

1976 CENSUS OF CANADA

PUBLIC USE SAMPLE TAPES

USER DOCUMENTATION

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CHAPTER I

INTRODUCTION

Purpose of the Public Use Sample Tapes

Most of the data published by Statistics Canada, Census and Household Surveys Field, are summary data; that is, counts of persons, families or household units in Canada, or for a given geographic area. These data are disseminated on a multitude of formats: published and unpublished tabulations available in hard copy (paper), micro-film or magnetic tape.

With increasing frequency, however, users are asking for microdata, that is, data disaggregated back to its original reporting unit, so that the user may aggregate the data in a format to meet his/her own particular need.

To meet this demand, the second series of Public Use Sample Tapes are being produced. The microdata on these Public Use Sample Tapes refer to individual respondents in the 1976 Census. Since Statistics Canada is required by law to maintain confidentiality of census data, the data are in a format modified to prevent identification of a unique record.

Description of Sample

The Public Use Sample is a representative sample of individual records from the data collected during the 1976 Census. The primary sample size is one-in-a-hundred. The sample is self-weighting: that is, each record is assigned a weight of 100. Thus, in order to estimate the frequency of any variable for the entire population, the user simply multiplies his/her tabulation variables by 100.

Data from the long-form census questionnaire, or one-third sample, were used to create the Public Use Sample Tapes. For the convenience of users, a sample copy of the 1976 Census questionnaire is included in Chapter VIII.

A detailed description of the sampling technique used to create the Public Use Sample, is discussed in Chapter II, Sample Design.

File Design and Content

Data for the Public Use Sample Tapes have been organized into three separate files: Individual, Household and Family files. To create each of these basic files an independent stratified sample was taken from the data collected during the 1976 Census, thereby preventing any linkage of data from one file to another which might make possible the identification of a unique record.

The **Individual** file contains detailed demographic and economic data along with a few family and household characteristics, for each individual in the sample. A record, when dealing with the Individual file, refers to data on one person.

The **Household** file contains detailed demographic information on the occupants of the household, as well as some information on housing. A record, when dealing with the Household file, refers to data on one household unit.

The **Family** file gives detailed information on the husband or male lone parent and the wife or female lone parent in the census family as well as grouped data on the other members of the family. A record, when dealing with the Family file, refers to data on one family unit.

List of Variables on the Three Files

The following is an alphabetical list of all variables that are coded on the three Public Use Sample Tape files. The number below the file name indicates the number of codes available for the variable on this file. A dash indicates that the variable is not available on the file.

Example:

	Individual file	Household file	Family file
Number of Persons Under 6 Years of Age	—	7	—

The example shows that "Number of Persons Under 6 Years of Age" is not available on the Individual and Family files and that there are 7 codes (distribution of codes: 0 to 6 or more) for this variable on the Household file. Definitions and codes for each variable in the Individual, Household and Family files are given in Chapters IV, V and VI respectively.

Variable name	Individual file	Household file	Family file
Age	96	—	—
Age of Household Head	—	80	—
Age of Husband or Male Lone Parent	—	—	61
Age of Wife or Female Lone Parent	—	—	61
Educational Qualification	9	—	—
Educational Qualification of Husband or Male Lone Parent	—	—	9
Educational Qualification of Wife or Female Lone Parent	—	—	9
Family Status	7	—	—
Family Structure	—	—	3
Families by Type	—	—	7
Highest Grade	16	—	—
Household Classification	3	—	—
Household Status	12	—	—
Labour Force Activity	9	—	—
Labour Force Activity (1971 definition)	8	—	—
Labour Force Activity of Household Head	—	3	—
Labour Force Activity of Husband or Male Lone Parent	—	—	4
Labour Force Activity of Wife or Female Lone Parent	—	—	4
Level of Schooling	26	—	—
Level of Schooling of Household Head	—	10	—
Level of Schooling of Husband or Male Lone Parent	26	—	11
Level of Schooling of Wife or Female Lone Parent	26	—	11
Marital Status	5	—	—
Marital Status of Household Head	—	5	—

Variable name	Individual file	Household file	Family file
Marital Status of Lone Parent	—	—	6
Mobility Status	9	—	—
Mobility Status of Husband or Male Lone Parent	—	—	9
Mobility Status of Wife or Female Lone Parent	—	—	9
Mother Tongue	11	—	—
Mother Tongue of Household Head	—	7	—
Mother Tongue of Husband or Male Lone Parent	—	12	—
Mother Tongue of Wife or Female Lone Parent	—	12	—
Number of Children Present Under 6 Years of Age	—	—	5
Number of Children Present 6-14 Years of Age	—	—	6
Number of Children 15-17 Years of Age	—	—	4
Number of Children 18-24 Years of Age Attending School	—	—	4
Number of Children 18-24 Years of Age Not Attending School	—	—	4
Number of Children 25 Years of Age and Over	—	—	4
Number of Family Persons	—	9	—
Number of Lodgers	—	5	—
Number of Non-family Persons	—	6	—
Number of Persons	—	9	9
Number of Persons in Family	11	—	—
Number of Persons Under 6 Years of Age	—	7	—
Number of Persons Under 14 Years of Age	—	8	—
Number of Persons Under 16 Years of Age	—	10	—
Number of Persons Under 18 Years of Age	—	10	—
Number of Persons 60-64 Years of Age	—	4	—
Number of Persons 65-69 Years of Age	—	4	—
Number of Persons 70 Years of Age and Over	—	5	—
Occupied Private Dwellings by Tenure	—	2	—
Population Size Group, 1971	14	—	—
Population Size Group, 1976	12	—	—
Population Size Group of Place of Residence of Household Head, 1976	—	12	—
Population Size Group of Place of Residence of Husband, 1976	—	—	13
Population Size Group of Place of Residence of Husband or Male Lone Parent on June 1, 1971	—	—	14
Population Size Group of Place of Residence of Lone Parent, 1976	—	—	13
Population Size Group of Place of Residence of Wife or Female Lone Parent on June 1, 1971	—	—	14

Variable name	Individual file	Household file	Family file
Post-secondary Non-university	5	—	—
Post-secondary Non-university Education of Husband or Male Lone Parent	—	—	5
Post-secondary Non-university Education of Wife or Female Lone Parent	—	—	5
Post-secondary University	8	—	—
Post-secondary University Education of Husband or Male Lone Parent	—	—	8
Post-secondary University Education of Wife or Female Lone Parent	—	—	8
Private Dwellings by Structural Type	—	8	—
Rural/Urban, 1971	4	—	—
Rural/Urban, 1976	9	—	—
School Attendance Status	4	—	—
Sex	2	—	—
Sex of Household Head	—	2	—
Tenure of Occupied Private Dwellings	—	—	3
Type of Dwelling	—	—	9
Type of Private Household	—	18	—
Type of School Attendance Status	5	—	—

Summary of Limitations

Sample

The Public Use Sample Tapes are only a sample and should be treated as such. One cannot expect exact agreement between census publications and user estimates based on tallies of a one-in-a-hundred sample. They will inevitably differ to some extent due to chance in selection of actual cases for the Public Use Sample. Chapter II, Sample Evaluation, discusses sampling variability and its measurement.

Limited Geographic Detail

In the interest of confidentiality geographic areas included in the sample were restricted to areas with a minimum population of 250,000 persons. As a result, sampling was done for nine of the provinces: Newfoundland, Nova Scotia, New Brunswick, Québec, Ontario, Manitoba, Saskatchewan, Alberta and British Columbia. Sample data for Prince Edward Island, Yukon and Northwest Territories are not available as these areas did not meet the population restriction.

The three major census metropolitan areas, Montréal, Toronto and Vancouver are identified in the applicable provincial samples by a CMA code. There are no independent samples for any census metropolitan areas for this production and release of microdata files.

Procedures to Protect Confidentiality

Since Statistics Canada is required by law to maintain confidentiality of individual respondents to the census, the following steps were taken to prevent disclosure of information for any individual.

1. Geographic areas indentified in the sample were restricted to areas with a minimum population of 250,000 persons
2. Names, addresses and detailed geographic identification were omitted from the record.
3. Some regrouping of particular characteristics was necessary, notably characteristics initially coded to a detailed level, such as mother tongue.
4. In order to avoid the possibility that small areas may be identified as a consequence of the systematic order in which the sample records were selected, the records within each geographic area will be listed in random order on the Public Use Sample Tapes.

Guide to the User Documentation Manual

Organization and Content

Item description and record layouts for the three Public Use Sample Tapes, the Individual, Household and Family files, are presented in this document.

For convenience of use and reproduction, they are presented in three separate chapters.

Individual file	Chapter IV
Household file	Chapter V
Family file	Chapter VI

An alphabetical listing of all the variables on the three files is given in Chapter I, File Design and Content.

As the Public Use Sample Tapes are created, counts of persons, household and family units are tallied within each identified geographic area. These control counts are listed along with the item description for each file.

A failure of user tallies to replicate these exact counts would indicate a possible error in the user's processing of data.

One cannot, of course, expect exact agreement between census publications and user estimates based on tallies of a one-in-a-hundred sample. They will inevitably differ to some extent as a result of chance in selection of actual cases for the Public Use Sample Tapes. Chapter II, Sample Evaluation, will discuss sampling variability and its measurement.

Page numbering in the User Documentation Manual has been organized into chapter and page number. When additions or corrections are required to the manual, an update will automatically be sent to all persons who have purchased the documentation manual with or without tapes.

Supplementary Materials Which Are Included

For the convenience of users, additional pertinent documents are included in this manual.

A copy of the contractual agreement for the sale of microdata, along with the technical options offered in the duplication of the tapes for user requests are present in Chapter VII, Technical Specifications and Ordering Procedures. Please note that both of these documents are required for the purchase of the Public Use Sample Tapes.

For the user's ease in interpreting census terminology, a brief copy of the "Dictionary of 1976 Census Terms" along with the 1976 Census questionnaire are included in Chapter VIII, Reference Material.

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CHAPTER II

STATISTICAL PROPERTIES, RELIABILITY AND LIMITATIONS

Sample Design for the One-Third Census Sample

Selection of the One-Third Sample

For the one-third sample data collected in the 1976 Census, the household, including all its members, was the sampling unit. The sample was, within each Enumeration Area, selected according to certain procedures which are described below. The enumerator was to number the households before or during the drop-off of questionnaires. The order in which the households were to be visited, or at least numbered, was determined by standard procedures. The numbering of households had a random start, the starting number being 1, 2 or 3. This random starting number was assigned, in advance, to each enumerator. Each household whose number was a multiple of three was selected in the sample, which means that it was assigned an extended (2B) questionnaire. To this rule there were some exceptions:

- (a) Collective households which are defined as groups of people living in collective dwellings such as hotels, orphanages, military camps, prisons, etc. were all in the sample. This implies that each collective household received only 2B questionnaires.
- (b) Private households in certain remote canvasser areas where all stages of the enumeration were done at the same time were, without exception, selected in the sample.
- (c) All households in the Yukon and Northwest Territories were selected in the sample. The Yukon and Northwest Territories were, however, excluded from the Public Use Sample Tape.

Under some weak assumptions the sampling procedure is unbiased for private households in pick-up and mail-back areas. Because of the addition of collective households and private households in canvasser areas the sample will almost surely be somewhat larger than the intended one-third. Biases that may occur as a consequence of this are, however, compensated for by the weighting procedure described in the next section.

Ratio Estimation Procedure for Published Data

The statistics based on the 1976 sample data are estimates made through the use of a ratio estimation procedure which has been applied for the one-third sample.⁽¹⁾ The procedure is called "Raking Ratio Estimation Procedure" and assigns a weight to each separate sample item (individual or household), utilizing the existence of complete and sample counts of the basic characteristics of population and households. The main advantage of this method is that it may remove or at least reduce sampling bias and may also reduce the sampling variance of estimates made from the sample data.

The first step in this ratio estimation procedure is to identify areas within which separate ratios are to be established. These areas are referred to as "weighting areas" which contain about 4000 individuals and 6 or 7 Enumeration Areas. Weighting areas are established by a mechanical operation on the computer. Within each weighting area the starting point for the calculation of weights is the cross-classification table of certain basic characteristics. This cross-classification table contains the population as well as the sample counts.

For the calculation of weights for individuals from private households, the rows of this table correspond to combinations of the variables: age, sex and marital status.

The columns are based on household and family characteristics such as family structure, family status, age and presence of children. There are three separate tables according to mother tongue, one for English, one for French and one for Other. For the calculation of the weights, the three tables are used simultaneously. For the household weights, the rows correspond to combinations of the variables type of household, sex of household head, age of household head and number of persons in household.

The columns correspond to combinations of housing characteristics such as tenure (owned or rented) and structural type of dwelling (e.g., apartment).

The calculation of the weights is an iterative procedure in which initial weights are calculated from the marginal totals and these weights are later adjusted depending on the values in the individual cells and the corresponding row and column totals.

In order to increase the reliability, a separate weight (ratio) was not calculated in a group whenever certain criteria pertaining to the complete count of persons and the magnitude of the weight were not met. In this case, groups were combined according to a specific predetermined collapsing strategy until the conditions were met.

(1) For further details, see "Quality of Data, Series 1: Sources of Error – Sampling and Weighting", Statistics Canada, 1979.

Selection of the One-in-a-Hundred Public Use Sample

General Procedure

One-in-a-hundred samples were drawn for each of the Individual, Household and Family files. These samples were obtained by drawing systematic sub-samples within pre-defined strata from among the 2B questionnaires. The ratio of one-in-a-hundred was achieved by selecting three records in every hundred from the one-third sample data. The strata, described in the section below, were defined in terms of 1976 Census data, and partly employ the same characteristics used to determine the cells from which the weights for the ratio estimation procedure were derived.

The selection method has been designed to sample individuals, households or families respectively from each geographic area and stratum in proportion to its estimated frequency in the actual population.

To designate the sample, a set of counters — one for each of the appropriate strata — is reserved. Each counter is assigned an initial value; this initial value is for each counter a random start number between 0 and 99 inclusive. Each sample unit — for the appropriate Public Use Sample — in the original data file is considered in turn. The computer examines the data given on the record and classifies the unit into the proper stratum. The one-third sample weight is added to the existing value in the counter for that stratum. The sample unit is selected in the 1% sample if the addition of its weight causes the cumulation of weights for the stratum to equal or pass the next multiple of 100.

In order to avoid the possibility that small geographic areas may be identified as a consequence of the systematic order in which sample units are selected, the sample units within each geographic area are listed in a random order.

For each of the three Public Use Sample Tapes, the population of Canada has been subdivided into geographic regions as indicated on the tape. The geographic regions into which all individuals are stratified are:

1. Newfoundland
2. Nova Scotia
3. New Brunswick
4. Montréal Census Metropolitan Area
5. Québec, excluding Montréal
6. Toronto Census Metropolitan Area
7. Ontario, excluding Toronto
8. Manitoba
9. Saskatchewan
10. Alberta
11. Vancouver Census Metropolitan Area
12. British Columbia, excluding Vancouver

Prince Edward Island, Yukon and Northwest Territories have not been included in the Public Use Sample Tapes. They were considered too small to safely permit release of microdata without danger of disclosure and consequent breach of the promise of confidentiality. Including data from these areas with adjacent provinces would have "contaminated" the data for these provinces.

Sample of Individuals

For the selection of the Public Use Sample Tape of individuals, the corresponding individual weights have been cumulated within the appropriate strata. The sample for individuals includes members from private as well as collective households.

Stratification variables that apply to all individuals within each geographic area are:

1. Age

- (a) Less than 15 years
- (b) 15 to 64 years
- (c) Greater than 64 years

2. Sex

- (a) Male
- (b) Female

3. Mother tongue

- (a) English
- (b) French
- (c) Other

The actual strata are formed from all possible combinations of the above sets of codes. Individuals from private households were also stratified within each geographic region according to:

4. Relationship to head of household

- (a) Head
- (b) Relative of head
- (c) Non-relative

Furthermore, individuals from private households not in the Montréal, Toronto or Vancouver Census Metropolitan Areas were stratified by:

5. Areas of residence

- (a) Urban — 30,000 people or more
- (b) Urban — less than 30,000 people
- (c) Rural

The strata are formed by all possible combinations of the values of the variables described above. The number of strata per geographic region are listed in the following table.

	Private dwellings	Collective dwellings	Total
Census metropolitan areas	54	18	72
Other geographic regions	162	18	180

The total number of different strata, counting the 12 geographic regions, is consequently 1836.

Sample of Households

The Public Use Sample Tape for households contains only private households, hence collective households, temporary households and overseas households have been excluded.

For the selection of this sample, the household weights were cumulated within the appropriate strata.

Within each geographic region, the stratification variables for the Household tape are:

1. **Type of Household**

- (a) One-family household, family of head, both parents, without additional persons
- (b) One-family household, family of head, both parents, with additional persons
- (c) One-family household, family of head, one parent, without additional persons
- (d) One-family household, family of head, one parent, with additional persons
- (e) One-family household, non-family of head, related to head
- (f) One-family household, non-family of head, non-related to head
- (g) Two or more family households, including family of head
- (h) Two or more family households, no family of head
- (i) Non-family household, one person
- (j) Non-family household, two or more persons

2. **Tenure**

- (a) Dwelling owned
- (b) Dwelling rented
- (c) Not applicable or not stated

For households not in a census metropolitan area, another stratification variable is:

3. **Area of residence**

- (a) Urban - 30,000 people or more
- (b) Urban - less than 30,000 people
- (c) Rural

The total number of different strata, counting the 12 geographic regions, is consequently 900.

Sample of Families

The Public Use Sample Tape for families contains families living in private households.

For the selection of the sample of families, the weights of an appropriate family member have been cumulated in the appropriate strata. This member is either the lone parent or one of the wife or husband, arbitrarily chosen.

Within each geographic region, the stratification variables for the Public Use Sample Tape of families are:

1. **Sex of member (husband, wife or lone parent)**

- (a) Male
- (b) Female

2. **Family size**

- (a) Two persons
- (b) Three persons
- (c) Four persons
- (d) Five persons
- (e) Six or more persons

3. **Mother tongue of member (husband, wife or lone parent)**

- (a) English
- (b) French
- (c) Other

For families in private dwellings outside the census metropolitan areas, another stratification variable is:

4. **Area of residence**

- (a) Urban — 30,000 people or more
- (b) Urban — less than 30,000 people
- (c) Rural

The number of strata within each geographic region is according to the table below:

	Private dwellings	Collective dwellings	Total
Census metropolitan areas	30	30	60
Other geographic regions	90	30	120

The total number of different strata, counting the 12 geographic regions, is consequently 1512.

User Selection of Smaller Samples

The user can, if he wishes, take smaller samples from the Public Use Sample Tape.

For example, to select a one-in-a-thousand sample of the total population, the user should proceed as follows:

- (a) Select a random number between 1 and 10 inclusive, let it be the number 6.
- (b) Select the 6th record of the tape in the subsample.
- (c) Select every 10th record in the subsample after that (that is, the 16th, 26th, etc., record of the tape).

In case the user wishes to select a stratified subsample from the tape:

- (a) Determine the variables and their values according to which the Public Use Sample Tape is to be stratified. The best choice would be to take those variables (or subsets thereof) which have been used as stratification variables for the selection of Public Use Sample Tape.
- (b) Define the strata by combining the values of the variables chosen for stratification. If, for instance, the variables of stratification for a subsample of individuals were sex and mother tongue, there would be 6 strata, namely:
 1. Male English
 2. Male French
 3. Male Other
 4. Female English
 5. Female French
 6. Female Other
- (c) Select a random number between 1 and 10 for each of the strata which, within every stratum, defines the first record after the one which has been randomly assigned to be the first subsample record.

Since the records on the Public Use Sample Tape have been listed in a random order, the procedures described above can be considered adequate to select unbiased subsamples.

Sample Evaluation

General

The Public Use Sample has been selected as a three-in-a-hundred sample of the 2B population or effectively, as a one-in-a-hundred sample of the entire population of Canada as it was during the 1976 Census. The user usually wants to make estimates for certain characteristics at the population level, that is, to estimate how many people there are in a geographic area with a certain combination of characteristics. This may be done by finding how many of these people there are in the appropriate Public Use Sample and afterwards multiplying this number by 100. For instance, one may want to know how many people live in the province of Ontario whose mother tongue is Polish. In tabulating Category 6 of Field 10 of the Public Use Sample for individuals in Ontario, one would find 585 people with this characteristic. An estimate of the total number of people with mother tongue Polish in Ontario would consequently be 58500 which deviates by 3% from the amount listed in census tabulations.

One cannot, of course, expect exact agreement between census publications (based on the complete census counts or on the one-in-three sample known as 2B population) and user estimates based on counts from the one-in-a-hundred Public Use Sample. They will usually differ to some extent due to chance in selection of actual cases for the Public Use Samples. The amount of chance variation for a given statistic can be measured and a discussion of measures of chance variation is the subject of one of the following sections. The Public Use Sample Tapes have been evaluated in order to make sure that the above-mentioned differences between estimates made from the Public Use Sample and the 1976 Census data are only due to sampling variability. This evaluation has been done in two stages where the first stage is a test for the validity of the sample and the second is the estimation of sampling variability.

The test for the validity of the sample has mainly been performed to verify that the Public Use Sample can be considered to be representative of the population of Canada as it was during the 1976 Census. Actually, since the Public Use Sample has been selected from the 2B population, the test verifies that the sample is representative for the 2B population, which as mentioned, is in itself a one-in-three sample of the total population.

The second stage, estimation of sampling variability, has mainly been included as an aid for the users of Public Use Sample data, which enables them to determine the approximate accuracy of estimates derived from Public Use Sample data.

Validity of the Public Use Sample

A test that is usually applied to determine whether a given sample may be considered to be representative of the population from which it has been selected, is the χ^2 test, defined by:

$$\chi^2 = \frac{1}{1-f} \sum_{i=1}^k \frac{(n_i - v_i)^2}{v_i} \quad (1)$$

where:

k = the (effective) number of categories in the distribution of the sample,

n_i = the number of sample items that belong to Category i ($i = 1, 2, \dots, k$), that is the number actually found in the sample for this category.

v_i = the number that one would expect to find in the sample for Category i. In the Public Use Sample, we have:

$$v_i = \frac{nX_i}{N}$$

where:

n = the sample size,

N = the size of the population from which the sample is selected,

X_i = the number of population items in Category i,

f = the sampling ratio (for the Public Use Sample, f is to be chosen equal to 0.03 since it has been selected from the 2B population).

In the case of a one-dimensional frequency distribution (i.e., the distribution over the codes for one variable), the quantity (1) is approximately distributed as chi-square with $k-1$ degrees of freedom. Tables of percentage points of the chi-square distribution (as a function of the number of degrees of freedom) may be found in most standard statistical textbooks.

In practice, the quantity k in (1) is not necessarily equal to the number of categories in the particular distribution. Categories for which v_i is < 5 are, as a rule, collapsed with an adjacent category. The quantity k is, therefore, sometimes called the effective number of categories or classes.

A similar test may also be applied for cross-classifications of two or more characteristics. The calculation of the number of degrees of freedom as well as the collapsing strategy, in case one or more of the cells have an expected frequency smaller than five, become more complicated.

The test, as described above, has been applied for each of the three Public Use Sample Tapes (Individual, Household and Family). For each of the geographic areas, the test has been carried out for each characteristic separately. Cross-classifications of characteristics have not been tested. Since testing has been done at the 5% level, one may expect that on the average, 1 out of 20 tests would give a significant result due to sampling variability.

The results of the test of each of the Public Use Samples and within these, for each combination of geographic area and characteristic, have been according to what can be expected; that is, less than 5% of the test statistics calculated were significant. It is, consequently, safe to assume that deviations of estimates, made from a Public Use Sample, with respect to the real (population) values as provided by census data, are due to sampling variability.

Sampling Variability

Introduction

If an estimate is made from a sample for a certain characteristic, it is bound to be less precise than the true value or, in the case of the Public Use Sample, a complete count of the population. The precision will decrease as the sample size decreases. The value estimated from the sample will differ from the true value by a factor due to chance, that is, the chance that one set of elements happens to be selected in the sample instead of another.

We can describe this phenomenon symbolically. For any characteristic, we have:

$$X' = X + e \quad (2)$$

where:

X = the true value or census count,

X' = the value of the sample estimate,

e = an error introduced by chance, which can be either positive or negative (i.e., an error due to sampling variability).

In fact, in this simplified model, it is assumed that all sources of error other than sampling variability are negligible. From Formula (2), it may be seen that the precision of our estimate depends on the sampling variability. If we manage to keep it small we can expect relatively precise estimates.

Errors due to sampling variability happen to obey certain laws and occur in a certain pattern. The nature of this pattern usually depends on the method of sample selection, the type of population and the way the categories (values) of the characteristic are distributed in the population. It may even depend on the value of the estimate itself. In many cases this pattern can be approximated by the well known bell-shaped curve called the "normal" or "Gaussian" distribution. Under these circumstances, the pattern of errors due to sampling variability show two basic properties. Errors that increase the estimate occur as often as errors that decrease it and small errors occur more often than large ones.

The unit in which the errors are measured, if the approximation by the normal distribution applies, is the standard error (s.e.) of the estimate. In 68% of the cases, the absolute value of the error is smaller than one standard error. In 95% of the cases, it will be smaller than two standard errors. That is, if X is the real value of a certain characteristic and X' its estimate from a sample, we have in 95% of the cases:

$$X - 2(s.e.) \leq X' \leq X + 2(s.e.). \quad (3)$$

We can also use this equation conversely. This is useful since the real value X is usually unknown. If X' is again the estimate, then, in 95% of the cases, the real value X will lie within two standard errors of the estimate. In 95% of the cases, we have:

$$X' - 2(s.e.) \leq X \leq X' + 2(s.e.). \quad (4)$$

Equation (4) is the definition of what is called a confidence interval and a confidence interval is normally used to indicate the precision of an estimate.

Example 1: From the Public Use Sample Tape for individuals, we find that the number of people in Ontario who have Polish as a mother tongue is approximately 58500. The standard error of this estimate is equal to 2502. Hence a 95% confidence interval for the true number of people with mother tongue Polish living in Ontario is:

$$58500 - 2(2502) \leq X \leq 58500 + 2(2502)$$

or

$$53896 \leq X \leq 63904.$$

Hence, with probability 95%, the interval will contain the real value X and the number of Ontario inhabitants with mother tongue Polish. The actual value of X according to the 1976 Census publications is 57,050, which is well within the bounds of the confidence interval. In fact, the actual value lies well within the confidence interval only two standard errors wide. In some cases, the use of standard errors for the calculation of confidence intervals is not justified because the probability distribution cannot be approximated by the normal distribution to a sufficient extent. In these situations, it is necessary to find other means to calculate or at least to approximate the confidence interval.

Example 2: From the Public Use Sample Tape for families, we find that, in Saskatchewan, the number of lodging families is approximately 400. The standard error of this estimate is equal to 213. A 95% confidence interval for the real number of lodging families using the standard error would be:

$$26 \leq X \leq 826.$$

However, a much better 95% confidence interval is:

$$100 \leq X \leq 952$$

which is approximately of the same length but is not located symmetrically around the estimate of 400 anymore. The real number of lodging families, as found by the 1976 Census, is 290, which is well within the limits of both the confidence intervals.

Tables for Estimation of Sampling Variability

The tables are included in order to facilitate the estimation of sampling variability. There are three different kinds of tables.

A. Tables with approximate confidence intervals (Tables 1-4)

In these tables, lower and upper limits of the approximate confidence interval are given for the real value of the population parameter for which an estimate has been derived from the Public Use Sample. The limits have been tabulated for various combinations of the estimated value and the estimated size of the population for which the estimated value applies. Two tables (1-2) are for estimates of total counts while the other two are for estimated percentages (3-4). One table of each group (1,3) gives 95% confidence intervals while the other two (2,4) give 99% confidence intervals.

The confidence intervals are based on the assumption that, by geographic area, the Public Use Sample Tapes are one-in-a-hundred simple random samples from the entire population. Since this assumption is not quite valid, the confidence limits have to be adjusted with correction factors as given in Tables 7-9. This factor depends on the individual characteristic or the

combination of characteristics for which an estimate has been calculated and for which a confidence interval is desired.

B. Tables with approximate standard errors (Tables 5-6)

In certain cases, it is not possible to use the tables for the confidence intervals as described above. For instance, if one wants to calculate a confidence interval for the difference between the provinces of Ontario and Québec with respect to the percentage of inhabitants with mother tongue Polish, it would not be possible to use Table 3 or 4. Approximations to the confidence intervals can be calculated if standard errors are used. In the following section, various situations are described where standard errors should be used for the calculation of confidence intervals.

There are, again, two types of standard errors, one for estimated population totals (Table 5) and one for estimated percentages (Table 6). In both tables, the standard errors are given for various combinations of the estimated value and the estimated number of people in the population for which the estimate has been made. The standard errors are, like the confidence intervals in Tables 1-4, based on the assumption that the Public Use Sample is a one-in-a-hundred simple random sample of the total population. To compensate for the invalidity of the assumption, the factors in Tables 7-9 may be used.

C. Tables with factors for characteristics (Tables 7-9)

As mentioned before, the tables for confidence intervals and those for standard errors are based on the assumption that the Public Use Sample is a simple random sample of the entire population. In reality, the procedure to select the Public Use Sample was more complicated.

In the first place, the Public Use Sample was selected from the 2B population which includes:

1. One out of every three private households
2. All collective households
3. All households in canvasser areas, including most of the Northwest and Yukon Territories.
The last two parts of Canada have been excluded from the Public Use Sample Tape.

The 2B population is a stratified systematic cluster sample of individuals and includes all individuals from collective households and canvasser areas. Additionally, each person, as well as each household in the 2B population, is assigned an integral weight according to the raking ratio procedure. The Public Use Sample was selected as a systematic sample of individuals, households and families where the probability of an individual, household or family being selected, was proportional to its weight.

The method by which the 2B population was selected will, for various characteristics, increase the sampling variability due to the clustering effect. On the other hand, the weighting procedure has been devised to remove some of the resulting sampling variability, that is, to compensate for the clustering effect. The extent to which it actually does this depends on the within-cluster correlation for the particular characteristic and its correlation with the variables that have been used to calculate the raking weights.

The factors for the individual characteristics, as displayed in Tables 7-9, give a measure of the dispersion for the characteristic relative to the standard error of a simple random sample without replacement from the same population and of the same size. In some sampling literature, this factor is called the "design effect". In order to find the standard error for a characteristic, one

should multiply the standard error, as found in one of the Tables 5-6, by the appropriate factor. The formula is as follows:

$$s_i = a_i s \quad (5)$$

where:

s_i = the standard error for characteristic i ,

a_i = the factor for characteristic i ,

s = the standard error for the appropriate combination of estimate and population size as found in either Table 5 or 6.

To adjust the limits of the confidence intervals, as given in Tables 1-4, the procedure is a similar but slightly more complicated one.

Let

\hat{X} = the value of the estimate as derived from the Public Use Sample (either a population count or a percentage, etc.),

L = the appropriate lower level as derived from one of the Tables 1-4.

U = the appropriate upper level as derived from the same table,

a_i = the factor for characteristic i .

Then, the adjusted lower and upper limits for characteristic i are:

$$\begin{aligned} L_i &= (1-a_i) \hat{X} + a_i L \\ U_i &= (1-a_i) \hat{X} + a_i U \end{aligned} \quad (6)$$

It may be possible, by using the factors, that one of the adjusted limits exceeds the natural limit for this statistic. For instance, the lower limit for a population total can never be less than the number found in the sample. The natural limits depend, of course, on the statistic used.

There is one table of factors for each of the three Public Use Sample Tapes, one for the Individual, one for the Household and one for the Family.

TABLE 1. 95% Confidence Intervals for Total Counts

POP. ESTIMATE	SIZE	5000	10000	25000	50000	100000	250000	500000	1000000	2500000	5000000	10000000	25000000
0	L	0	0	0	0	0	0	0	0	0	0	0	0
	U	288	293	296	297	298	298	298	298	298	298	298	298
100	L	12	14	15	16	16	16	16	16	16	16	16	16
	U	529	542	551	554	555	556	556	557	557	557	557	557
200	L	26	28	29	29	30	30	30	30	30	30	30	30
	U	681	701	713	717	719	720	721	721	721	721	721	721
300	L	62	64	65	65	65	65	65	65	65	65	65	65
	U	823	848	864	869	872	874	874	875	875	875	875	875
400	L	110	111	111	112	112	112	112	112	112	112	112	112
	U	957	989	1008	1015	1018	1020	1021	1021	1022	1022	1022	1022
500	L	165	165	165	165	165	165	165	165	165	165	165	165
	U	1086	1124	1148	1156	1160	1162	1163	1164	1164	1164	1164	1164
600	L	225	224	223	223	223	223	223	223	223	223	223	223
	U	1211	1256	1284	1293	1298	1301	1302	1302	1303	1303	1303	1303
700	L	289	286	285	284	284	284	284	284	284	284	284	284
	U	1332	1385	1417	1428	1433	1437	1438	1438	1439	1439	1439	1439
800	L	357	352	349	348	348	348	348	348	348	348	348	348
	U	1451	1511	1548	1560	1566	1570	1571	1572	1572	1573	1573	1573
900	L	427	420	416	415	414	414	414	414	414	414	414	414
	U	1567	1635	1677	1691	1698	1702	1703	1704	1704	1705	1705	1705
1000	L	500	490	485	484	483	482	482	482	482	482	482	482
	U	1681	1757	1804	1819	1827	1832	1833	1834	1835	1835	1835	1835
1500	L	893	865	851	847	844	843	843	842	842	842	842	842
	U	2226	2348	2421	2445	2457	2464	2467	2468	2469	2469	2469	2469
2000	L	1321	1268	1241	1233	1229	1226	1226	1225	1225	1225	1225	1225
	U	2738	2913	3016	3050	3066	3077	3080	3082	3083	3083	3083	3083
2500	L	1778	1690	1647	1634	1628	1624	1623	1622	1622	1622	1621	1621
	U	3221	3460	3596	3640	3662	3676	3680	3682	3684	3684	3684	3684
5000	L	4712	3987	3810	3762	3739	3725	3721	3719	3717	3717	3717	3717
	U	5000	6012	6368	6478	6531	6563	6573	6579	6582	6583	6583	6584
10000	L	9707	8476	8297	8218	8173	8159	8152	8147	8146	8145	8145	8145
	U	10000	11583	11880	12019	12099	12126	12139	12147	12149	12151	12151	12151
25000	L		24704	22774	22355	22141	22075	22042	22023	22017	22013	22011	
	U		25000	27225	27791	28093	28189	28236	28264	28273	28278	28281	
50000	L		49703	46869	46137	45928	45829	45771	45751	45742	45736		
	U		50000	53130	54037	54304	54433	54508	54534	54546	54554		
100000	L			99702	95203	94521	94214	94039	93982	93954	93937		
	U			100000	104854	105653	106017	106227	106296	106330	106350		
250000	L				249702	243055	241576	240813	240573	240456	240387		
	U				250000	256944	258567	259418	259686	259818	259896		
500000	L					499702	490197	487699	486979	486635	486433		
	U					500000	512472	513249	513623	513842			

TABLE 1. 95% Confidence Intervals for Total Counts — Concluded

POP. ESTIMATE	SIZE	5000	10000	25000	50000	100000	250000	500000	1000000	2500000	5000000	10000000	25000000
1000000	L								999702	984869	982589	981559	980969
	U								1000000	1015186	1017581	1018669	1019293
2500000	L								2499702	2478141	2473312	2470804	
	U								2500000	2521856	2526831	2529422	
5000000	L								4999702	4969110	4961023		
	U								5000000	5030892	5039147		
10000000	L								9999702	9952176			
	U								10000000	10047840			

TABLE 2. 99% Confidence Intervals for Total Counts

POP. ESTIMATE	SIZE	5000	10000	25000	50000	100000	250000	500000	1000000	2500000	5000000	10000000	25000000
0	L U	0 439	0 452	0 461	0 463	0 465	0 466						
100	L U	20 692	26 718	30 735	31 741	32 744	32 745	32 746	32 746	32 747	32 747	32 747	32 747
200	L U	13 856	19 890	23 913	24 920	25 924	25 927	25 928	25 928	25 928	25 928	25 928	25 928
300	L U	32 1006	38 1050	41 1078	42 1087	43 1092	43 1095	43 1096	43 1097	43 1097	43 1097	43 1097	43 1097
400	L U	64 1148	69 1200	72 1234	74 1246	74 1252	74 1256	74 1257	75 1257	75 1258	75 1258	75 1258	75 1258
500	L U	106 1283	110 1345	112 1385	113 1399	113 1406	114 1410	114 1411	114 1412	114 1413	114 1413	114 1413	114 1413
600	L U	153 1413	156 1485	158 1531	158 1547	159 1555	159 1560	159 1562	159 1562	159 1563	159 1563	159 1563	159 1563
700	L U	206 1538	207 1621	208 1674	208 1692	209 1701	209 1706	209 1708	209 1709	209 1710	209 1710	209 1710	209 1710
800	L U	263 1661	262 1754	262 1813	262 1833	262 1844	262 1850	262 1852	262 1853	262 1854	262 1854	262 1854	262 1854
900	L U	323 1780	320 1884	318 1950	318 1973	318 1984	318 1991	318 1993	318 1995	318 1995	318 1996	318 1996	318 1996
1000	L U	387 1896	381 2012	378 2085	377 2110	377 2123	376 2130	376 2133	376 2134	376 2135	376 2135	376 2135	376 2135
1500	L U	741 2446	714 2625	701 2735	698 2773	696 2792	695 2803	694 2807	694 2809	694 2810	694 2810	694 2810	694 2811
2000	L U	1140 2952	1084 3205	1056 3357	1048 3408	1044 3434	1042 3450	1041 3455	1041 3457	1040 3459	1040 3460	1040 3460	1040 3460
2500	L U	1577 3422	1478 3761	1432 3960	1418 4026	1411 4059	1407 4079	1406 4086	1405 4089	1405 4091	1405 4092	1405 4092	1405 4092
5000	L U	4561 5000	3693 6306	3483 6806	3426 6963	3399 7040	3384 7086	3379 7101	3376 7109	3375 7113	3374 7115	3374 7115	3374 7116
10000	L U	9548 10000	8027 12068	7808 12480	7712 12674	7658 12787	7640 12825	7631 12843	7626 12854	7625 12858	7624 12860	7623 12861	7623 12861
25000	L U		24539 25000	22095 27904	21565 28674	21297 29086	21214 29218	21173 29283	21149 29321	21141 29334	21137 29341	21135 29344	21135 29344
50000	L U			49537 50000	45904 54095	44969 55317	44703 55678	44577 55853	44503 55956	44478 55989	44466 56006	44459 56017	44459 56017
100000	L U				99535 100000	93723 106371	92844 107441	92450 107930	92226 108212	92152 108304	92116 108350	92094 108378	92094 108378
250000	L U					249534 250000	240890 259109	238970 261266	237981 262399	237671 262756	237519 262932	237429 263036	237429 263036
500000	L U						499534 500000	487135 512863	483880 516403	482943 517434	482496 517930	482233 518221	482233 518221

TABLE 2. 99% Confidence Intervals for Total Counts - Concluded

POP. ESTIMATE	SIZE	5000	10000	25000	50000	100000	250000	500000	1000000	2500000	5000000	10000000	25000000
1000000	L							999534	980142	977164	975821	975051	
	U							1000000	1019950	1023117	1024556	1025383	
2500000	L							2499534	2471290	2464968	2461687		
	U							2500000	2528707	2535267	2538688		
5000000	L							4999534	4959422	4948824			
	U							5000000	5040580	5051458			
10000000	L							9999534	9937192				
	U							10000000	10062864				

TABLE 3. 95% Confidence Intervals for Percentages

BASE OF PERC. ESTIMATE (%)		5000	10000	25000	50000	100000	250000	500000	1000000	2500000	5000000	10000000	25000000
	L	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	U	5.77	2.94	1.19	0.60	0.30	0.12	0.06	0.03	0.01	0.01	0.00	0.00
1	L	0.57	0.15	0.18	0.33	0.48	0.65	0.74	0.82	0.88	0.92	0.94	0.96
1	U	8.92	5.43	3.16	2.31	1.83	1.47	1.31	1.21	1.13	1.09	1.06	1.04
2	L	0.25	0.28	0.66	0.97	1.23	1.49	1.63	1.74	1.83	1.88	1.91	1.95
2	U	10.58	7.01	4.59	3.64	3.07	2.63	2.43	2.29	2.18	2.13	2.09	2.06
3	L	0.30	0.64	1.27	1.69	2.04	2.37	2.55	2.68	2.79	2.85	2.90	2.93
3	U	12.15	8.49	5.93	4.89	4.25	3.74	3.51	3.35	3.22	3.15	3.11	3.07
4	L	0.53	1.11	1.94	2.47	2.88	3.27	3.48	3.63	3.76	3.83	3.88	3.92
4	U	13.64	9.89	7.22	6.10	5.40	4.84	4.58	4.40	4.25	4.17	4.12	4.08
5	L	0.85	1.65	2.66	3.27	3.74	4.18	4.42	4.58	4.73	4.81	4.87	4.92
5	U	15.07	11.25	8.46	7.28	6.53	5.92	5.64	5.44	5.28	5.19	5.14	5.09
6	L	1.26	2.24	3.41	4.09	4.62	5.11	5.36	5.54	5.71	5.79	5.85	5.91
6	U	16.47	12.56	9.68	8.44	7.65	7.00	6.69	6.48	6.30	6.21	6.15	6.09
7	L	1.71	2.87	4.18	4.93	5.50	6.04	6.31	6.51	6.69	6.78	6.84	6.90
7	U	17.82	13.85	10.88	9.59	8.75	8.07	7.74	7.52	7.32	7.23	7.16	7.10
8	L	2.21	3.52	4.97	5.79	6.40	6.97	7.27	7.48	7.67	7.76	7.83	7.89
8	U	19.15	15.11	12.06	10.72	9.85	9.13	8.78	8.55	8.34	8.24	8.17	8.11
9	L	2.74	4.21	5.77	6.65	7.31	7.91	8.22	8.45	8.65	8.75	8.82	8.89
9	U	20.45	16.35	13.23	11.84	10.94	10.18	9.82	9.58	9.36	9.25	9.18	9.11
10	L	3.31	4.91	6.59	7.52	8.22	8.86	9.19	9.42	9.63	9.74	9.82	9.88
10	U	21.73	17.58	14.39	12.96	12.02	11.24	10.86	10.60	10.38	10.26	10.19	10.12
15	L	6.47	8.66	10.83	12.00	12.85	13.63	14.03	14.31	14.56	14.69	14.78	14.86
15	U	27.85	23.48	20.01	18.42	17.35	16.45	16.02	15.71	15.45	15.31	15.22	15.14
20	L	10.02	12.68	15.24	16.60	17.57	18.46	18.90	19.22	19.51	19.65	19.75	19.84
20	U	33.64	29.14	25.48	23.76	22.60	21.61	21.13	20.79	20.50	20.35	20.25	20.16
25	L	13.84	16.90	19.78	21.28	22.36	23.32	23.81	24.16	24.47	24.62	24.73	24.83
25	U	39.18	34.61	30.82	29.02	27.79	26.74	26.22	25.86	25.54	25.38	25.27	25.17
30	L	17.87	21.27	24.41	26.03	27.19	28.22	28.74	29.11	29.43	29.60	29.72	29.82
30	U	44.54	39.93	36.07	34.21	32.93	31.83	31.29	30.90	30.57	30.40	30.28	30.18
35	L	22.07	25.76	29.12	30.84	32.06	33.14	33.68	34.07	34.41	34.58	34.71	34.81
35	U	49.73	45.14	41.23	39.34	38.03	36.90	36.33	35.94	35.59	35.42	35.30	35.19
40	L	26.43	30.36	33.91	35.70	36.96	38.08	38.64	39.04	39.39	39.57	39.70	39.81
40	U	54.77	50.23	46.33	44.42	43.10	41.94	41.37	40.96	40.61	40.43	40.30	40.19
45	L	30.93	35.07	38.75	40.60	41.90	43.05	43.62	44.03	44.38	44.57	44.69	44.81
45	U	59.67	55.23	51.37	49.46	48.13	46.97	46.38	45.98	45.62	45.44	45.31	45.19
50	L	35.57	39.87	43.66	45.55	46.87	48.03	48.61	49.02	49.38	49.56	49.69	49.80
50	U	64.43	60.13	56.34	54.45	53.13	51.97	51.39	50.98	50.62	50.44	50.31	50.20
55	L	40.33	44.77	48.63	50.54	51.87	53.03	53.62	54.02	54.38	54.56	54.69	54.81
55	U	69.07	64.93	61.25	59.40	58.10	56.95	56.38	55.97	55.62	55.43	55.31	55.19
60	L	45.23	49.77	53.67	55.58	56.90	58.06	58.63	59.04	59.39	59.57	59.70	59.81
60	U	73.57	69.64	66.09	64.30	63.04	61.92	61.36	60.96	60.61	60.43	60.30	60.19

TABLE 3. 95% Confidence Intervals for Percentages — Concluded

BASE OF PERC. ESTIMATE (%)		5000	10000	25000	50000	100000	250000	500000	1000000	2500000	5000000	10000000	25000000
65	L	50.27	54.86	58.77	60.66	61.97	63.10	63.67	64.06	64.41	64.58	64.70	64.81
	U	77.93	74.24	70.88	69.16	67.94	66.86	66.32	65.93	65.59	65.42	65.29	65.19
70	L	55.46	60.07	63.93	65.79	67.07	68.17	68.71	69.10	69.43	69.60	69.72	69.82
	U	82.13	78.73	75.59	73.97	72.81	71.78	71.26	70.89	70.57	70.40	70.28	70.18
75	L	60.82	65.39	69.18	70.98	72.21	73.26	73.78	74.14	74.46	74.62	74.73	74.83
	U	86.16	83.10	80.22	78.72	77.64	76.68	76.19	75.84	75.53	75.38	75.27	75.17
80	L	66.36	70.86	74.52	76.24	77.40	78.39	78.87	79.21	79.50	79.65	79.75	79.84
	U	89.98	87.32	84.76	83.40	82.43	81.54	81.10	80.78	80.49	80.35	80.25	80.16
85	L	72.15	76.52	79.99	81.58	82.65	83.55	83.98	84.29	84.55	84.69	84.78	84.86
	U	93.53	91.34	89.17	88.00	87.15	86.37	85.97	85.69	85.44	85.31	85.22	85.14
90	L	78.27	82.42	85.61	87.04	87.98	88.76	89.14	89.40	89.62	89.73	89.81	89.88
	U	96.69	95.09	93.41	92.48	91.78	91.14	90.81	90.58	90.37	90.26	90.18	90.12
95	L	84.93	88.75	91.54	92.72	93.47	94.08	94.36	94.56	94.72	94.81	94.86	94.91
	U	99.15	98.35	97.34	96.73	96.26	95.82	95.58	95.42	95.27	95.19	95.13	95.08

TABLE 4. 99% Confidence Intervals for Percentages

BASE OF PERC. ESTIMATE (%)		5000	10000	25000	50000	100000	250000	500000	1000000	2500000	5000000	10000000	25000000
	L	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	U	8.78	4.52	1.84	0.93	0.47	0.19	0.09	0.05	0.02	0.01	0.00	0.00
1	L	0.93	0.27	0.12	0.23	0.38	0.56	0.68	0.76	0.85	0.89	0.92	0.95
	U	12.04	7.18	3.99	2.80	2.12	1.63	1.42	1.28	1.17	1.12	1.08	1.05
2	L	0.41	0.20	0.45	0.75	1.04	1.35	1.53	1.66	1.78	1.84	1.89	1.93
	U	13.84	8.91	5.54	4.22	3.43	2.83	2.57	2.39	2.24	2.17	2.12	2.07
3	L	0.25	0.38	0.94	1.40	1.79	2.20	2.42	2.58	2.73	2.81	2.86	2.91
	U	15.52	10.50	6.98	5.55	4.67	3.99	3.67	3.47	3.29	3.20	3.14	3.09
4	L	0.28	0.70	1.51	2.10	2.58	3.06	3.32	3.51	3.69	3.78	3.84	3.90
	U	17.12	12.01	8.34	6.82	5.87	5.12	4.77	4.53	4.33	4.23	4.16	4.10
5	L	0.42	1.10	2.14	2.84	3.40	3.95	4.24	4.46	4.65	4.75	4.82	4.89
	U	18.65	13.45	9.66	8.05	7.04	6.23	5.84	5.59	5.36	5.26	5.18	5.11
6	L	0.65	1.56	2.81	3.60	4.24	4.85	5.17	5.41	5.62	5.73	5.81	5.88
	U	20.13	14.85	10.94	9.26	8.19	7.32	6.91	6.63	6.40	6.28	6.20	6.12
7	L	0.95	2.07	3.51	4.39	5.09	5.75	6.11	6.36	6.59	6.71	6.79	6.87
	U	21.56	16.21	12.20	10.45	9.33	8.41	7.98	7.68	7.42	7.30	7.21	7.13
8	L	1.30	2.62	4.23	5.20	5.95	6.67	7.05	7.32	7.57	7.69	7.78	7.86
	U	22.96	17.54	13.43	11.62	10.45	9.49	9.03	8.72	8.45	8.32	8.22	8.14
9	L	1.69	3.20	4.97	6.02	6.83	7.59	7.99	8.28	8.54	8.67	8.77	8.85
	U	24.33	18.85	14.54	12.78	11.57	10.57	10.09	9.76	9.47	9.33	9.23	9.15
10	L	2.12	3.81	5.73	6.85	7.71	8.52	8.94	9.25	9.52	9.66	9.76	9.85
	U	25.66	20.12	15.84	13.93	12.67	11.63	11.14	10.79	10.50	10.35	10.25	10.15
15	L	4.69	7.15	9.72	11.15	12.23	13.22	13.73	14.10	14.43	14.59	14.71	14.82
	U	32.01	26.25	21.64	19.52	18.11	16.92	16.34	15.94	15.59	15.41	15.29	15.18
20	L	7.75	10.84	13.93	15.62	16.86	17.99	18.57	18.98	19.36	19.54	19.68	19.80
	U	37.93	32.05	27.23	24.96	23.43	22.13	21.49	21.04	20.66	20.46	20.33	20.21
25	L	11.16	14.78	18.31	20.19	21.57	22.81	23.44	23.90	24.30	24.50	24.65	24.78
	U	43.55	37.62	32.66	30.29	28.67	27.29	26.60	26.13	25.71	25.50	25.35	25.22
30	L	14.83	18.92	22.81	24.86	26.34	27.67	28.35	28.83	29.26	29.48	29.63	29.77
	U	48.92	43.00	37.96	35.53	33.85	32.41	31.69	31.19	30.75	30.53	30.37	30.24
35	L	18.72	23.22	27.41	29.60	31.16	32.57	33.28	33.78	34.23	34.45	34.61	34.76
	U	54.08	48.22	43.16	40.69	38.98	37.49	36.75	36.23	35.78	35.55	35.39	35.24
40	L	22.82	27.66	32.11	34.40	36.03	37.49	38.22	38.74	39.21	39.44	39.60	39.75
	U	59.05	53.30	48.27	45.79	44.06	42.55	41.79	41.27	40.80	40.56	40.40	40.25
45	L	27.09	32.23	36.89	39.27	40.95	42.44	43.19	43.72	44.19	44.43	44.60	44.74
	U	63.84	58.25	53.30	50.83	49.10	47.58	46.82	46.28	45.81	45.57	45.40	45.26
50	L	31.54	36.93	41.76	44.19	45.90	47.42	48.18	48.71	49.19	49.43	49.59	49.74
	U	68.46	63.07	58.24	55.81	54.10	52.58	51.82	51.29	50.81	50.57	50.41	50.26
55	L	36.16	41.75	46.70	49.17	50.90	52.42	53.18	53.72	54.19	54.43	54.60	54.74
	U	72.91	67.77	63.11	60.73	59.05	57.56	56.81	56.28	55.81	55.57	55.40	55.26
60	L	40.95	46.70	51.73	54.21	55.94	57.45	58.21	58.73	59.20	59.44	59.60	59.75
	U	77.18	72.34	67.89	65.60	63.97	62.51	61.78	61.26	60.79	60.56	60.40	60.25

TABLE 4. 99% Confidence Intervals for Percentages — Concluded

BASE OF PERC. ESTIMATE (%)		5000	10000	25000	50000	100000	250000	500000	1000000	2500000	5000000	10000000	25000000
65	L	45.92	51.78	56.84	59.31	61.02	62.51	63.25	63.77	64.22	64.45	64.61	64.76
	U	81.28	76.78	72.59	70.40	68.84	67.43	66.72	66.22	65.77	65.55	65.39	65.24
70	L	51.08	57.00	62.04	64.47	66.15	67.59	68.31	68.81	69.25	69.47	69.63	69.76
	U	85.17	81.08	77.19	75.14	73.66	72.33	71.65	71.17	70.74	70.52	70.37	70.23
75	L	56.45	62.38	67.34	69.71	71.33	72.71	73.40	73.87	74.29	74.50	74.65	74.78
	U	88.84	85.22	81.69	79.81	78.43	77.19	76.56	76.10	75.70	75.49	75.35	75.22
80	L	62.07	67.95	72.77	75.04	76.57	77.87	78.51	78.96	79.34	79.54	79.67	79.79
	U	92.25	89.16	86.07	84.38	83.14	82.01	81.43	81.02	80.64	80.46	80.32	80.20
85	L	67.99	73.75	78.36	80.48	81.89	83.08	83.66	84.06	84.41	84.59	84.71	84.82
	U	95.31	92.85	90.28	88.85	87.77	86.78	86.27	85.90	85.57	85.41	85.29	85.18
90	L	74.34	79.88	84.16	86.07	87.33	88.37	88.86	89.21	89.50	89.65	89.75	89.85
	U	97.88	96.19	94.27	93.15	92.29	91.48	91.06	90.75	90.48	90.34	90.24	90.15
95	L	81.35	86.55	90.34	91.95	92.96	93.77	94.16	94.41	94.64	94.74	94.82	94.89
	U	99.58	98.90	97.86	97.16	96.60	96.05	95.76	95.54	95.35	95.25	95.18	95.11

TABLE 5. Standard Errors for Total Counts

TABLE 6. Standard Errors for Percentages

BASE OF PERC. ESTIMATE (%)	5000	10000	25000	50000	100000	250000	500000	1000000	2500000	5000000	10000000	25000000
1 or 99	1.41	0.99	0.63	0.44	0.31	0.20	0.14	0.10	0.06	0.04	0.03	0.02
2 or 98	1.99	1.40	0.88	0.62	0.44	0.28	0.20	0.14	0.09	0.06	0.04	0.03
3 or 97	2.42	1.71	1.08	0.76	0.54	0.34	0.24	0.17	0.11	0.08	0.05	0.03
4 or 96	2.79	1.96	1.24	0.87	0.62	0.39	0.28	0.19	0.12	0.09	0.06	0.04
5 or 95	3.10	2.18	1.37	0.97	0.69	0.43	0.31	0.22	0.14	0.10	0.07	0.04
6 or 94	3.38	2.37	1.50	1.06	0.75	0.47	0.33	0.24	0.15	0.11	0.07	0.05
7 or 93	3.63	2.55	1.61	1.14	0.80	0.51	0.36	0.25	0.16	0.11	0.08	0.05
8 or 92	3.86	2.71	1.71	1.21	0.85	0.54	0.38	0.27	0.17	0.12	0.09	0.05
9 or 91	4.07	2.86	1.80	1.27	0.90	0.57	0.40	0.28	0.18	0.13	0.09	0.06
10 or 90	4.26	3.00	1.89	1.34	0.94	0.60	0.42	0.30	0.19	0.13	0.09	0.06
15 or 85	5.08	3.57	2.25	1.59	1.12	0.71	0.50	0.36	0.22	0.16	0.11	0.07
20 or 80	5.69	4.00	2.52	1.78	1.26	0.80	0.56	0.40	0.25	0.18	0.13	0.08
25 or 75	6.15	4.33	2.73	1.93	1.36	0.86	0.61	0.43	0.27	0.19	0.14	0.09
30 or 70	6.51	4.58	2.89	2.04	1.44	0.91	0.64	0.46	0.29	0.20	0.14	0.09
35 or 65	6.78	4.77	3.01	2.12	1.50	0.95	0.67	0.47	0.30	0.21	0.15	0.09
40 or 60	6.96	4.90	3.09	2.18	1.54	0.98	0.69	0.49	0.31	0.22	0.15	0.10
45 or 55	7.07	4.97	3.14	2.22	1.57	0.99	0.70	0.50	0.31	0.22	0.16	0.10
50	7.11	5.00	3.15	2.23	1.57	1.00	0.70	0.50	0.31	0.22	0.16	0.10

TABLE 7. Factors to be Used for Characteristics of Individuals

Field	Description	Factor
4	Household classification	1.04
5	Household status	0.84
6	Family status	0.56
7	Number of persons in family	0.97
8	Sex	0.16
9	Marital status	0.69
10	Mother tongue	0.71
13	Age	1.01
15	Level of schooling of husband or male lone parent	1.00
16	Level of schooling of wife or female lone parent	0.16
17	School attendance status	1.04
22	Highest grade	1.16
23	Labour force activity	0.95
25	Mobility status	1.53
28	Rural/Urban, 1976	0.42
29	Rural/Urban, 1971	0.84

TABLE 8. Factors to be Used for Characteristics of Households

Field	Description	Factor
4	Type of private household	1.10
5	Number of persons in household	0.64
6	Number of family persons in household	0.89
7	Number of non-family persons in household	0.88
8	Number of lodgers in household	0.56
9	Number of persons under 6 years of age in household	0.86
10	Number of persons under 14 years of age in household	0.86
11	Number of persons under 16 years of age in household	0.85
12	Number of persons under 18 years of age in household	0.71
13	Number of persons 60-64 years of age in household	0.64
14	Number of persons 65-69 years of age in household	1.34
15	Number of persons 70 years of age and over in household	1.08
16	Sex of household head	0.89
17	Marital status of household head	0.93
19	Age of household head	1.01
20	Level of schooling of household head	0.95
21	Labour force activity of household head	1.16
23	Occupied private dwellings by tenure	0.67
24	Private dwellings by structural type	0.92

TABLE 9: Factors to be Used for Characteristics of Families

Field	Description	Factor
4	Family type	1.07
5	Family structure	0.15
6	Number of persons in family	0.57
7	Number of children present under 6 years of age in family	1.25
8	Number of children present 6-14 years of age in family	1.03
14	Mother tongue of husband or male lone parent	1.04
15	Mother tongue of wife or female lone parent	0.78
16	Age of husband or male lone parent	1.13
17	Age of wife or female lone parent	0.90
18	Level of schooling of husband or male lone parent	1.25
19	Level of schooling of wife or female lone parent	0.84
26	Labour force activity of husband or male lone parent	1.00
27	Labour force activity of wife or female lone parent	1.23
34	Tenure of occupied private dwellings	1.24
35	Type of dwelling	0.87

Use of the Tables for Estimation of Sampling Variability

Before proceeding to discuss the use of the given tables, it should be emphasized that from the Public Use Sample Tapes, at least for some of the characteristics, two essentially different kinds of estimates can be derived.

The first kind of estimates, that can be derived for all characteristics or combinations thereof, are related to the frequency with which the categories of a certain characteristic occur. Examples are for instance, the total number of Ontario inhabitants with mother tongue Polish or the percentage of females in Canada who are 60 years of age or older. Variables can further be subdivided into two kinds, the qualitative and quantitative variables. Quantitative variables are those for which the outcome is represented by a number (e.g., age, income, household size) while for qualitative variables this is not possible in a logical way (e.g., sex, relationship to head of household).

For quantitative variables and combinations thereof, one can, in addition to statistics that relate to frequencies of their categories, derive meaningful statistics that utilize their quantitative nature, such as means, medians, ranges, standard deviations, coefficients of regression and correlation. This is not possible with qualitative variables.

A. Interpolation in Tables 1-6

In many cases, the user will need an estimate of sampling variability (either a confidence interval or a standard error) for a combination of the estimate (total count or percentage) and the estimated population size that has not been tabulated. That is, the combination for which the estimate of sampling variability is needed, falls somewhere between the tabulated values.

In such a case, one can do two things:

1. Calculate the value of the estimate using the Formulae 17-26 substituting the values of N , \bar{X} and n for which the estimate is desired.
2. Interpolate in the tables provided.

In case the calculations are to be done by hand or with a simple desk calculator (by a simple desk calculator, one means, one that has only the basic arithmetic operations (+, -, \times and $/$)), interpolation is the easier way to find the desired estimate. With a more sophisticated desk calculator (one with a $\sqrt{ }$ function and one or more memories), there is not much difference between the two methods, except that using the formula never gives a worse result than interpolation.

The entries in the tables have been given as a function of two arguments, the estimate x and the population size (or base of the percentage) N . The tabulated values can, accordingly, be denoted by $f(x, N)$.

Interpolation can be carried out in different ways:

1. For a tabulated value of x and an intermediate value of N , denoted by horizontal direction,
2. For a tabulated value of N and an intermediate value of x , denoted by the vertical direction,
3. For intermediate values of both x and N , which calls for interpolation in both the horizontal and vertical directions.

The best known and most frequently used method of interpolation is linear interpolation, which in many cases is sufficiently accurate, especially if the function within a certain range can be approximated by a straight line.

The tabulated functions are not, however, linear functions of either x or N and, except in certain regions of the tables, linear interpolation may not give estimates that are sufficiently accurate. A better method to approximate the desired value of $f(x, N)$ is then quadratic interpolation.

Both methods of interpolation (linear and quadratic) will be briefly discussed below using a function with one argument. Since interpolation is carried out for one argument at a time, the extension to a function with two arguments is straightforward; the argument for which interpolation is not currently performed, is simply held fixed at a chosen value. Let $f(y)$ be a function with argument y for which it is to be interpolated. In the tables, one can substitute x or N for y depending on the situation.

B. Linear Interpolation

Let y_0 be a value immediately below the value y for which the function is tabulated and for which an estimate of $f(y)$ is desired.

Let y_1 be the next value above y_0 in the table.

Consequently, we have: $y_0 < y < y_1$.

The estimate of the function for y is then:

$$f(y) = f(y_0) + \frac{y - y_0}{y_1 - y_0} [f(y_1) - f(y_0)] \quad (7)$$

C. Quadratic Interpolation

Let y_0 be a value for which the function is tabulated in the vicinity of the desired value y .

Let y_{-1} be the next value below y_0 in the table.

Let y_1 be the next value above y_0 in the table.

We must now have: $y_{-1} < y < y_0$. The estimate of $f(y)$ is then:

$$f(y_0) + \frac{y - y_0}{y_1 - y_{-1}} \left[\frac{y - y_{-1}}{y_1 - y_0} [f(y_1) - f(y_0)] + \frac{y_1 - y}{y_0 - y_{-1}} [f(y_0) - f(y_{-1})] \right] \quad (8)$$

As implicitly stated above, substitute N for y if interpolation is to be carried out in the horizontal direction; otherwise substitute x for y . In both cases, the other argument is kept at a fixed value.

In case $y_1 - y_0 = y_0 - y_{-1}$ (equivalent arguments) Formula (8) simplifies to:

$$f(y) = \frac{u(u-1)}{2} f(y_{-1}) + (1-u^2) f(y_0) + \frac{u(u+1)}{2} f(y_1)$$

where:

$$u = \frac{y - y_0}{y_1 - y_0} \quad (9)$$

This is the well known three point interpolation formula of Lagrange.

For more detailed information on the use of the interpolation formulae, the reader is referred to the numerical examples below.

Estimation of the Sampling Variability of a Total Count

For the estimation of the sampling variability of an estimated total count, we can use either Table 1 for a confidence interval or Table 5 for the standard error.

Example 3: From the Public Use Sample Tape, we find that the number of people in Newfoundland who have Polish as a mother tongue is zero. We want to find a 95% confidence interval for the real number of people in Newfoundland who have Polish as a mother tongue. The Public Use Sample Tape contains 5593 inhabitants of Newfoundland, hence an estimate of its population is 559300.

Since the estimate of Polish speaking individuals in Newfoundland is too small to use the standard error (which in this case would also be estimated to be zero), we consult Table 1 to find the upper and lower bounds of the confidence interval. For $x = 0$ and $N = 559300$ we find,

the lower bound $L = 0$

the upper bound $U = 298$.

Referring to Table 7 (for individual characteristics), we find that the factor to be applied for mother tongue is 1.04. The lower and upper bounds of the confidence interval are hence:

$$\text{lower bound } (1-1.04)0 + (1.04)0 = 0$$

$$\text{upper bound } (1-1.04)0 + (1.04)298 = 305.$$

The real number of individuals with mother tongue Polish in Newfoundland during the 1976 Census was 45. This figure is well within the confidence limits.

Example 4: One wants to estimate the number of people in Montréal whose highest grade attended is 9 or 10. In Field 14 of the Individual file, one finds in Category 4 (Grades 9-10), 3717 people. An estimate of the number of people in Montréal with highest level of schooling as Grades 9-10 is, consequently, 371700.

Looking at the value of the estimate, we see that $X = 250000$ is quite close to the estimate. In order to apply quadratic interpolation, we choose:

$$X_{-1} = 100000$$

$$X_0 = 250000$$

$$X_1 = 500000.$$

We could also have chosen $X_{-1} = 250000$, $X_0 = 500000$, $X_1 = 1000000$ since 373500 is even a little closer to 500000 than to 250000.

The lower limits of the confidence intervals for the three tabulated values of the estimate are 99355, 240686 and 487534 which represent $f(y_{-1})$, $f(y_0)$ and $f(y_1)$ respectively in Formula (8), while y , y_{-1} , y_0 and y_1 are represented by 373500, 100000, 250000 and 500000, respectively. Applying Formula (8), the lower limit is:

$$\begin{aligned} L &= 240686 + \frac{(371700-250000)}{(500000-100000)} \left[\frac{(371700-100000)}{(500000-250000)} (487534-240686) \right. \\ &\quad \left. + \frac{(500000-371700)}{(250000-100000)} (240686-99355) \right] \\ &= 359086. \end{aligned}$$

A similar exercise, using the corresponding values for the upper limit (106244, 259477 and 512654 respectively), yields for the upper limit a value of $U = 383067$. In Table 7 (for individuals), one finds that the factor to be applied for level of schooling is 1.16. The lower and upper limits of the 95% confidence interval are, using Formula (6):

$$L_i = (1-1.16)371700 + (1.16)359086 = 357068$$

$$U_i = (1-1.16)371700 + (1.16)383067 = 384888.$$

Hence the 95% confidence interval is:

$$357068 \leq X \leq 384888.$$

Since the estimate (373500) is relatively large, it is also possible to calculate standard errors directly in this case. For Montréal, the standard errors of 100000, 250000 and 500000 are, respectively, 3090, 4748 and 6380.

$$\begin{aligned} s.e. &= 4748 + \frac{(371700-250000)}{(500000-100000)} \left[\frac{(371700-100000)}{(500000-100000)} (6380-4748) \right. \\ &\quad \left. + \frac{(500000-371700)}{(250000-100000)} (4748-3090) \right] \\ &= 5719. \end{aligned}$$

Applying the factor 1.16 for level of schooling gives

$$s = 1.16 \times 5719 = 6634$$

and the 95% confidence interval becomes:

$$371700 - 2(6634) \leq X \leq 371700 + 2(6634)$$

or

$$358432 \leq X \leq 384968$$

which is quite close to the confidence interval found using Table 1. The user may verify that, even with linear interpolation, one obtains limits that are sufficiently close to the ones mentioned above.

Estimation of the Sampling Variability of a Percentage

For the estimation of the sampling variability of an estimated percentage, one can use either Table 3 or 4 for a confidence interval or Table 6 for a standard error. The tables give the sampling variability as a function of the estimate and of the base of the percentage. Since the base of the percentage will usually be an estimate, just like the population size in the table for total counts, the figures in the tables are again approximations. The error will, in practice, be negligible.

Example 5: One wants to estimate, for people with a university degree, the percentage who are between 16 and 24 years of age. From the Public Use Sample Tape for individuals in Toronto, we find 1970 people with a university degree (Codes 5-8 on Field 19) of which 269 are of age 16-24. The corresponding estimates for Toronto are consequently 197000 and 26900. The estimated percentage is $(100)(26900)/197000 = 13.65$ and the estimated base of the percentage is 197000. Suppose one wishes to estimate the approximate standard error. From Table 6, we choose as percentages

$$P_{-1} = 10\%; P_0 = 15\%; P_1 = 20\%$$

and for the estimated base

$$N_{-1} = 100000; N_0 = 250000; N_1 = 500000.$$

Since the percentages in this range are equidistant, we interpolate first vertically for each of the chosen values for N using Formula (9).

We have:

$$u = \frac{13.65-15}{20-15} = -0.27; \frac{u(u-1)}{2} = 0.17; 1-u^2 = 0.93; \frac{u(u+1)}{2} = -0.10.$$

Hence we get:

$$\text{for } N_{-1} : S_{-1} = (0.17)(0.94) + (0.93)(1.12) + (-0.10)(1.26) = 1.08;$$

$$\text{for } N_0 : S_0 = (0.17)(0.60) + (0.93)(0.71) + (-0.10)(0.80) = 0.68,$$

$$\text{for } N_1 : S_1 = (0.17)(0.42) + (0.93)(0.50) + (-0.10)(0.56) = 0.48.$$

Interpolating in the horizontal direction using Formula (8) gives the estimated standard error:

$$\begin{aligned} \text{s.e.} &= 0.68 + \frac{(198500-250000)}{(500000-100000)} \left[\frac{(198500-100000)}{(500000-250000)} (0.48-0.68) \right. \\ &\quad \left. + \frac{(500000-198500)}{(250000-100000)} (0.68-1.08) \right] \\ &= 0.79. \end{aligned}$$

Hence 0.79% is the unadjusted estimated standard error for the estimate of 13.65% with 197000 as a base. This estimate must be adjusted for the particular characteristic, which is a combination of age and level of schooling. The factor for age is 1.01 and the factor for level of schooling is 1.16. The largest factor should be used. The standard error is, consequently,

$$(1.16)(0.79) = 0.92.$$

We can now calculate a 95% confidence interval for the real percentage. The real percentage being

$$13.65 - 2(0.92) \leq P \leq 13.65 + 2(0.92)$$

or

$$11.8\% \leq P \leq 15.5\%.$$

Comparing Two Different Areas or Populations

One of the uses of sample data is to determine whether or not two populations differ from one another with regard to a particular characteristic or whether an estimated difference is large enough that it cannot merely be attributed to chance. In order to be able to compare the populations, we have to convert the data to the same unit (for example, to a percentage) and further we have to use the appropriate table for standard errors to estimate the sampling variability of this difference.

If s_a and s_b are the standard errors of the individual estimates for the two populations (the estimates in the same unit) then, the standard error of the difference is given by:

$$s_{a-b} = \sqrt{s_a^2 + s_b^2} \quad (10)$$

Example 6: For Toronto and Montréal, assume we want to compare the percentage of people with a university degree who are 16-24 years of age. For Toronto, we found this percentage to be 13.65 with a standard error of 0.92. Similarly we find, for Montréal, that this percentage is 11.8 with a standard error of 0.82. Hence we have:

$$V = 13.65 - 11.8 = 1.85$$

$$S_v = (0.92)^2 + (0.82)^2 = 1.52$$

The difference is equal to $\frac{1.85}{1.52} = 1.22$ times the standard error.

We can, therefore, conclude that there is a very small chance that the true value of the percentage in question is larger for Toronto than for Montréal.

Comparing More Than Two Different Areas or Populations

A natural extension to comparing two areas would be comparing more than two areas for differences with respect to a certain characteristic. Assuming that the values for the various areas are again given in the same unit (a percentage), one can proceed as follows:

Let k be the number of areas to be compared, let x_i be the value of the characteristics for area i and s_i its standard error as derived from one of Tables 5-6 or from the appropriate formulae. Proceed to calculate:

$$t = \sum_{i=1}^k \frac{1}{s_i^2} \quad (11)$$

$$w_i = \frac{1}{ts_i^2} \quad (i=1, 2, \dots, k) \quad (12)$$

$$\bar{x} = \sum_{i=1}^k w_i x_i \quad (13)$$

and finally

$$X^2 = \sum_{i=1}^k (x_i - \bar{x})^2 / s_i^2 \quad (14)$$

The statistic X^2 has, assuming there are no differences between the areas, approximately a X^2 (chi-square) – distribution with $k-1$ degrees of freedom.

Note: If, for any of the areas, the standard error is estimated to be zero because the estimate of the characteristic is equal to zero or 100 (percentages) or N (total counts) then, this area should either be omitted or be collapsed to a comparable area. For each area omitted or collapsed, the quantity k , the number of areas to be compared, is reduced by one.

Example 7: For the provinces, suppose one wants to compare the percentage of children of age 16-24 whose father has a university degree and who have, themselves, a university degree, to all children age 16-24 with a university degree. Persons whose father has a university degree have Codes 15-18 or 22-25 on Field 15.

The Maritime Provinces (without P.E.I.) and the Prairie Provinces have been collapsed. The calculations are in the table below:

Province	x	n	N	P(%)	s _i	1/s _i ²
Maritime Provinces	41	146	14600	28.1	3.713	0.0725
Québec	100	311	31100	31.8	2.632	0.1443
Ontario	177	602	60200	29.1	1.843	0.2945
Prairie Provinces	83	279	27900	28.3	2.688	0.1384
British Columbia	31	116	11600	25.9	4.063	0.0606
Total						0.7103

In the table above we have:

x = the number of children of age 16-24 with a university degree whose father also has a university degree, as found in the Public Use Sample,

n = the total number of children of age 16-24 with a university degree, as found in the Public Use Sample,

N = the estimated base of the percentage (= 100n),

P = the estimated percentage (= 100 x/n),

s_i = the standard error of the percentage as calculated with Formula (25).

From the table we now find:

$$x = [(0.0725)(28.11) + (0.1443)(31.8) + (0.2945)(29.1) + (0.1384)(28.3) + (0.0606)(25.9)]/0.7103$$

$$= 29.12$$

$$X^2 = \frac{(28.1-29.12)^2}{(3.713)^2} + \frac{(31.8-29.12)^2}{(2.632)^2} + \frac{(29.1-29.12)^2}{(1.843)^2} + \frac{(28.3-29.12)^2}{(2.688)^2} + \frac{(25.9-29.12)^2}{(4.063)^2}$$
$$= 1.834$$

which is approximately distributed as chi-square with $5-1 = 4$ degrees of freedom. From the table of chi-square values (which can be found in almost any standard statistical textbook), it can be deduced that the probability of obtaining $X^2 = 1.834$ with 4 degrees of freedom is close to 90%. There is, consequently, an extremely high chance of obtaining such a value of X^2 if there is no difference between the provinces. We conclude that any difference between provinces with respect to this characteristic cannot be shown and that the differences found in the Public Use Sample data can be accounted for by sampling variability.

Estimation of Other Statistical Quantities

Another quantity that can be calculated from the estimated frequencies is the coefficient of association between two or more variables. Association is somewhat related to correlation, the latter being defined only for strictly quantitative variables. There exist various coefficients of association, which may be found in textbooks, on the analysis of quantitative data.

Comparing Public Use Sample Data with Those in Census Publications

In certain cases, one may want to compare data, derived from the Public Use Sample, with similar data published from the census. When the published data are from the 1976 Census, the Public Use Sample may be regarded as a (sub)sample from these and, consequently, Formula (10) for the standard error of the difference does not apply.

The formula to be used depends on whether the published data are for 2A (complete count) or 2B (one-in-three sample) characteristics.

Let s_c be the standard error of the published data and s_s that derived for the Public Use Sample data. Then s_{s-c} would be the standard error of the difference. Since the results of a sample and of a subsample would be correlated, this would reduce the standard error of the difference. The formula for the difference is given by

$$s_{s-c} = \sqrt{s_s^2 - s_c^2} \quad (15)$$

In case the difference is estimated for 2A characteristics or combinations thereof, we naturally have $s_c = 0$ and $s_{s-c} = s_s$. If, however, one or more 2B characteristics are involved, whether or not in combination with 2A data, the sampling variability in terms of the standard error is not equal to zero and should be estimated in some way. If in the publication an indication has been given of its size, this estimate should be used; in other cases, a rough approximation can be derived from Formula (22) for total counts or from Formula (25) for percentages, substituting

\hat{X} or \hat{p} = the published estimate

$f = 1/3$

$n = \hat{N}/3$

\hat{N} = the estimated population size or base of the percentage.

In case comparisons are made with published data from the 1971 Census or earlier censuses, Formula (10) can be applied using the appropriate estimates of s_s and s_c .

Estimation of the Sampling Variability for Other Derived Quantities

As stated, it is, for some of the variables, possible to derive statistics that are based on the quantitative nature of these variables and that, consequently, utilize the actual (numerical) values that are in a natural way connected to the elements of the population. Examples of such statistics are means, medians, standard errors, indices and coefficients of regression and correlation. Estimation of the sampling variability of these statistics should be carried out directly from the Public Use Sample data and requires extra work. The way in which the sampling variability of derived statistics can be estimated may be found in most statistical textbooks. It should, however, be emphasized that for some of the derived statistics the formula for the estimation of sampling variability (such as the formula for the standard error) is based on the assumption that the characteristic or characteristics involved are distributed according to a normal distribution, at least approximately. This assumption may, in some cases, not be very realistic. Another method, known as the "Replication Method", uses random subgroups. For example:

1. Subdivide the elements (either individuals, households or families) on the Public Use Sample Tape into k subgroups of approximately equal size. Since the elements on the Public Use Sample are given in a random order, it suffices to select the subgroups systematically allocating the first element and each k th element after that to the first subgroup, etc.
2. Calculate the desired statistic within each of the subgroups. Let z_i be the value of the statistic for subgroup i ($i = 1, 2, \dots, k$).
3. The standard error of the statistic for the entire sample is, then, estimated with the formula:

$$s_b = \sqrt{\frac{1}{k} \sum_{i=1}^{k-1} (z_i - z)^2} \quad (16)$$

where z is the value of the statistic as calculated from the entire sample.

Formulae Used for the Calculation of the Tables

The formulae given below have been used to compute the entries in the tables. Estimates of sampling variability may be derived using Tables 1-6 depending on the kind of estimate for which the sampling variability is to be estimated. Or, they may be calculated directly using the appropriate formula given below. It must be emphasized that the user should apply the appropriate factor as given in Tables 7-8 after having calculated the crude estimate of sampling variability. This should be done to account for the sampling design used in selecting the 2B population during the 1976 Census as well as that used to select the Public Use Sample.

1. Tables with approximate confidence intervals (Tables 1-4)

The formulae used to calculate the entries in these tables have been taken from Molenaar (1973)*. For a 100 (1-2 α)% confidence interval for a total count calculate:

$$P_1 = [x-1 + \psi - \xi \sqrt{\frac{(x-\omega)(n-x+1-\omega)}{n+11\omega-4}}] / (n+2\psi-1) \quad (17)$$

$$P_2 = [x+\psi + \xi \sqrt{\frac{(x+1-\omega)(n-x-\omega)}{n+11\omega-4}}] / (n+2\psi-1) \quad (18)$$

and subsequently:

the lower limit:

$$L = 1/2 [x-1 + P_1 (2\hat{N}-n+1)] \quad (19)$$

the upper limit:

$$U = 1/2 [x+P_2 (2\hat{N}-n+1)] \quad (20)$$

In the formulae above, we have:

x = the sample value as found in the Public Use Sample,

n = the corresponding sample size,

\hat{N} = the population size (real or estimated),

*Molenaar, W.: Simple Approximations to the Poisson, Binomial and Hypergeometric Distributions. Biometrics 29 (1973) 2, pp. 403-407.

$\xi = u(\alpha)$ = the normal deviate with right tail probability α ,

$$\psi = (\xi^2 + 2)/3,$$

$$\omega = (7 - \xi^2)/18.$$

In the table below, values for ξ , ψ and ω have been listed for some values of α that are most commonly used.

100(1- α)	α	ξ	ψ	ω
80%	0.1	1.2816	1.2142	0.2976
90%	0.05	1.6449	1.5686	0.2386
95%	0.025	1.9600	1.9472	0.1755
98%	0.01	2.3263	2.4706	0.0882
99%	0.005	2.5758	2.8782	0.0203
99.8%	0.001	3.0902	3.8498	-0.1416
99.9%	0.0005	3.2905	4.2758	-0.2126

In the row for $\hat{X} = 0$ in Tables 1 and 2, L is set equal to zero while U is calculated with Formulae (18) and (20) using $\xi = u(2\alpha)$. If the estimate $\hat{X} > \hat{N}/2$ the confidence bounds for X may be found as follows:

1. Calculate $\hat{Y} = \hat{N} - \hat{X}$.
2. Find confidence bounds L' and U' for $Y = N - \hat{X}$ using the formulae above or the tables, substituting $n - x$ for x .
3. The confidence bounds for X are then $L = \hat{N} - U'$

$$U = \hat{N} - L'$$

Confidence intervals for a percentage $p = \frac{100X}{N}\%$ can be found from Formulae (19) and (20) as follows:

$$L(p) = \frac{100L}{\hat{N}}$$

$$U(p) = \frac{100U}{\hat{N}} \quad (21)$$

Similarly, one may find the confidence bounds for any other multiple of X, for instance, the number of people with a university degree per 1000 inhabitants, etc.

2. Tables with approximate standard errors (Tables 5-6)

The standard errors as listed in Tables 5-6 have been calculated as follows:

For a total count the estimate of the standard error is:

$$s(\hat{X}_i) = \sqrt{\frac{\hat{x}_i (\hat{N} - \hat{X}_i)(1-f)}{n-1}} \quad (22)$$

or, expressed in terms of a proportion:

$$s(\hat{X}_i) = \hat{N} \sqrt{\frac{\hat{P}_i(1-\hat{P}_i)(1-f)}{n-1}} \quad (23)$$

where:

\hat{N} = the estimated population size

\hat{X}_i = the estimated number of elements in a category

$P_i = \hat{X}_i/\hat{N}$

n = the sample size (i.e., 1% of N)

$f = n/N$ (=0.01 for the Public Use Sample or may be different if the user decides to take a subsample from it).

The variance of \hat{X}_i is, of course, the square of the expression (22) or (23). The covariance between two estimates (of Categories i and j say, $i \neq j$) is:

$$\text{Cov} (\hat{X}_i, \hat{X}_j) = -\frac{\hat{X}_i \hat{X}_j (1-f)}{n-1} = -\hat{N}^2 \frac{P_i P_j (1-f)}{n-1} \quad (24)$$

The standard error and covariance of percentages can simply be derived from the formulae already given. We have for the standard error:

$$s(\hat{P}_i) = \sqrt{\frac{\hat{P}_i (100-\hat{P}_i)(1-f)}{n-1}} \quad (25)$$

where \hat{P}_i is the estimated percentage.

For the covariance:

$$\text{Cov} (\hat{P}_i \hat{P}_j) = -\frac{\hat{P}_i \hat{P}_j (1-f)}{n-1} \quad (26)$$

Note: In cases where f is small and n relatively large, it is customary to ignore the factor 1-f and to replace $n-1$ by n in the above formulae.

3. Tables with factors for the characteristics (Tables 7-9)

The factors in the tables are given in order to be able to compensate for the way the 2B population, as well as the Public Use Sample, have been selected with regard to sampling variability. This effect depends to a large extent on the way the sampled households (for the 2B population) are comprised, especially with respect to correlations within households, which are likely to be different for each characteristic. Another factor is the weighting system applied to individuals and households for which the effect on the sampling variability is also likely to be different from characteristic to characteristic. The factors given in the tables have been calculated empirically from the data of the Public Use Sample Tapes, using analysis of variance. That is, it was determined how much of the overall variance could be attributed to a given variable. The factors in these tables represent, as mentioned earlier, the deviation of the real sampling variability from the one that can be expected if the Public Use Sample had been selected as a simple random sample of the entire population of Canada.

The factors in this table are the same as the ones calculated for the 1971 Public Use Sample Tapes. Time did not permit the recalculation of these factors based on 1976 data. However, there is little reason to suspect that five years would make much difference. Unfortunately, for some variables in the 1976 Public Use Sample Tapes, factors are not available. For these, it is suggested that the unadjusted sampling variance be used. Factors based on 1976 data will be calculated if user interest warrants it.

Non-sampling Errors

Sampling error is only one of the components of the total error in a survey. Further contribution may come from so-called non-sampling errors. Non-sampling errors are introduced, for instance, during imputation for non-reporting of or obvious errors in reporting. Other errors may be introduced during coding and other processing of the questionnaires. The confidence intervals and standard errors, given in the section before, measure the sampling variability of the sample estimates, derived from the Public Use Sample, relative to a census count. They do not reflect any potential inaccuracy in a census. This means that, relative to census counts, estimates made from the Public Use Sample Tapes would not be affected by non-sampling errors. Relative to the real situation, however, the effect of non-sampling errors would be more serious, as far as estimates of totals are concerned, since the effect of a non-sampling error would be magnified by a factor of 100. On the other hand, the probability that a record with a non-sampling error is selected is roughly 1/33, since the Public Use Sample has been selected from the 2B population.

For estimates of totals representing relatively small proportions of the population, the major component of the total variance would be sampling variance. As the estimated totals approach the level of the population, the sampling variance decreases. This may not necessarily be true of the non-sampling errors, so that the latter may assume a larger role in the total error for estimates close to the total population of an area.

CHAPTER III

PROGRAMMING TECHNIQUES

Software Requirements for Processing

Note that in many instances the sample tapes can be accessed with standard utility packages already available on the user's computer. The user should consult his/her computing center if he/she is not aware of these possibilities.

The software requirements for processing of Public Use Sample Tapes can be stated in terms of some of the major operations likely to be performed on the sample data (1%) from Census.

1. Storage and Retrieval — both for individual variables and geographic areas
2. Aggregation
3. Cross-tabulation
4. Formatting
5. Statistical Analysis

The above list is by no means complete. However, it enables us to suggest some software packages which can be useful to manipulate data on the Public Use Sample Tapes. These software packages are briefly described below.

FANTOM: A generalized computer program which performs mathematical and statistical calculations on blocks of data through the use of English language commands and parameters.

STATAPE/TARELA: A generalized programming package which employs TARELA (Tabulation Request Language) — a problem-oriented language for use in retrieving data from survey files to produce statistical tabulations. This package has been developed by Statistics Canada.

SCIENTIFIC SUBROUTINE PACKAGE: An IBM library of mathematical and statistical subroutines which may be supplemented or modified by users to perform various manipulation, formatting and statistical analysis of data.

SOFTWARE PACKAGE FOR SOCIAL SCIENTISTS: A generalized package to carry out tabulations, formatting, and statistical analysis of survey data employing simple manual language commands for defining data and manipulating it.

For details regarding FANTOM and STATAPE please write:

Census Tape Inquiries,
CANSIM Division,
Statistics Canada,
Ottawa, Canada
K1A 0Z8

or call (613) 995-0097.

This list of software packages is by no means complete, nor is it intended to serve as a recommendation for any software packages.

Figure 1. The effect of the number of training samples on the performance of the proposed model.

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Consequently, the first step in the analysis of the data is to estimate the parameters of the model. This can be done by using the maximum likelihood estimation method.

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Majority Rule

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indicates that such a negative attitude towards gay men may be reflected in the attitudes of the general public towards gay men.

Almond leatherette has a subtle texture and a light tan color. It's a great choice for those who prefer a more natural look.

As unhas se expandem deslizando a superfície da unha para dentro das unhas
de modo inverso ao que acontece com as unhas de madeira e plástica que se estendem.

1962-1963 - 1963-1964

discusses how to choose between different types of basis functions in the context of neural network training.

CHAPTER IV

RECORD STRUCTURE AND VARIABLES FOR THE INDIVIDUAL FILE

Record Structure

To create the Individual file, a systematic 1% sample of individuals was drawn from data collected during the 1976 Census. The Individual file gives detailed demographic and economic data along with a few family and household characteristics for each individual in the sample.

A record, when dealing with the Individual file, refers to data on one person.

Record Layout

A record layout is the technical description of how the data are organized on each record. It specifies the field number, size, position, type, mnemonic and title of each variable.

Field:	Indicates the sequence of the variable on the record in relation to the other variables.
Size:	Refers to the number of characters required to code the variable.
Position:	Indicates the exact location, that is the start and finish positions, of the codes for the variable on the record.
Type:	Is used to identify how a variable is coded on the record. In 1976, only numeric (N) is used.
Mnemonic:	The mnemonic assigned to each variable on the Individual file is for internal purposes only. These mnemonics may, however, be used if the retrieval system employed by the user requires a code book.
Title:	Gives the actual name of the variable.

Example:

FIELD	SIZE	POSITION	TYPE	MNEMONIC	TITLE
14	2	24-25	N	EDUCAT	Level of Schooling

The example states that the variable "Level of Schooling", is the fourteenth variable (Field 14) coded on the record. Two digits (Size 2, Type N) are required to code its distribution. The first digit is coded in position 24, the second digit in position 25 of the record and the mnemonic is EDUCAT.

RECORD LAYOUT

Data Set Name: INDIVIDUAL FILE

Field	Size	Position	Type	Mnemonic	Title
1	2	1 - 2	N	PROV	Province Code
2	3	3 - 5	N	CMA	CMA Code
3	1	6	N	FTYPE	File Type Indicator
4	1	7	N	HHLD-CLAS	Household Classification
5	2	8 - 9	N	HHLD-REL	Household Status
6	1	10	N	FAM-MEMB	Family Status
7	2	11 - 12	N	FAM-SIZE	Number of Persons in Family
8	1	13	N	SEX	Sex
9	1	14	N	USMARST	Marital Status
10	2	15 - 16	N	USMOTHTG	Mother Tongue
11	2	17 - 18	N	MTMP	Mother Tongue of Husband or Male Lone Parent
12	2	19 - 20	N	MTFP	Mother Tongue of Wife or Female Lone Parent
13	2	21 - 22	N	AGE	Age
14	2	23 - 24	N	EDUCAT	Level of Schooling
15	2	25 - 26	N	EDUMP	Level of Schooling of Husband or Male Lone Parent
16	2	27 - 28	N	EDUFP	Level of Schooling of Wife or Female Lone Parent
17	1	29	N	ATTEND	School Attendance Status
18	1	30	N	ATYPE	Type of School Attendance Status
19	1	31	N	DGREE	Educational Qualification
20	1	32	N	PSUV	Post-secondary University
21	1	33	N	PSNU	Post-secondary Non-university
22	2	34 - 35	N	HGRAD	Highest Grade
23	1	36	N	LFTAG	Labour Force Activity
24	1	37	N	LF71X	Labour Force Activity (1971 definition)
25	1	38	N	MOBS	Mobility Status
26	2	39 - 40	N	POPS	Population Size Group, 1971
27	2	41 - 42	N	POP	Population Size Group, 1976
28	1	43	N	RUSIZE-S	Rural/Urban, 1976
29	1	44	N	RUUB5	Rural/Urban, 1971

Definitions and Codes

The definition and codes for each variable on the Individual file are given in this section. The variables are listed in the same sequence as the FIELD identification of the record layout. The field number and mnemonic for the variable are indicated at the top of each page. Each variable is listed on a separate page.

The definition gives a brief explanation of the census terminology and also identifies who reported this variable on the 1976 Census questionnaire. The definition is followed by the distribution of the Public Use Sample Tape codes describing what the code represents and what has been combined, where applicable, to create the new Public Use Sample Tape codes.

For the user's convenience in interpreting census terminology, a brief copy of the "Dictionary of 1976 Census Terms" is included in Chapter VIII.

Data Set Name: Individual File

FIELD: 1

PROV

Province Code

Two digit code used to identify the region and province where people reside.

Reported for: Total population

Code	Description	Includes
10	Newfoundland	
12	Nova Scotia	
13	New Brunswick	
24	Québec	
35	Ontario	
46	Manitoba	
47	Saskatchewan	
48	Alberta	
59	British Columbia	

Data Set Name: Individual File

FIELD: 2

CMA

CMA Code

Three digit code used to identify the census metropolitan area where people reside.

Reported for: Total population

Code	Description	Includes
462	Montréal CMA	
535	Toronto CMA	
933	Vancouver CMA	
000	Not applicable	

Data Set Name: Individual File

FIELD: 3

FTYPE

File Type Indicator

Indicates the type of file being processed. It is used as an audit function.

Reported for: Total population (File)

Code	Description	Includes
1	Individual file	
2	Family file	
3	Household file	

Data Set Name: Individual File

**FIELD: 4
HHLD-CLAS**

Household Classification

Households are classified into three groups: A PRIVATE household refers to persons (other than foreign residents) who occupy private dwellings and do not have a usual place of residence elsewhere in Canada. A COLLECTIVE household consists of persons (other than foreign residents) who occupy collective dwellings and do not have a usual place of residence elsewhere in Canada. A HOUSEHOLD OUTSIDE CANADA refers to military, diplomatic or other government personnel together with their dependents who reside outside Canada.

Reported for: Total population

Code	Description	Includes
1	Private household	
2	Collective household	
3	Other	Canadians enumerated outside Canada, temporary residents who could not be assigned to the dwelling in which they usually reside, persons for whom relationship to head of household at usual place of residence could not be determined, etc.

Data Set Name: Individual File

**FIELD: 5
HHLD-REL**

Household Status

Refers to the relationship of persons to the household head. A person may be related through blood, marriage or adoption, or unrelated to the head.

Reported for: Total population

Code	Description	Includes
01	Head of Household	
02	Spouse	Husband or wife
03	Son, daughter	
04	Daughter-in-law, son-in-law	
05	Grandchild	
06	Father or mother	
07	Brother or sister	
08	Father-in-law, mother-in-law	
09	Brother-in-law, sister-in-law	
10	Other relative	
11	Non-relative	Lodger, partner, employee
00	Not applicable	Persons in collectives, persons in households outside Canada, temporary residents who could not be assigned to the dwelling in which they usually reside, persons in private households whose relationship to the head of the household could not be determined at the data processing stage.

Data Set Name: Individual File

**FIELD: 6
FAM-MEMB**

Family Status

Refers to the classification of the persons into family and non-family persons. FAMILY PERSONS are members of a census family (e.g. are persons living in the same dwelling who have a husband-wife or parent-child relationship). NON-FAMILY PERSONS are not members of a census family. They may be related to the household head (e.g. brother-in-law, cousin) or unrelated (e.g. lodger, employee).

Reported for: Total population

Code	Description	Includes
	Member of a census family	
1	Husband	
2	Wife	
3	Male lone parent	
4	Female lone parent	
5	Child	
6	Non-census family person	
0	Not applicable	Persons in collectives, persons in households outside Canada, temporary residents who could not be assigned to the dwelling in which they usually reside, persons in private households whose relationship to the head of the household could not be determined at the data processing stage.

Data Set Name: Individual File

FIELD: 7
FAM-SIZE

Number of Persons in Family

Refers to the number of persons in the census family to which the individual belongs.

Reported for: Total population

Code	Description	Includes
01	Non-family persons	
	Family persons	
02	Two persons	
03	Three persons	
04	Four persons	
05	Five persons	
06	Six persons	
07	Seven persons	
08	Eight persons	
09	Nine persons	
10	Ten or more persons	
00	Not applicable	Persons in collectives, persons in households outside Canada, temporary residents who could not be assigned to the dwelling in which they usually reside, persons in private households whose relationship to the head of the household could not be determined at the data processing stage.

Data Set Name: Individual File

FIELD: 8

SEX

Sex

Refers to the gender of the person.

Reported for: Total population

Code	Description	Includes
1	Male	
2	Female	

Data Set Name: Individual File

**FIELD: 9
USMARST**

Marital Status

Refers to the conjugal status of the person.

Reported for: Total population

Code	Description	Includes
1	Single (never married)	
2	Married (includes persons living common-law)	
3	Widowed	
4	Divorced	
5	Separated	

Data Set Name: Individual File

**FIELD: 10
USMOTHTG**

Mother Tongue

Refers to the language first learned and still understood.

Reported for: Total population

Code	Description	Includes
01	English	
02	French	
03	German	
04	Italian	
05	Netherlandic	
06	Polish	
07	Scandinavian	Danish, Icelandic, Norwegian, Swedish
08	Ukrainian	
09	Native Indian	
10	Not stated	Mother tongue not reported
11	All other	

Data Set Name: Individual File

FIELD: 11

MTMP

Mother Tongue of Husband or Male Lone Parent

Refers to the language first learned and still understood by the husband or male lone parent.

Reported for: Total population

Code	Description	Includes
01	English	
02	French	
03	German	
04	Italian	
05	Netherlandic	
06	Polish	
07	Scandinavian	Danish, Icelandic, Norwegian, Swedish
08	Ukrainian	
09	Native Indian	
10	Not stated	Mother tongue not reported
11	All other	
00	Not applicable	Female lone parent, non-family member, child in a female lone parent census family, persons in collectives, persons in house- holds outside Canada, temporary residents who could not be assigned to the dwelling in which they usually reside, persons in private households whose relation- ship to the head of the household could not be determined at the data processing stage.

Data Set Name: Individual File

FIELD: 12

MTFP

Mother Tongue of Wife or Female Lone Parent

Refers to the language first learned and still understood by the wife or female lone parent.

Reported for: Total population

Code	Description	Includes
01	English	
02	French	
03	German	
04	Italian	
05	Netherlandic	
06	Polish	
07	Scandinavian	Danish, Icelandic, Norwegian, Swedish
08	Ukrainian	
09	Native Indian	
10	Not stated	Mother tongue not reported
11	All other	
00	Not applicable	Male lone parent, non-family member, child in a male lone parent census family, persons in collectives, persons in households outside Canada, temporary residents who could not be assigned to the dwelling in which they usually reside, persons in private households whose relationship to the head of the household could not be determined at the data processing stage.

Data Set Name: Individual File

FIELD: 13

AGE

Age

Refers to the number of completed years of age at last birthday before the census date.

Reported for: Total population

Code	Description	Includes
	Single years of age from 00 to 94, then 95 for any age of 95 years and over.	

Data Set Name: Individual File

FIELD: 14

EDUCAT

Level of Schooling

Refers to the highest grade or year of elementary/secondary school attended, or highest year of post-secondary non-university or university completed with or without degree, certificate or diploma.

Reported for: Total population

Code	Description	Includes
01	No schooling	
02	Kindergarten to Grade 4	
03	Grades 5-8	
04	Grades 9-10	
05	Grade 11 — No secondary certificate	
06	Grade 11 — With secondary certificate	
07	Grade 12 — No secondary certificate	
08	Grade 12 — With secondary certificate	
09	Grade 13 — No secondary certificate	
10	Grade 13 — With secondary certificate	
11	Post-secondary non-university only — No certificate	
12	Post-secondary non-university only — With certificate	
13	University only — No post-secondary certificate, diploma or degree	
14	University only — With post-secondary non-university or university certificate or diploma	
15	University only — Bachelor	
16	University only — Medical degree	
17	University only — Master's degree	

Code	Description	Includes
18	University only — Doctorate degree	
19	Both university and non-university — No post-secondary certificate, diploma or degree	
20	Both university and non-university — With non-university certificate or diploma	
21	Both university and non-university — With university certificate or diploma	
22	Both university and non-university — Bachelor degree	
23	Both university and non-university — Medical degree	
24	Both university and non-university — Master's degree	
25	Both university and non-university — Doctorate degree	
00	Not applicable	Persons under 15 years of age

Data Set Name: Individual File

FIELD: 15

EDUMP

Level of Schooling of Husband or Male Lone Parent

Refers to the highest grade or year of elementary/secondary school attended, or highest year of post-secondary non-university or university completed with or without degree, certificate or diploma by the husband or male lone parent.

Reported for: Total population

Code	Description	Includes
01	No schooling	
02	Kindergarten to Grade 4	
03	Grades 5-8	
04	Grades 9-10	
05	Grade 11 — No secondary certificate	
06	Grade 11 — With secondary certificate	
07	Grade 12 — No secondary certificate	
08	Grade 12 — With secondary certificate	
09	Grade 13 — No secondary certificate	
10	Grade 13 — With secondary certificate	
11	Post-secondary non-university only — No certificate	
12	Post-secondary non-university only — With certificate	
13	University only — No post-secondary certificate, diploma or degree	
14	University only — With post-secondary non-university or university certificate or diploma	
15	University only — Bachelor	
16	University only — Medical degree	

Code	Description	Includes
17	University only — Master's degree	
18	University only — Doctorate degree	
19	Both university and non-university — No post-secondary certificate, diploma or degree	
20	Both university and non-university — With non-university certificate or diploma	
21	Both university and non-university — With university certificate or diploma	
22	Both university and non-university — Bachelor degree	
23	Both university and non-university — Medical degree	
24	Both university and non-university — Master's degree	
25	Both university and non-university — Doctorate degree	
00	Not applicable	Female lone parent, non-family member, child in a female lone parent census family, persons in collectives, persons in house- holds outside Canada, temporary residents who could not be assigned to the dwelling in which they usually reside, persons in private households whose relation- ship to the head of the household could not be determined at the data processing stage.

Data Set Name: Individual File

FIELD: 16

EDUFFP

Level of Schooling of Wife or Female Lone Parent

Refers to the highest grade or year of elementary/secondary school attended, or highest year of post-secondary non-university or university completed with or without degree, certificate or diploma by the wife or female lone parent.

Reported for: Total population

Code	Description	Includes
01	No schooling	
02	Kindergarten to Grade 4	
03	Grades 5-8	
04	Grades 9-10	
05	Grade 11 — No secondary certificate	
06	Grade 11 — With secondary certificate	
07	Grade 12 — No secondary certificate	
08	Grade 12 — With secondary certificate	
09	Grade 13 — No secondary certificate	
10	Grade 13 — With secondary certificate	
11	Post-secondary non-university only — No certificate	
12	Post-secondary non-university only — With certificate	
13	University only — No post-secondary certificate, diploma or degree	
14	University only — With post-secondary non-university or university certificate or diploma	
15	University only — Bachelor	
16	University only — Medical degree	

Code	Description	Includes
17	University only — Master's degree	
18	University only — Doctorate degree	
19	Both university and non-university — No post-secondary certificate, diploma or degree	
20	Both university and non-university — With non-university certificate or diploma	
21	Both university and non-university — With university certificate or diploma	
22	Both university and non-university — Bachelor degree	
23	Both university and non-university — Medical degree	
24	Both university and non-university — Master's degree	
25	Both university and non-university — Doctorate degree	
00	Not applicable	Male lone parent, non-family member, child in a male lone parent census family, persons in collectives, persons in house- holds outside Canada, temporary residents who could not be assigned to the dwelling in which they usually reside, per- sons in private households whose relationship to the head of the household could not be determined at the data processing stage.

Data Set Name: Individual File

FIELD: 17

ATTEND

School Attendance Status

Refers to either full-time or part-time attendance during the period between September, 1975 and June 1, 1976 at an educational institution¹.

Reported for: Total population

Code	Description	Includes
1	Attending school full-time	
2	Attending school part-time	
3	Not attending school	
0	Not applicable	Persons under 15 years of age

- 1 The data for attending school full-time are underestimated by as much as 25% at the Canada level due to a response error resulting from a misinterpretation of the term "educational institution". The response error is concentrated in the 15-19 year age group attending at the elementary-secondary level. The data for not attending school contains an overestimate of as much as 3%. In view of this response error, the user is advised to utilize school attendance data only in conjunction with post-secondary non-university and university values in "Type of School Attendance Status" (Field 18).

Data Set Name: Individual File

FIELD: 18

ATYPE

Type of School Attendance Status

Refers to the type of educational institution attended.

Reported for: Total population

Code	Description	Includes
1	Invalid ¹	
2	Post-secondary non-university	
3	University	
4	Blank	Persons 15 years of age and over who did not attend school between September 1975 and June 1, 1976
0	Not applicable	Persons under 15 years of age
1	This code contains data for attendance at the elementary-secondary level which are known to be underestimated by as much as 40% at the Canada level. See note on "School Attendance Status" (Field 17).	

Data Set Name: Individual File

FIELD: 19

DGREE

Educational Qualification

Refers to the highest educational qualification or credential that has been obtained.

Reported for: Total population

Code	Description	Includes
1	None	
2	Secondary (high) school graduation certificate	
3	Non-university certificate or diploma	
4	University certificate or diploma below Bachelor level	
5	Bachelor degree	
6	Degree in medicine, dentistry, or veterinary medicine	
7	Master's degree	
8	Earned doctorate	
0	Not applicable	Persons under 15 years of age

Data Set Name: Individual File

FIELD: 20
PSUV

Post-secondary University

Refers to the number of years of post-secondary university level education completed (including university transfer courses of community colleges and CEGEP's (general)).

Reported for: Total population

Code	Description	Includes
1	None	
2	One year or less	
3	Two years	
4	Three years	
5	Four years	
6	Five years	
7	Six years or more	
0	Not applicable	Persons under 15 years of age

Data Set Name: Individual File

FIELD: 21

PSNU

Post-secondary Non-university

Refers to the number of years of post-secondary non-university training completed.

Reported for: Total population

Code	Description	Includes
1	None	
2	One year or less	
3	Two years	
4	Three years or more	
0	Not applicable	Persons under 15 years of age

Data Set Name: Individual File

FIELD: 22

HGRAD

Highest Grade

Refers to the highest grade or year of elementary or secondary school attended.

Reported for: Total population

Code	Description	Includes
01	Grade 1	
02	Grade 2	
03	Grade 3	
04	Grade 4	
05	Grade 5	
06	Grade 6	
07	Grade 7	
08	Grade 8	
09	Grade 9	
10	Grade 10	
11	Grade 11	
12	Grade 12	
13	Grade 13	
14	Kindergarten	
15	No schooling	
00	Not applicable	Persons under 15 years of age

Data Set Name: Individual File

FIELD: 23

LFTAG

Labour Force Activity

The 1976 Census questionnaire question no. 11 is the source of data for this variable. The labour force activity of the population is derived by combining those groups classed as "WORKED LAST WEEK FOR PAY OR IN OWN BUSINESS", or "WORKED IN UNPAID FAMILY WORK", or "WITH A JOB BUT NOT AT WORK", who form the employed portion; and "ON TEMPORARY LAY-OFF", "WAITING TO START NEW JOB" and "LOOKED FOR WORK (and available)" who form the unemployed portion. (See the definition of Labour Force Activity in the Introduction to Volume 5, Catalogue 94-800.)

Since housework in own home and volunteer work are excluded from the "WORKED LAST WEEK FOR PAY OR IN OWN BUSINESS" and "WORKED IN UNPAID FAMILY WORK" groups, persons performing only these activities are excluded from the labour force. Also excluded are persons who looked for work but indicated they were not available.

Reported for: Total population

Code	Description	Includes
1	Worked last week for pay or in own business	
2	Worked in unpaid family work	
3	With a job but not at work	
4	On temporary lay-off	
5	Waiting to start new job	
6	Looked for work (and available)	
7	Not in the labour force (looked, not available)	
8	Not in the labour force (other)	Inmates
0	Not applicable	Persons under 15 years of age

NOTE: The various labour groups can be obtained from the sample file by combining the following codes:

Total labour force: codes 1 to 6

Employed labour force: codes 1, 2 and 3

Unemployed labour force: codes 4, 5 and 6

Data Set Name: Individual File

FIELD: 24
LF71X

Labour Force Activity (1971 definition)

Refers to the labour force activity of the population 15 years of age and over as defined in 1971 terms. For a more detailed explanation, see the "Dictionary of 1976 Census Terms" in Chapter VIII.

Reported for: Total population

Code	Description	Includes
1	Employed — Pay	
2	Employed — No pay	
3	Unemployed — Looked	
4	Unemployed — Lay-off	
5	Employed — Absent	
6	Not in the labour force — Non-inmate	
7	Not in the labour force — Inmate	
0	Not applicable	Persons under 15 years of age

Data Set Name: Individual File

FIELD: 25

MOB5

Mobility Status

MOBILITY STATUS is determined by the response to a question relating to the individual's dwelling or place of residence five years earlier — June 1, 1971. Based on the question, the population is classified into non-movers or movers.

NON-MOVERS are persons who, on Census Day (June 1, 1976), were living in the same dwelling they occupied five years earlier (June 1, 1971).

MOVERS are persons who, on Census Day, were living in a different dwelling than the one occupied five years earlier. Movers can be further classified according to their geographic location of residence in 1971: for example, same census subdivision (municipality), different census subdivision, same province, different province, outside Canada, etc. Within the category 'movers', a distinction is usually made between non-migrants and migrants (i.e., migration status). **NON-MIGRANTS** are movers who, on Census Day, were living within the same census subdivision they resided in five years earlier. **MIGRANTS** are movers who, on Census Day, were residing in a different census subdivision than five years earlier. Canadian residents stationed outside Canada in the Armed Forces or the diplomatic service are excluded from the population universe from which mobility data are collected. Those aged 0-4 on June 1, 1976 are also excluded from the mobility status universe as the 5-year reference period precludes this segment of the population.

Reported for: Mobility status was reported for the population 15 years and over, resident within Canada on June 1, 1976. For the population 5-14 resident within Canada, mobility status was imputed. The imputation algorithm assigned mobility status from other household members on a priority basis (mother, father, brother/sister, economic family indicator, other relative, household head) except non-family members resident in collectives. In this latter case, mobility status was assigned according to the all Canada distribution of the population 15 years and over by type of collective dwelling.

Code	Description	Includes
1	Same dwelling	
2	Same census subdivision (CSD)	
3	Different CSD, same census division (CD)	
4	Different CD, same province	
5	Same province, sub-provincial status not stated	
6	Different province	

Code	Description	Includes
7	Province of residence in 1971 not stated	
8	Outside Canada	
0	Not applicable	Persons under 5 and persons enumerated outside Canada

NOTE: The various mobility status or migration status categories are defined as follows:

MOBILITY STATUS UNIVERSE — MOB5 eq 1 to 8

NON-MOVERS — MOB5 eq 1

MOVERS — MOB5 eq 2 to 8

NON-MIGRANTS — MOB5 eq 2

MIGRANTS — MOB5 eq 3 to 8

INTERNAL MIGRANTS — MOB5 eq 3 to 7

EXTERNAL MIGRANTS — MOB5 eq 8

MOBILITY STATUS UNIVERSE EXCLUSIONS — MOB5 eq 0.

Data Set Name: Individual File

FIELD: 26

POP5

Population Size Group, 1971

Where a census subdivision is not part of a census metropolitan area or census agglomeration, this variable refers to the 1976 population size of the census subdivision where the individual lived and slept (i.e., that person's home) on June 1, 1971. Where the census subdivision of residence in 1971 is within a census metropolitan area or census agglomeration, the variable refers to the 1976 population size of the respective census metropolitan area or census agglomeration.

Reported for: POP5 was derived for only internal migrants (see Field 25, MOB5 documentation).

Therefore, the category 'Not applicable' for POP5 (code eq 00) includes:

- a) Non-movers
- b) Non-migrants
- c) External migrants
- d) Mobility status universe exclusions

Code	Description	Includes
01	1 - 999	
02	1,000 - 1,999	
03	2,000 - 4,999	
04	5,000 - 9,999	
05	10,000 - 24,999	
06	25,000 - 49,999	
07	50,000 - 74,999	
08	75,000 - 99,999	
09	100,000 - 249,999	
10	250,000 - 499,999	
11	500,000 - 999,999	
12	1,000,000 plus	
13	Residence in 1971 not stated	
00	Not applicable	

NOTE: When cross-classifying using POP5, collapsing of categories should be considered.

Data Set Name: Individual File

FIELD: 27

POP

Population Size Group, 1976

Where a census subdivision is not part of a census metropolitan area or census agglomeration, this variable refers to the population size of the census subdivision where the individual lived and slept (i.e., that person's home) on June 1, 1976. Where the census subdivision is within a census metropolitan area or census agglomeration, the variable refers to the population size of the respective census metropolitan area or census agglomeration. Persons enumerated away from their permanent residence, due to business, vacation, etc., are counted at their permanent residence.

Reported for: Total population

Code	Description	Includes
01	1 - 999	
02	1,000 - 1,999	
03	2,000 - 4,999	
04	5,000 - 9,999	
05	10,000 - 24,999	
06	25,000 - 49,999	
07	50,000 - 74,999	
08	75,000 - 99,999	
09	100,000 - 249,999	
10	250,000 - 499,999	
11	500,000 - 999,999	
12	1,000,000 plus	

NOTE: When cross-classifying using POP, collapsing of categories should be considered.

Data Set Name: Individual File

**FIELD: 28
RUSIZE-S**

Rural/Urban, 1976

Refers to the rural/urban status of a person's residence in 1976.

Reported for: Total population

Code	Description	Includes
1	Urban 500,000 and up	
2	100,000 - 499,999	
3	30,000 - 99,999	
4	10,000 - 29,999	
5	5,000 - 9,999	
6	2,500 - 4,999	
7	1,000 - 2,499	
8	Rural Non-farm	
9	Rural Farm	

Data Set Name: Individual File

FIELD: 29

RUUB5

Rural/Urban, 1971

Refers to the rural/urban status of a person's residence in 1971.

Reported for: RUUB5 was derived for only internal migrants (see Field 25, MOB5 documentation).

Therefore, the category 'Not applicable' for RUUB5 (code eq 0) includes:

- a) Non-movers
- b) Non-migrants
- c) External migrants
- d) Mobility status universe exclusions

Code	Description	Includes
1	Rural 1971	
2	Urban 1971	
3	Residence in 1971 not stated	
0	Not applicable	

Control Counts

As the Public Use Sample file was created, counts of persons selected into the sample were tallied for certain characteristics, within each identified geographic area. These control counts are given below. A failure of user tallies to replicate these exact counts would indicate an error in the user's data processing.

In comparing sample tabulations with published data, one must carefully note the universe of the published tabulation. One cannot, of course, expect exact agreement between census publications and user estimates based on tallies of a one-in-a-hundred sample. They will inevitably differ to some extent as a result of chance in selection of actual cases for the Public Use Sample. Chapter II, Sample Evaluation, discusses sampling variability and its measurement.

CHAPTER V

RECORD STRUCTURE AND VARIABLES FOR THE HOUSEHOLD FILE

Record Structure

To create the Household file, a systematic 1% sample of household units was drawn from data collected during the 1976 Census. The Household file gives detailed demographic information on the occupants of the household as well as some information on housing.

A record, when dealing with the Household file, refers to data on one household.

A household refers to a person or group of persons (other than foreign residents) who occupy a dwelling and do not have a usual place of residence elsewhere in Canada. It usually consists of a family group, with or without lodgers, employees, etc. However, it may consist of two or more families sharing a dwelling, a group of unrelated persons or one person living alone. Household members who are temporarily absent on Census Day (e.g., temporary residents elsewhere) are considered as part of their usual household. For census purposes, every person is a member of one and only one household. Private households in Canada only were included in the Household file during the selection of the sample.

Despite precautions census data are not immune to processing and respondent errors. While edit and imputation procedures have removed blanks and logical impossibilities from the data, and while frequency of the remaining substantive implausibilities is statistically insignificant, the user should nevertheless be aware of the potential for their existence.

Record Layout

A record layout is the technical description of how the data are organized on each record. It specifies the field number, size, position, type, mnemonic and title of each variable.

- Field: Indicates the sequence of the variable on the record in relation to the other variables.
- Size: Refers to the number of characters required to code the variable.
- Position: Indicates the exact location, that is the start and finish positions, of the codes for the variable on the record.
- Type: Is used to identify how a variable is coded on the record. In 1976, only numeric (N) coding is used.
- Mnemonic: The mnemonic assigned to each variable on the Household file is for internal purposes only. These mnemonics may, however, be used if the retrieval system being employed by the user requires a code book.
- Title: Gives the actual name of the variable.

Example:

FIELD	SIZE	POSITION	TYPE	MNEMONIC	TITLE
15	1	19	N	PERSC	Number of Persons 70 Years of Age and Over

The example states that the variable "Number of Persons 70 Years of Age and Over" is the fifteenth variable (Field 15) coded on the record. One digit (Size 1, Type N) is required to code its distribution. The codes are in position 19 of the record and the mnemonic is PERSC.

RECORD LAYOUT

Data Set Name: HOUSEHOLD FILE

Field	Size	Position	Type	Mnemonic	Title
1	2	1 - 2	N	PROV	Province Code
2	3	3 - 5	N	CMA	CMA Code
3	1	6	N	FTYPE	File Type Indicator
4	2	7 - 8	N	HHTYPE	Type of Private Household
					Private Households by:
5	1	9	N	PERSHH	Number of Persons
6	1	10	N	PERSFAM	Number of Family Persons
7	1	11	N	PERSNFAM	Number of Non-family Persons
8	1	12	N	LODGERS	Number of Lodgers
9	1	13	N	CHILDA	Number of Persons Under 6 Years of Age
10	1	14	N	CHILDB	Number of Persons Under 14 Years of Age
11	1	15	N	CHILDC	Number of Persons Under 16 Years of Age
12	1	16	N	CHILDD	Number of Persons Under 18 Years of Age
13	1	17	N	PERSA	Number of Persons 60-64 Years of Age
14	1	18	N	PERSB	Number of Persons 65-69 Years of Age
15	1	19	N	PERSC	Number of Persons 70 Years of Age and Over
16	1	20	N	SEXHD	Sex of Household Head
17	1	21	N	MARHD	Marital Status of Household Head
18	1	22	N	LANGHD	Mother Tongue of Household Head
19	2	23 - 24	N	AGEHD	Age of Household Head
20	2	25 - 26	N	EDUHD	Level of Schooling of Household Head
21	1	27	N	LFAHD	Labour Force Activity of Household Head
22	2	28 - 29	N	POPHD	Population Size Group of Place of Residence of Household Head, 1976
23	1	30	N	TENURE	Occupied Private Dwellings by Tenure
24	1	31	N	TYPDWL	Private Dwellings by Structural Type

Definitions and Codes

The definition and codes for each variable on the Household file are given in this section. The variables are listed in the same sequence as the FIELD identification of the record layout. The field number and mnemonic for the variable are indicated at the top of each page. Each variable is listed on a separate page.

The definition gives a brief explanation of the census terminology and also identifies who reported this variable on the 1976 Census questionnaire. The definition is followed by the distribution of the Public Use Sample Tape codes describing what the code represents and what has been combined, where applicable, to create the new Public Use Sample Tape codes.

For the user's convenience in interpreting census terminology, a brief copy of the "Dictionary of 1976 Census Terms" is included in Chapter VIII.

Data Set Name: Household File

FIELD: 1

PROV

Province Code

Two digit code used to identify the region and province where people reside.

Reported for: Total private households in Canada

Code	Description	Includes
10	Newfoundland	
12	Nova Scotia	
13	New Brunswick	
24	Québec	
35	Ontario	
46	Manitoba	
47	Saskatchewan	
48	Alberta	
59	British Columbia	

Data Set Name: Household File

FIELD: 2

CMA

CMA Code

Three digit code used to identify the census metropolitan area where people reside.

Reported for: Total private households in Canada

Code	Description	Includes
462	Montréal CMA	
535	Toronto CMA	
933	Vancouver CMA	
000	Not applicable	

Data Set Name: Household File

FIELD: 3
FTYPE

File Type Indicator

Indicates the type of file being processed. It is used as an audit function.

Reported for: Total private households in Canada (File)

Code	Description	Includes
1	Individual file	
2	Family file	
3	Household file	

Data Set Name: Household File

FIELD: 4
HHTYPE

Type of Private Household

Refers to the basic division of private households in Canada into family and non-family households.

FAMILY HOUSEHOLD refers to a private household that contains at least one census family. One-family Household refers to a single census family that occupies one private dwelling. The family may be that of the household head or one living as a related, lodging or other type of family with a household head who is a non-family person.

A Multiple-family Household is one in which two or more census families occupy the same private dwelling.

One family may be that of the household head, or the household head may be a non-family person with whom two or more census families are residing.

NON-FAMILY HOUSEHOLD refers to one person who lives alone in a private dwelling, or to a group of persons who occupy one private dwelling and do not constitute a census family.

Reported for: Total private households in Canada

Code	Description	Includes
FAMILY HOUSEHOLDS		
	One-family Households	
	Family of household head	
	Both parents at home	
01	Without additional persons	
	With additional persons	
02	Related to head	
03	Not related to head	
04	Both related and not related	
	One parent only at home	
05	Without additional persons	
	With additional persons	
06	Related to head	
07	Not related to head	
08	Both related and not related	
	Family other than that of household head	
	Related to head	
09	Both parents at home	
10	One parent only at home	
	Not related to head	
11	Both parents at home	
12	One parent only at home	

Code	Description	Includes
13	Multiple-family Households Including family of household head	
14	With no family of household head	
NON-FAMILY HOUSEHOLDS		
15	One person only	
	Two or more persons	
16	Related to head	
17	Not related to head	
18	Both related and not related	

Data Set Name: Household File

**FIELD: 5
PERSHH**

Private Households by Number of Persons

Refers to the number of households by the number of persons comprising the household.

Reported for: Total private households in Canada

Code	Description	Includes
1	One person	
2	Two persons	
3	Three persons	
4	Four persons	
5	Five persons	
6	Six persons	
7	Seven persons	
8	Eight persons	
9	Nine or more persons	

Data Set Name: Household File

**FIELD: 6
PERSFAM**

Private Households by Number of Family Persons

Refers to the number of households by the number of persons who are members of a census family.

Reported for: Total private households in Canada

Code	Description	Includes
0	None	
2	Two persons	
3	Three persons	
4	Four persons	
5	Five persons	
6	Six persons	
7	Seven persons	
8	Eight persons	
9	Nine or more persons	

Data Set Name: Household File

FIELD: 7
PERSNFAM

Private Households by Number of Non-family Persons

Refers to the number of households by the number of persons who are not members of a census family.

Reported for: Total private households in Canada

Code	Description	Includes
0	None	
1	One person	
2	Two persons	
3	Three persons	
4	Four persons	
5	Five or more persons	

Data Set Name: Household File

**FIELD: 8
LODGERS**

Private Households by Number of Lodgers

Refers to the number of households by the number of lodgers, lodger's spouses and lodger's children in the household.

Reported for: Total private households in Canada

Code	Description	Includes
0	None	
1	One	
2	Two	
3	Three	
4	Four or more	

Data Set Name: Household File

FIELD: 9
CHILDA

Private Households by Number of Persons Under 6 Years of Age

Refers to the number of households by the number of persons 0 to 5 years of age in the household.

Reported for: Total private households in Canada

Code	Description	Includes
0	None	
1	One	
2	Two	
3	Three	
4	Four	
5	Five	
6	Six or more	

Data Set Name: Household File

FIELD: 10

CHILDB

Private Households by Number of Persons Under 14 Years of Age

Refers to the number of households by the number of persons 0 to 13 years of age in the household.

Reported for: Total private households in Canada

Code	Description	Includes
0	None	
1	One	
2	Two	
3	Three	
4	Four	
5	Five	
6	Six	
7	Seven or more	

Data Set Name: Household File

FIELD: 11
CHILDC

Private Households by Number of Persons Under 16 Years of Age

Refers to the number of households by the number of persons 0 to 15 years of age in the household.

Reported for: Total private households in Canada

Code	Description	Includes
0	None	
1	One	
2	Two	
3	Three	
4	Four	
5	Five	
6	Six	
7	Seven	
8	Eight	
9	Nine or more	

Data Set Name: Household File

FIELD: 12

CHILDD

Private Households by Number of Persons Under 18 Years of Age

Refers to the number of households by the number of persons 0 to 17 years of age in the household.

Reported for: Total private households in Canada

Code	Description	Includes
0	None	
1	One	
2	Two	
3	Three	
4	Four	
5	Five	
6	Six	
7	Seven	
8	Eight	
9	Nine or more	

Data Set Name: Household File

FIELD: 13
PERSA

Private Households by Number of Persons 60-64 Years of Age

Refers to the number of households by number of persons 60-64 years of age in the household.

Reported for: Total private households in Canada

Code	Description	Includes
0	None	
1	One	
2	Two	
3	Three or more	

Data Set Name: Household File

FIELD: 14

PERSB

Private Households by Number of Persons 65-69 Years of Age

Refers to the number of households by number of persons 65-69 years of age in the household.

Reported for: Total private households in Canada

Code	Description	Includes
0	None	
1	One	
2	Two	
3	Three or more	

Data Set Name: Household File

FIELD: 15
PERSC

Private Households by Number of Persons 70 Years of Age and Over

Refers to the number of households by the number of persons 70 years of age and over in the household.

Reported for: Total private households in Canada

Code	Description	Includes
0	None	
1	One	
2	Two	
3	Three	
4	Four or more	

Data Set Name: Household File

FIELD: 16

SEXHD

Private Households by Sex of Household Head

Refers to the gender of the household head.

Reported for: Heads of private households in Canada

Code	Description	Includes
1	Male	
2	Female	

Data Set Name: Household File

FIELD: 17
MARHD

Private Households by Marital Status of Household Head

Refers to the conjugal status of the household head.

Reported for: Heads of private households in Canada

Code	Description	Includes
1	Single (never married)	
2	Married (includes persons living common-law)	
3	Widowed	
4	Divorced	
5	Separated	

Data Set Name: Household File

**FIELD: 18
LANGHD**

Private Households by Mother Tongue of Household Head

Refers to the language first learned and still understood by the household head.

Reported for: Heads of private households in Canada

Code	Description	Includes
1	English	
2	French	
3	German	
4	Italian	
5	Ukrainian	
6	Not stated	Mother tongue not reported
7	All other	

Data Set Name: Household File

FIELD: 19

AGEHD

Private Households by Age of Household Head

Refers to the number of completed years of age of the household head at last birthday before the census date.

Reported for: Heads of private households in Canada

Code	Description	Includes
	Single years of age from 15 to 94, then 95 for any age of 95 years and over.	

Data Set Name: Household File

FIELD: 20

EDUHD

Private Households by Level of Schooling of Household Head

Refers to households by the highest grade or year of elementary/secondary school attended, or the highest year of post-secondary non-university or university completed with or without degree, certificate or diploma by the household head.

Reported for: Heads of private households in Canada

Code	Description	Includes
01	Less than Grade 9	"No schooling" and "Kindergarten"
02	Grades 9-10	
03	Grade 11	
	Grades 12-13	
04	Without certificate or diploma	
05	With certificate or diploma	
	Post-secondary non-university only	
06	Without certificate or diploma	
07	With certificate or diploma	
	University	
08	Without university certificate, diploma or degree	
09	With university certificate or diploma	
10	With degree	

Data Set Name: Household File

FIELD: 21
LFAHD

Private Households by Labour Force Activity of Household Head

Refers to the labour market activity of the household head in the week prior to enumeration.

Reported for: Heads of private households in Canada

Code	Description	Includes
In the labour force		
1	Employed	
2	Unemployed	
3	Not in the labour force	

Data Set Name: Household File

**FIELD: 22
POPHD**

**Private Households by Population Size Group of Place of Residence
of Household Head, 1976**

Where a census subdivision is not part of a census metropolitan area or census agglomeration, this variable refers to the population size of the census subdivision where the household head lived and slept (i.e., his/her home) on June 1, 1976. Where the census subdivision is within a census metropolitan area or census agglomeration, the variable refers to the population size of the respective census metropolitan area or census agglomeration. Persons enumerated away from their permanent residence, due to business, vacation, etc. are counted at their permanent residence.

Reported for: Heads of private households in Canada

Code	Description	Includes
01	1 -	999
02	1,000 -	1,999
03	2,000 -	4,999
04	5,000 -	9,999
05	10,000 -	24,999
06	25,000 -	49,999
07	50,000 -	74,999
08	75,000 -	99,999
09	100,000 -	249,999
10	250,000 -	499,999
11	500,000 -	999,999
12	1,000,000 plus	

NOTE: When cross-classifying using POPHD, collapsing of categories should be considered.

Data Set Name: Household File

FIELD: 23
TENURE

Occupied Private Dwellings by Tenure

Refers to whether an occupied private dwelling is owned or rented by the household head or any other member(s) of the household.

Reported for: Occupied private dwellings in Canada

Code	Description	Includes
1	Owned	
2	Rented	

Data Set Name: Household File

FIELD: 24
TYPDWL

Private Dwellings by Structural Type

Refers to the classification of private dwellings in Canada in terms of their physical structure.

Reported for: Occupied private dwellings in Canada

Code	Description	Includes
1	Single detached	A structure with one dwelling only, separated by open space from all other structures, except its own garage or shed.
2	Single attached	A dwelling joined to only one other dwelling, separated from it by a wall extending from ground to roof (i.e., one of two dwellings attached side by side, having no other dwellings either above or below and separated by open space from all other structures).
2	Semi-detached or double	A dwelling joined to only one other dwelling, separated from it by a wall extending from ground to roof (i.e., one of two dwellings attached side by side, having no other dwellings either above or below and separated by open space from all other structures).
3	Row house	A dwelling unit in a row of three or more dwellings, sharing common walls extending from ground to roof and in which there are no other dwellings either above or below.
4	Attached to a non-residential structure	A single house attached to a non-residential structure (such as a store, church, etc.), but separated from it by a wall extending from ground to roof.
5	Apartment	A dwelling unit in a triplex, quadruplex or apartment building that is separated from other dwelling units by a horizontal division or by both horizontal and vertical divisions. Dwellings in duplexes or triplexes that are attached in rows are included here. Dwellings such as flats above or within a non-

Code	Description	Includes
6	Duplex	residential structure such as a school or a store also are included in this category, as are structurally separate dwellings in a converted house if they number more than two.
7	Mobile home	One of two dwellings, one on top of the other, separated by open space from all other structures. Included are any dwellings built as a single house but in which the basement or upper storey has been converted to form another separate dwelling.
8	Other movable dwelling	A movable dwelling designed and constructed to be transported (by road) on its own chassis to a site and placed on a temporary foundation such as blocks, posts or a prepared pad. It should be capable of being moved to a new location on short notice. Motor homes, trailers and camper trailers, if used as permanent residences, are included under "Other movable dwelling".
		Other movable dwellings (other than mobile homes) which are used as permanent residences and are also capable of being moved on short notice such as tents, motor homes, travel trailers, camper trailers, railroad cars and houseboats.

Control Counts

As the Public Use Sample file was created, counts of households selected into the sample were tallied for certain characteristics, within each identified geographic area. These control counts are given below. A failure of user tallies to replicate these exact counts would indicate an error in the user's data processing.

In comparing sample tabulations with published data, one must carefully note the universe of the published tabulation. One cannot, of course, expect exact agreement between census publications and user estimates based on tallies of a one-in-a-hundred sample. They will inevitably differ to some extent as a result of chance in selection of actual cases for the Public Use Sample. Chapter II, Sample Evaluation, discusses sampling variability and its measurement.

Characteristics	Nfld.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Montreal CMA	Toronto CMA	Vancouver CMA
Total Private Households by Number of Persons:	131,700	243,300	189,900	1,893,900	2,634,500	328,900	291,600	575,800	828,100	924,600	909,300	407,700
One person	8,800	34,800	23,900	294,400	449,100	63,600	55,300	99,700	169,200	176,100	164,500	94,900
Two persons	25,000	64,600	46,000	494,500	743,700	94,000	83,300	159,700	254,500	250,900	253,900	126,400
Three persons	24,300	44,100	35,900	368,200	471,700	52,900	48,500	91,800	133,500	176,400	166,700	65,300
Four or five persons	43,500	70,500	56,300	550,400	761,100	88,400	76,300	174,700	219,800	257,700	257,900	98,800
Six or seven persons	19,400	22,200	20,200	146,800	175,700	25,500	21,600	41,900	42,800	55,500	55,000	18,900
Eight or more persons	10,700	7,100	7,600	39,600	33,200	4,500	6,600	8,000	8,300	8,000	11,300	3,400
Total Private Households by Sex of Household Head:												
Male	116,300	194,300	154,900	1,531,800	2,089,600	259,700	234,200	471,300	653,100	723,000	703,700	307,600
Female	15,400	49,000	35,000	362,100	544,900	69,200	57,400	104,500	175,000	201,600	205,600	100,100
Total Private Households by Labour Force Activity of Household Head:												
Employed	79,600	157,500	126,200	1,357,400	1,935,000	229,500	208,300	441,300	570,900	686,000	690,200	282,600
Unemployed	9,900	9,700	7,800	62,300	68,000	8,300	4,900	13,100	33,500	23,100	25,300	15,900
Not in the labour force	42,200	76,100	55,900	474,200	631,500	91,100	78,400	121,400	223,700	215,500	193,800	109,200
Occupied Private Dwellings by Tenure:												
Owned	106,200	176,000	136,500	953,700	1,676,500	218,300	220,100	373,000	540,700	353,300	507,900	242,200
Rented	25,500	67,300	53,400	940,200	958,000	110,600	71,500	202,800	287,400	571,300	401,400	165,500
Total Private Dwellings by Structural Type:												
Single detached	96,000	160,400	128,000	748,300	1,489,000	221,500	222,300	373,700	512,800	222,500	356,100	230,800
Semi-detached or double	5,300	11,400	5,400	70,400	179,200	7,800	4,800	17,100	19,800	36,500	104,500	7,900
Row house	7,100	5,900	3,200	35,200	107,700	7,600	5,700	21,600	22,600	21,500	44,800	10,900
Attached to a non-residential structure	1,500	1,500	1,400	17,400	10,400	1,800	2,600	2,500	4,100	3,300	1,700	1,700
Apartment	7,200	37,630	29,500	845,100	730,900	72,200	34,500	107,500	195,400	598,500	381,300	134,700
Duplex	10,000	11,900	11,800	150,100	94,400	10,200	10,200	24,900	27,100	39,800	20,400	16,400
Mobile home	4,400	14,300	10,500	25,800	21,600	7,600	10,700	27,700	42,500	2,400	400	4,700
Other movable dwelling	200	100	100	1,600	1,300	200	800	800	3,800	100	100	600

CHAPTER VI

RECORD STRUCTURE AND VARIABLES FOR THE FAMILY FILE

Record Structure

To create the Family file, a systematic 1% sample of census families was drawn from data collected during the 1976 Census. The Family file gives detailed information on the husband or male lone parent and the wife or female lone parent in the census family as well as grouped data on the other members of the family.

A record, when dealing with the Family file, refers to data on one family unit.

A census family consists of a husband and a wife (with or without children who have never married, regardless of age) or a lone parent, regardless of marital status, with one or more children (who have never married, regardless of age) living in the same dwelling.

Families belonging to private households in Canada only were included in the file during the selection of the sample.

Record Layout

A record layout is the technical description of how the data are organized on each record. It specifies the field number, size, position, type, mnemonic and title of each variable.

- Field: Indicates the sequence of the variable on the record in relation to the other variables.
- Size: Refers to the number of characters required to code the variable.
- Position: Indicates the exact location, that is the start and finish positions, of the codes for the variable on the record.
- Type: Is used to identify how a variable is coded on the record. In 1976, only numeric (N) coding is used.
- Mnemonic: The mnemonic assigned to each variable on the Family file is for internal purposes only. These mnemonics may, however, be used if the retrieval system employed by the user requires a code book.
- Title: Gives the actual name of the variable.

Example:

FIELD	SIZE	POSITION	TYPE	MNEMONIC	TITLE
13	1	17	N	MARLP	Marital Status of Lone Parent

The example states that the variable "Marital Status of Lone Parent" is the thirteenth variable (Field 13) coded on the record. One digit (Size 1, Type N) is required to code its distribution. The codes are in position 17 of the record and the mnemonic is MARLP.

RECORD LAYOUT

Data Set Name: FAMILY FILE

Field	Size	Position	Type	Mnemonic	Title
1	2	1 - 2	N	PROV	Province Code
2	3	3 - 5	N	CMA	CMA Code
3	1	6	N	FTYPE	File Type Indicator
					Families by:
4	1	7	N	FAMTYPE	Type
5	1	8	N	FAMSTR	Family Structure
6	2	9 - 10	N	FAMPERS	Number of Persons
7	1	11	N	CHILDA	Number of Children Present Under 6 Years of Age
8	1	12	N	CHILDB	Number of Children Present 6-14 Years of Age
9	1	13	N	CHILDC	Number of Children 15-17 Years of Age
10	1	14	N	CHILDD	Number of Children 18-24 Years of Age Attending School
11	1	15	N	CHILDDA	Number of Children 18-24 Years of Age Not Attending School
12	1	16	N	CHILDE	Number of Children 25 Years of Age and Over
13	1	17	N	MARLP	Marital Status of Lone Parent
14	1	18	N	LANGHSD	Mother Tongue of Husband or Male Lone Parent
15	1	19	N	LANGWF	Mother Tongue of Wife or Female Lone Parent
16	2	20 - 21	N	AGEHSD	Age of Husband or Male Lone Parent
17	2	22 - 23	N	AGEWF	Age of Wife or Female Lone Parent
18	2	24 - 25	N	EDUHSD	Level of Schooling of Husband or Male Lone Parent
19	2	26 - 27	N	EDUWF	Level of Schooling of Wife or Female Lone Parent
20	1	28	N	DGREEHSD	Educational Qualification of Husband or Male Lone Parent
21	1	29	N	DGREEWF	Educational Qualification of Wife or Female Lone Parent
22	1	30	N	PSNUHSD	Post-secondary Non-university Education of Husband or Male Lone Parent
23	1	31	N	PSNUWF	Post-secondary Non-university Education of Wife or Female Lone Parent
24	1	32	N	PSUVHSD	Post-secondary University Education of Husband or Male Lone Parent
25	1	33	N	PSUVWF	Post-secondary University Education of Wife or Female Lone Parent
26	1	34	N	LFAHSD	Labour Force Activity of Husband or Male Lone Parent
27	1	35	N	LFAWF	Labour Force Activity of Wife or Female Lone Parent
28	2	36 - 37	N	POP5HSD	Population Size Group of Place of Residence of Husband or Male Lone Parent on June 1, 1971
29	2	38 - 39	N	POP5WF	Population Size Group of Place of Residence of Wife or Female Lone Parent on June 1, 1971
30	2	40 - 41	N	POPHSD	Population Size Group of Place of Residence of Husband, 1976
31	2	42 - 43	N	POPLP	Population Size Group of Place of Residence of Lone Parent, 1976
32	1	44	N	MOB5HSD	Mobility Status of Husband or Male Lone Parent
33	1	45	N	MOB5WF	Mobility Status of Wife or Female Lone Parent
34	1	46	N	TENURE	Tenure of Occupied Private Dwellings
35	1	47	N	TPDWL	Type of Dwelling

Definitions and Codes

The definition and codes for each variable on the Family file are given in this section. The variables are listed in the same sequence as the FIELD identification of the record layout. The field number and mnemonic for the variable are indicated at the top of each page. Each variable is listed on a separate page.

The definition gives a brief explanation of the census terminology and also identifies who reported this variable on the 1976 Census questionnaire. The definition is followed by the distribution of the Public Use Sample Tape codes describing what the code represents and what has been combined, where applicable, to create the new Public Use Sample Tape codes.

For the user's convenience in interpreting census terminology, a brief copy of the "Dictionary of 1976 Census Terms" is included in Chapter VIII.

Data Set Name: Family File

FIELD: 1

PROV

Province Code

Two digit code used to identify the region and province where people reside.

Reported for: Total census families in private households in Canada

Code	Description	Includes
10	Newfoundland	
12	Nova Scotia	
13	New Brunswick	
24	Québec	
35	Ontario	
46	Manitoba	
47	Saskatchewan	
48	Alberta	
59	British Columbia	

Data Set Name: Family File

FIELD: 2

CMA

CMA Code

Three digit code used to identify the census metropolitan area where people reside.

Reported for: Total census families in private households in Canada

Code	Description	Includes
462	Montréal CMA	
535	Toronto CMA	
933	Vancouver CMA	
000	Not applicable	

Data Set Name: Family File

FIELD: 3

FTYPE

File Type Indicator

Indicates the type of file being processed. It is used as an audit function.

Reported for: Total census families in private households in Canada (File)

Code	Description	Includes
1	Individual file	
2	Family file	
3	Household file	

Data Set Name: Family File

FIELD: 4
FAMTYPE

Families by Type

Refers to the classification of census families according to whether they maintain or do not maintain their own household (i.e. whether or not the husband, the wife or the parent in a lone parent family is also household head).

Reported for: Total census families in private households in Canada

Code	Description	Includes
1	Families maintaining own household Without additional persons	
2	With additional persons With non-family persons only	
3	With secondary family persons only	
4	With both non-family and secondary family persons	
	Families not maintaining own household	
5	Related	
6	Lodging	
7	Other	Employees, partners

Data Set Name: Family File

FIELD: 5
FAMSTR

Families by Family Structure

Refers to the classification of census families into husband-wife families or lone parent families.

Reported for: Total census families in private households in Canada

Code	Description	Includes
1	Husband-wife family	
	Lone parent family	
2	Male parent	
3	Female parent	

Data Set Name: Family File

**FIELD: 6
FAMPERS**

Families by Number of Persons

Refers to families by the number of persons in the census family.

Reported for: Total census families in private households in Canada

Code	Description	Includes
02	Two	
03	Three	
04	Four	
05	Five	
06	Six	
07	Seven	
08	Eight	
09	Nine	
10	Ten or more	

Data Set Name: Family File

FIELD: 7
CHILDA

Families by Number of Children Present Under 6 Years of Age

Refers to families by the number of children in the family 0 to 5 years of age.

Reported for: Total census families in private households in Canada

Code	Description	Includes
0	None	Families with no children and families with no children under 6 years of age.
1	One	
2	Two	
3	Three	
4	Four or more	

Data Set Name: Family File

FIELD: 8
CHILDB

Families by Number of Children Present 6-14 Years of Age

Refers to families by the number of children in the family 6 to 14 years of age.

Reported for: Total census families in private households in Canada

Code	Description	Includes
0	None	Families with no children and families with no children 6 to 14 years of age.
1	One	
2	Two	
3	Three	
4	Four	
5	Five or more	

Data Set Name: Family File

FIELD: 9
CHILDC

Families by Number of Children 15-17 Years of Age¹

Refers to families by the number of children in the family 15 to 17 years of age.

Reported for: Total census families in private households in Canada

Code	Description	Includes
0	None	Families with no children and families with no children 15 to 17 years of age.
1	One	
2	Two	
3	Three or more	

¹ The data for children in families attending school full-time in the 15-17 year age group may be underestimated by as much as 46% of the published estimate at the Canada level. This underestimate is subject to fairly large variations below the Canada level and for further disaggregations of the data. Therefore, the data for attending school full-time in the 15-17 year age group is not available in this field on the Family file.

Data Set Name: Family File

**FIELD: 10
CHILDD**

Families by Number of Children 18-24 Years of Age Attending School¹

Refers to families by the number of children in the family 18 to 24 years of age, who attended school full or part-time during 1975.

Reported for: Total census families in private households in Canada

Code	Description	Includes
0	None	Families with no children, families with no children 18 to 24 years of age and families with no children 18 to 24 years of age at school.
1	One	
2	Two	
3	Three or more	

¹ The data for children in families attending school full-time in the 18-24 year age group may be underestimated by as much as 6% at the Canada level.

Data Set Name: Family File

FIELD: 11
CHILDDA

Families by Number of Children 18-24 Years of Age Not Attending School¹

Refers to families by the number of children in the family 18 to 24 years of age, who did not attend school either full or part-time during 1975.

Reported for: Total census families in private households in Canada

Code	Description	Includes
0	None	Families with no children, families with no children 18 to 24 years of age and families with children 18 to 24 years of age at school.
1	One	
2	Two	
3	Three or more	

¹ The data for children in families not attending school full-time in the 18-24 year age group may be overestimated by as much as 1% at the Canada level.

Data Set Name: Family File

**FIELD: 12
CHILDE**

Families by Number of Children 25 Years of Age and Over

Refers to families by the number of children in the family 25 years of age and over.

Reported for: Total census families in private households in Canada

Code	Description	Includes
0	None	Families with no children and families with no children 25 years of age and over.
1	One	
2	Two	
3	Three or more	

Data Set Name: Family File

**FIELD: 13
MARLP**

Families by Marital Status of Lone Parent

Refers to the conjugal status of lone parent.

Reported for: Total census families in private households in Canada

Code	Description	Includes
1	Single (never married)	
2	Married (spouse absent)	
3	Widowed	
4	Divorced	
5	Separated	
0	Not applicable	Husband-wife families

Data Set Name: Family File

**FIELD: 14
LANGHSD**

Families by Mother Tongue of Husband or Male Lone Parent

Refers to the language first learned and still understood by the husband or male lone parent.

Reported for: Total census families in private households in Canada

Code	Description	Includes
1	English	
2	French	
3	German	
4	Italian	
5	Ukrainian	
6	Not stated	Mother tongue not reported
7	All other	
0	Not applicable	Female lone parent families

Data Set Name: Family File

FIELD: 15
LANGWF

Families by Mother Tongue of Wife or Female Lone Parent

Refers to the language first learned and still understood by the wife or female lone parent.

Reported for: Total census families in private households in Canada

Code	Description	Includes
1	English	
2	French	
3	German	
4	Italian	
5	Ukrainian	
6	Not stated	Mother tongue not reported
7	All other	
0	Not applicable	Male lone parent families

Data Set Name: Family File

FIELD: 16
AGEHSD

Families by Age of Husband or Male Lone Parent

Refers to the number of completed years of age of the husband or male lone parent at last birthday before the census date.

Reported for: Total census families in private households in Canada

Code	Description	Includes
	Single years of age from 15 to 74, then 75 for any age of 75 or over.	
00	Not applicable	Female lone parent families

Data Set Name: Family File

FIELD: 17

AGEWF

Families by Age of Wife or Female Lone Parent

Refers to the number of completed years of age of the wife or female lone parent at last birthday before the census date.

Reported for: Total census families in private households in Canada

Code	Description	Includes
	Single years of age from 15 to 74, then 75 for any age of 75 or over	
00	Not applicable	Male lone parent families

Data Set Name: Family File

FIELD: 18
EDUHSD

Families by Level of Schooling of Husband or Male Lone Parent

Refers to families by the highest grade or year of elementary/secondary school attended, or the highest year of post-secondary non-university or university completed with or without degree, certificate or diploma, by the husband or male lone parent.

Reported for: Total census families in private households in Canada

Code	Description	Includes
01	Less than Grade 9	"No schooling" and "Kinder-garten"
02	Grades 9-10	
03	Grade 11	
	Grades 12-13	
04	Without certificate or diploma	
05	With certificate or diploma	
	Post-secondary non-university only	
06	Without certificate or diploma	
07	With certificate or diploma	
	University	
08	Without university certificate diploma or degree	
09	With university certificate or diploma	
10	With degree	
00	Not applicable	Female lone parent families

Data Set Name: Family File

FIELD: 19

EDUWF

Families by Level of Schooling of Wife or Female Lone Parent

Refers to families by the highest grade or year of elementary/secondary school attended, or the highest year of post-secondary non-university or university completed with or without degree, certificate or diploma, by the wife or female lone parent.

Reported for: Total census families in private households in Canada

Code	Description	Includes
01	Less than Grade 9	"No schooling" and "Kindergarten"
02	Grades 9-10	
03	Grade 11	
	Grades 12-13	
04	Without certificate or diploma	
05	With certificate or diploma	
	Post-secondary non-university only	
06	Without certificate or diploma	
07	With certificate or diploma	
	University	
08	Without university certificate, diploma or degree	
09	With university certificate or diploma	
10	With degree	
00	Not applicable	Male lone parent families

Data Set Name: Family File

FIELD: 20
DGREEHSD

Families by Educational Qualification of Husband or Male Lone Parent

Refers to the highest educational qualification or credential that has been obtained by the husband or male lone parent.

Reported for: Total census families in private households in Canada.

Code	Description	Includes
1	None	
2	Secondary (high) school graduation certificate	
3	Non-university certificate or diploma	
4	University certificate or diploma below Bachelor level	
5	Bachelor degree	
6	Degree in medicine, dentistry or veterinary medicine	
7	Master's degree	
8	Earned doctorate	
0	Not applicable	Female lone parent families

Data Set Name: Family File

FIELD: 21
DGREEWF

Families by Educational Qualification of Wife or Female Lone Parent

Refers to the highest educational qualification or credential that has been obtained by the wife or female lone parent.

Reported for: Total census families in private households in Canada

Code	Description	Includes
1	None	
2	Secondary (high) school graduation certificate	
3	Non-university certificate or diploma	
4	University certificate or diploma below Bachelor level	
5	Bachelor degree	
6	Degree in medicine, dentistry or veterinary medicine	
7	Master's degree	
8	Earned doctorate	
0	Not applicable	Male lone parent families

Data Set Name: Family File

FIELD: 22
PSNUHSD

**Families by Post-secondary Non-university Education of
Husband or Male Lone Parent**

Refers to the number of years of post-secondary non-university training completed by the husband or male lone parent.

Reported for: Total census families in private households in Canada

Code	Description	Includes
1	None	
2	One year or less	
3	Two years	
4	Three years or more	
0	Not applicable	Female lone parent families

Data Set Name: Family File

FIELD: 23
PSNUWF

**Families by Post-secondary Non-university Education of
Wife or Female Lone Parent**

Refers to the number of years of post-secondary non-university training completed by the wife or female lone parent.

Reported for: Total census families in private households in Canada

Code	Description	Includes
1	None	
2	One year or less	
3	Two years	
4	Three years or more	
0	Not applicable	Male lone parent families

Data Set Name: Family File

FIELD: 24

PSUVHSD

Families by Post-secondary University Education of Husband or Male Lone Parent

Refers to the number of years of post-secondary university level education (including university transfer courses of community colleges and CEGEP's (general)), completed by the husband or male lone parent.

Reported for: Total census families in private households in Canada

Code	Description	Includes
1	None	
2	One year or less	
3	Two years	
4	Three years	
5	Four years	
6	Five years	
7	Six years or more	
0	Not applicable	Female lone parent families

Data Set Name: Family File

FIELD: 25
PSUVWF

Families by Post-secondary University Education of Wife or Female Lone Parent

Refers to the number of years of post-secondary university level education (including university transfer courses of community colleges and CEGEP's (general)), completed by the wife or female lone parent.

Reported for: Total census families in private households in Canada

Code	Description	Includes
1	None	
2	One year or less	
3	Two years	
4	Three years	
5	Four years	
6	Five years	
7	Six years or more	
0	Not applicable	Male lone parent families

Data Set Name: Family File

FIELD: 26
LFAHSD

Families by Labour Force Activity of Husband or Male Lone Parent

Refers to the labour market activity of the husband or male lone parent in the week prior to enumeration, whether employed, unemployed or not in the labour force.

Reported for: Total census families in private households in Canada

Code	Description	Includes
	In the labour force	
1	Employed	
2	Unemployed	
3	Not in the labour force	
0	Not applicable	Female lone parent families

Data Set Name: Family File

FIELD: 27
LFAWF

Families by Labour Force Activity of Wife or Female Lone Parent

Refers to the labour market activity of the wife or female lone parent in the week prior to enumeration, whether employed, unemployed or not in the labour force.

Reported for: Total census families in private households in Canada

Code	Description	Includes
	In the labour force	
1	Employed	
2	Unemployed	
3	Not in the labour force	
0	Not applicable	Male lone parent families

Data Set Name: Family File

FIELD: 28
POP5HSD

Families by Population Size Group of Place of Residence of Husband or Male Lone Parent on June 1, 1971

Where a census subdivision is not part of a census metropolitan area or census agglomeration, this variable refers to the 1976 population size of the census subdivision where the husband or male lone parent lived and slept (i.e., his home) on June 1, 1971. Where the census subdivision of residence in 1971 is within a census metropolitan area or census agglomeration, the variable refers to the 1976 population size of the respective census metropolitan area or census agglomeration.

Reported for: Total census families in private households in Canada

Code	Description	Includes
01	1 - 999	
02	1,000 - 1,999	
03	2,000 - 4,999	
04	5,000 - 9,999	
05	10,000 - 24,999	
06	25,000 - 49,999	
07	50,000 - 74,999	
08	75,000 - 99,999	
09	100,000 - 249,999	
10	250,000 - 499,999	
11	500,000 - 999,999	
12	1,000,000 plus	
13	Residence in 1971 not stated	
00	Not applicable	All female lone parent families; male lone parent families and husband-wife families who resided in the same dwelling in 1976 as in 1971 (non-movers), resided in a different dwelling but same census subdivision (non-migrants) or resided outside Canada in 1971.

NOTE: When cross-classifying using POP5HSD, collapsing of categories should be considered.

Data Set Name: Family File

FIELD: 29
POP5WF

**Families by Population Size Group of Place of Residence of
Wife or Female Lone Parent on June 1, 1971**

Where a census subdivision is not part of a census metropolitan area or census agglomeration, this variable refers to the 1976 population size of the census subdivision where the wife or female lone parent lived and slept (i.e., her home) on June 1, 1971. Where the census subdivision of residence in 1971 is within a census metropolitan area or census agglomeration, the variable refers to the 1976 population size of the respective census metropolitan area or census agglomeration.

Reported for: Total census families in private households in Canada

Code	Description	Includes
01	1 - 999	
02	1,000 - 1,999	
03	2,000 - 4,999	
04	5,000 - 9,999	
05	10,000 - 24,999	
06	25,000 - 49,999	
07	50,000 - 74,999	
08	75,000 - 99,999	
09	100,000 - 249,999	
10	250,000 - 499,999	
11	500,000 - 999,999	
12	1,000,000 plus	
13	Residence in 1971 not stated	
00	Not applicable	All male lone parent families; female lone parent families and husband-wife families who resided in the same dwelling in 1976 as in 1971 (non-movers), resided in a different dwelling but same census subdivision (non-migrants) or resided outside Canada in 1971.

NOTE: When cross-classifying using POP5WF, collapsing of categories should be considered.

Data Set Name: Family File

FIELD: 30
POPHSD

Families by Population Size Group of Place of Residence of Husband, 1976

Where a census subdivision is not part of a census metropolitan area or census agglomeration, this variable refers to the population size of the census subdivision where the husband lived and slept (i.e., his home) on June 1, 1976. Where the census subdivision is within a census metropolitan area or census agglomeration, the variable refers to the population size of the respective census metropolitan area or census agglomeration. Persons enumerated away from their permanent residence, due to business, vacation, etc., are counted at their permanent residence.

Reported for: Total census families in private households in Canada

Code	Description	Includes
01	1 - 999	
02	1,000 - 1,999	
03	2,000 - 4,999	
04	5,000 - 9,999	
05	10,000 - 24,999	
06	25,000 - 49,999	
07	50,000 - 74,999	
08	75,000 - 99,999	
09	100,000 - 249,999	
10	250,000 - 499,999	
11	500,000 - 999,999	
12	1,000,000 plus	
00	Not applicable	Lone parent families

NOTE: Place of residence of wife will be the same as place of residence of husband. When cross-classifying using POPHSD, collapsing of categories should be considered.

Data Set Name: Family File

FIELD: 31

POPLP

Families by Population Size Group of Place of Residence of Lone Parent, 1976

Where a census subdivision is not part of a census metropolitan area or census agglomeration, this variable refers to the population size of the census subdivision where the lone parent lived and slept (i.e., his/her home) on June 1, 1976. Where the census subdivision is within a census metropolitan area or census agglomeration, the variable refers to the population size of the respective census metropolitan area or census agglomeration. Persons enumerated away from their permanent residence, due to business, vacation, etc., are counted at their permanent residence.

Reported for: Total census families in private households in Canada

Code	Description	Includes
01	1 - 999	
02	1,000 - 1,999	
03	2,000 - 4,999	
04	5,000 - 9,999	
05	10,000 - 24,999	
06	25,000 - 49,999	
07	50,000 - 74,999	
08	75,000 - 99,999	
09	100,000 - 249,999	
10	250,000 - 499,999	
11	500,000 - 999,999	
12	1,000,000 plus	
00	Not applicable	Husband-wife families

NOTE: When cross-classifying using POPLP, collapsing of categories should be considered.

Data Set Name: Family File

FIELD: 32
MOB5HSD

Families by Mobility Status of Husband or Male Lone Parent

MOBILITY STATUS is determined by the response to a question relating to the individual's dwelling or place of residence five years earlier — June 1, 1971. Based on the question, husbands or male lone parents are classified into non-movers or movers.

NON-MOVERS are persons who, on Census Day (June 1, 1976), were living in the same dwelling they occupied five years earlier (June 1, 1971).

MOVERS are persons who, on Census Day, were living in a different dwelling than the one occupied five years earlier. Movers can be further classified according to their geographic location of residence in 1971: for example, same census subdivision (municipality), different census subdivision, same province, different province, outside Canada, etc. Within the category 'movers', a distinction is usually made between non-migrants and migrants (i.e., migration status). NON-MIGRANTS are movers who, on Census Day, were living within the same census subdivision they resided in five years earlier. MIGRANTS are movers who, on Census Day, were residing in a different census subdivision than five years earlier.

Reported for: Total census families in private households in Canada

Code	Description	Includes
1	Same dwelling	
2	Same census subdivision (CSD)	
3	Different CSD, same census division (CD)	
4	Different CD, same province	
5	Same province, sub-provincial status not stated	
6	Different province	
7	Province of residence in 1971 not stated	
8	Outside Canada	
0	Not applicable	Female lone parent families

NOTE: The various mobility status or migration status categories are defined as follows:

MOBILITY STATUS UNIVERSE — MOB5 eq 1 to 8

NON-MOVERS — MOB5 eq 1

MOVERS — MOB5 eq 2 to 8

NON-MIGRANTS — MOB5 eq 2

MIGRANTS — MOB5 eq 3 to 8

INTERNAL MIGRANTS — MOB5 eq 3 to 7

EXTERNAL MIGRANTS — MOB5 eq 8

Data Set Name: Family File

FIELD: 33
MOB5WF

Families by Mobility Status of Wife or Female Lone Parent

MOBILITY STATUS is determined by the response to a question relating to the individual's dwelling or place of residence five years earlier — June 1, 1971. Based on the question, wives or female lone parents are classified into non-movers or movers.

NON-MOVERS are persons who, on Census Day (June 1, 1976), were living in the same dwelling they occupied five years earlier (June 1, 1971).

MOVERS are persons who, on Census Day, were living in a different dwelling than the one occupied five years earlier. Movers can be further classified according to their geographic location of residence in 1971: for example, same census subdivision (municipality), different census subdivision, same province, different province, outside Canada, etc. Within the category 'movers', a distinction is usually made between non-migrants and migrants (i.e., migration status). NON-MIGRANTS are movers who, on Census Day, were living within the same census subdivision they resided in five years earlier. MIGRANTS are movers who, on Census Day, were residing in a different census subdivision than five years earlier.

Reported for: Total census families in private households in Canada

Code	Description	Includes
1	Same dwelling	
2	Same census subdivision (CSD)	
3	Different CSD, same census division (CD)	
4	Different CD, same province	
5	Same province, sub-provincial status not stated	
6	Different province	
7	Province of residence in 1971 not stated	
8	Outside Canada	
0	Not applicable	Male lone parent families

SALE OF MICRODATA TAPE(S)

AGREEMENT ENTERED INTO THIS _____ DAY OF _____, 19_____

BETWEEN:

HER MAJESTY THE QUEEN in right of Canada, herein
acting through the President of the Treasury Board
and represented by the Assistant Chief Statistician,
Marketing Services, Statistics Canada (hereinafter
described as "Statistics Canada")

VENDOR

AND:

of the city of _____,
in the province of _____, residing therein
at _____, (hereinafter
described as "subscriber")

PURCHASER

THIS AGREEMENT witnesseth that in consideration of the premises and mutual covenants herein set forth, Statistics Canada and the subscriber mutually covenant and agree as follows:

1. The subscriber hereby nominates _____ as the contact person to whom all further communication shall be addressed by Statistics Canada on any matter concerning this Agreement.
2. The above-mentioned contact person nominated by the subscriber may only be changed upon written notice delivered to Statistics Canada.
3. Statistics Canada shall provide to the subscriber's contact person, magnetic tape(s) containing microdata representing a sample of the 1976 Canadian Census of Population and relating to _____, _____, _____.
4. Any advice and support service that is required by the subscriber may be made available by Statistics Canada on a full cost recovery per diem rate by separate contract upon the condition that the technical assistance which is necessary can be provided by Statistics Canada at the time of the request.
5. The subscriber shall pay to Her Majesty the sum of \$ _____ payable prior to delivery of the magnetic tape(s) and/or documentation.

6. The copyright belongs to Her Majesty and the subscriber shall do nothing inconsistent with the copyright of Her Majesty to the information and formats provided by Statistics Canada.
7. No duplicates or copies shall be made of all or any part of the microdata except for the subscriber's own use nor shall they be made accessible to others without written permission of Statistics Canada.
8. In publishing research or other results based on the use of these microdata the subscriber shall use this form of accreditation:- "Based on Public Use Sample Data derived from the 1976 Canadian Census of Population supplied by Statistics Canada. The responsibility for the use and interpretation of these data is entirely that of the author(s)".
9. No member of the House of Commons of Canada shall share in any benefit arising from this Agreement.

IN WITNESS WHEREOF, this Agreement has been executed on the day and year set out above.

Witness

Assistant Chief Statistician,
Marketing Services

Witness

Subscriber

SALE OF MICRODATA TAPE(S)

AGREEMENT ENTERED INTO THIS _____ DAY OF _____, 19_____

BETWEEN:

**HER MAJESTY THE QUEEN in right of Canada, herein
acting through the President of the Treasury Board
and represented by the Assistant Chief Statistician,
Marketing Services, Statistics Canada (hereinafter
described as "Statistics Canada")**

VENDOR

AND:

**_____, of the city of _____,
in the province of _____, residing therein
at _____, (hereinafter
described as "subscriber")**

PURCHASER

THIS AGREEMENT witnesseth that in consideration of the premises and mutual covenants herein set forth, Statistics Canada and the subscriber mutually covenant and agree as follows:

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Witness

Assistant Chief Statistician,
Marketing Services

Witness

Subscriber

NOTE: The various mobility status or migration status categories are defined as follows:

MOBILITY STATUS UNIVERSE — MOB5 eq 1 to 8

NON-MOVERS — MOB5 eq 1

MOVERS — MOB5 eq 2 to 8

NON-MIGRANTS — MOB5 eq 2

MIGRANTS — MOB5 eq 3 to 8

INTERNAL MIGRANTS — MOB5 eq 3 to 7

EXTERNAL MIGRANTS — MOB5 eq 8

Data Set Name: Family File

FIELD: 34

TENURE

Families by Tenure of Occupied Private Dwellings

Refers to whether an occupied private dwelling is owned or rented by the family.

Reported for: Total census families maintaining their own private household in Canada without additional persons present

Code	Description	Includes
1	Owned	
2	Rented	
0	Not applicable	Family not maintaining own household, family maintaining own household but with additional persons present.

Data Set Name: Family File

FIELD: 35

TYPDWL

Families by Type of Dwelling

Refers to the classification of private dwellings in Canada in terms of their physical structure.

Reported for: Total census families maintaining their own household, without additional persons present

Code	Description	Includes
1	Single detached	A structure with one dwelling only, separated by open space from all other structures, except its own garage or shed.
	Single attached	
2	Semi-detached or double	A dwelling joined to only one other dwelling, separated from it by a wall extending from ground to roof (i.e., one of two dwellings attached side by side, having no other dwellings either above or below and separated by open space from all other structures).
3	Row house	A dwelling unit in a row of three or more dwellings, sharing common walls extending from ground to roof and in which there are no other dwellings either above or below.
4	Attached to a non-residential structure	A single house attached to a non-residential structure (such as a store, church, etc.), but separated from it by a wall extending from ground to roof.
5	Apartment	A dwelling unit in a triplex, quadruplex or apartment building that is separated from other dwelling units by a horizontal division or by both horizontal and vertical divisions. Dwellings in duplexes or triplexes that are attached in rows are included here. Dwellings such

		as flats above or within a non-residential structure such as a school or a store also are included in this category, as are structurally separate dwellings in a converted house if they number more than two.
6	Duplex	One of two dwellings, one on top of the other, separated by open space from all other structures. Included are any dwellings built as a single house but in which the basement or upper storey has been converted to form another separate dwelling.
7	Mobile home	A movable dwelling designed and constructed to be transported (by road) on its own chassis to a site and placed on a temporary foundation such as blocks, posts or a prepared pad. It should be capable of being moved to a new location on short notice. Motor homes, trailers and camper trailers, if used as permanent residences, are included under "Other movable dwelling".
8	Other movable dwelling	Other movable dwellings (other than mobile homes) which are used as permanent residences and are also capable of being moved on short notice such as tents, motor homes, travel trailers, camper trailers, railroad cars and houseboats.
0	Not applicable	Families not maintaining own household, families maintaining own household but with additional persons present.

Control Counts

As the Public Use Sample file was created, counts of families selected into the sample were tallied for certain characteristics, within each identified geographic area. These control counts are given below. A failure of user tallies to replicate these exact counts would indicate an error in the user's data processing.

In comparing sample tabulations with published data, one must carefully note the universe of the published tabulation. One cannot, of course, expect exact agreement between census publications and user estimates based on tallies of a one-in-a-hundred sample. They will inevitably differ to some extent as a result of chance in selection of actual cases for the Public Use Sample. Chapter II, Sample Evaluation, discusses sampling variability and its measurement.

Characteristics	Nfld.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Montreal CMA	Toronto CMA	Vancouver CMA
Total	124,600	200,500	161,500	1,541,800	2,106,500	251,900	226,400	449,100	629,800	716,800	717,000	296,000
Families by Family Structure:												
Husband-wife family	114,000	180,200	144,800	1,382,000	1,905,100	226,900	208,500	407,300	570,000	634,900	645,100	265,700
Male lone parent family	2,200	2,800	3,800	25,000	33,700	4,500	3,500	7,500	9,500	12,200	11,200	4,400
Female lone parent family	8,400	17,500	12,900	134,800	167,700	20,500	14,400	34,300	50,300	69,700	60,700	25,900
Families by Number of Persons:												
Two	31,400	68,200	51,300	508,100	756,900	94,600	84,000	154,900	251,400	258,200	261,500	123,000
Three	26,700	43,500	34,300	346,900	450,100	51,600	44,300	90,700	125,600	164,300	161,100	60,200
Four	26,400	42,500	34,500	344,100	486,000	53,700	46,500	105,000	141,400	163,900	169,300	65,500
Five	16,600	24,300	20,100	183,400	251,400	30,100	27,600	57,700	70,600	80,200	81,700	31,400
Six	9,500	12,500	12,500	85,900	107,600	13,000	15,000	27,000	28,100	31,400	29,200	11,600
Seven	6,400	4,100	4,300	38,600	35,600	5,400	4,400	7,700	8,100	10,900	9,800	2,700
Eight or more	7,600	5,400	4,500	34,800	18,900	3,500	4,600	6,100	4,600	7,900	4,400	1,600
Families by Labour Force												
Activity of Husband or Male												
Lone Parent:												
Employed	75,200	138,000	108,500	1,123,400	1,575,200	182,600	175,100	347,300	445,100	528,000	546,800	211,300
Unemployed	10,100	7,000	6,500	46,100	43,800	5,400	2,800	7,600	25,100	16,400	15,700	10,600
Not in the labour force	30,900	38,000	33,600	237,500	319,800	43,400	34,100	59,900	109,300	102,700	93,800	48,200
Families by Labour Force												
Activity of Wife or Female												
Lone Parent:												
Employed	27,600	67,600	49,200	528,100	923,200	109,500	110,400	213,200	250,800	260,000	347,800	125,900
Unemployed	5,200	6,900	6,000	45,900	71,000	5,300	2,100	8,600	24,400	18,400	22,100	10,300
Not in the labour force	89,600	123,200	102,500	942,800	1,078,600	132,600	110,400	219,800	345,100	426,200	335,900	155,400

CHAPTER VII

TECHNICAL SPECIFICATIONS AND ORDERING PROCEDURES

General

As mentioned in Chapter I, File Design and Content, the data for the Public Use Sample Tapes have been organized into three separate files: Individual, Household and Family files. For each of these basic files an independent sample was taken from the data collected during the 1976 Census, thereby preventing any linkage of data from one file to another which might make possible the identification of a unique record.

The sample files have been constructed so that it should not be difficult to obtain desired tabulations. File structure and coding of items are straightforward. There are no missing data (blanks) on the records. Variables not applicable to certain groups of people are coded "Not applicable". The appropriate "Definitions and Codes" section for each file is located as follows:

Individual file	Chapter IV
Household file	Chapter V
Family file	Chapter VI

File Size

The 1976 Public Use Sample Tapes will be made up of 3 reels of 9 track, 1600 bytes per inch magnetic tape.

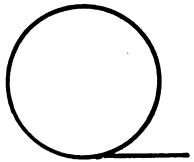
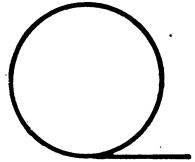
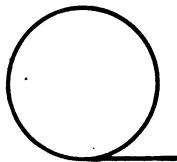
Data for all the provinces, including the three Census Metropolitan Areas, will be concatenated onto one reel of tape for each file.

1976 Census Public Use Sample Tapes

Individual File Household File Family File

PROVINCES AND CENSUS METROPOLITAN AREAS

Identifies nine of the provinces individually (Newfoundland, Nova Scotia, New Brunswick, Québec, Ontario, Manitoba, Saskatchewan, Alberta, British Columbia) and three of the Census Metropolitan Areas (Montréal, Toronto, Vancouver) within their respective provinces.



Each tape symbol represents a separate one-in-a-hundred public use sample.

Tape Options

The Public Use Sample Tapes will be available in a variety of formats; see the table below for the complete technical description of format options available.

WARNING: If the technical options are not clear, users should contact their local computing center prior to ordering tapes.

Optional features

Characteristic	9 track- 800 or 1600 or 6250 b.p.i.	7 track
Labels	IBM OS standard or unlabelled	IBM OS standard or unlabelled
Densities	800 or 1600 or 6250 b.p.i.	800 b.p.i.
Track utilization	8 data; 1 parity	6 data; 1 parity
Recording language	EBCDIC	BCD
Interblock gap	0.6 inch	0.75 inch
Width	0.5 inch	0.5 inch
Length	2,400 ft.	2,400 ft.

NOTE: User can request tape density and blocking factor to suit his/her needs; otherwise, the specifications will be: 9 track- 1,600 bytes per inch, IBM OS standard labels (DSName will be User File ID as listed). Recording will be EBCDIC.

To insure that the correct reel of tape is mounted on the computer, a system of labels is used to identify the tape. The sample tapes may be purchased with IBM OS standard labels or unlabelled. If the tapes are purchased with labels, then the labels are located both at the beginning and at the end of the tape. The labels at the beginning are referred to as "headers" and those at the end as "trailer" labels.

The header labels consist of three 80 character records; the volume, header 1, and header 2 labels. The trailer labels consist of two 80 character records; file 1 and file 2 labels. The following is an example of the labels coded on the Public Use Sample Tapes.

Explanation of Labels

1 Volume Label

Position	Title	Code	Explanation
1-4	Label ident.	VOL1	Label identification
5-10	Volume serial	028965	The volume serial number of the tape
11-12	Volume secur	NO	Volume security, not used on standard labels
13-80	Owner name and address	blank	Can be used to code the owners' name and address, not used on standard labels

2 and 4 Header 1 / Trailer 1 Labels

1-4	Label ident.	HDR1 and EOF1	Label identification
5-21	Data set identifier	PUST1976.IND	The data set name for this tape
22-27	Data set serial #	028965	The volume serial number of the tape
28-31	Volume seq #	0001	The volume sequence number, important if more than 1 reel of tape is used to create the data set
32-35	Data set seq #	0001	Data sequence number, used to identify the sequence of the data sets on multi file reels
36-39	Gener #	blank	Generation number, not used with standard labels
40-43	Version #	blank	Version number, not used with standard labels

Position	Title	Code	Explanation
44-48	Create date	75042	The julian calendar date of when the tape was produced
49-53	Expiry date	00000	The julian calendar date of when the data on the tape should be deleted, not used on standard labels
54-55	Data set security	NO	Not used on standard labels
56-61	Blk count on volume	blank	Block count on volume, not used on standard labels
62-80	Programming system code	blank	Not used on standard labels

3 and 5 Header 2 / Trailer 2 Labels

1-4	Label ident.	HDR2 and EOF2	Label identification
5	Reclm	FB	Record format, fixed blocked
6-10	Blksize	03960	Blocksize
11-15	Lrecl	00099	Logical record length
16	Tape density	1600	1600 bytes per inch
17-33	Job/job step identification	A1344RCD/ RCD1661PVI	Identification of the job and step that created the tape
34-35	Trtch	blank	Tape recording technique, " " identifies odd parity
36-80			Not used on standard labels

If more detailed information is required, see the IBM reference manual; "IBM System/360 Operating System, Tape Labels", number C28-6680.

Ordering Procedures

Sale of microdata files will be carried out by formal contract only. A few of the conditions of sale in the contractual agreement bear emphasizing at this time.

- Paragraph 1 The subscriber hereby nominates ----- as the contact person to whom all further communication shall be addressed by Statistics Canada on any matter concerning this Agreement.
- Paragraph 7 No duplicates or copies shall be made of all or any part of the microdata except for the subscriber's own use nor shall they be made accessible to others without written permission of Statistics Canada.
- Paragraph 8 In publishing research or other results based on the use of these microdata, the subscriber shall use this form of accreditation: --- "Based on Public Use Sample Data derived from the 1976 Canadian Census of Population supplied by Statistics Canada. The responsibility for the use and interpretation of these data is entirely that of the author(s)".

The Public Use Sample Tapes will be sold for **\$300. per file** and the User Documentation Manual for **\$50. per copy**.

To order microdata files, the user must send the following:

- two signed copies of the contract
- a completed technical specification form
- and a cheque or money order, made payable to the Receiver General for Canada, for the full amount of the order.

To: Census Tape Inquiries,
 CANSIM Division,
 Statistics Canada,
 Ottawa, Canada
 K1A 0Z8

For user convenience two copies of the contract and one copy of the technical specification form are included here.

CHAPTER VIII

REFERENCE MATERIAL

For the user's convenience, a copy of the following documents are enclosed in this chapter.

- A brief copy of the "Dictionary of 1976 Census Terms"
- The 1976 2B Census Questionnaire

DEFINITIONS

Variable

Age: Age refers to the number of completed years of age at last birthday, and is computed on the basis of the census questionnaire item on date of birth.

Census Family: Consists of a husband and a wife (with or without children who have never married, regardless of age) or a lone parent, regardless of marital status, with one or more children (who have never married, regardless of age) living in the same dwelling. Persons living common-law are directed to report as now married on the census questionnaire. Such persons are therefore indistinguishable from those who are legally married and will appear as a husband-wife family. Unless otherwise specified, all family data in the Individual and Family files are for census families.

Children: Refers to sons and daughters (including adopted and stepchildren) who have never married, regardless of age, and are living in the same dwelling as their parent(s). Sons and daughters who have ever married, regardless of age, are not considered as members of their parents' family, even though they are living in the same dwelling.

Collective Dwelling: Refers to a dwelling of an institutional, commercial or communal nature, occupied on Census Day, by a person or group of persons (other than foreign residents). Included are hotels, motels, hospitals, staff residences, school residences, camps, religious institutions, orphanages, nursing homes, Hutterite colonies, jails, missions and hostels, as well as dwellings containing ten or more persons unrelated to the household head such as a rooming- or lodging-house. Also included are small hotels, nursing homes, etc., which display indications of being a business establishment or a religious order (e.g., such signs as "Eventide Home", "Mrs. Smith's Nursing Home"), even though there are fewer than ten persons unrelated to the household head.

Degrees/Diplomas/Certificates: A secondary (high) school graduation certificate or diploma is one which is classifiable as junior or senior matriculation, at the honours, general, technical or commercial levels. A non-university certificate or diploma is obtainable at institutions such as nursing school, community college, or CEGEP. A university certificate or diploma is obtainable in courses such as dental hygiene, occupational therapy, or agriculture. University degrees encompass the traditional Bachelor, Master's and Doctorate degrees, as well as the "Medical" category which includes degrees in medicine, dentistry or veterinary medicine.

Dwelling: Refers to a set of living quarters in which a person or group of persons resides or could reside.

Family Persons: Refers to members of a census family (e.g., persons living in the same dwelling who have a husband-wife or parent-child relationship).

Family Status: Refers to the classification of the population in private households into family and non-family persons. Family persons are further classified as: husband, wife, lone parent, spouse, child.

FAMILY PERSONS are members of a census family (e.g., persons living in the same dwelling who have a husband-wife or parent-child relationship). **HUSBAND/WIFE** refers to persons living in the same dwelling as their spouse. **LONE PARENT** refers to a mother or a father, with no spouse present, living in a dwelling with one or more never-married children. **SPOUSE** refers to either the husband or the wife of a husband-wife census family. **CHILDREN** refers to sons and daughters (including adopted and stepchildren) who have never married, regardless of age, and are living in the same dwelling as their parent(s). Sons and daughters who have ever married, regardless of age, are not considered as members of their parents' family, even though they are living in the same dwelling.

NON-FAMILY PERSONS are not members of a census family. They may be related to the household head (e.g., brother-in-law, cousin) or unrelated (e.g., lodger, employee).

Family Structure: Refers to the classification of census families into husband-wife families or lone parent families. **HUSBAND-WIFE FAMILIES** consist of a husband and a wife (with or without children), or persons who live

common-law (with or without children). LONE PARENT FAMILIES consist of a parent, regardless of marital status, with one or more children living in the same dwelling (see CHILDREN).

Family Type: Refers to the classification of census families according to whether they maintain or do not maintain their own household (i.e., whether or not the husband, the wife or the parent in a lone parent family is also the household head). Families not maintaining their own household are further classified according to their relationship to the household head (e.g., related and non-related families).

MAINTAINING OWN HOUSEHOLD (PRIMARY FAMILY) refers to the family of the household head where the household head is a family person (i.e., a member of a census family).

NOT MAINTAINING OWN HOUSEHOLD (SECONDARY FAMILY) refers to a census family other than that of the household head. Note that it is possible to have secondary families without having corresponding primary families, as in the case of a non-family household head and a lodging family. Secondary families are further classified into RELATED FAMILIES, consisting of a census family in which the husband, the wife or the parent in a lone parent family is related by blood, marriage or adoption to the household head. Non-related families are further subdivided into LODGING FAMILIES and OTHER NON-RELATED FAMILIES (employee's family, partner's family).

Household: Refers to a person or group of persons (other than foreign residents) who occupy a dwelling and do not have a usual place of residence elsewhere in Canada. It usually consists of a family group with or without lodgers, employees, etc. However, it may consist of two or more families sharing a dwelling, a group of unrelated persons, or one person living alone. Household members who are temporarily absent on Census Day (e.g., temporary residents elsewhere) are considered as part of their usual household. For census purposes, every person is a member of one and only one household.

Households are classified into three groups: (1) A PRIVATE household refers to persons (other than foreign residents) who occupy private dwellings and do not have a usual place of residence elsewhere in Canada. (2) A COLLECTIVE household consists of persons (other than foreign residents) who occupy collective dwellings and do not have a usual place of residence elsewhere in Canada. (3) A HOUSEHOLD OUTSIDE CANADA refers to military, diplomatic or other government personnel together with their dependents who reside outside Canada. Unless otherwise specified, all data in the Household file are for private households only.

Household Head: For census purposes, every household has a head and only one person is so designated. This is either the husband or the wife; the parent where there is one parent only, with one or more children (who have never married, regardless of age); or any member of a group sharing a dwelling equally. A person occupying a dwelling alone is always reported as the head. The minimum age for the head of household is 15 years.

Household Status: Refers to the relationship of persons in the household to the household head. A person may be related to the head through blood, marriage or adoption (e.g., spouse, son or daughter, brother-in-law) or may be unrelated to the head (e.g., lodger, employee).

A LODGER is a person, unrelated to the household head, who pays for accommodation (e.g., boarder). He/she does not share responsibility for maintenance of the dwelling. If the lodger's spouse or child is present, the relationship to the household head is "lodger's spouse" or "lodger's child". In addition to these, unrelated wards and foster children, irrespective of whether pay is received, are designated as lodgers.

A PARTNER is a person, unrelated to the household head, who has equal access to dwelling facilities (e.g., friend) and/or shares responsibility for the maintenance of the dwelling (e.g., room-mate). A partner must be 15 years or over. If the partner's spouse or child is present, the relationship to the household head is "partner's spouse" or "partner's child".

An EMPLOYEE is a person, unrelated to the household head, who is employed by the household or the household head, and resides in the same dwelling as the household head (e.g., maid, nurse, hired farm labourer). An employee must be 15 years or over. If the employee's spouse or child is present, the relationship to the household head is "employee's spouse" or "employee's child".

Husband-wife Family: Consists of a husband and a wife (with or without children), or persons who live common-law (with or without children).

Labour Force Activity: Refers to the labour market activity of persons 15 years of age and over in the week prior to enumeration, whether employed, unemployed or not in the labour force.

Labour Force: Refers to the non-inmate¹ population, 15 years of age and over who, in the week prior to enumeration were (a) employed or (b) unemployed.

(a) The **Employed** consists of persons who, in the week prior to enumeration,

- (i) worked for pay or in their own business, farm or professional practice;
- (ii) helped without pay in a family business or farm; or
- (iii) had a job from which they were temporarily absent because of illness, vacation, labour dispute at their place of work, training course (provided the job was being held until trainee's return), bad weather, fire, personal reasons, etc.

(b) The **Unemployed** includes persons not classified as employed who, in the week prior to enumeration,

- (i) looked for work and were available to start work. As well, the Census Instruction Booklet asked persons who would have actively looked for work, but did not for certain specific reasons, to answer "yes" to the "looking" question. Those reasons were: temporary illness; indefinite layoff (exceeding 30 days) from a job to which they expected to be called back; or belief that no work was available in their community.
- (ii) were on temporary lay-off, not exceeding 30 days, from a job to which they expected to return (excluding full-time elementary and secondary school students); or
- (iii) had definite arrangements to start a new job at a future date (excluding full-time elementary and secondary school students).

Not in the Labour Force: Consists of all persons 15 years of age and over not classified as either employed or unemployed. It includes persons who looked for work in the week prior to enumeration but who indicated that they were not available to start work, as well as those persons who did not work, have a job or look for work in the week prior to enumeration.

Most persons in this category would be students, homemakers, retired workers, seasonal workers in an "off" season who are not looking for work, and persons who cannot work because of long-term illness or disability. Inmates of institutions are also classified as not in the labour force.

Labour Force – Historical Comparability

The data are based on the "labour force" concept which was introduced in the 1951 Census and has undergone very little change since. Between 1911 and 1941, the "gainfully occupied" concept was used to produce the census data. The gainfully occupied concept concentrated on a person's past and present occupation rather than on the current economic activity and, while it included persons 10 years old and over prior to 1941 and 14 years old and over in 1941, it omitted other individuals who were active in the labour market.²

¹ An INMATE is a resident of a collective household for whom care or custody is being provided, such as persons residing in mental hospitals, homes for the aged, penitentiaries or other institutions.

² Such as those looking for work for the first time, most females working as unpaid family workers on a part-time basis, and full-time students with part-time jobs who would normally be excluded from the "gainfully occupied". For a detailed discussion of the conceptual differences and adjusted 1911-1941 census data, see **Historical Estimates of the Canadian Labour Force**. Catalogue No. 99-549.

Although the labour force concept has been revised only marginally since 1951, the questions asked to produce the data changed markedly from one census to another. In the 1976 Census, the following two questions were added:

"Last week did you have definite arrangements to report to a new job at a future date?"

"Were you available to start work last week?"

The first question was asked of all persons 15 years old and over, although the data as defined after edit excluded full-time elementary and secondary students. The second question was asked only if the person was looking for work.

The differences between the data in 1971 and those in 1976 are as follows:

- (1) Females doing unpaid family work only, related to the head and resident on a farm, are excluded from the employed if their hours of work are less than 20. These females are considered to be not in the labour force.
- (2) Persons looking for work are counted in the unemployed whether or not they had a job from which they were absent as well and whether or not they were available for work.
- (3) Persons indicating they had a new job to start are excluded from the labour force unless they also looked for work or indicated that they were absent.
- (4) Persons on a temporary lay-off were included in the unemployed whether or not they were full-time students.

In identifying the female unpaid family workers in 1976, those related to the head and resident on a farm were deleted while, in 1971, these females were identified using the occupation data. The inclusion of the new job and availability questions and the different order in which the questions appeared in the census questionnaire might have affected the answers. However, it is not possible to assess fully their impact on the data.

Further discussions on the differences between the 1971 and 1976 Census labour force data are available in the **Introduction to Volume 5** (Catalogue No. 94-800), and the **Evaluation Report on the 1976 Census Labour Force Characteristics**. The latter report contains also a detailed explanation on the comparability of the 1976 Census and the monthly Labour Force Survey data.

Level of Schooling: Level of schooling refers to the highest grade or year of elementary/secondary attended, or the highest year of post-secondary non-university or university completed by the person. Those currently enrolled reported their present grade or year. Those persons with both university and post-secondary non-university training are indicated accordingly in a separate category.³ University is defined as a degree-granting institution which grants a degree, certificate or diploma upon successful completion of a programme of studies. (This category includes university transfer courses of community colleges and CEGEPs (general).) Post-secondary non-university training is obtained at a non-degree granting educational institution (e.g., community college, CEGEP (professional), nursing school). (See also the definition for Degrees/Diplomas/Certificates.)

Lone Parent Family: Consists of a parent, regardless of marital status, with one or more children living in the same dwelling (see CHILDREN).

³ Not applicable to the Family and Household files.

Marital Status: Refers to the categories single (never married), married, widowed, separated and divorced. Note in particular that:

Single (never married) includes all persons under age 15;

Married includes persons living common-law;

Separated includes married persons who have been deserted or have parted because they no longer wish to live together but have not obtained a divorce; this category, therefore, includes separations whether legal or otherwise.

Mobility Status: MOBILITY STATUS is determined by the response to a question relating to the individual's dwelling or place of residence five years earlier — June 1, 1971. Based on this question, the population is classified into non-movers or movers. NON-MOVERS are persons who, on Census Day (June 1, 1976), were living in the same dwelling they occupied five years earlier (June 1, 1971). MOVERS are persons who, on Census Day, were living in a different dwelling than the one occupied five years earlier. Movers can be further classified according to their geographic location of residence in 1971: for example, same census subdivision (municipality), different census subdivision, same province, different province, outside Canada, etc. Within the category "movers", a distinction is usually made between non-migrants and migrants (i.e., migration status). NON-MIGRANTS are movers who, on Census Day, were living within the same census subdivision they resided in five years earlier. MIGRANTS are movers who, on Census Day, were residing in a different census subdivision than five years earlier.

Canadian residents stationed outside Canada in the Armed Forces or the diplomatic service are excluded from the population universe from which mobility data are collected. Those aged 0-4 on June 1, 1976 are also excluded from the mobility status universe as the 5-year reference period precludes this segment of the population.

Mother Tongue: The language first learned and still understood. Infants who have not yet learned to speak are considered to have as mother tongue the language most often spoken in the home.

Non-family Persons: Refers to persons who are not members of a census family. They may be related to the household head (e.g., brother-in-law, cousin) or unrelated (e.g., lodger, employee).

Occupied Private Dwelling: Refers to a private dwelling in which a person or group of persons is permanently residing. Also included are private dwellings whose usual residents are temporarily absent on Census Day. Unless otherwise specified, all data in the Household and Family files are for occupied private dwellings rather than unoccupied private dwellings or dwellings occupied by foreign and/or temporary residents.

Participation Rate: The percentage the total labour force (employed plus unemployed) forms of the population 15 years of age and over in the area or category.

Private Dwelling: Refers to a structurally separate set of living quarters with a private entrance from outside or from a common hallway or stairway inside the building (e.g., the entrance must not be through someone else's living quarters). The census classifies private dwellings into three major groups: OCCUPIED DWELLINGS, UNOCCUPIED DWELLINGS, and DWELLINGS OCCUPIED BY FOREIGN AND/OR TEMPORARY RESIDENTS.

Private Household: Refers to a person or group of persons (other than foreign residents) who occupy a private dwelling and do not have a usual place of residence elsewhere in Canada. The number of private households equals the number of occupied private dwellings.

School Attendance (Family file only): School attendance refers to either full-time or part-time attendance at an educational institution at any time since the month of September preceding the census date of June 1, 1976. Educational institutions attended include those at the elementary — secondary, post-secondary non-university and university levels. The category for persons not attending school does not include those attending part-time.

School Attendance (post-secondary only): Post-secondary school attendance is divided into two groups: (i) those attending a post-secondary school full-time at any time since the month of September preceding the census date of June 1, 1976, and (ii) those attending part-time. Attendance is considered to be full-time if the person is taking 75% or more of the normal course load in the grade or year in which he or she is registered. Attendance (either full- or part-time) could have been at any of the following types of post-secondary educational institutions: university, institute of technology, community college, CEGEP, teachers' college, nursing school, private business school or college, public or private trade or vocational school.

Structural Type: Refers to the classification of private dwellings in terms of their physical structure. Five major groups result.

SINGLE DETACHED refers to:

Single house: A structure with one dwelling only, separated by open space from all other structures except its own garage or shed.

SINGLE ATTACHED refers to:

Semi-detached or double house: A dwelling joined to only one other dwelling, separated from it by a wall extending from ground to roof (e.g., one of two dwellings attached side by side), having no other dwellings either above or below and separated by open space from all other structures.

Row house: A dwelling unit in a row of three or more dwellings, sharing common walls extending from ground to roof and in which there are no other dwellings either above or below (e.g., town house, garden home, maisonnette, etc.).

House attached to a non-residential structure: A single house attached to a non-residential structure (such as a store, church, etc.), but separated from it by a wall extending from ground to roof (e.g., attached side by side).

APARTMENT refers to:

Apartment or Multiple Dwelling: A dwelling unit in a triplex, quadruplex or apartment building that is separated from other dwelling units by a horizontal division or by both horizontal and vertical divisions. Dwellings in duplexes or triplexes that are attached in rows are included here. Dwellings above or within a non-residential structure such as a school or a store and structurally separate dwellings in a converted house, if they number more than two, are also included in this category.

DUPLEX refers to:

Duplex: One of two dwellings, one on top of the other, separated by open space from all other structures. Included is any dwelling built as a single house but in which the basement or upper storey has been converted to form another separate dwelling.

MOVABLE refers to:

Mobile home: A movable dwelling designed and constructed to be transported (by road) on its own chassis to a site, and placed on a temporary foundation such as blocks, posts or a prepared pad. It should be capable of being moved to a new location on short notice.

Other movable dwelling: A dwelling (other than mobile homes) which is used as a permanent residence and is also capable of being moved on short notice. Examples are tents, motor homes, travel trailers, camper trailers, railroad cars and houseboats.

Tenure: Refers to whether an occupied private dwelling is owned or rented by the household head or any other member(s) of the household. A dwelling is classified as OWNED even though it may be mortgaged or in the process of being bought (e.g., closure has not yet been finalized). A dwelling is classified as RENTED if it is not owned by any member of the household, even if no rent is paid. A dwelling which is rented with an option to buy is considered to be rented until the option is taken up.

Type of Private Household: Refers to the basic division of private households into family and non-family households.

FAMILY HOUSEHOLD refers to a household that contains at least one census family. ONE-FAMILY HOUSEHOLD refers to a single census family that occupies one private dwelling. The family may be that of the household head or one living as a related, lodging or other type of family with a household head who is a non-family person.

A MULTIPLE-FAMILY HOUSEHOLD is one in which two or more census families occupy the same private dwelling. One family may be that of the household head, or the household head may be a non-family person with whom two or more census families are residing.

NON-FAMILY HOUSEHOLD refers to one person who lives alone in a private dwelling, or to a group of persons who occupy one private dwelling and do not constitute a census family.

Unemployment Rate: The percentage the unemployed labour force forms of the total labour force in the category or area.

DEFINITIONS

Geographic

Census Agglomeration (CA): A geostatistical area created by Statistics Canada comprised of at least two adjacent municipal entities. These entities must be at least partly urban and belong to an urbanized core having a population of 2,000 or more. The urbanized core includes a largest city and remainder, each with a population of 1,000 or more, and has a population density of at least 1,000 per square mile (386 per square kilometre). CAs with an urbanized core of 100,000 or more (based on previous census figures) are called census metropolitan areas.

Census Division (CD): General term applying to counties, regional districts, regional municipalities, etc. In Newfoundland, Manitoba, Saskatchewan and Alberta, the term describes geostatistical areas that have been created by Statistics Canada in co-operation with the province as an equivalent for counties.

Census Metropolitan Area (CMA): The main labour market area of an urbanized core (or continuous built-up area) having 100,000 or more population. CMAs are created by Statistics Canada and are usually known by the name of their largest city. They contain whole municipalities (or census subdivisions). CMAs are comprised of (1) municipalities completely or partly inside the urbanized core, and (2) other municipalities, if (a) at least 40% of the employed labour force living in the municipality works in the urbanized core, or (b) at least 25% of the employed labour force working in the municipality lives in the urbanized core.

Census Subdivision (CSD): General term applying to municipalities, Indian Reserves, unorganized territories and subdivisions. In Newfoundland, Nova Scotia and British Columbia, the term also describes geostatistical areas that have been created by Statistics Canada in co-operation with the province as an equivalent for municipalities. It should be noted that the parts of Flin Flon falling in Manitoba and Saskatchewan, and the parts of Lloydminster falling in Saskatchewan and Alberta are treated as separate CSDs.

Municipality: Area with corporate status governed by Provincial and Territorial Acts. These acts differ from province to province. Moreover, municipalities within each province vary in name, status and administrative powers.

Place of Residence: Place where a person normally lives and sleeps, i.e., that person's home. Persons enumerated away from their permanent residence, due to business, vacation, etc., are counted at their permanent residence.

Population Size Group, 1971: Where a census subdivision is not part of a census metropolitan area or census agglomeration, this variable refers to the 1976 population size of the census subdivision where the individual lived and slept (i.e., that person's home) on June 1, 1971. Where the census subdivision of residence in 1971 is within a census metropolitan area or census agglomeration, the variable refers to the 1976 population size of the respective census metropolitan area or census agglomeration.

Population Size Group, 1976: Where a census subdivision is not part of a census metropolitan area or census agglomeration, this variable refers to the population size of the census subdivision where the individual lived and slept (i.e., that person's home) on June 1, 1976. Where the census subdivision is within a census metropolitan area or census agglomeration, the variable refers to the population size of the respective census metropolitan area or census agglomeration.

Province: Major political division of Canada. From a statistical point of view, it is a basic unit for which data are tabulated and cross-classified. There are ten provinces which are divided into federal electoral districts, census divisions, census subdivisions, etc. In census publications, provincial tables include the Yukon and Northwest Territories.

Rural Area: All territory lying outside "Urban Areas".

Rural Population: Persons living outside "Urban Areas".

Rural Farm Population: All persons living in dwellings situated on census-farms in rural areas. The rural farm population includes persons living on census-farms who are not connected with the farming operations and who derive their income from non-agricultural pursuits. Conversely, farm operators and their families who live elsewhere than on a census-farm are not included. A census-farm is any holding of one acre (0.405 hectare) or more with sales of agricultural products during the past 12 months of \$1,200 or more.

Rural Non-farm Population: All persons living in rural areas in dwellings not situated on census-farms.

Rural/Urban, 1971: Refers to the rural/urban status of a person's residence in 1971.

Urban Area: Area having a population concentration of 1,000 or more and a population density of 1,000 or more per square mile (386 per square kilometre).

Urban Population: Persons living in an area having a population concentration of 1,000 or more and a population density of at least 1,000 per square mile (386 per square kilometre).

Urban Population Size Group: Classification used in tabulations where the urban areas are distributed according to the following size groups:

1,000 - 2,499

2,500 - 4,999

5,000 - 9,999

10,000 - 29,999

30,000 - 99,999

100,000 - 499,999

500,000 and over