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PERSONAL IDENTIFICATION NUMBERS
AND POPULATION STATISTICS IN
DENMARK

CONTENTS

1. The development of population registers
 2. The CPR number
 3. Maintenance and application of the system of personal identification numbers
 - 3.1. The Central Population Register CPR
 - 3.1.1. CPR's population
 - 3.1.2. Administration of the CPR
 - 3.1.3. The structure of CPR
 - 3.1.4. Data contents
 - 3.1.5. Updating
 - 3.1.6. Maintenance of the CPR system
 - 3.1.7. The data quality of the CPR
 - 3.2. General application of the CPR number
 - 3.3. Statistical use of the CPR numbers
 - 3.3.1. Population statistics
 - 3.3.2. Matching of data material by means of CPR numbers
 - 3.3.2.1. Occupational mortality
 - 3.3.2.2. Census-type population statistics for 1976
 - 3.3.3. Sample surveys
 4. Evaluation of the CPR number
 5. Protection of identifiable personal data
 6. Plans regarding the utilization of registers
- Annex 1: The structure of the personal identification number
- Annex 2: CPR personal index card (in Danish only)
- Annex 3: CPR road index card (in Danish only)
- Annex 4: Bibliography (in Danish only)

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1. The development of population registers

During the 19th century many western countries introduced continually updated systematic registration of the residence and marital status of their population in population registers. Such registers were not established in Denmark at that time, but at the beginning of the 20th century the demand for reliable information about the residence of individual persons arose as a consequence of the growth in public administration. It thus proved to be difficult for the municipalities to collect maintenance money and taxes because taxpayers could not be traced. Moreover, the authorities realized that population registers could serve other purposes as well: They would be useful for the searching of persons by the police, as a basis for the writing out of electoral registers, and as a basis of population statistics, etc.

In 1924 the Danish Folketing therefore passed "Lov om Folkeregistre" (The Act on Local Population Registers) which laid down that in the same year all municipalities in the country should each establish a local population register, i.e. a file containing information about all persons who were resident in the municipality, irrespective of their being temporarily absent.

The local population registers were to contain information serving as personal identification, such as occupation and name, date and place of birth; apart from this the most important items of information were those of residence, family circumstances, and citizenship.

The municipalities were to keep the files continually up-to-date by receiving information about births, deaths, marriages, divorces, etc. from the various authorities, whereas the individual persons of the population became liable to give notification about changes of address direct to the local population register.

The debate preceding the enactment on local population registers included a proposal for the setting up of a national register which should be an aggregation of the local population registers comprising the whole of the population resident in Denmark, but this proposal was not proceeded with.

During the following years the local population registers were gradually developed to serve local as well as other public administration. Sets of forms were introduced by means of which the local population registers could notify, among others, the tax authorities and the health insurance funds about migrations so that these authorities were able to keep their own population registers.

Gradually the punch-card system was introduced for solving periodic large-scale tasks, such as the calculation of taxes and writing out of electoral registers. In order to perform these tasks regional punch-card data centres were established, owned by the municipalities.

In 1968 an important reform of the local population register system was implemented, the purpose of which was to simplify the total public registration of the population and render it more efficient by means of electronic data processing. In addition to the local population registers, which continued to exist, a Central Population Register, CPR, was set up, a national magnetic-tape register of the Danish population; the Central Population Register and the local population registers are updated by one integrated administrative process.

An essential part of the reform was the introduction of a permanent identification number for each individual person, the personal identification number (the CPR number). This number was considered a practical necessity for the operation of the Central Population Register. Moreover, the number was to be introduced into all sectors of public administration and thus was to replace the many different number systems which had previously been employed by the various branches of the administration.

The establishment of the CPR was first and foremost brought about by the wish to avoid double registration and the need for extra resources which was a consequence hereof. A contributing factor was also the prospect of a tax reform which would introduce the system of tax at source. This would be very difficult to carry through without a reliable system for identifying the population.

In 1972 the CPR system was extended to comprise Greenland.

2. The CPR number

The CPR number is a 10-digit identification number with which all persons in the Central Population Register are provided.

The first 6 digits of the number indicate the person's date of birth, in the sequence day, month, and year.

The next 3 digits form a reference number, which is assigned in such a way that persons born in this century have reference numbers below 500, whereas persons born in the previous century have reference numbers above or equal to 500.

The last digit of the CPR number is a check digit, which is computed automatically on the basis of the other digits by means of a modulus-11 algorithm, cf. annex 1.

The CPR numbers are assigned so that all men have uneven check digits and all women have even check digits.

Thus the CPR number in itself provides information about the person's date of birth and sex.

3. Maintenance and application of the system of personal identification numbers

The system of personal identification numbers is maintained by the Central Population Register, the CPR, and a substantial part of the statistical application as well as other administrative use of the number system is connected with this register.

Before explaining the application of the numbers it will therefore be natural to start with a short description of the CPR system itself.

3.1. The Central Population Register CPR

3.1.1. CPR's population

The Central Population Register is a basis register of general personal data used for a number of administrative purposes within the public administration.

The register holds information about all persons who are resident or have been resident in Denmark since the setting up of the register in 1968. In addition, it comprises persons who have been resident in Greenland since 1972. Finally, the register contains information about some persons who have not lived in Denmark, but who have a certain connection with the country, for example with regard to taxation. At present a total of some 6 million persons are recorded in the register.

Only current items of information about the persons registered are retained. Thus in the case of migration, information about the previous address is deleted from the register. An important exception from this rule, however, is that persons who die or emigrate remain in the register with the data recorded at the time of their death or migration.

Some of the items of information removed for lack of current interest are kept in a special historical register. A technical reorganization of the CPR, now in progress, will result in the inclusion of historical address data, etc., in the central register itself.

3.1.2. Administration of the CPR

The CPR is a State register administered by the Secretariat for Personal Registration, an agency of the Danish Ministry of the Interior. The Secretariat attends to the daily administration of the register. Cases involving matters of principle are submitted by the Secretariat to a Supervisory Board of Personal Registration, set up by the Minister of the Interior, in which the political parties in the Danish Folketing are represented.

Physically, the register is kept at I/S Datacentralen, a publicly owned edp service centre, which performs most of the State's edp operations. Here the automatic processing of the data takes place.

Included in the register system are also the local population registers which supply most of CPR's data. The Central Population Register may be looked upon as an aggregation of the 294 local population registers in the country.

3.1.3. The structure of CPR

The CPR system consists of a number of different sub-registers, of which, however, only two can be said to be of any interest for statistical purposes: The register of persons and the address register.

The register of persons is the very nucleus of the CPR. It contains information about each of the said approx. 6 million persons, identified by personal identification numbers. As some address data - name of street and postal district - are common to several persons, this information has, for practical reasons, been recorded in a special register, the address register, which contains approx. 300 000 roads and road sections, each identified by a municipal code, a road code, and a house number interval. The contents of the address register appear from annex 3: "CPR road index card". Such a card is made out for each road, and these cards are kept at the local population registers in a manual card file, which shows the contents of the address register for the municipality in question. Apart from information about road name, also information about the location of the road in relation to different geographical divisions is registered, such as postal district and parish. A road which is intersected by a geographical division line is divided into two or more road sections, each defined by a house number interval.

3.1.4. Data contents

The data contents, which, as mentioned above, consist of general personal data, are shown on the "CPR personal index card" in annex 2, which is available in Danish only. The most important items of information for statistical purposes are: The CPR number serves, as previously mentioned, as the register's personal identification.

In addition to this comes information about the person's name and residence. In the population register the address is recorded in the form of codes, the meaning of which appears from the address register.

The migration date indicates the time of migration to the municipality of the present residence. However, in the case of persons who have emigrated, the date indicates the time of emigration.

The cross-reference number is the CPR number of another person. By means of cross-reference numbers it is possible to establish certain family relations, i.e. between married persons and between parents and children.

The marital status code indicates the marital circumstances of a person, e.g. married or widowed.

The CPR holds information about occupation and code of occupation, and, about employment status: self-employed, employee, etc. These items of information, which are reported to the register by the State Tax Directorate, are not sufficiently accurate to be applied directly in the statistics, but must be supplemented with data about occupation from other sources.

Information about citizenship and place of birth, put together, makes it possible to select national minority groups. The place of birth code is, moreover, so specified that the parish constitutes the smallest unit within the borders of Denmark.

Finally, the register contains some date registrations, as for example, date of marriage, date of divorce, and date of death.

As described above, the latest current information on persons who leave the population as a consequence of death, emigration or disappearance, is retained in the register. Therefore, the register contains a managing code, called status, indicating whether a person is active (i.e. in existence) or inactive, making a distinction between persons who have died, emigrated or disappeared.

3.1.5. Updating

The register of persons is stored on magnetic tape, organized sequentially according to CPR numbers - at present 20 tapes -

and is updated once a week. For the time being about 50 000 data alterations are made every week.

The main part of the alterations are reported to the register by the local population registers which receive information, partly from other authorities, and partly from the registered persons themselves.

At the request of users of the CPR, extracts from the register are formed during the weekly updating process. For this purpose a general procedure has been developed, making it possible to obtain information about a certain group of persons by means of their CPR numbers or other criteria which serve to define the group of persons in question. A selection may, for example, be based on geographical criteria, the date of death, age, or a combination of several such factors.

Printouts of the above-mentioned type, which provide information about CPR's data contents at a certain time, are called status extracts.

It is, moreover, possible to retrieve information about all persons who have their data contents altered at a certain time, for example, all persons who change address (migrate) or status code (die). Such printouts are called change extracts.

Change extracts can be used by authorities for updating population registers with special data contents, e.g. tax registers.

3.1.6. Maintenance of the CPR system

New CPR numbers are assigned to all new-born children, immigrants, and persons who have been given a wrong CPR number.

The assignment of numbers is vital for the whole administration of the CPR system. The correspondence between persons and their identification numbers must be absolutely unambiguous, and, on the whole, alterations in the numbers ought not to take place. Therefore, the assignment of CPR numbers has been centralized in the CPR.

The assignment of CPR numbers to new-born children and corrections of wrong numbers are made automatically in connection with the updating of CPR on the basis of information about the correct date of birth and sex.

An immigrant who has been provided with a personal identification number during a previous stay in Denmark, must in the case of a later immigration be re-registered under this number. Therefore, the CPR maintains an inquiry system with phonetic search by name, by means of which the local population registers can receive immediate information as to whether a person has previously been given a CPR number; only if this proves not to be the case does the CPR provide the immigrant with an available CPR number.

When assigning new CPR numbers to first-time immigrants the problem may arise that an immigrant does not know his exact date of birth. In such cases the procedure is that instead of the date of birth, the year of birth is applied (or perhaps the approximate year of birth) supplemented with the month and day of immigration.

3.1.7. The data quality of the CPR

As appears from section 3.2., information from the CPR is used by the public administration in almost all cases which are related to individual persons. This means that there are many possibilities of detecting and correcting errors and deficiencies in the register contents. Thus a person cannot obtain work as an employee without giving information about his CPR number to the employer who is to withhold the employee's provisional tax and remit it to the tax authorities. This and several other reporting channels provide a relatively safe guarantee that all persons are actually registered in the CPR, and that the most frequently used information (addresses, family relations, etc.) are being correctly registered.

For the reporting to the register of increases and decreases in the population as a consequence of births and deaths, very

reliable sources are used, involving physicians and clergymen, whereas reports of decreases as a consequence of emigrations are less reliable, because it is the emigrant himself who is liable to notify the local population register about the emigration, and often the incentive to give this notification is very little. The CPR, therefore, has persons registered who no longer live in the country. However, this situation is always rectified within a relatively short period, because the authorities write to the population at regular intervals, for example when sending out income tax returns and sickness insurance certificates; and these letters are returned if the addressee cannot be found. According to the rules, the population register authorities must in such cases institute an investigation in order to establish the reason why a person cannot be found. If they fail to find an explanation, the person must be registered as disappeared.

Each year a total of some 1000-2000 persons are registered as disappeared. Most of them are foreigners, who, it must be presumed, have returned to their home countries, whereas almost all Danish citizens who disappear will appear again at a later time.

In short it can be said that the data quality of the CPR is very high, and that the serious problems which may arise are of little numerical importance.

3.2. General application of the CPR number

Generally, the CPR number is used in the public administration as a kind of file number, which at the same time serves as an accurate identification of individual persons. Therefore, the CPR number must be stated in connection with practically all matters in which the public authorities are involved: tax cases, payment of social benefits, hospitalization, admission to schools or institutions, purchase of real property, military service, etc.

By means of the CPR number the tax authorities and the social administration, etc. can retrieve general personal data from the

CPR system. For many branches of the administration it has been necessary to build up special edp-registers which, apart from the CPR data also contain personal data relevant to the various special fields of administration. Naturally, these special registers also make use of the CPR number for identification purposes, and the registers are constructed in such a way that the general personal data are updated by means of automatic reports from the CPR; especially it should be mentioned that CPR can supply information about increases and decreases within the population group with which the administrative authority is concerned.

By application (including the statistical use) of the special registers it should be pointed out that these data are of a different nature than those of the CPR: The register data need not necessarily be generally applicable, and they seldom have the same degree of reliability.

The more important public registers, which avail themselves of CPR numbers today, are, apart from the CPR:

Tax register

Pension registers

Unemployment registers

Social registers

Hospital registers

Registers of people receiving education

Registers of real property

Central register of enterprises and establishments

Within the health sector two special medical registers should be mentioned in which the persons are identified by their CPR numbers: The cancer register, which has 1/2 million living and dead cancer patients recorded, and the heart register, in which patients with an acute coronary thrombosis are registered. These are research registers which are almost exclusively used for statistical analyses.

The fact that the personal identification number serves as a key to all the systems mentioned makes it possible to integrate the utilization, to combine personal data from different sources. This accumulation of personal data may, however, by the population be considered a threat to privacy, and at present these problems are being debated in Denmark, cf. section 5.

The integrated statistical utilization of the registers will be further described in the next section.

As a main rule, only the public authorities can require information about the CPR numbers and receive personal data from the CPR. However, the employers must know the CPR numbers of their employees with a view to the payment of tax withheld. Another exception from the rule is that banks are liable to register the CPR numbers of all bank customers who have deposit accounts with the bank. This legal rule makes it possible for the authorities to exercise an effective control over the taxpayers' information to the tax authorities about bank deposits and income in the form of interest.

3.3. Statistical use of the CPR numbers

In Denmark the responsibility for the general statistical production and the co-ordination of the total statistical production rests with a special body, Danmarks Statistik. The statistical utilization of the CPR system thus primarily takes place at Danmarks Statistik, which co-operates with several authorities:

The Secretariat for Personal Registration, the National Health Service, governmental and local tax authorities, and planning authorities, research institutes, etc.

3.3.1. Population statistics

The basis of the CPR utilization is the current population statistics, i.e. the statistics of the size of the population, its composition and changes - births and deaths, migrations, etc.

Surveys of the total population and its composition are normally made once a year, i.e. of 1st January. The basis of the surveys is a complete copy of the CPR's register of persons and address register at the turn of the year, which is worked up by means of electronic data processing at Danmarks Statistik.

However there is a certain delay in the reporting of births, deaths, and migrations to the CPR, which in the case of most categories of changes may amount to an average of 3 weeks from the time when the change took place and till the information is properly recorded in the register. The population register will, therefore, never correspond in contents to the resident population as it is at a certain time in question. By the processing, these delays are taken into account in that the population recorded in the local population register as at 1st January, is adjusted with regard to births, deaths, migrations, etc., which have taken place before 1st January, but which were reported within the first 1 1/2 months of the new year. By means of this period of collection it is ensured that all reports, which are not subject to extraordinary delays, are included in the statistics.

The statistics of population changes - births, deaths, etc. - are based on magnetic tapes with change extracts, which Danmarks Statistik receives from each updating of the CPR. These change extracts must be subjected to an initial processing at Danmarks Statistik, during which the category of change must be established in each individual case. Especially it must be decided whether a change has actually taken place, or whether it is only a case of correction of wrong data contents. By the processing of change extracts attention must be paid to delays in the reports. In the current statistics changes are transferred to the next period (year, or quarter of a year) if they are reported later than 1 1/2 months after the end of the period.

The statistics of births are, apart from the said CPR data, moreover, based on midwives' reports which are filled in by the

midwife for each live birth in Denmark. The midwives' reports are not systematically provided with the child's CPR number, but both data materials are filled in with the mother's CPR number which serves as a secondary identification so that all items of information in the reports can be combined automatically with the changes reported from the CPR.

In the same way the statistics of deaths are prepared by a combination of data from two sources, namely CPR data and the original death certificates, which are filled in by physicians in connection with all deaths taking place in Denmark. The CPR number of the deceased is stated in both data materials and is used for an automatic matching of the data.

The inclusion of material in the form of certificates and reports as a supplementary basis is due to the fact that medical information about births, for example the inducement of labour, or about deaths, the cause of death, is not contained in the CPR. The demographic variables such as sex, residence, and occupation could theoretically be taken from the certificates and reports, but by applying the demographic variables from the CPR, the advantage of rationalization is obtained, as the code and registration work can be reduced. Besides the statistics of births and deaths are co-ordinated with the other CPR-based population statistics. This is most desirable, as e.g. the number of deaths in various groups of the population - by geographical area or by special industries - should be seen in relation to the size and composition of the population in that same group.

3.3.2. Matching of data material by means of CPR numbers

The CPR number is extensively used for statistical production where personal data from various sources are to be combined. As mentioned above, such matchings are currently conducted in population statistics, but the possibilities of person-orientated matchings are numerous. In the following a short description will be given of some studies making use of this technique.

3.3.2.1. Occupational mortality

This study has as its purpose to demonstrate differences in the mortality between various occupational and industrial groups. Information about occupation at the time of death is not very useful for such a study: When persons die they often, for reasons of old age or poor health, have given up the occupation which they have had throughout their economically active life and which may have had an influence on their state of health. It may even be presumed that this selection is frequently found in occupations which are strenuous and injurious to health.

The idea of the study is, therefore, to follow the population registered at the population census in 1970, the employment status of which was recorded on that occasion. Apart from the population census material, which includes CPR numbers, also the systematized CPR material contained in the population statistics is included to provide information about decreases in the population as a result of deaths, migrations and other causes during the period 1970-75. Medical statements from death certificates are also used in the study so that it will be possible to calculate the cause-specific mortality rates for the various industrial groups.

3.3.2.2. Census-type population statistics for 1976

In Denmark population and housing censuses have traditionally been taken every fifth year, and according to this schedule a population census should have taken place in 1975.

On account of the large costs incidental to such a census and the inconvenience caused to the population, it was however decided not to take the census. Instead planning data corresponding to the population census data are to be obtained, as far as possible, from already existing registers.

The reference date of the census-type population statistics is the 1st July, 1976, and the basic source is the Central Population Register. The population is grouped by geographic criteria, mainly into parishes, according to CPR's address register, and

into urban areas which are defined in accordance with the traditional definition recommended by UN. For this task maps are used, made available by the various municipalities, combined with population data from the CPR.

By means of a complicated matching process involving several tax registers and a central register of enterprises and establishments it is possible to provide information about the individual persons with regard to occupation and industry.

Finally, the various items of information can be matched to produce information by family. This is done by means of address data and family references from the CPR.

The study has not yet been fully completed, and moreover it has not been possible to make a final evaluation of the quality of the material so far. The principles of the study do, however, seem to open up a wide perspective, cf. item 6 below.

3.3.3. Sample surveys

It has been described above how existing register data can be more or less directly used in the production of population statistics. This method of production can, of course, far from satisfy all statistical requirements. For example, satisfactory information about factors of employment and their effect on the state of health cannot be compiled solely on the basis of data already registered. A closer analysis of this question would require the collection of special information from the population, perhaps from special groups of the population. This may be done by means of interviews or mailed questionnaires, and it could, moreover, be necessary to carry out clinical and laboratory tests. The data collection should be based on some form of representative samples, randomly selected. The selection of a representative sample would require a complete list of all persons in the population under review, and for this purpose the CPR serves as a suitable basis. The population which is the subject of the study can be printed out from the CPR provided it can be defined by means of the data contained in this register.

Danmarks Statistik and Socialforskningsinstituttet (The National Institute of Social Research) currently conduct various sample surveys on the basis of the CPR. By way of example, could be mentioned Danmarks Statistik's labour force surveys which are conducted by means of mailed questionnaires sent to 1 1/2 - 5% of the population. The samples used for these surveys are persons selected by their dates of birth, and the selection is made solely on the basis of CPR numbers. Naturally, the questionnaires never ask for background data which can be obtained from the CPR register.

4. Evaluation of the CPR number

Experience from the first decade with the CPR numbers confirms that the use of one common and accurate personal identification within the public administration highly facilitates the administrative work, especially in connection with the use of electronic data processing.

The administrative registers can communicate by means of the CPR numbers, which means that a given personal data item, for example an address, need only be recorded at one place in the total register system. This also ensures that the best and most updated data can be used by all registers.

For the same reason the distribution of public registration on several authorities is only a question of practical organization as the data about the individual person technically can be combined with great accuracy, even though they are obtained from different registers. But, on the other hand, the highly efficient use of the registers results in a fear of registration, and the problems concerning accessibility of data are accentuated, cf. below.

The fact that the personal identification number contains information about the date of birth and sex makes it relatively easy for the individual person to remember it rather than a randomly assigned reference number which would have to consist of at least 7 digits in order to cover the Danish population.

By the input of data into the various register systems, the check digit of the CPR number is automatically controlled which is a safeguard against errors in the writing or registration of the number.

The use of CPR numbers has had a very great impact on the production of different forms of population statistics. In this way it has been possible to make a co-ordination of the various fields of statistics so that they now appear as one consistent system of population statistics. The concepts of population statistics can be used as a common framework of references for social statistics, income statistics, health statistics, educational statistics, etc. In this connection especially some data-processing modules should be mentioned intended for common use in the various population statistics.

1. A module for distribution of the population according to residence. Any geographical division may be applied.
2. A module for distribution of the population by industry and occupation within a specified period (one year).
3. A module for assessment of the size of the population at any given time.
4. A module for distribution of the population by family nuclei, i.e. groups of persons consisting of married couples or single persons with children, if any, staying at the same address.

The possibilities of co-ordinating population statistics are still far from being fully utilized, but it is obvious that this work will result in a much better service to users of the statistics.

As mentioned above, the use of CPR numbers and administrative registers has, moreover, meant an improvement in the rationalization of many surveys. As a consequence, it has been possible to reduce the processing period and publish statistics which are more up-to-date than previously, which has resulted in a much better service to the users, especially researchers and planners.

The conducting of surveys based on questionnaires sent to a representative sample of a population group is rendered more

efficient because the CPR, on which the samples are based, is frequently updated and contains data of a very high quality; of special importance is the good quality of address data in the CPR and the fact that it is sufficient to ask for data which have not already been registered. These factors reduce the risk of non-response and thereby a material source of error in respect of all questionnaire surveys.

It should also be mentioned that the CPR number has made certain types of studies possible which were previously considered impracticable, such as life cycle analyses where the development of a given population is followed during a rather long period. An example of such a study is the previously described study of the correlation between mortality rates and occupation.

5. Protection of identifiable personal data

During the period since the introduction in 1968 of the CPR numbers, the public debate concerning registration of personal information and safeguard of privacy has gradually become intensified. From time to time the problem is presented as if it was a question of being for or against CPR numbers. This is, of course, misleading, because the problems concerning the protection of personal data are dating far back. But the introduction of the CPR number has made the operation of registers more efficient and the accuracy of personal identification has made it easier to combine items of information so that it is now technically possible to integrate many pieces of information about the individual person.

As said, only public authorities are entitled to ask for the CPR number. In accordance with the current rules of law it is a main rule that the public authorities must not pass on personal information to private persons or firms. However, a person can, within certain limits, insist on knowing about information registered about himself, and there is free access to the local population registers for information about the addresses of individual persons whom the inquirer can identify.

On the other hand, the registers are not permitted to pass on individualized information on a large scale to private persons. The staff within the public administration and in the service agencies, which are dealing with information for the public, are subject to the general rules of non-disclosure.

If the authorities use register information in a way which is considered by the population to violate the right of integrity this may result in an opposition against supplying necessary information to the public authorities, including the CPR number. In the case of widespread opposition the existence of the population registers could be threatened. However, only few - if any - examples of abuse in connection with the use of registers are known of.

In the last few years a certain reluctance against registration has been observed, although the manifestation have not been so pronounced as in certain other countries.

At present a bill on public registers is under debate in the Danish Folketing. This bill clearly stresses the rules of non-disclosure already in force and the rules of accessibility of register data. Moreover, it proposes the setting up of a Register Board, which shall supervise the registers and approve regulations concerning the operation of the registers, with a special emphasis on safety measures for the protection of information. Matchings of registers shall in each individual case be notified to the Board which may lay down the conditions of how such matchings should be carried out.

The control rules specified in the bill concerning the matching of registers are not to apply to registers which are solely used for the production of statistics. The reason is that statistics in themselves cannot threaten privacy, because information about individual persons cannot be identified from the statistical tables, and because individual information in statistical registers must not be used for administrative purposes.

The problem of protection of personal information has for many years been recognized as important for the production of statistics. It is vital to the activities of Danmarks Statistik that there is confidence in the population that information given for statistical purposes is not passed on, neither to public authorities nor to private persons. In consequence hereof information must be treated as confidential and must be safeguarded so that no information is published which may be related to individual persons.

In this respect the practice of Danmarks Statistik is most restricted, implying that no identifiable information must be passed on, not even to institutions solely concerned with research work. It goes without saying that when dealing with CPR numbers the utmost secrecy is observed.

The debate on the question of integrity in connection with the CPR numbers has up till now only in one case had consequences which were detrimental to the production of statistics. This is the statistics on social benefits, under The Social Assistance Act (Bistandsloven), for which Danmarks Statistik is to collect data identified by CPR numbers from the municipalities. A few local governments have refused to give the CPR numbers on grounds of the clients' right to anonymity. There is a hope, however, that the problem will be solved by the passing of the previously mentioned Register Act.

6. Plans regarding the utilization of registers

The future development of population statistics will to some degree be determined by the development of the registration systems. Conversely, also the requirements of statistical production are taken into consideration when re-organizations and extensions of the registers are being planned.

During the next few years expansions of the register systems may be expected which will make it possible to comply with urgent needs of the users of statistics. Two of these expansions will be mentioned in the following.

In the course of the next year, the chain of registers important for population statistics will be extended by a new link: a national basis register of all buildings and dwellings, which is about to be established. This register will contain information about, among other things, location, size, age, and installations of the dwellings, and the dwellings will be identifiable by means of a specified address code. The address code system will constitute a national and unambiguous system of identification in respect of all buildings and dwellings, and the codes will, in the same way as the CPR numbers, be used in all registers which are concerned with such objects, among other things, for stating the residence in the CPR and the employment address in the central register of enterprises and establishments.

It is important for population statistics that the general address identification will make it possible to combine items of information about dwellings and residents. This means that the data about dwellings can be used as background variables in the various population statistics, for example in health statistics. Statistics on dwellings and residents are, moreover, essential as a basis of public and private planning, and traditionally it has only been possible to carry out such statistical analyses in connection with the regular population and housing censuses. In future the analyses can be made more frequently and be more up-to-date.

Denmark is under an obligation to produce population and housing census statistics in 1981, but it is planned to collect the statistical data from registers, i.e. without inquiries to the population for information; it may however be necessary to supplement the census with questionnaire surveys, based on samples, in respect of some data which cannot be retrieved from the registers.

The other planned expansion of the register system, mentioned here, consists in a registration of the individual establishments, i.e. local business units. On the whole, the existing registers of enterprises and establishments contain

information only about enterprises, i.e. legal business units of which several each comprises more than one establishment.

The expansion, which is taking place for statistical purposes, will make it possible to specify the number of establishments within a certain geographical area. Moreover, it will be possible in the statistics to combine information about the location of the establishment and the residence of the individual employee so that, among other things, the extent of commuting can be analysed. Also the location of the establishment can be used as a basis variable in the population statistics. Finally, the possibilities of analysing the population by industry, mentioned in section 4, will be improved. These improvements in the statistics are to be realized by means of a matching project which will be based on data from the tax authorities' register of the employers' notifications to the tax authorities about the employees' wages and salaries, taxes paid, etc.

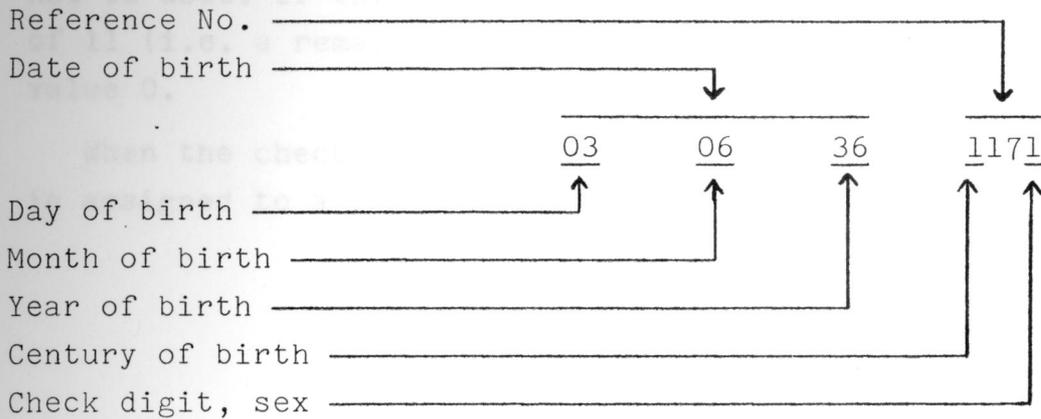
This register contains references partly to the employees by their CPR numbers, partly to the enterprises by the employer code numbers, but the project requires the last-mentioned reference to be specified to apply to the individual establishment within the enterprise. At present the project is still at an initial stage.

By way of a conclusion it can be mentioned that with the already existing registers there are many possibilities of conducting important statistical surveys, which have not yet been exploited, and that some of the above-mentioned surveys can be expected to give rise to wishes for new statistical projects. Thus the basis material for the study of employment and mortality rates will be used for special-purpose analyses directed at selected groups of the population or causes of death.

Annex 1: The structure of the personal identification number

The personal identification number is purely numerical and consists of 10 digits.

The below figure shows by way of an example how the number is built up:



This is the CPR number of a man, born on the 3rd June, 1936.

The check digit is computed by means of modulus-11 algorithm on the basis of the 9 other digits.

The calculation is made as follows:

1. The digits are multiplied by the constants

4, 3, 2, 7, 6, 5, 4, 3, 2

and the results are added:

0	3	0	6	3	6	1	1	7
x	x	x	x	x	x	x	x	x
4	3	2	7	6	5	4	3	2

$$0 + 9 + 0 + 42 + 18 + 30 + 4 + 3 + 14 = 120$$

2. The sum is divided by 11 and the remainder of the division is arrived at:

$$\begin{array}{r}
 120 : 11 = 10 \\
 \underline{110} \\
 10
 \end{array}$$

3. The check digit is found to be (11 - the remainder):

$$11 - 10 = 1$$

Accordingly, the check digit is 1.

By employing this method certain combinations of the first 9 digits give a check digit of 10, and these combinations cannot be used. If the result of the calculation is a check digit of 11 (i.e. a remainder of 0) the check digit is given the value 0.

When the check digit is uneven, as in this case, the number is assigned to a man. Women are provided with even check digits.

INDENRIGSMINISTERIET
København
December 1945
J.nr. 1945-127-4
/997

Indlægget består af 11

ADRESSE

- 1. Adresse, 2. Forpostnummer, 3. Postkassenummer, 4. Postdistrikt, 5. Postkontor, 6. Postby, 7. Postregion, 8. Postland, 9. Postnummer, 10. Postkoden, 11. Postdistrikt

PERSONOPLYSNING

- 2. PERSONNUMMER
STILLING
FOLKERÅDSTYRE
UKYNDIGHED

ANNEX 2

CPR PERSONAL INDEX CARD

(in Danish only)

NAVNEOPLYSNING

- 3. FULDT NAVN

- ADRESSEKORT
SØGENAVN
FØDELSER
STATSBOR

ADRESSEOPLYSNING

I felterne 1-11
på den side
kan være en
adresse i f.
flytningssk
registrering
supplerende
meddelelse
kommunen e.
Af de 13 n

December 1976

j.nr. 1976-117-4

/gqr

DATAINDHOLD I PERSONKORT

Tallene refererer til vedlagte personkort (bilag 1).

ADRESSE

1. ADRESSE. I første linie skrives vejkode, husnummer, incl. husbogsstav, etage og side/dørnummer (værelsesnummer). I anden linie skrives vejnavnet. Feltet er kun udfyldt for de kommuner, der har personkortene stående i adresseorden.

PERSONOPLYSNINGER

2. PERSONNUMMER

STILLING

FOLKEKIRKEFORHOLD

UMYNDIGGØRELSE

NAVNEOPLYSNINGER MM

3. FULDE NAVN. Fulde navn består af slægtsnavn, fornavn(e) og præpositioner/pigenavn.

ADRESSERINGSNAVN

SØGENAVN

FØDSELSREGISTRERINGSSTED (klarskrift og kode)

STATSBORGERRET (landekode)

ADRESSEOPLYSNINGER

I felterne 4-11 udskrives adresseregistreringerne linie for linie med den sidste (aktuelle) registrering nederst. Den øverste adresse kan være en adresse i udlandet, indrapporteret som supplerende adresse i forbindelse med indvandring - eller en adresse i fraflytningskommunen. Herefter kan der følge en række adresseregistreringer indenfor kommunen. Nederst kan anføres enten en supplerende adresse til den aktuelle adresse eller en afgangsmeddelelse. Afgangsmeddelelsen er enten adressen i tilflytningskommunen eller en meddelelse om død, udvandring eller forsvinding. Af de 12 mulige skrivelinier vil højst 10 være udfyldt.

4. ADRESSE DATO kan indeholde
- dato for flytning til adressen
 - udvandrings- eller forsvindingsdato

5. KOMMUNEKODE

6. VEJKODE

Ved udenlandske adresseregistreringer i forbindelse med ud- eller indvandring indeholder vejkode en landekode. En stjerne efter vejkode angiver, at der findes yderligere oplysninger i feltet BEMÆRKNINGER.

7. VEJNAVN: Feltet kan foruden vejnavn indeholde

- adresse i udlandet
- supplerende adresse
- c/o-navn
- kommunenavn (en oversættelse af tilflytnings- eller fraflytningskommunekoden)
- "DØD", "FORSVUNDET" eller "UDVANDRET"

8. HUSNR, der foruden husnr kan indeholde husbogstav

ETAGE

DØRNR. I dette felt udskrives side eller værelsesnummer.

Hvis begge felter findes udskrives værelsesnummer yderst til højre.

9. BYNAVN

For Grønland benyttes feltet til bygningsnummer. Hvis husbetegnelse indgår i adressen udskrives den i dette felt.

10. POSTNR som kun udskrives ved den aktuelle adresse

11. BEMÆRKNINGER

- ADR B, betyder at adressen er beskyttet
- SUP A, betyder at adressen er en supplerende adresse
- HIS , betyder at CPR indeholder flere adresser end der er udskrevet på kortet

.....

CIVILSTANDSOPLYSNINGER & KOMMUNALE FORHOLD

CIVILSTANDSOPLYSNINGER

I felterne 12-17 udskrives civilstandsregistreringerne linie for linie med den aktuelle registrering nederst.

12. DATO. Feltet kan indeholde civilstandsændringsdato eller dødsdato.
13. CIVILSTAND, herunder D for død. Blankt felt betyder, at personen er ugift.
14. CIVILSTANDSMYNDIGHEDSKODE. Ved dødsfald udskrives dødsregistreringsstedets myndighedskode.
15. CIVILSTANDSMYNDIGHED (klarskrift). Ved dødsfald udskrives dødsregistreringssted.
16. PERSONNUMMER på ægtefælle eller tidligere ægtefælle (fraskilt eller død)
17. BEMÆRKNINGER
 - HIS , betyder at CPR indeholder flere civilstandsregistreringer end der er udskrevet på kortet
 - KOR , betyder at linien er korrigeret og erstattet af den efterfølgende linie. Næste gang der udskrives et personkort, vil denne linie ikke blive udskrevet, idet den kun udskrives i forbindelse med korrektionen.

KOMMUNALE FORHOLD

18. KOMMUNALE FORHOLD indeholder oplysninger, som er indrapporteret i de nuværende felter SPECIELLE FORHOLD

"SLÆGTSKAB"

19. BØRN ELLER FORELDRE

1290 112B 3 TH

1

LANGGADEN

010740-2122

2

STILLING

F KIRK

UMYND

ANDERSEN, POULINE CHRISTINE CHRISTENSEN/JØRGENSEN

3

ADRESSERINGSNAVN

ANDERSEN, POULINE CHRISTENSEN

SØGENAVN

CHRISTENSEN, POULINE

FØDELSREGISTERINGSSTED

ØLSEMAGLE, RØGE

7234

STATSBORGER I

D

4	5	6	7	8	9	10	11
02 10 75	123	0728	KINGORA SAFAT, 5262 KUWAIT	123A ST TV 1234			
17 01 76	123	1277	BORGMESTERGADE	7 1 42			
23 04 76	123	1290*	KALKBRÆNDERIVEJ	112B 3 TH	RINKENÆS	7532	ADR B
			LANGGADEN				
			C/O HANS HANSEN				

12	13	14	15	16	17	18
01 03 73	G	7875K	GODTHÅB, KØBENHAVN	060537-0233		1 3297

BØRN: 100571-1233 100571-1245 170573-0321 121174-0422 121174-0443
281075-0233

19

SUPPLERENDE OPLYSNINGER

INDVANDRET 021075 TILFLYTTET 021075 ÆNDR.DATO 230476 HG NR 531-016-0129

20

CPR PERSONKORT

AJOURFØRT 020576 ÆNDR * 02, 04, 11, 26

123

BILAG 1 EKS. 1
NEDFOTOGRAFERET FRA FORMAT A4

1

100557-1245

ANDERSEN, HANS

STILLING 2

ADRESSERINGSNAVN 3

MATROS
P LIAK

UMYND

ANDERSEN, HANS
SØBENAVN

FØDSELSREGISTRERINGSSTED

NORGE
STATSBØRGER I

5219

U

D

4	5	6	7	8	9	10	11
04 03 75	101	1246	BEATEVEJ KØBENHAVN	3 2 TV			
07 12 75	124	5678	SVALEVEJ * INDKALDT TIL SØVÆRNET,	19 AUDERØD		3211	SUP A

12	13	14	15	16	17	18
DATE	CIVST	MYNDKODE	MYNDIGHED	PERSONNUMMER	BEM	KOMMUNALE FORHOLD

FORELDRE: 110731-2127 010730-2122 HOVEDPERSON 110731-2127

19

SUPPLERENDE OPLYSNINGER

TILFLYTTET 071275 ÆNDR.DATO 220476

HGNR 512-123-0026

UMYNDGJ.MYND/DATO 2219/120176

20

BILAG 1 EKS. 2
NEFOTOGRAFERET FRA FORMAT A4.

CPR PERSONKORT

AJOURFØRT 020576 ÆNDR * 10,16

124

På barnets kort indeholder feltet forældrenes personnumre. Oplysningerne om forældrene udskrives fra henvisningsregistret. Henvisninger til forældre oprettes når et barn bliver født, indvandrer eller bliver adopteret, samt når en enlig far eller mor senere indgår ægteskab. Forældrehenvisninger består, selvom forældrene er faktisk adskilte, separeret, døde, forsvundet eller udvandret. Forældrehenvisninger bortfalder heller ikke ved ophør af bopælsfællesskab, men ophører når barnet bortadopteres, indgår ægteskab, samt når en pige nedkommer. Når forældrene får skilsmisse, slettes henvisning til den ene af forældrene.

Endvidere udskrives henvisning til hovedperson.

På forældrenes kort indeholder feltet børns personnumre. Oplysningerne udskrives fra henvisningsregistret. Voksne personers henvisning til børn indsættes ved barnets fødsel, indvandring eller adoption. Henvisningen til barnet består fortsat ved personens udvandring/forsvinding, død og ved evt. bopælsfællesskabs ophør. Henvisning til børn slettes, når barnet bortadopteres, når barnet indgår ægteskab eller når barnet (pigen) nedkommer.

SUPPLERENDE OPLYSNINGER

21. SUPPLERENDE OPLYSNINGER

Feltet kan indeholde

- indvandringsdato
- tilflytningsdato til kommunen
- ændringsdato
- navneændringsmyndighedskode og dato
- myndighedskode og dato for umyndiggørelse
- ajourføringsdato og hullegrundlagsnummer
- koder for sidst ændrede felter, således som disse udskrives på CPR-kortet
- pensionsforhold
- markering for historiske navneoplysninger
- ved navneændring skrives tidligere navn, kun på det kort som følger umiddelbart efter ændringen
- personnummerændring (nummerdrab og nynummerering).

CPR ID NO.		PERSONAL ID NO.	
CPR ADDRESS		CPR ADDRESS	
1	2	3	4
5	6	7	8
CPR ADDRESS		CPR ADDRESS	
CPR ADDRESS		CPR ADDRESS	

ANNEX 3
 CPR ROAD INDEX CARD
 (in Danish only)

CPR VEJKORT

OPRET.DATO	AFGANGSDATO	VEJKORT NR.
ULIGE HUSNUMRE		LIGE HUSNUMRE
ÆNDR.DATO		AJOURF.DATO

01 KOMM. KODE		KOMMUNENAVN			02 VEJ. KODE	05 VEJNAVN		ULIGE HUSNUMRE		LIGE HUSNUMRE		03 ÆNDR.DATO								AJOURF.DATO			
HUSNR-INTERVAL		BYNAVN		POSTNR	POSTDISTRIKT	VALG DIST.	SOGN	KIRKE DIST.	SKOLE DIST.	SKATTE-DIST.	STATI-STIK	SOC. DIST.	POL. DIS.	DIV 1	DIV 2	DIV 3	DIV 4	DIV 5	DIV 6	DIV 7	DIV 8	ÆNDR.DATO	ÆNDR
999		XKÅBING			0265	THYGE LARSENS ALLE																	
005 -077		1234	ADSTRUP	03	7532																		
002 -040		1234	ADSTRUP	03	7532																		
042 -102		1234	ADSTRUP	03	7537																		

HG NR

BLANKET NR

Bilag 4: Litteraturliste

- (1) Betænkning afgivet af
af 1920. København
- (2) Lov nr. 57 af
- (3) Betænkning
medv.

ANNEX 4

BIBLIOGRAPHY

(in Danish only)

Bilag 4: Litteraturliste

- (1) Betænkning afgivet af folkeregisterkommissionen af 1920. København 1922.
- (2) Lov nr. 57 af 14. marts 1924: Lov om folkeregistre.
- (3) Betænkning nr. 329: Betænkning om folkeregistrenes medvirken ved indførelse af elektronisk databehandling i den offentlige forvaltning m.v. København 1963.
- (4) Lov nr. 239 af 10. juni 1968: Lov om folkeregistrering.
- (5) Indenrigsministeriets bekendtgørelse af 5. januar 1973: Bekendtgørelse om folkeregistre.
- (6) Indenrigsministeriets cirkulære af 5. januar 1973: Instruks for førelse af folkeregistre.
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- (9) CPR instruks. Udgivet af Sekretariatet for personregistrering.
- (10) Betænkning nr. 767. Delbetænkning om offentlige registre. København 1976.
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- (13) Befolkningens bevægelser 1976. Danmarks Statistik 1978.
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