

**Documentation of statistics for  
Childcare before school start 2019**

## 1 Introduction

The statistics illustrates the number of children in childcare preschool, the number of employees with pedagogical assignments and the ratio between children and employees in childcare facilities. The purpose is to illustrate the trends in childcare. The statistics have been published since 1943, while the ratio between children and employees was first published in 2015. The ratio between children and employees does not show the direct time the staff spend with children - also known as "face-to-face" time. The inventory is an estimate of resource allocation to the childcare area.

## 2 Statistical presentation

The statistics is an annual inventory of the number of children enrolled in childcare facilities, the number of employees with pedagogical assignments, and the ratio between children and employees. The framework for the statistics follows the recommendations of the work of an inter-ministerial working group, where stakeholders were involved. This work and the model for the estimations are documented in the publication. "Normeringer i dagtilbud – Model for en årsopgørelse af normeringer i dagtilbud" (The ratio of children per adults in daycare – A model to calculate the yearly ratio of children per adults in daycare).

### 2.1 Data description

The purpose of the statistics is to establish a possibility for municipalities on resource allocation for childcare facilities. The inventory contains childcare arrangements, which are defined under The act on Law on day-care facilities (Dagtilbudslovens section 2 in Dagtilbud til børn indtil skolestart). In other words the childcare facilities are limited day care institutions from 0 years to school start (normally 5 years).

Children and staff are measured as full-time units (also called full-time equivalents). This means that a child or staff on full-time for a year is equal to one full-time unit, while a half-time employed staff counts as 0.5 full-time unit.

The ratio of children per adult is calculated on the basis of the agreement on the Finance Act in 2013, where it was decided "to develop a new method for calculating the ratios" and to prepare more accurate annual inventories for the average number of children per year. A working group was then set up consisting of the Ministry of Economic and Home Affairs, the Ministry of Finance, the national association of municipalities and the Ministry of Children, Gender Equality, Integration and Social Affairs. The working group recommended a methodological framework to estimate the ratio between children and employees. Among other things they recommended that employees with pedagogical tasks should include employees with managerial assignments (managers). It is documented in the report The ratio of children per adults in daycare – A model to calculate the yearly ratio of children per adults in daycare (Normeringer i dagtilbud: Model for en årsopgørelse af normeringer i dagtilbud fra 2014)

### 2.2 Classification system

Under construction.

### 2.3 Sector coverage

Childminders and institutions in childcare for children until school start.

## **2.4 Statistical concepts and definitions**

Fuldtidsomregnet pædagogisk personale: Ansatte med pædagogiske opgaver er udregnet som fuldtidsomregnet ansatte med pædagogiske opgaver i daginstitutioner. Opgørelsen beregnes ud fra årsværk, som personalet har været ansat i daginstitutionen i løbet af året. En pædagogisk ansat med pædagogiske opgaver i en institution på fuldtid - et helt år - er én fuldtidsomregnet ansat med pædagogiske opgaver. En ansat med pædagogiske opgaver i institutionen, som kun er ansat på halv tid eller på fuldtid i et halvt år er en halv fuldtidsomregnet ansat med pædagogiske opgaver. Et årsværk svarer til 1924 timer på et år. Under det pædagogiske personale medtages dagplejer, pædagoger, pædagogmedhjælper (herunder studerende) og ledere i daginstitutioner. Udregningsmetoden følger arbejdsgruppens opgørelsesmetode for normeringsstatistik.

Fuldtidsomregnede børn: Antallet af børn er udregnet som fuldtidsomregnet børn i daginstitutioner. Opgørelsen beregnes ud fra timer pr. uge, barnet har været indmeldt i løbet af året. Et barn som er i børnepasning på fuldtid - i et helt år - er ét fuldtidsomregnet barn. Et barn som kun er i børnepasning på halv tid eller på fuldtid i et halvt år er kun et halvt fuldtidsomregnet barn. Et barn indmeldt i 0-25 timer pr. uge (deltid) opgøres til et 0,5 fuldtidsækvivalent barn. Børn som er indmeldt 26 til 35 timer om ugen opgøres til 0,75 fuldtidsækvivalenter, mens børn indmeldt over 35 timer per uge opgøres til en fuldtidsækvivalent.

## **2.5 Statistical unit**

Children and employees

## **2.6 Statistical population**

Childcare for children from 0 years until start of school in public and independent institutions and public daycare

## **2.7 Reference area**

Denmark.

## **2.8 Time coverage**

These statistics cover the time period from 2015 and onwards.

## **2.9 Base period**

Not relevant for these inventories.

## **2.10 Unit of measure**

Number of children and staff is measured in full-time equivalents. The ratio between children and employees is measured in number of children per employee with pedagogical assignments.

### **2.11 Reference period**

Reference periode for children and staff is a calendar year.

### **2.12 Frequency of dissemination**

Annual.

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

Act on Statistics Denmark § 6 and § 8

### **2.14 Cost and burden**

Filling a validation report can be a comprehensive task for a municipality, as it requires that several different departments cooperate in order to gather the relevant data. The extent of this is not measured.

### **2.15 Comment**

Due to the Covid-19 situation in 2020 there has only been one publication in 2020. That is the 23 of September. Read more about the statistics on Statistics Denmark's page for Childcare. [Børnepasning](#).

## **3 Statistical processing**

Information on enrolled children and employees are obtained primarily from registration in municipalities through the municipalities' and regions' payroll office (KRL). Data is examined for errors and all municipalities validate their data in dialogue with Statistics Denmark. In estimation of the ratio between children and employees, trainees and interns are counted as less than one, while employees with pedagogical skills are counted as one. The calculations follows the method recommended in the report "Normeringer i dagtilbud: Model for en årsopgørelse af normeringer i dagtilbud fra 2014" (The ratio of children per adults in daycare – A model to calculate the yearly ratio of children per adults in daycare).

### **3.1 Source data**

Information on enrolled children is obtained from registration in municipalities which are send to IT-suppliers. The IT suppliers are KMD, IST, ASSEMBLE and in Læsø, data is collected directly from the municipality. Data on employees are obtained through payroll systems. The suppliers for private and some independent institutions are FOBU, BØRNERINGEN, SPIA, Læsø, ACCOUNTOR, LDD, FDDDB. For municipal and some self-governing institutions data are collected from the municipalities 'and regions' payroll office (KRL). The statistic also uses Statistics Denmark's own registres on education and maternity leave.

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

Data is collected monthly.

### **3.3 Data collection**

Data on children's enrollment and working hours of employees are obtained through data providers. The municipalities register the staff's working hours and enrollment of children electronically.

### **3.4 Data validation**

Overall, two validation procedures are performed. 1) Error detection of data and 2) dispatch a validation report and engage in dialogue with municipalities. Step 1: The first part of the data collection is done by reviewing the received data from the data providers. This is done by comparing the new data with previous years data. In addition to comparing data across years, comparisons are also made between annual data and monthly data to assess whether there is compliance between them. Step 2: After data have been checked for errors, an account is made of the numbers of children and staff in each municipality. Subsequently, a validation report is prepared, which is then sent out to each municipality. The municipalities add their assessment of children and employees and the assessment from Statistic Denmark are compared to the assessment from each Municipality.

### **3.5 Data compilation**

Child and staff data are imported as annual extracts from pay systems in the municipalities. Then, an overall quality control and debugging is done in dialogue with the data providers. When data is received, groups are grouped in relevant staff groups and after completed education.

In the inventory of the ratio between children and employees students is weighted with 0,43 while pedagogical interns are weighted with 0.25. The reason for weighting employees is that students and interns also spend time on teaching and receiving guidance. The weighing of personel follows the recommendation from the "Normeringer i dagtilbud: Model for en årsopgørelse af normeringer i dagtilbud fra 2014" (The ratio of children per adults in daycare – A model to calculate the yearly ratio of children per adults in daycare).

### **3.6 Adjustment**

No corrections have been made.

## **4 Relevance**

There are different and diverse users of the statistics. The Danish Ministries use the statistics to compare the resource allocation to childcare in different municipalities and to develop policies on child care. Interest organizations, such as the National Association of Pedagogues (BUPL), the National Associations of Municipalities (KL) and The Association of Parents (FOLA) use the statistics to assess the service level in the childcare area. Data has been collected on an agreement between Statistics Denmark and the Ministry of Children and Education.

#### **4.1 User Needs**

There are several different users of the statistics and such users are diverse. The Danish Ministries use the inventories to compare the resource allocation for childcare in different municipalities and to develop policies on the child care area. In addition, the figures are also used in cross-municipal comparisons of municipalities' resource allocation for childcare in daycare institutions. Various interest groups use the inventories to assess the municipalities' prioritization of staff and children in the childcare area. This applies to both interest groups such as the National Association of Pedagogues (BUPL) and The Association of Parents (FOLA) as well as broader interest organizations such as the National Associations of Municipalities (KL). The figures are also used by researchers who examine developments in the resource allocation in the childcare area or combine the inventories with other statistical information.

There is interest in calculating the ratio between children and employees without counting managers as part of the staff. This can be done by multiplying the number from the ratio between children and employees (from BOERN3) by the ratio of employees with or without managers from employees (BOERN1).

For example, the ratio between children and employees for the whole country for children in the age 3-5 years is 6.2 with managers and 6.7 without managers (of the 46.570 full-time employees with pedagogical tasks were 3,457 managers, that is, the relationship between educational staff counted with and without managers 1,08. Multiplied by the norm for the whole country in institutions for 3-5 year olds:  $6.2 * 1.08 = 6.7$ ).

#### **4.2 User Satisfaction**

The statistics have been prepared on the basis of a contract between the Ministry of Children and Social Affairs and Statistics Denmark. There is a follow-up group linked to the statistics including BUPL and KL. Participants in the follow-up group are regularly informed about the work with the statistics, and participate in developing the statistics.

#### **4.3 Data completeness rate**

Not relevant to this statistic.

### **5 Accuracy and reliability**

The inventory for 2019 has information from all 98 municipalities. The accuracy is affected by errors in municipal registrations and whether keys for distributing staff in age groups 0-2 and 3-5 years in 0-5 year institutions are correct. Employees and children from private institutions are not included in the statistics, because of an unrealistic high or low ratio of children pr. Employee in such institutions. Moreover, uncertainty comes from single registration errors that do not give systematic errors in the calculation.

## 5.1 Overall accuracy

The inventory for 2018 is the second publication of 2018 and contains information from all 98 municipalities.

The number of staff (BOERN1) was not published in the first publication (19 of June, 2018), as the publication depends on the Danish Statistical Qualification Register (højest fuldførte uddannelse) - which is published with delay and is necessary for publishing the inventory.

The statistics are based on register data and cover all children enrolled in public day care institutions and day care. It is considered unlikely that a large number of children or staff will not be registered in the system, since registration regarding parental payment is used as part of the municipal administration. However, the overall precision can be influenced by staff who do not register institutions, employees or children correct. To compensate for these errors, Statistics Denmark sent an inventory of children and staff for validation in the municipalities.

The municipalities report a key that describes how many staff are working in the age groups 0-2 years and 3-5 years in age-integrated institutions (institutions with children in the age group 0-5 years, where age groups can be 0-2 years and 3-5 year). It might affect the accuracy of cross-municipal comparison if there are significant differences in the value of these keys. Statistics Denmark is aware of the issue and has made comparison of distribution keys across the municipalities.

The inventories do not cover employees with pedagogical tasks and children in private institutions. In the validation of the data from private institutions, comparisons were made to the number of children compared with the number of employees with pedagogical tasks. A similar comparison was made between the number of institutions and employees with educational tasks. During these comparisons, there were private institutions that had, for example, few or no children per adult and other institutions with over 20 children per adults. In other cases, there was a lack of systematic information on employees and staff from some private institutions. It indicates systematic errors in the data that Statistics Denmark has collected on children and employees from private institutions. It indicates that information on employees and children from private institutions contains systematic errors, which is why they are omitted from the inventories. It has not been possible to find the explanation for the systematic errors. A special focus area for the work in 2019 and 2020 is to improve registration and data collection from private institutions

## 5.2 Sampling error

Not relevant

### **5.3 Non-sampling error**

The precision of the data is based on correctly registration from institutions and municipalities. Random errors such as incorrectly stated CPR numbers can cause employees and children to be underestimated in the inventories because Statistics Denmark removes duplicates and non-valid CPR numbers in processing of checking data for errors. It is assessed that such errors are random and therefore do not have a systematic effect on the precision of the statistics.

The errors are also improved through the dialogue between the municipalities and Statistics Denmark. Here, errors in the data which do not match municipalities' expectations on the same data will often be identified and corrected. The municipalities indicate how many employees with pedagogical tasks look after children in institutions where there are both children in the age of 0-2 year and 3-5 years (for 0-5 years old institutions). The municipalities do not have a specific value that indicates how many employees look after children in the two age groups. Therefore this number is an assessment by the Municipalities.

Correction for maternity leave is made for employees. No correction is made for employees on holiday or sick leave. Temporary employees are counted in the inventory.

In the inventory on the ratio between children and employees report (BOERN3), employees sick leave, holidays etc. appear to equalize, because both children and employees have holidays and sick leave. The inventories are calculated with managers as part of the educational staff in the calculation of the ration between children and employees. It follows the recommendations from the report "Normeringer i dagtilbud: Model for en årsopgørelse af normeringer i dagtilbud fra 2014" (The ratio of children per adults in daycare – A model to calculate the yearly ratio of children per adults in daycare). On the same background, pedagogical trainees and assistants are included in the inventory, but weighs with a lower factor than ordinary employees.

The ratio between children and employees is an average for a municipality over a whole year, and is therefore not a reflection of a given institution at a given time. The ratio between children and employees does therefore not show the direct time that employees spend with the children - also known as "face-to-face" time. Instead, the statistics reflect the working group's purpose of calculating a resource allocation for Municipalities on day-care. In other words, the inventory is a gross statement of norms in day-care institutions.

### **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

In the first release of the statistic in 2018, 35 municipalities were published. The release from 2018 is the first release for the year 2018 and is updated in the second publication of the inventories on September 25, 2019. The publication for 2018 covers BOERN2 (employees) and BOERN3 (the ratio between employees and children). Since the publication of BOERN1 (employees) depends on the Statistical Qualifications Register - which will be published with delay in 2019 - BOERN1 will be published for the first time on September 25, 2019. All 98 municipalities are included in the 2017 release, which is a significant improvement compared to 2016, where 78 municipalities were published.

Statistics Denmark has searched the data for errors and validated the number of children and employees with each municipality. The criteria for a municipality to be included in the statistics consist of several steps and is an overall assessment of different criterias. It is a combination of the percentage deviation on relevant factors, the proportion of children who are promoted and the dialogue with the municipality that determines whether data is considered good enough to be published. It should be noted that the purpose of the inventory on ratio between children and employees (BOERN3) is to assess the municipality's resource allocation for the day-care area across municipalities. The quality of the inventory must therefore be assessed on the basis of whether the inventory can be used for cross-municipal comparison. In other words, the inventory of the ration between children and employee is an inventory that looks at the number of children per pedagogical employee in the Danish municipalities.

## 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

Only final figures are published. Numbers are normally only revised if substantial errors are discovered

## 6 Timeliness and punctuality

In 2020 the statistics is only published once - the 23 of september - due to the Covid-19 situation. The inventories are published without delay in relation to the pre-announced release date in the release calendar.

### 6.1 Timeliness and time lag - final results

The statistic is first published with preliminary figures in mid-June. The statistic is finally published in late September. The statistic are published around a half a year after the end of the reference year. In 2020 the statistics is only published once - the 23 of september - due to the Covid-19 situation.

## 6.2 Punctuality

These statistics are published without delay, with reference to the announced time of publication in the release calendar.

## 7 Comparability

Statistic on childcare can be dated back to 1943. From 1975 it was the number of children enrolled in the age groups 0-2 years and 3-6 years. Until 2004, the date of measurement was a day in spring, but from 2004 it becomes the first of October. As of 2015, children and staff are measured as full-time units. This gives a lower number of children and staff compared to before 2015. Figures from before 1983 can be found in statistical yearbooks, while figures from 1983 onwards can be found at statistikbanken. Statistics on childcare do not have common guidelines across countries.

### 7.1 Comparability - geographical

Statistics on childcare are published in a large number of countries. However, the statistics are not subject to any common international guidelines, which means that national methods may vary from country to country.

### 7.2 Comparability over time

Statistics on childcare can be dated back to 1943. In those years it was about the Child Welfare Service, where inventories were made on the number of institutions and spaces available. From 1975 the inventories measure the number of children enrolled in the age group 0-2 years and 3-6 years, and there are figures for the number of institutions, and number of full-time spaces divided between nurseries and kindergartens. Figures from before 1983 can be found in statistical yearbooks, while figures from 1983 onwards can be found in the Statistikbank. Until 2007, the measurement dates for the inventories is a given time in the spring, but as of 2007, the measurement date moved to the first October.

From 2015, the number of children and employees is measured on one day. As of 2015, enrolled children and employees are measured as full-time equivalents (number of full-time enrolled children and full-time employees) over a year. This means, for example, that children who are enrolled under 25 hours (part-time enrolled) count 0.5 full-time equivalents, while children enrolled between 26-35 hours count for 0.75 full-time equivalents. All other things being equal, it will underestimate the number of children and staff (number of heads) in day care institutions as of 2015. In other words, this means that the number of children and staff is lower from 2015 and onwards, if compared with the number before 2015. Another important point that has to be considered in yearly comparison of the data is the difference in the number of published municipalities. A total of 78 municipalities have been published in 2015 and 2016. In 2017, it was possible to obtain sufficiently high data quality for 98 municipalities and therefore 98 municipalities was published in 2017. In summary, comparisons of the number of children and employees before 2015 with the numbers after 2015 should take into account a change in calculation of counting children and employees.

### **7.3 Coherence - cross domain**

Statistics Denmark publishes an inventory on the rates on childcare. They can be found at [Takster for børnepasning](#). An inventory of the number of institutions can also be found here. In addition, the day-care institutions' lunch arrangements and information on the contents of the lunch arrangements was first published in 2017. Statistics Denmark also makes similar statistics on leisure schemes, where the number of children and staff is calculated.

### **7.4 Coherence - internal**

Both children and staff might appear in several registers over a year. Statistic Denmark ensures that there is no child or person appearing in an inventory at the same time.

## **8 Accessibility and clarity**

Statistics on the number of children enrolled in institutions, pedagogical employees, the ratio between children and employees and the number of institutions are published in Statistikbanken under Children and staff and Institutions. See more on the topic for Childcare. [Childcare](#).

### **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**

The inventories are not part of any publications from Statistical Denmark

### **8.5 Publications**

Not relevant for these statistics.

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

The statistics are published in the StatBank in the following tables:

- [BOERN1](#): Staff by job category and education by region, job title, education and time
- [BOERN2](#): Clients in day care og family day care by region, category of child care and time
- [BOERN3](#): Ratios in day care and family day care by region, category of child care and time
- [BOERN4](#): Institutions and units by region, type of care, type of ownership and time

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

External access to de-identified micro data is only available via Statistics Denmark's Research Services [Research Services](#).

### **8.8 Other**

Not relevant for these statistics.

### **8.9 Confidentiality - policy**

Publication from the register will be in accordance to the data privacy policy of Statistics Denmark. [Data Confidentiality Policy](#) for Statistics Denmark is applied.

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

The statistics are not published at a level detailed enough for individuals to be identified.

### **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**

In terms of administration, these statistics belong to Population and Education. Bjarne Mann is the head of statistics, tel. +39 17 37 58, e-mail: [bsm@dst.dk](mailto:bsm@dst.dk).

### **9.1 Contact organisation**

Statistics Denmark

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