

**Documentation of statistics for  
Research Education 2016**

## 1 Introduction

The aim of the statistics on PhD-students is to show the volume of PhD-education. Furthermore it gives information on the progress of the education and the subjects of the project. Data are comparable since mid-eighties which is as long the PhD education has existed in Denmark.

## 2 Statistical presentation

The statistics gives information on numbers of PhD-students and numbers of PhD-graduates at institutions approved to offer PhD-educations in Denmark. The statistics gives information on the progress of the education, under here schemes and special arrangements, periods of leave, and study periods spent abroad. The statistics also gives information on the subjects of the project and on sources of financing. The statistics also covers doctorate granted after §15,2, according to this paragraph a doctorate can be granted based exclusively on a positive evaluation of a thesis without participation in an education.

### 2.1 Data description

The statistics gives information on numbers of PhD-students and numbers of PhD-graduates at institutions approved to offer PhD-educations in Denmark.

The statistics gives information on the progress of the education, including schemes and special arrangements, periods of leave, and study periods spent abroad.

The statistics also gives information on the subjects of the project and on sources of financing.

### 2.2 Classification system

The information of main field of study is primarily based on the students place in the University's institutional structure, i.e. based on information of Faculty supplemented with Institute.

There are the following six main fields:

1. Natural science
2. Engineering and Technology
3. Medical science
4. Agricultural science
5. Social science
6. Humanities, Theology

### 2.3 Sector coverage

The education sector.

### 2.4 Statistical concepts and definitions

PhD-student: A person enrolled at a university following a PhD-scheme

PhD-graduates: The student is awarded the PhD-degree by the university where the dissertation was assessed

## 2.5 Statistical unit

The unit of the statistics is a PhD-student enrolled at a university. If a student changes institution during the reference year the person will be counted twice in the statistics. However, this rarely happens.

If a student stops the education but shortly afterwards finishes the project at the same institution the two periods will be added and the person will only be counted once in the statistics.

If a dissertation is examined at the university without the student following the education scheme for a PhD-education (which is possible according to section 15, subsection 2,3 in the Order) only selected data is reported in these cases.

## 2.6 Statistical population

The statistics gives information on PhD-educations taken at Danish institutions approved to offer PhD-educations. These following ten institutions are approved to offer PhD-educations:

Aalborg University Aarhus University Copenhagen Business School Technical University of Denmark IT University of Copenhagen University of Copenhagen Roskilde University University of Southern Denmark Aarhus School of Architecture The Royal Danish Academy of Fine Arts

Also people of foreign origin who are taking a PhD-education at a Danish institution are included, even if they do not have an address in Denmark. People of Danish origin who taking a PhD-education abroad are not included. Foreigners staying in Denmark who have taken their doctorate abroad are not covered by the statistics either.

## 2.7 Reference area

The statistics gives information on PhD-educations taken at Danish institutions approved to offer PhD-educations. I.e. Universities but also other institutions can be approved, i.e. schools of architecture. Educations taken abroad by Danish citizens or foreigners are not covered. Foreigners staying in Denmark who have taken the degree abroad are not covered by the statistics either.

## 2.8 Time coverage

The statistics is published yearly In Statbank Denmark. First year published is 1996.

## 2.9 Base period

Not relevant for these statistics.

## 2.10 Unit of measure

- Number of PhD students per institution.
- Number of PhD graduates.

## 2.11 Reference period

The reference period follows the calendar year, January 1st - December 31st

## **2.12 Frequency of dissemination**

The statistics is published once a year.

## **2.13 Legal acts and other agreements**

The data collection is warranted according to Act on Statistics Denmark, section 8, subsection 3.

## **2.14 Cost and burden**

Is not calculated as the respondents are public institutions.

## **2.15 Comment**

No further documentation is available for this statistics. Please contact Statistics Denmark for further information.

## **3 Statistical processing**

The statistics is based on reports from all Danish institutions approved to offer PhD-educations. The data collection covers the total population. The reported data from each respondent is examined carefully. The examination is concentrated on missing data for each respondent. It is also checked if consistent information are reported for each student. Data reported from a university is furthermore compared to data for previous time periods.

In case of missing data or unexpected trends the respondent is contacted for verification of the reported data.

### **3.1 Source data**

The statistics is based on reports from all Danish institutions approved to offer PhD-educations. The data collection covers the total population.

### **3.2 Frequency of data collection**

Data is collected yearly.

### **3.3 Data collection**

Data is collected yearly from education institutions approved to offer PhD-educations and Statistics Denmark receives data in excel-format. From the 2013-statistics an increasing number of the respondents have used a system-to-system-format.

### **3.4 Data validation**

The reported data is examined carefully. The examination is concentrated on missing data for each respondent. It is also checked if consistent information are reported for each student. Data reported from a university is furthermore compared to data for previous time periods at the University and also compared to data for other universities in the same main field and in the current reference period. Furthermore, invalid civil registration numbers are corrected.

In case of missing data or unexpected trends the respondent is contacted for verification of the reported data.

### **3.5 Data compilation**

The reported data is examined carefully. The examination is concentrated on missing data for each respondent. It is also checked if the reported information are consistent for each student and if the required specification are met. Among other things, it is checked if the dates in the PhD-education are in the correct order, whether or not the informed scheme and the student's qualifications are in line with each other and whether industrial PhD students have an external supervisor assigned.

### **3.6 Adjustment**

For people who have more than one PhD-education, the educations cannot overlap and it is corrected in case they do.

## **4 Relevance**

These statistics are relevant for Ministries, Universities, Public service, Business organizations, Media and Researchers, for research and analyses. The statistical data are also used in other areas within Statistics Denmark as education statistics are relevant in many contexts.

### **4.1 User Needs**

Typical users: Ministries, Universities, Public service, Business organizations, Media and Researchers.

### **4.2 User Satisfaction**

1-2 times a year the "Kontaktudvalg for Uddannelse" and "Kontaktudvalget for statistikker vedr. Forskning, Udvikling og Innovation" meet and here user-representatives from selected ministries, Labour market organizations, and NGOs in the Education and Research sector have the opportunity of commenting the statistics. Furthermore there is a yearly seminar with the universities, where they gives Statistics Denmark feedback on data quality and publishing.

### **4.3 Data completeness rate**

Not relevant for these statistics.

## 5 Accuracy and reliability

In general the accuracy is very high. All universities and other Institutions approved to offer PhD-educations reports data. Concerning the central units: PhD-students and PhD-graduates, the quality is considered as being very good as the corrections-procedures are very thoroughly. Concerning the information on Main field the quality is considered as good, but since it is based on the students institutional setting and the Faculty structure is under reconstruction these years the accuracy of this information can be affected in a few cases.

### 5.1 Overall accuracy

In general the accuracy is very high. All Universities and other Institutions approved to offer PhD-educations reports data. Please note that the classical doctorate degree are not covered by these statistics.

### 5.2 Sampling error

Not relevant for these statistics.

### 5.3 Non-sampling error

**Coverage:** Concerning number of PhD-students the statistics covers the target population. Concerning number of PhD-graduates please note that the statistics covers degrees taken at Danish Universities, while degrees taken at Universities abroad by people of Danish or foreign origin in most cases are not included.

*\*Measurement errors:* Concerning the central units: PhD-students and PhD-graduates the quality is considered as being very good as the corrections-procedures are very thorough. Concerning the information on Main field of the research project the quality is considered as good but since it is based on the students institutional setting and the Faculty structure is under reconstruction these years the accuracy of this information can be affected in a few cases.

The students and the information on the main variables are checked very carefully, and on the whole only few cases of "missing data" does not.

### 5.4 Quality management

Statistics Denmark follows the recommendations on organisation and management of quality given in the Code of Practice for European Statistics (CoP) and the implementation guidelines given in the Quality Assurance Framework of the European Statistical System (QAF). A Working Group on Quality and a central quality assurance function have been established to continuously carry through control of products and processes.

## 5.5 Quality assurance

Statistics Denmark follows the principles in the Code of Practice for European Statistics (CoP) and uses the Quality Assurance Framework of the European Statistical System (QAF) for the implementation of the principles. This involves continuous decentralized and central control of products and processes based on documentation following international standards. The central quality assurance function reports to the Working Group on Quality. Reports include suggestions for improvement that are assessed, decided and subsequently implemented.

## 5.6 Quality assessment

**Accuracy:** In general the accuracy is very high. All universities and other Institutions approved to offer PhD-educations reports data.

**Reliability:** Concerning number of PhD-students the statistics covers the target population. Concerning number of PhD-graduates please note that the statistics covers degrees taken at Danish Universities, while degrees taken by people living in Denmark at Universities abroad in many cases are not included.

Concerning the central units: PhD-students and PhD-graduates the quality is considered as being very good as the corrections-procedures are very thoroughly. Concerning the information on Main field the quality is considered as good, but since it is based on the students institutional setting and the Faculty structure is under reconstruction these years the accuracy of this information can be affected in a few cases.

The students and the information on the main variables are checked very carefully, and on the whole "missing data" does not occur.

**Comparability:** Comparability over time for the main variables is good. Though there has been institutional changes for the main fields, which create a minor data breache in 2012. This is due to changes in the Faculty and Institute structure, some of the big universities has carries out. Some recoding has been done to ensure that the variable main field are consistent up till 2011. From 2012 changes could not be avoided especially for Agriculture and Veterinary science.

Comparability to international statistics on number of PhD-students are considered to be very good. Concerning international comparability of the education level of the population, countries using surveys have the possibility of including persons, who have obtained the PhD-degree abroad. These group is only partly included in the Danish statistics on attained education used for international comparison. since the statistics on PhD-degrees for this purpose is supplemented with information on education taken abroad for persons immigrated in the years up till 2006.

## 5.7 Data revision - policy

Statistics Denmark revises published figures in accordance with the [Revision Policy for Statistics Denmark](#). The common procedures and principles of the Revision Policy are for some statistics supplemented by a specific revision practice.

## 5.8 Data revision practice

It is possible for the universities to sent supplementary information referring to former reference periods. The corrections concerning the previous year will be included in the next publication. Other corrections will be included at the next big data revision.

## **6 Timeliness and punctuality**

The statistics is published during June after the reference year. Data collection and data processing have been under revision and the production time has therefore been shortened compared to earlier years.

### **6.1 Timeliness and time lag - final results**

- The 2016 statistics was published June 8, 2017
- The 2015 statistics was published July 7, 2016
- The 2014 statistics was published October 14, 2015
- The 2013 statistics was published December 8, 2014
- The 2012 statistics was published December 11, 2013
- The 2011 statistics was published June 13, 2012
- The 2010 statistics was published June 16, 2011
- The 2009 statistics was published June 28, 2010
- The 2008 statistics was published July 3, 2009

### **6.2 Punctuality**

The statistics is published during the summer after the reference year. The precise data have varied in previous years, therefore the date is announced separately each year. The statistics is published on time.

## **7 Comparability**

Comparability over time for the main variables is good. The statistics also contains information on education schemes, research topics, financing, stays abroad and employment. the content of these variables has changed over the years, but have been consistent since 2009.

International comparability of statistics on number of PhD-students are considered to be very good. Concerning international comparability of statistics on the education level of the population, countries using surveys have the possibility of including persons, who have obtained the PhD-degree abroad. These group is in most cases not included in the Danish statistics.

### **7.1 Comparability - geographical**

Comparability to international statistics on number of PhD-students are considered to be very good.

Concerning international comparability of the education level of the population, countries using surveys have the possibility of including persons, who have obtained the PhD-degree abroad. These group is only partly included in the Danish statistics on attained education used for international comparison. since the statistics on PhD-degrees for this purpose is supplemented with information on education taken abroad for persons immigrated in the years up till 2006.



## 7.2 Comparability over time

There is comparable data series from 1996. The definition of the population, number of PhD students and PhD graduates has been consistent over the years. Comparability on main areas is on a whole good but are influenced by the changes in the institutional structure. This is due to the changes in faculty structure made by some of the big universities as well as fusions by some of the institutions. In these periods of change recoding has been made so that the original structure is shown by the statistics.

The statistics also contains information on education schemes, research topics, financing, stays abroad and employment. The content of these variables has changed over the years, but have been consistent since 2009.

## 7.3 Coherence - cross domain

Universities Denmark publish yearly data on number of PhD-students, new entrants and number of obtained PhD-degrees. The comparability is very good. The small discrepancies are due to the fact that the data collections take place at different times, and the data is updated in different degrees.

## 7.4 Coherence - internal

Not relevant for these statistics.

## 8 Accessibility and clarity

- Please find further information on the homepage:  
<https://www.dst.dk/da/Statistik/emner/fuldtidsuddannelser/forskeruddannelser.aspx?tab=nog>
- The main figures are published in Statbank Denmark
- In the database "Norbal" there is PhD-data for the Nordic countries and Baltikum
- The Statistical Yearbook contains data on the PhD-education and more detailed analysis is published yearly in "Innovation and Research".
- Taylor made statistics is available via Statistics Denmark's Customers Center
- Micro-data is accessible via Statistics Denmark's Researcher's Center

### 8.1 Release calendar

The publication date appears in the release calendar. The date is confirmed in the weeks before.

### 8.2 Release calendar access

The Release Calendar can be accessed on our English website: [Release Calendar](#).

### 8.3 User access

Statistics are always published at 8:00 a.m. at the day announced in the release calendar. No one outside of Statistics Denmark can access the statistics before they are published.

#### **8.4 News release**

Newest available data is no longer published in "NYT fra Danmarks Statistik", [PhD-education](#).

#### **8.5 Publications**

Innovation and Research, [Innovation and Research](#). The yearbook shows the trend in enrollment of PhD-students and in the subjects of the PhD-projects. Furthermore tables show the employment of the PhD-graduates, i.e. by sector and industries.

The PhD-statistics is also used as input in the General Statistics on Education Activity and Education Attainment of the Danish Population.

#### **8.6 On-line database**

The statistics are published in the StatBank under the subject [Research education](#) in the following tables:

- [PHD1](#): Entrants, doctorate students by main areas, sex and time
- [PHD2](#): Graduate, doctorate students by main areas, sex and time
- [PHD3](#): Stock of doctorate students by main areas and sex

#### **8.7 Micro-data access**

Micro-data is available for Researchers etc. via the Division of Research Services in Statistics Denmark. For further information, see: [Research Services in Statistics Denmark](#).

#### **8.8 Other**

The Customers Center in Statistics Denmark has access to micro-data and offer detailed tables and tables combining PhD-data with other data in Statistics Denmark.

For further information: [Customers Center in Statistics Denmark](#).

#### **8.9 Confidentiality - policy**

[Confidentially-policy in Statistics Denmark](#).

#### **8.10 Confidentiality - data treatment**

The politics of confidentiality for Statistics Denmark is followed.

#### **8.11 Documentation on methodology**

Documentation on methodology is only available in Danish.

## **8.12 Quality documentation**

Results from the quality evaluation of products and selected processes are available in detail for each statistics and in summary reports for the Working Group on Quality.

## **9 Contact**

The administrative placement of these statistics placed in the section Population and Education. The person responsible is Sose Hakhverdyan, tel. +45 39 17 37 56, e-mail: soh@dst.dk

### **9.1 Contact organisation**

Statistics Denmark

### **9.2 Contact organisation unit**

Population and Education, Social Statistics

### **9.3 Contact name**

Sose Hakhverdyan

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Responsible for the statistics

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