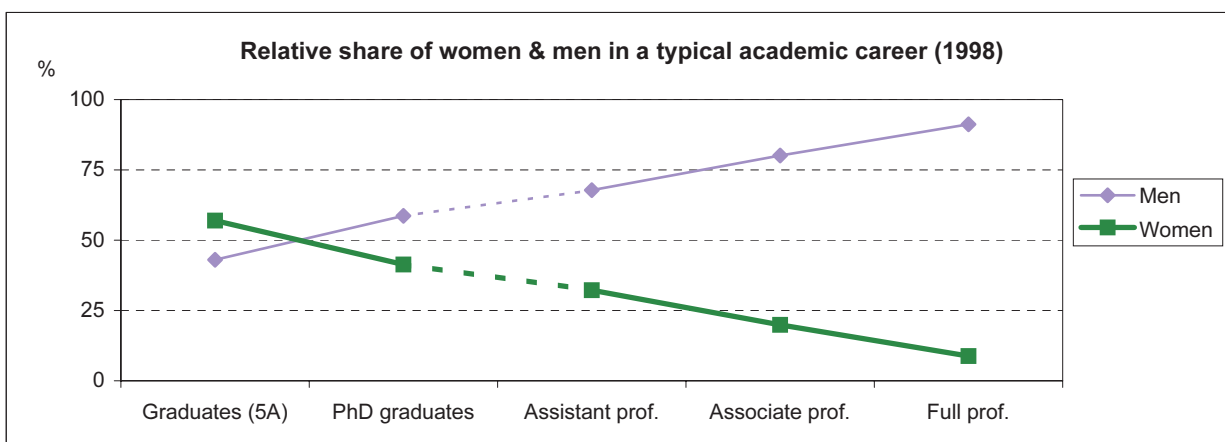
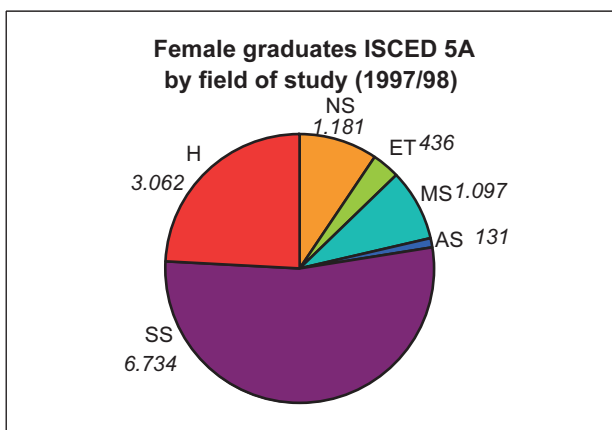
Funding and Success Rates (2000)

	Women	Men	Percentage Women
Funding applications	252	513	32,9
Funding beneficiaries	151	335	31,1
Funding success rate (%)	59,9	65,3	

Israel



Exceptions to the reference year: graduates, 1997; population and workforce, 2000

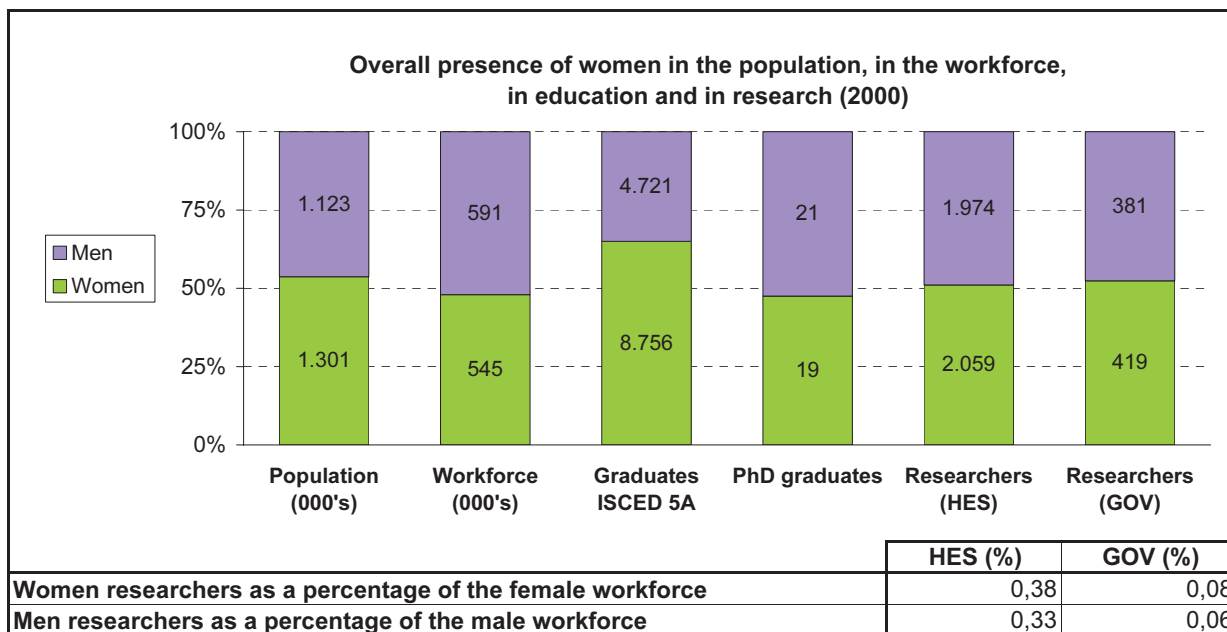


Exceptions to the reference year: graduates, 1997

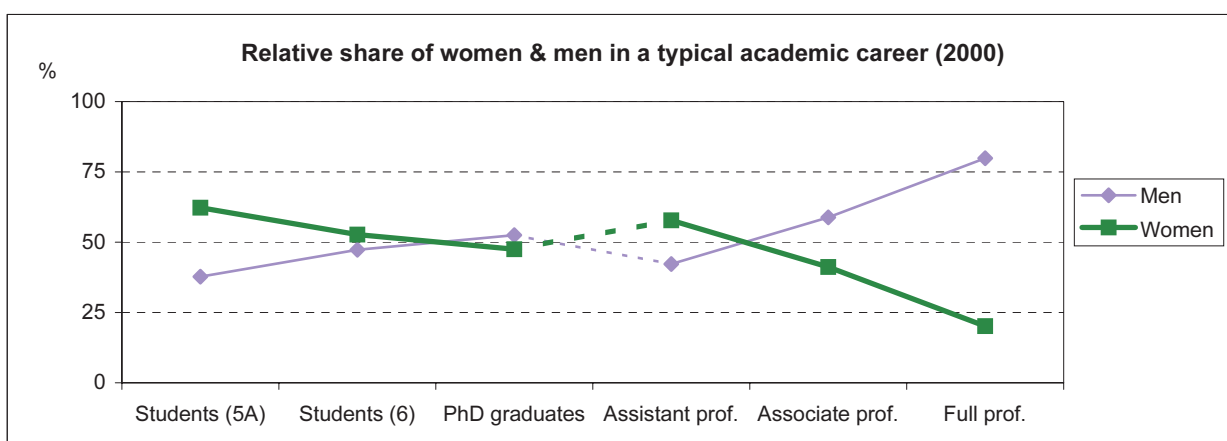
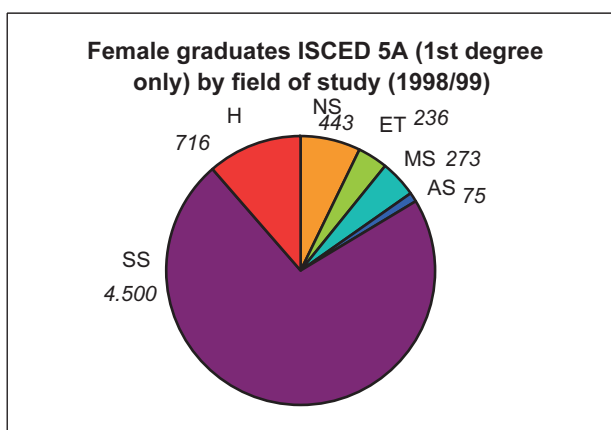
Funding and Success Rates (2000)

	Women	Men	Percentage Women
Funding applications	236	1119	17,4
Funding beneficiaries	71	435	14,0
Funding success rate (%)	30,1	38,9	

Latvia



Exceptions to the reference year: graduates, 1999

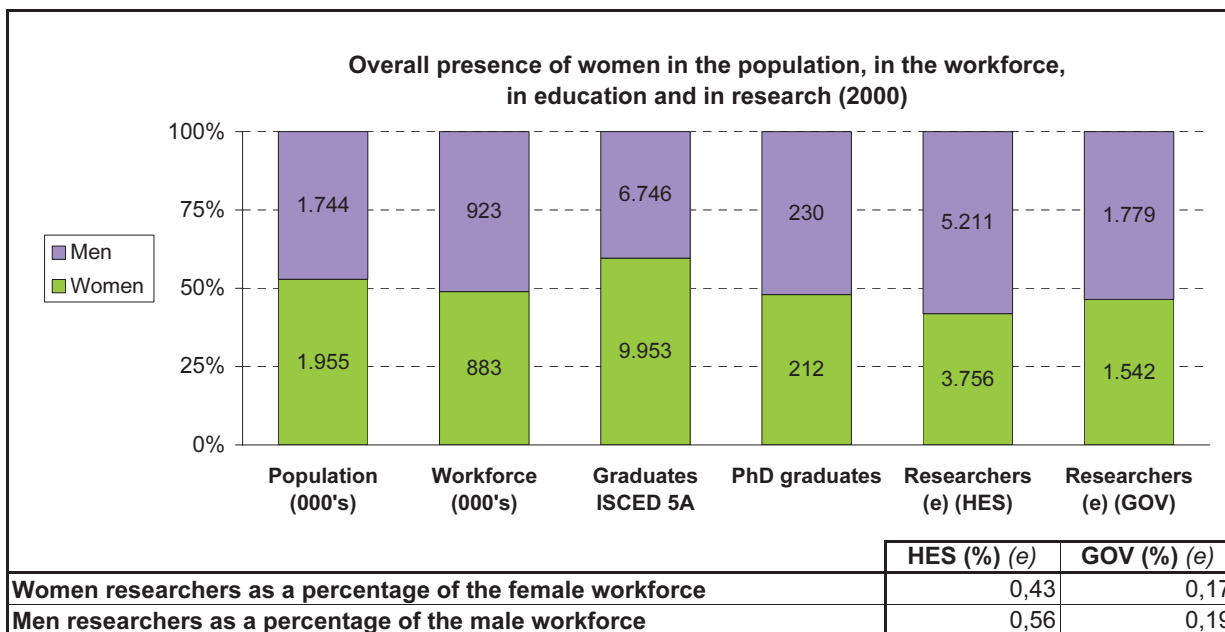


Exceptions to the reference year: students, 1998; graduates, 1999; percentage for PhD are calculated on less than 100 persons

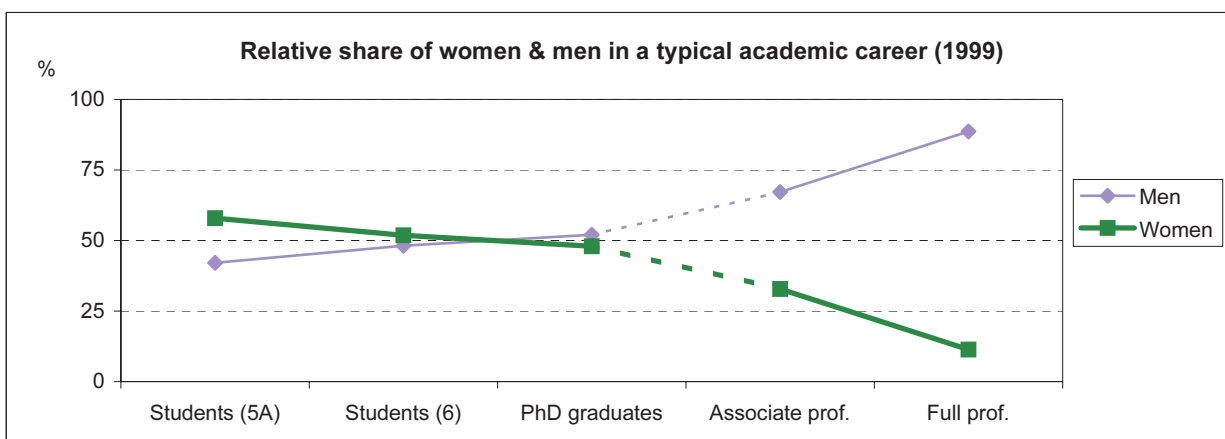
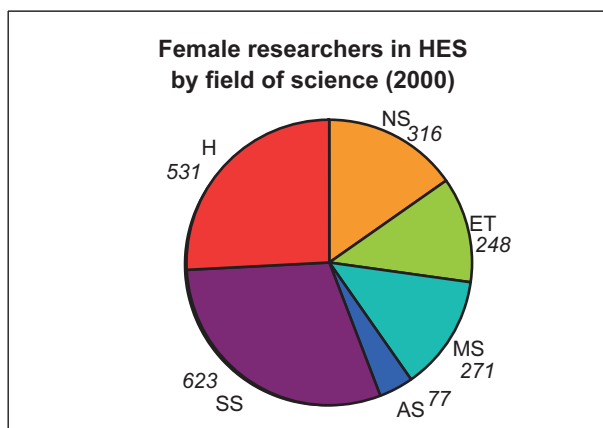
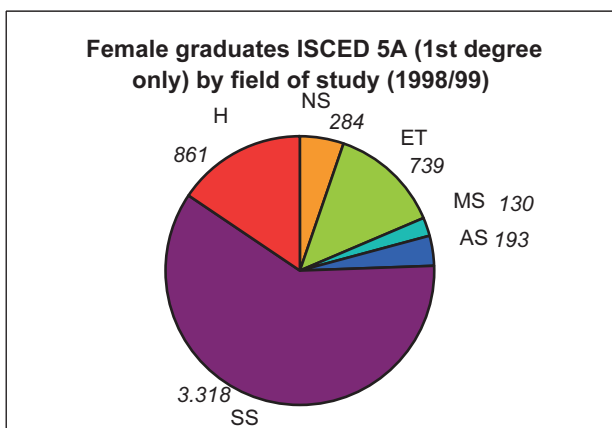
Funding and Success Rates (2001)

	Women	Men	Percentage Women
Funding applications	285	573	33,2
Funding beneficiaries	231	471	32,9
Funding success rate (%)	81,1	82,2	

Lithuania



Exceptions to the reference year: graduates, 1999

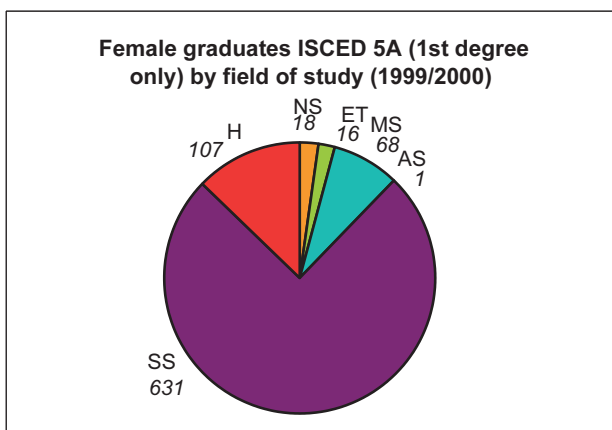
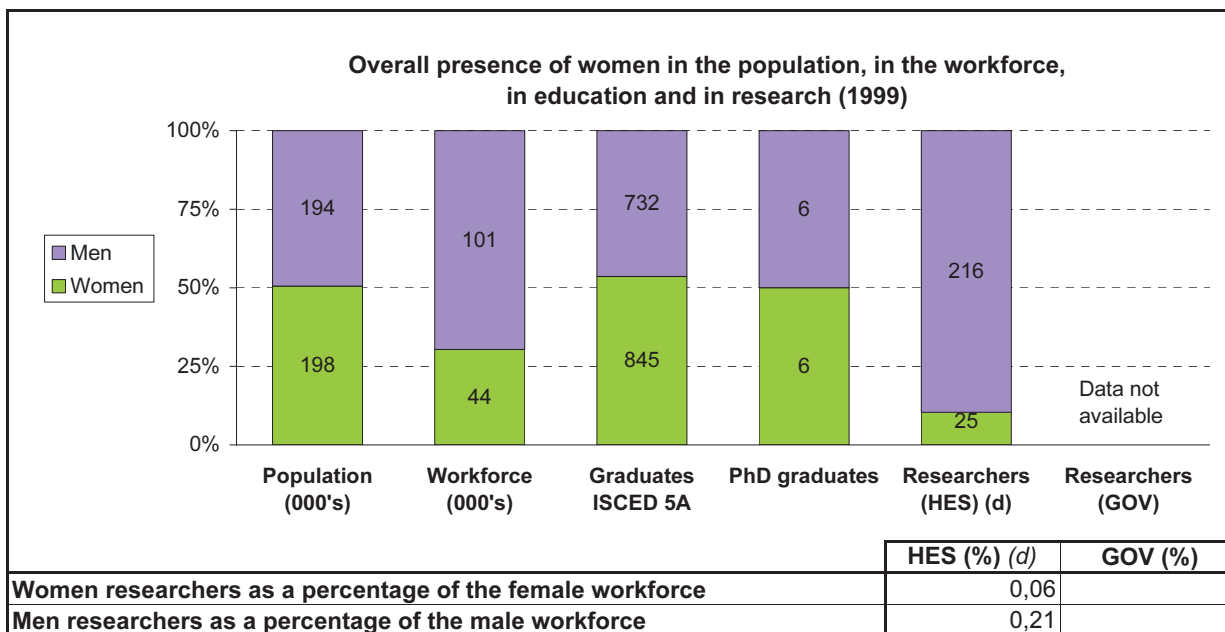


Exceptions to the reference year: students, 1998

Funding and Success Rates (2000)

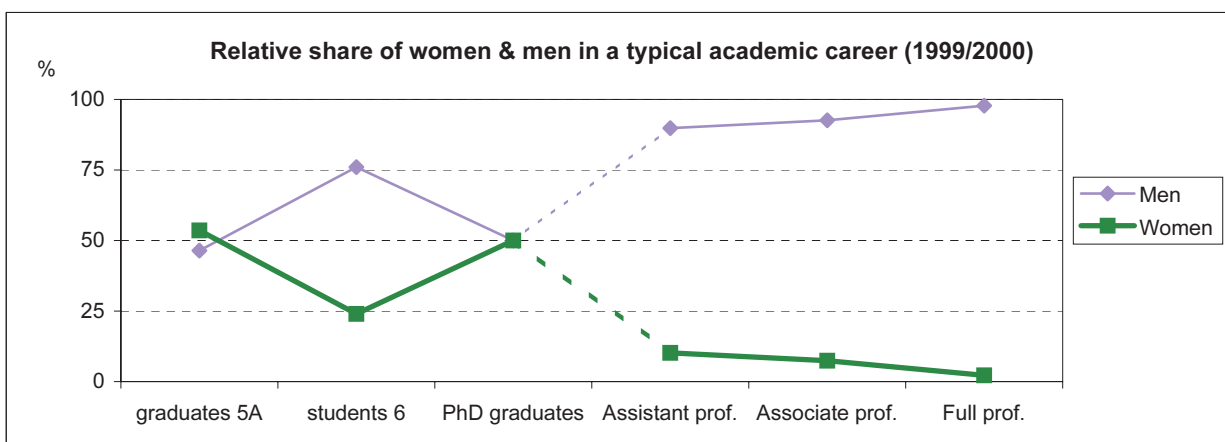
	Women	Men	Percentage Women
Funding applications	24	77	23,8
Funding beneficiaries	8	37	17,8
Funding success rate (%)	33,3	48,1	

Malta



Female researchers in HES by field of science

Data not available

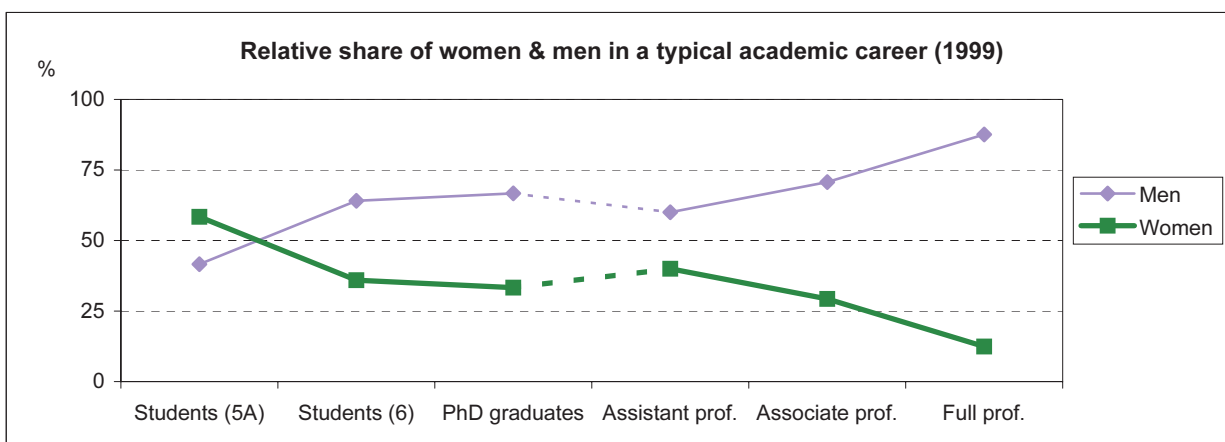
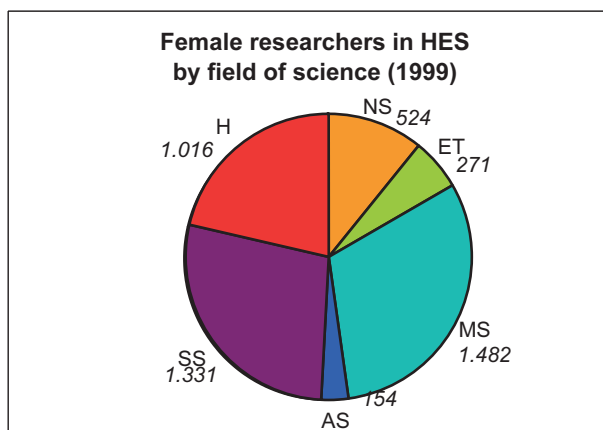
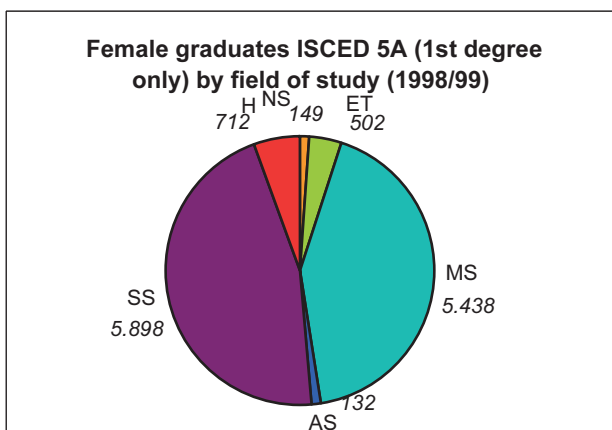
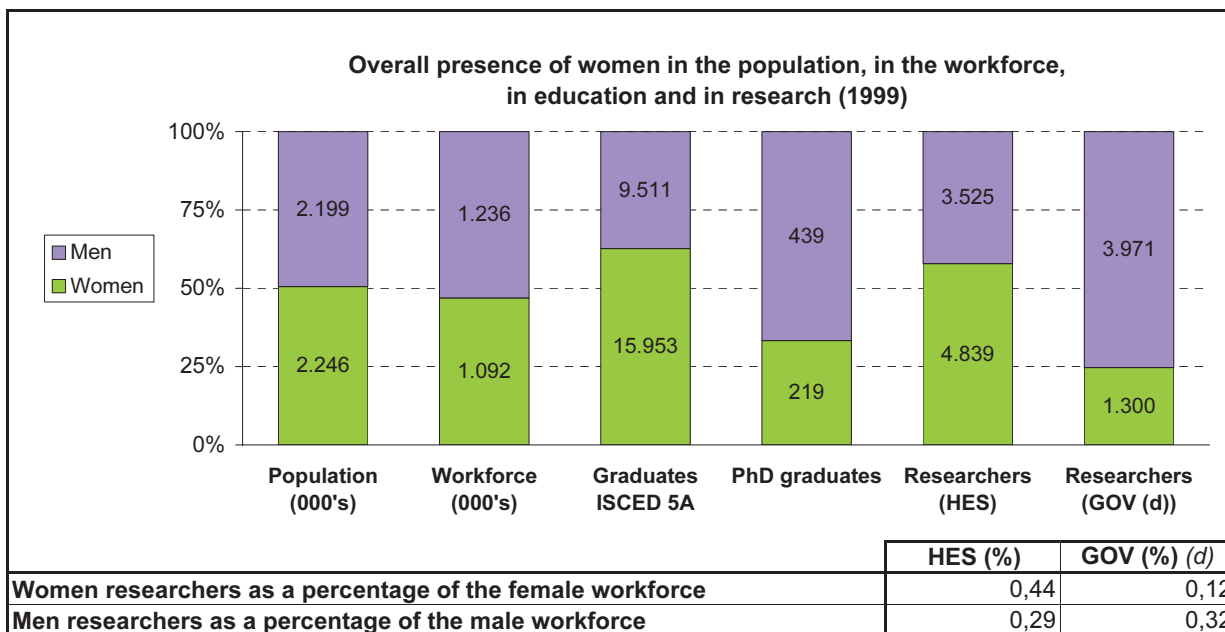


Percentage for PhD students and graduates, full and associate professors are calculated on less than 100 persons

Funding and Success Rates

	Women	Men	Percentage Women
Funding applications	:	:	-
Funding beneficiaries	:	:	-
Funding success rate (%)	-	-	

Norway

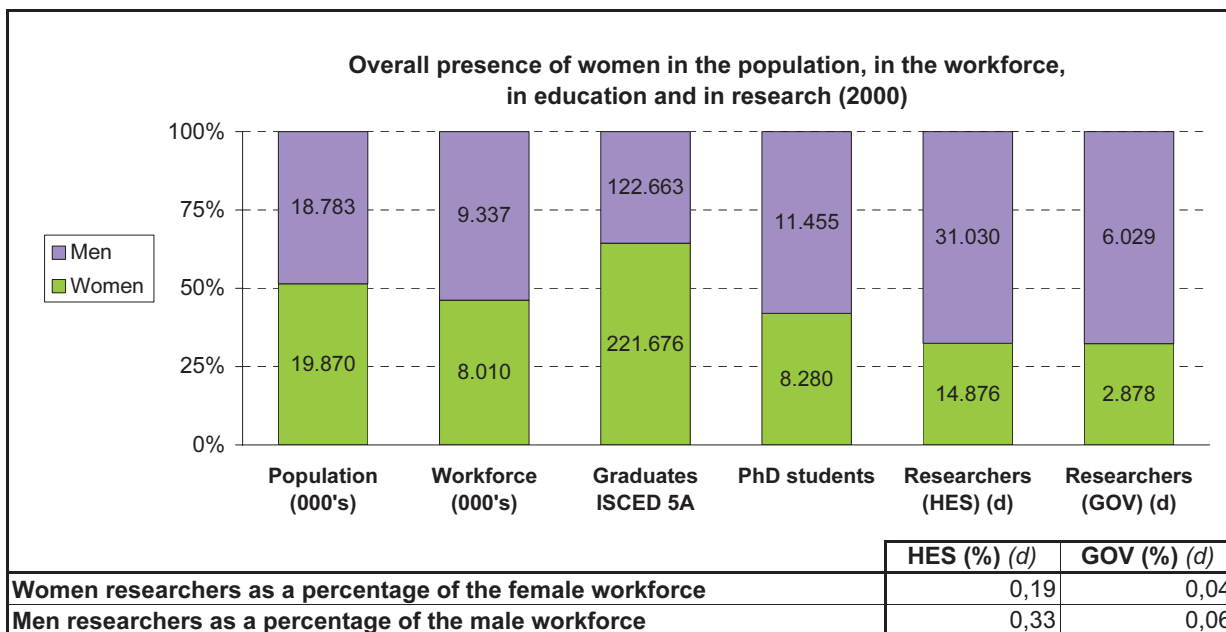


Exceptions to the reference year: students, 1998

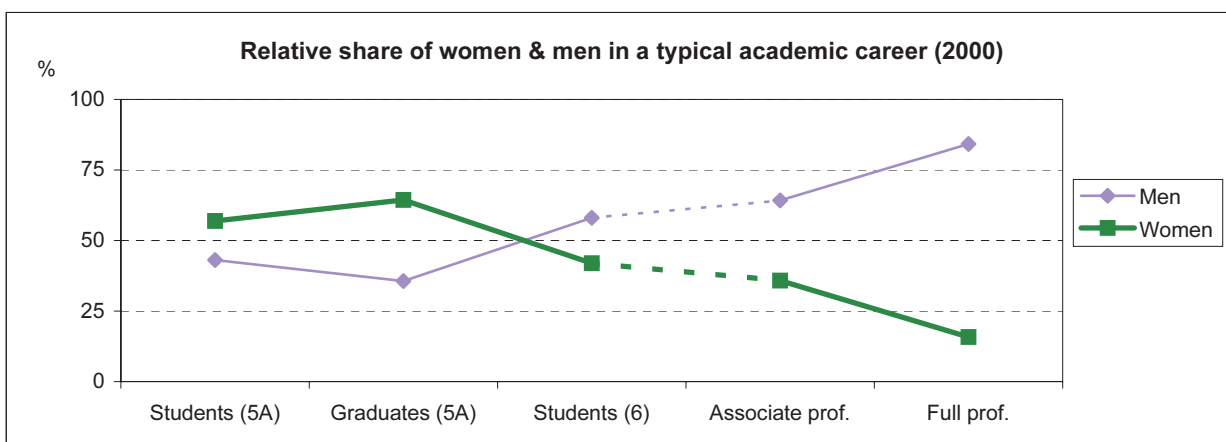
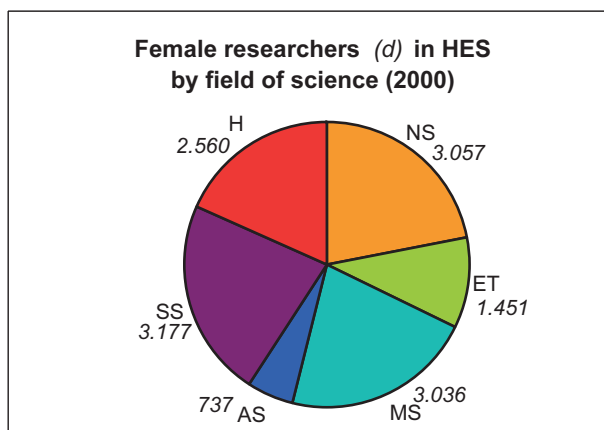
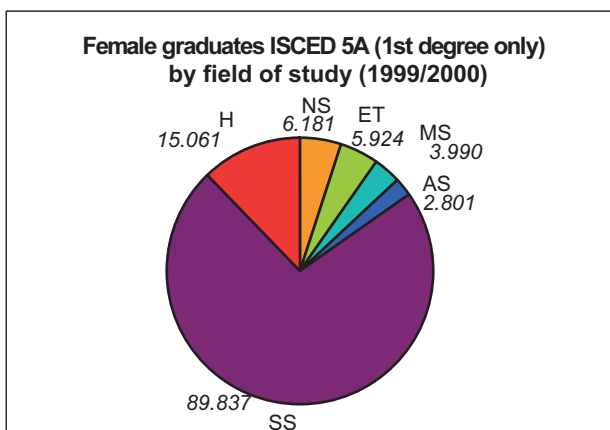
Funding and Success Rates (2000)

	Women	Men	Percentage Women
Funding applications	1041	4086	20,3
Funding beneficiaries	382	1638	18,9
Funding success rate (%)	36,7	40,1	

Poland



Exceptions to the reference year: PhD students, 1998; graduates 5A, 1999

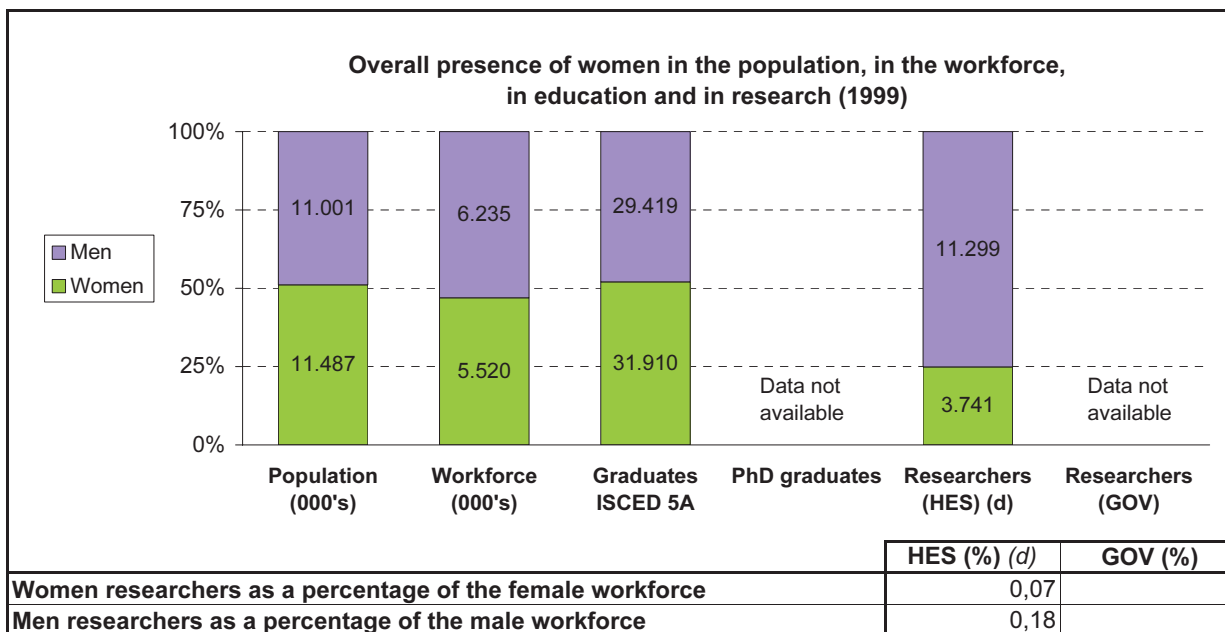


Exceptions to the reference year: students, 1998; graduates, 1999

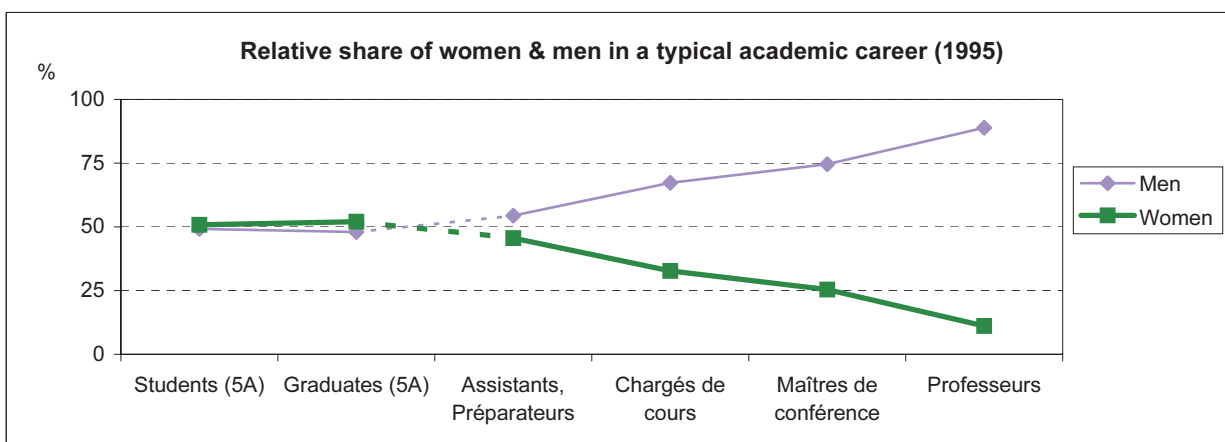
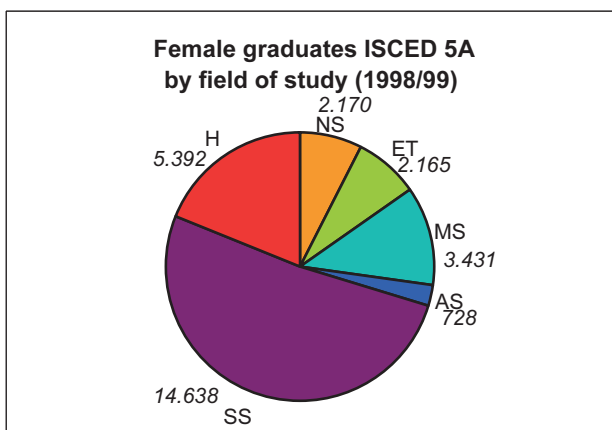
Funding and Success Rates (2001)

	Women	Men	Percentage Women
Funding applications	2513	6401	28,2
Funding beneficiaries	1008	2733	26,9
Funding success rate (%)	40,1	42,7	

Romania



Exceptions to the reference year: researchers (HES) 1995



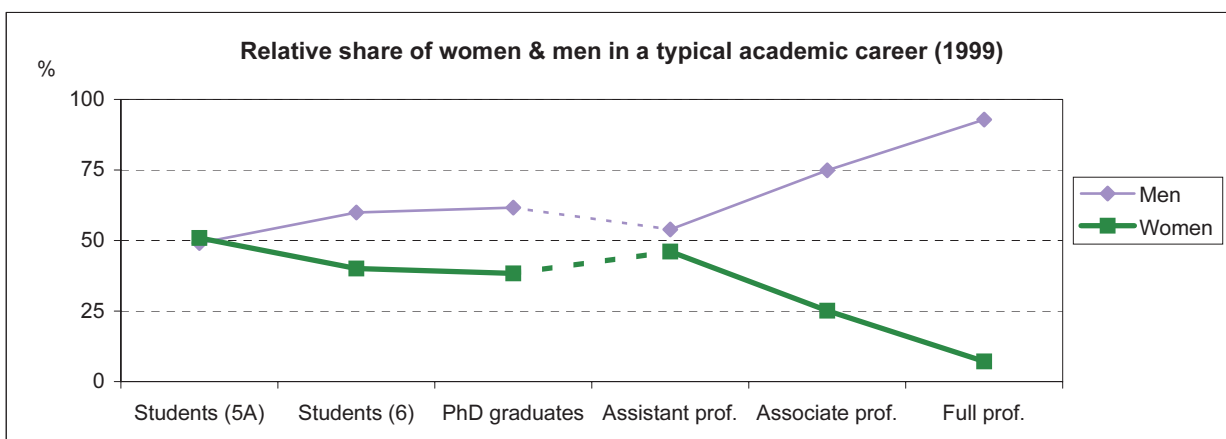
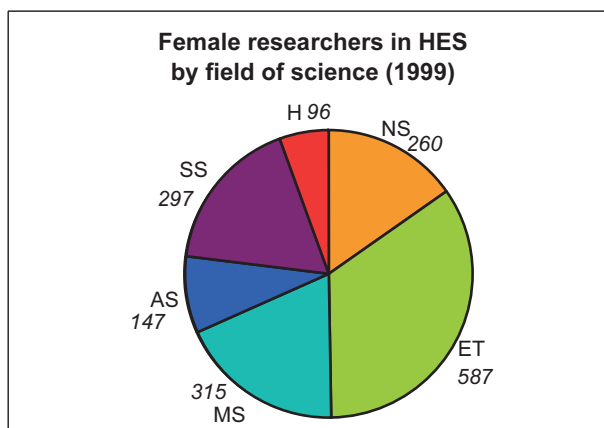
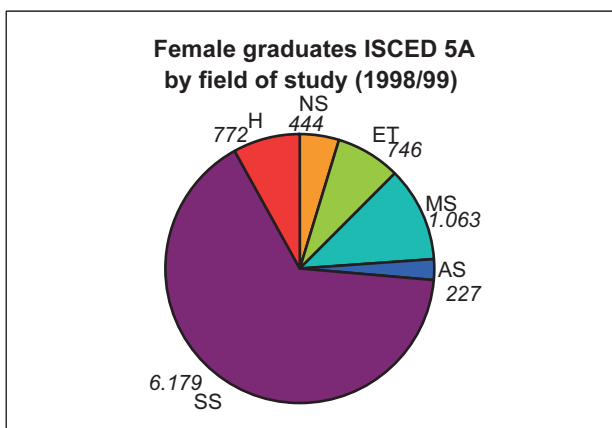
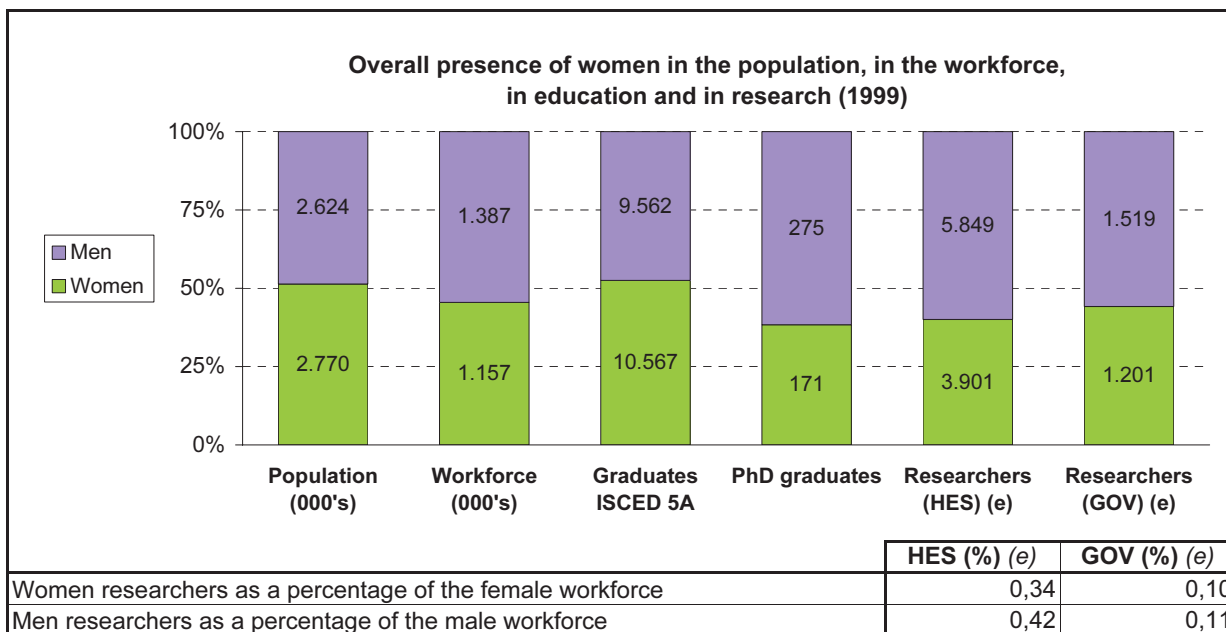
Exceptions to the reference year: students, 1998; graduates, 1999

Funding and Success Rates

	Women	Men	Percentage Women
Funding applications	:	:	-
Funding beneficiaries	:	:	-
Funding success rate (%)	-	-	

Since Romania has not yet appointed a statistical correspondent, the data used here have not been validated along the same lines as for other non-EU countries, and should therefore be interpreted with caution.

Slovakia

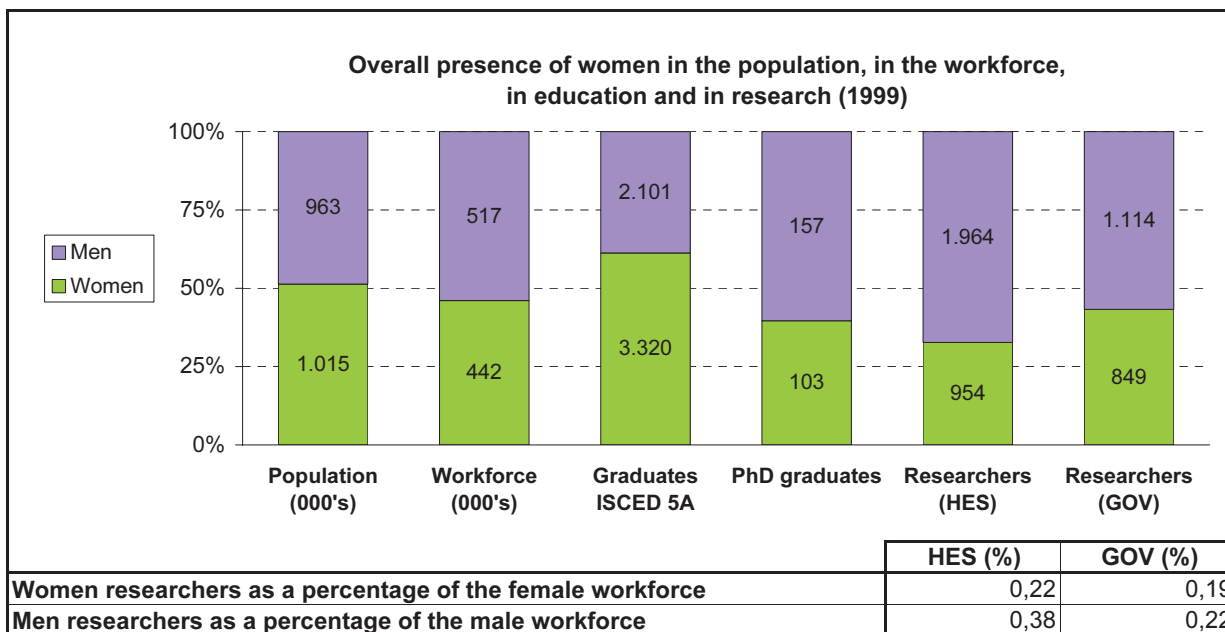


Exceptions to the reference year: students, 1998

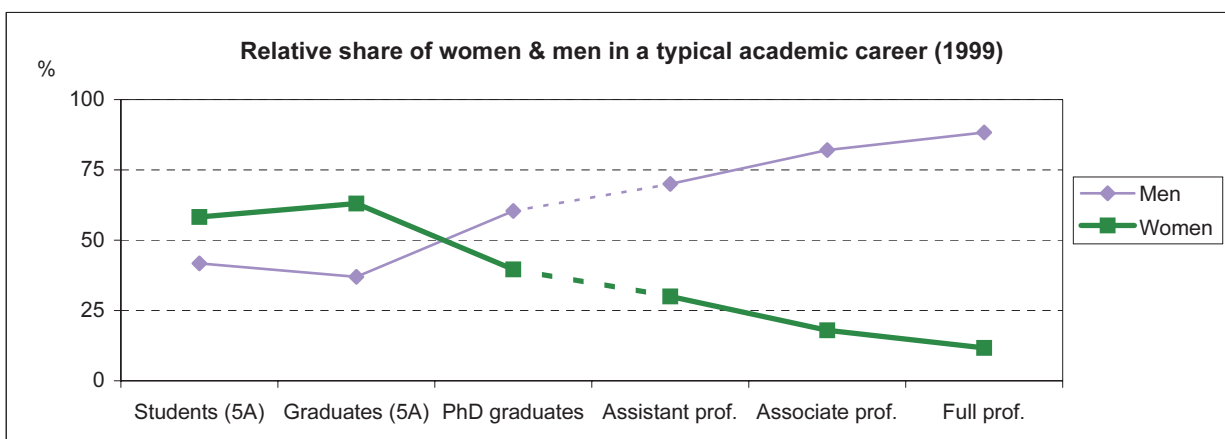
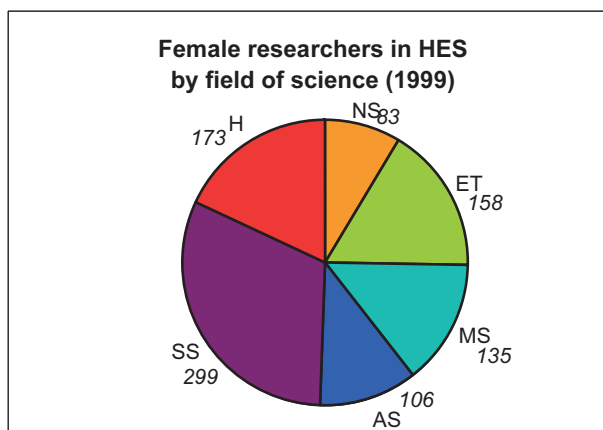
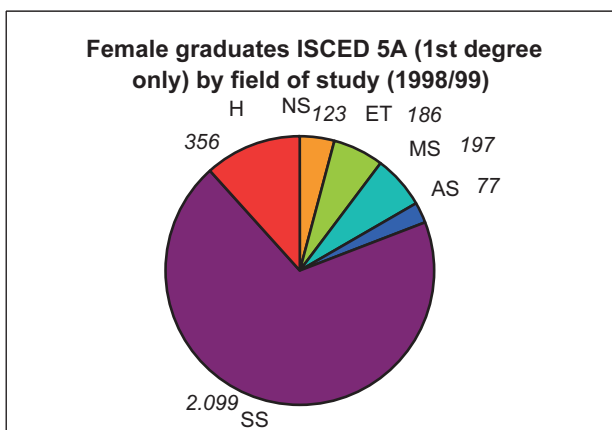
Funding and Success Rates (2001)

	Women	Men	Percentage Women
Funding applications	45	124	26,6
Funding beneficiaries	43	122	26,1
Funding success rate (%)	95,6	98,4	

Slovenia



Exceptions to the reference year: graduates, 1998



Exceptions to the reference year: students and graduates, 1998

Funding and Success Rates (2000)

	Women	Men	Percentage Women
Funding applications	:	:	-
Funding beneficiaries	973	1657	37,0
Funding success rate (%)	-	-	-

Methodological Notes

Country codes

The following codes have been used:

BE	Belgium
DK	Denmark
DE	Germany
EL	Greece
ES	Spain
FR	France
IE	Ireland
IT	Italy
LU	Luxembourg
NL	The Netherlands
AT	Austria
PT	Portugal
FI	Finland
SE	Sweden
UK	United Kingdom
BG	Bulgaria
CY	Cyprus
CZ	Czech Republic
EE	Estonia
HU	Hungary
IS	Iceland
IL	Israel
LV	Latvia
LT	Lithuania
MT	Malta
NO	Norway
PL	Poland
RO	Romania
SK	Slovakia
SI	Slovenia

Statistical classifications:

International Standard Classification of Education (ISCED)

The ISCED classification defines the activities of students and graduates by level (bachelor's and master's degrees and master of philosophy (ISCED5A); doctoral degree, PhD (ISCED6) and by field of study. The 'Education' field of study has been added to 'Social Sciences' to improve comparability between students/graduates and research staff. The ISCED classification was revised in 1997, which has resulted in a break in the time series between 1997 and 1998. The number of graduates refers to those graduating in the reference year and not to the number of graduates in the population.

Frascati Manual (The measurement of Scientific and technological Activities. Proposed standard Practice for Surveys of Research and Experimental Development)

The Frascati Manual defines researchers, §311; the 6 fields of science and technology [Natural sciences (NS), Engineering and Technologies (ET), Medical sciences (MS), Agricultural sciences (AS), Social sciences (SS) and Humanities (H), table 3.2], and four sectors of interest [of which two are of interest to us: Higher Education (HES), §190; and Government Institutions (GOV), §168]. The breakdown of researchers by field of science is according to the field in which they work and not according to the field of study.

Exceptions to the Frascati definition of sectors for IE and NO (GOV)

Exceptions to the Frascati definition of fields for PT [ES means exact sciences (Mathematics, Physics, chemistry); NS means biology and earth and space sciences; computing sciences are included in the engineering group.]

All persons employed are counted as Head Count (HC) unless otherwise specified, in which case they are in Full-Time Equivalent (FTE)). The personnel in HC is the number of individuals who are employed mainly or partly in defined occupations. One FTE corresponds to one year's work by one person.

The categories of Professors

The categories used here have been drawn from the ETAN report '*Science policies in the European Union: Promoting excellence through mainstreaming gender equality*' and include three grades of professor: full professor (A), associate professor (B), and assistant professor (C). While it is not an internationally recognised classification of professors, it has been developed by the ETAN report's co-authors in an attempt to achieve a degree of comparability of national data in this area. Modifications may therefore arise as this framework is currently under further development.

Data sources:

The **population statistics** (start of year population) and indicators are extracted from NewCronos (Eurostat) or have been provided by the Helsinki Group (CY, MT). The **workforce** is defined as the total economically active population.

The other data are extracted from the Women in Science (WiS) database. This was initiated as part of a common project between Eurostat and the Women and Science Unit of DG Research, with

the support of the Helsinki Group on women and science. The statistical correspondents from the Helsinki Group have been involved in both the collection and validation of the data contained in the WiS database.

Where data are collected at national level, they are mainly based on the definitions of the previous paragraphs. However, this is not uniformly applied in practice, which complicates the comparability of data between all 30 countries to a greater or lesser extent.

The data on **students and graduates** have been either obtained from Eurostat in the form of an extraction from the Education database or have been provided by the Helsinki Group (BE/Fr, EL (PhD graduates), IL, MT). The reference year is the first year of the academic year. Eurostat data include all students in the reference country, regardless of their nationality and permanent address. This affects the data for EL, IE, LU, CY, IS, MT in particular, who have large numbers of nationals graduating from universities in other countries. More recent education data became available from Eurostat for many countries shortly before this report went to press. These data will be used in future Women and Science publications, but it was not possible to include them here.

Data on **academic staff** (full, associate and assistant professors) have either been collected at national level from Higher Education Institutions as part of general surveys in that area, or as part of the R & D surveys.

Data on **researchers** have been obtained from an extraction from Eurostat's R&D database, from national R&D surveys, and partly from other national surveys. For researchers in Higher Education and Government Institutions, data for DK, DE, EL, ES, FR, IT (for Government Institutions sector only), AT, PT, FI, SE (for Higher Education sector only), UK (for Government Institutions sector only), BG, CY, CZ, EE, HU, IS, LV, LT, NO, SK and SI conform fully to the Frascati Manual definitions. For BE, IT, NL, IL, and PL the number of researchers in Higher Education is the sum of full, associate and assistant professors. For FI (by field of science), UK and RO, researchers in Higher Education are defined at the national level as ETAN A, B, C plus researchers, and are not necessarily identical to the definition of *the Frascati Manual*.

Estimation of HC data:

Data are presented in HC in the national profiles. For the countries providing data in Full-Time Equivalent, an estimated number in Head Count is necessary to calculate some specific indicators. The estimation procedure is based on factors for conversion between HC and FTE. When data on

total researchers in HC (SK) or national conversion ratios (NL) are available, this information is used. As there is no information on the (average) relationship between HC and FTE for some countries, the mean of the factors available for countries and years is used. It is assumed that this relationship does not differ fundamentally amongst the individual countries. Data, which have been estimated in HC from FTE, are flagged with an "e".

Estimated HC data are provided for:

DE, NL, LT, SK (Researchers in Higher Education)

IE, SE, LT, SK (Researchers in Government Institutions).

Flags:

The following flags have been used:

- = "not applicable" or "real zero" or "zero by default"
- :
- e = estimated value
- d = "definition differs"

FUNDS

Here follows a list per country of the national funding bodies, which provided data for both applicants and beneficiaries, unless otherwise indicated. For the funding success rate, only those funds, which have data available for both applicants and beneficiaries, have been used in the calculation.

BE

Fund for Scientific Research Flanders (FWO)
Funds for Industrial Research (IWT)
Fonds National de la Recherche Scientifique (FNRS) (beneficiaries only for a part of it)
Fond de Recherche pour l'Industrie et l'Agriculture (FRIA) (beneficiaries only)

DK

Six Councils of Research
The Danish Research Agency

EL

Hellenic Public Foundation for Grants (IKY)

ES

National R&D plan (beneficiaries only)

FR

Ministère de l'Education Nationale, de la Recherche et de la Technologie (MENRT)
(beneficiaries only)

LU

Gouvernement luxembourgeois (national research fellowship grants only)

NL

The Netherlands Organisation for Scientific Research (N.W.O)
Academy Fellowship Programme (KNAW)
The Netherlands foundation for the Advancement of Tropical Research (WOTRO)

AT

Austrian Science Funds (FWF)
Austrian Academy of Science (ÖAW)
Bureau for International Research and Technology Co-operation (BIT)

PT

Ciência Programme (beneficiaries only)
PRAXIS XXI Programme (beneficiaries only)

FI

Academy of Finland

SE

Swedish Research Councils (part of funds is for beneficiaries only)

UK

Research Councils (part of some councils is for beneficiaries only)

CY

Research Promotion Foundation (RPF)

CZ

Academy of Science

EE

Estonian Science Fund

HU

The Hungarian Scientific Research Fund (OTKA)

IS

The Science Fund
The Technology Fund
The Graduate Research Fund
Programme for Information Technology and Environmental Research
The Research Fund of the University of Iceland

IL

Bilateral (US-Israel) Science foundation (BSF)
Israel Science Foundation (ISF)

LV

Latvian Council of Science

LT

State Lithuanian Science and Higher Education Fund

NO

Research Council of Norway (RCN) (beneficiaries only)

PL

Government

SK

Commission VEGA of the Slovak Academy of Sciences

SI

Ministry of Education, Science and Sport