THE EMPLOYER RECORD CHECK

Introduction

This report presents information on: (a) the accuracy of occupation and place of work information reported in the 1960 census, based on a comparison with the same information secured from the employers of persons in a sample of households originally enumerated in the census, and (b) the accuracy of industry information reported in the 1960 census for the sample persons, based on a comparison with the industry codes assigned by the Social Security Administration (SSA) to the employers of the sample persons.

The data from the employers and codes from the SSA were obtained from a survey established for this purpose—the Employer Record Check (ERC). The method of record checks—the comparison of data collected in the census with independent records showing the same data—is one of a number of methods used to evaluate the content of the 1960 census.

The 1960 Census of Population contains data on the number of persons in the United States and the characteristics such as age, sex, color, school enrollment, labor force status and income of these persons. Considerable geographic detail and cross tabulations for these data are presented, by States, standard metropolitan statistical areas, and cities. Measurement errors in the census of population can arise from a number of different sources—the missing of people by enumerators will result in undercounts, personal characteristics may be erroneously reported, recorded information may be inaccurately coded, people may fail to report some of the information requested of them and adjustments for the missing data may introduce other errors, and so forth.

This report is primarily devoted to the effect on the quality of the census of errors arising from erroneous reporting of occupation, type of industry, and place of work. The analysis of errors in reporting industry also includes the effect of difference between the classification schemes used by the Census Bureau and the SSA. (See page LXXII of 1960 Census of Population, Vol. I, Characteristics of the Population, Part 1, United States Summary for a discussion of the difference between the classification methods.)

Although there is considerable emphasis on geographic detail in the census of population, an evaluation program cannot provide a separate evaluation of each area for which census data are presented without incurring a cost many times that of the census itself. The analysis of the quality of the population census is therefore restricted to national statistics. The measures of error do not necessarily apply to individual States, cities or other local areas. However, the factors creating these measurement errors are fairly widespread and are consistent in most areas of the country.

Although the Census Bureau did not publish statistics by type of enumeration procedure, the selection of the sample of ERC makes possible the separate presentation of the ERC data for both the single-stage and the two-stage procedure enumeration areas and the total United States. The basic difference in the two enumeration procedures was the use of self-enumeration to obtain the sample information (including the information on occupation and industry) in the two-stage areas; whereas direct interview by enumerators was the procedure employed in the single-stage areas. Approximately 80 percent of the population was enumerated in the two-stage areas. The single-stage areas—the less densely settled areas—included over half the land area of the United States, but only about 20 percent of the population. For a detailed description of the enumeration procedures used in the census see, Bureau of the Census, Working Paper No. 16, Procedural Report on the 1960 Censuses of Population and Housing.

Differences in the quality of reporting the two areas may be accounted for by differences in reporting patterns of the kinds of people who live in the two areas, as well as by the different enumeration techniques. Comparisons of the two areas should be made with this in mind.

Data Presented

This report provides measures of accuracy of the occupation, industry, and place of work statistics in the 1960 Census of Population.

Tables 1-3 present cross-classification by major occupation groups of individuals' responses in the census with the information furnished by the same individuals' employers. The employers of a sample of persons selected from the census were asked to furnish both a job title and a job description for the sample persons for the second quarter of 1960[1]. In the event of a change in occupation during the quarter, the employer also provided a secondary job title and description.

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[1] See Series ER-60 No. 1, Evaluation and Research Program of the U.S. Censuses of Population and Housing, 1960: Background, Procedures and Forms, for the forms used in the ERC.

Table 1 compares the primary job title furnished by the employer with the census occupation information. In 3 percent of the cases a primary job title was not provided by the employer. For those cases, the ERC classification in table 1 reflects the primary job description, or secondary job title, or secondary job description, whichever was provided (in the priority order shown).

For table 2, the primary job description is the major source of comparison with the census occupational data. In 6 percent of the cases a primary job description was not provided by the employer, and for those cases table 2 reflects the primary job title, secondary job title, or secondary job description, whichever was provided.

In table 3, the comparison of Census and ERC information was accomplished by matching the census occupation code against the four ERC occupation codes in the following order: primary job title, primary job description, secondary job title, and secondary job description. If any one of the ERC codes agreed with the census code, the case was entered in the "main diagonal" of table 3. If none of the four ERC codes agreed with the census code, the situation is reflected in the "off-diagonal" cases. The ERC classification used for the "off-diagonal" cases was the primary job title and this was available in 98 percent of the cases.

The remaining 2 percent of the "off-diagonal" cases have an ERC classification from the primary job description, secondary job title, or secondary job description since a primary job title was not furnished by the employer.

The purpose of table 3 is to eliminate differences which probably do not really represent response errors in the census or in coding but which arise either from some ambiguity in what the person really does—as reflected in differences between the job title and description, from lack of clarity in the employer's description of job title, or from actual job changes that occurred during the calendar quarter for which the employer reported. This elimination was accomplished by accepting the agreement of any of the four ERC entries with the census entry as an identical occupation.

Table A gives a rough indication of the extent to which response variability in the employer's reports can affect the comparisons with the census classification. Table A compares major occupation as reported in the employers' primary job title with that reported in the employers' primary job description. (It is likely that table A understates the effect of variation in employers' reports. Although the job title and job description were separately coded, the coder had both of these reports available and in marginal cases he could have referred to both, as an aid in coding.)

Table A.—MAJOR OCCUPATION GROUP ACCORDING TO EMPLOYER PRIMARY JOB TITLE AND PRIMARY JOB DESCRIPTION FOR CONTERMINOUS UNITED STATES

(In thousands)

Occupation group	Job description								
	Total	Professional, technical, and kindred workers	Managers, officials, and proprietors, except farm	Clerical and kindred workers	Sales workers	Craftsmen, foremen, and kindred workers	Operatives and kindred workers	Service workers, except private household	Laborers except, farm and mine
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Total, occupation reported.	37,771	4,415	2,451	6,576	2,950	6,081	9,141	4,021	2,136
Professional, technical and kindred workers...........	4,283	4,249	-	-	17	17	-	-	-
Managers, officials and proprietors, except farm..	2,734	20	2,427	67	18	86	69	49	-
Clerical and kindred workers...................	6,603	45	-	6,445	-	22	91	-	-
Sales workers..............	3,018	-	22	40	2,914	-	25	-	17
Craftsmen, foremen, and kindred workers...........	6,107	101	-	25	-	5,744	217	-	21
Operatives and kindred workers...................	8,931	-	-	-	-	212	8,621	40	57
Service workers, except private household.........	3,973	-	-	-	-	-	39	3,933	-
Laborers, except farm and mine.....................	2,122	-	-	-	-	-	80	-	2,041

Table 4 compares the industrial classification assigned by the SSA to firms employing the sample persons with the codes assigned by Census Bureau personnel based on the industrial description reported in the census. The SSA codes are, of course, based on the Standard Industrial Classification (S.I.C.) whereas the S.I.C. system has been modified somewhat for use in the Census Bureau. The relationship of the two coding systems is described in the text of 1960 Census of Population, Vol. I, Characteristics of the Population, Part 1, United States Summary.

In table 5, place of work as reported in the census by the sample persons is compared with the same information furnished by the employers. Place of work refers to the geographic location in which persons at work carry out their job activities. In the ERC study, the employer was asked to give the location at which the employee reported to work, in terms of (a) city or county, and (b) State. If the employee was assigned to several locations, the place he worked most of the time was reported. A more detailed description of the place of work item as reported in the census can be found in the text of the census volume referred to above.

Although the 1960 census contains occupation and industry data for all persons with work experience since 1950, practical problems of survey operations required certain restrictions on the population to be covered in the Employer Record Check. The study therefore excluded, by design, the following five groups: (1) unemployed and those not in the labor force—the ERC was therefore restricted to employed persons, (2) self-employed persons and unpaid family workers, (3) farmers and farm managers, farm laborers and foremen, and private household workers, (4) persons who did not provide information on industry in the 1960 Census—the vast majority of these also did not report name and address of employer, (5) persons residing in Alaska and Hawaii.

The ERC sample, therefore, represents the population remaining, after the five classes cited above have been deleted. The effect of these exclusions on the 1960 census figures is shown in table B below.

Table B.—PERSONS IN MAJOR OCCUPATION AND INDUSTRY GROUPS AS REPORTED IN 1960 CENSUS, FOR RESTRICTED POPULATION COVERED IN EMPLOYER RECORD CHECK AND FOR TOTAL POPULATION

(In thousands)

Occupation and industry group	Employed persons covered in ERC	All employed persons
Total employed...	50,421	64,639
Occupation:		
Professional, technical and kindred workers................................	6,311	7,232
Farmers and farm managers...	–	2,506
Managers, officials and proprietors, except farm..........................	3,370	5,410
Clerical and kindred workers..	9,009	9,307
Sales workers...	3,891	4,639
Craftsmen, foremen, and kindred workers...................................	7,849	8,741
Operatives and kindred workers..	11,406	11,898
Private household workers...	–	1,726
Service workers, except private household.................................	4,949	5,445
Farm laborers and farm foremen..	–	1,445
Laborers, except farm and mine..	2,937	3,108
Occupation not reported...	699	3,184
Industry:		
Agriculture, forestry and fisheries.......................................	292	4,350
Mining..	625	654
Construction..	3,045	3,860
Manufacturing-durable goods...	9,613	9,829
Manufacturing-nondurable goods..	7,419	7,624
Manufacturing-not specified...	56	61
Transportation, communication, and other public utilities................	4,244	4,458
Wholesale trade...	1,930	2,213
Retail trade..	7,685	9,580
Finance, insurance, and real estate.......................................	2,412	2,694
Business and repair services..	1,177	1,611
Personal services...	1,543	3,858
Entertainment and recreation services....................................	435	503
Professional and related services..	6,775	7,578
Public administration...	3,170	3,203
Industry not reported...	–	2,608

– Represents zero.

In addition to the restrictions on the population covered, there were other cases in which occupation or industry could not be obtained, either in the census or in the ERC. The basic cross classifications of census and ERC data are restricted to persons for whom occupation and industry information was obtained in both the Census and ERC. However, to clarify the relationship between persons for whom cross classifications are shown and the total number of persons in the ERC study, tables 1-5 also show Census and ERC distributions for persons not included in the cross classifications. (Since the ERC was conducted on a sample basis, the rim totals of tables 1-5 do not agree exactly with the figures in table B. No attempt was made to force agreement in estimating the totals from the sample data.)

Table 6 gives indexes of response variance and bias for the occupation and industry characteristics. The measures are described in the next section of this report.

Indexes of Response Variance and Bias

The response errors of a particular census or sample survey arise from the joint effects of response bias and response variance. Measures of these two items can therefore be used as indexes of the accuracy of the data. A brief description of response bias is that it represents systematic errors in reporting data, or the effect of types of errors that are consistent in direction and that would be consistent if it were possible to do independent repetitions of the survey under the same general conditions. Response variance, on the other hand, can be categorized as the effect of errors that tend to cancel out when a large number of observations are made. The paragraphs which follow give a more complete description of these terms. For a fuller discussion see the report Series ER 60 No. 1, Evaluation and Research Program of the U.S. Censuses of Population and Housing, 1960: Background, Procedures, and Forms, and the references in the bibliography of that report.

Under certain fairly general survey conditions, matching information from two sources for identical persons can provide estimates of response variance, and to the extent that one of these sources is based on more adequate measurement methods and is acceptable as a standard, it can also provide estimates of bias. Various measures of response variance and bias can then be constructed from the results of this kind of match. The ERC compared with the census gives two measurements for each sample person for the occupation and industry items and roughly satisfies the conditions given above. A group of such measures, which appear to be useful for analytic purposes, have been computed for each occupation and industry item and are shown in table 6.

Table C illustrates the results of the comparison of the census with the ERC where the value 1 is assigned to a person classified as having some specified characteristic and the value 0 otherwise. (Persons who have no response in either interview for the characteristic being studied are excluded.) Table C shows

that "a" of the persons were classified as having the specified characteristic in both the census and ERC "a + c" were classified as having the characteristic in the census, and "a + b" were classified as having the characteristic in the ERC.

Table C.—REPRESENTATION OF RESULTS OF CENSUS AND ERC FOR IDENTICAL PERSONS

Results of the ERC	Results of census		
	1	0	.Total
1	a	b	a + b
0	c	d	c + d
Total	a + c	b + d	n=a+b+c+d

If x_i represents the result for a person in the census and y_i represents the result for that same person in the ERC, the response difference, which is either 0, 1, or -1 for that particular person, is represented as $x_i - y_i = e_i$. The sum of the values of e_i over all persons included in both the census and the ERC is the net difference between the surveys. In the notation of the diagram

$$\sum_{i=1}^n e_i = \sum_{i=1}^n (x_i - y_i) = \sum_{i=1}^n x_i - \sum_{i=1}^n y_i =$$

$$(a + c) - (a + b) = c - b$$

The gross difference can be represented by b + c. The values of a, b, c, d, the gross difference, and the net difference are the components of the indexes of response variance and bias.

In evaluating a census statistic, the mean square error (MSE) of that statistic is of particular interest. The components of the MSE are as follows:

$$MSE_{x_c} = \sigma^2_{x_c} + B^2_{x_c}$$

where $\sigma^2_{x_c}$ is the variance of the census statistic and $B^2_{x_c}$ is the square of the bias of the census statistic. (Generally, the MSE is defined as having the sampling variance as a third component. For a complete census, the sampling variance vanishes. Even though the items analyzed here were sample items in the census, the sample at the national level was so large, that the sampling variance is a trivial part of the MSE. For statistics for small cells or small areas, the sampling variance contribution may be important. The analysis in this report relates to national statistics.)

For data on occupation, the expected value of the census result minus the expected value of the ERC result is equal to the bias of the census statistic since the employer responses are considered to be more accurate than those reported in the census. For industry, however, the differences represent differences in the classification schemes as well as biases in reporting. The estimated variance of the individual response differences is $s_e^2 = \sum_{i=1}^{n} \frac{(e_i - \bar{e})^2}{n-1}$ where e_i is the response difference and $\bar{e} = \sum \frac{e_i}{n}$ represents the mean of the response differences. Since $e_i = x_i - y_i$,

$$\sum_{i=1}^{n} e_i^2 = \sum_{i=1}^{n} (x_i - y_i)^2$$

Whenever the responses in the census and ERC are different, $e_i^2 = 1$, since $(x_i - y_i)^2 = (1)^2$, or $(-1)^2$. Whenever the responses are the same, $e_i^2 = 0$. Therefore, $\sum_{i=1}^{n} e_i^2 = b + c$, the sum of all the differences in response from the census and ERC, or the gross difference. Now, since $\sum_{i=1}^{n} e_i = c - b$, s_e^2 can be written as follows:

$$s_e^2 = \frac{b + c}{n - 1} - \frac{(c - b)^2}{n(n - 1)}$$

The gross difference can be expressed as

$$b + c = (n - 1) s_e^2 + \frac{(c - b)^2}{n}$$

The gross difference rate is then

$$\frac{b + c}{n} = \frac{(n - 1) s_e^2}{n} + \frac{(c - b)^2}{n^2}$$

The indexes which are described more fully below are functions of the detail in classification of the characteristic. For example, the tables on occupation presented in this report are in terms of major occupation groups. If the data were changed to detailed occupation groups, the indexes would change. At the present time some empirical studies are being conducted to discover the effect of the detail in classification.

1. Gross difference rate:

$$g = \frac{b + c}{n} = \frac{(n - 1) s_e^2}{n} + \frac{(c - b)^2}{n^2}$$

When n is large the first component of the gross difference rate is approximately equal to the simple response variance of the census statistic when the difference between the ERC and the census is used as a measure of the bias. The second component is the square of the estimated bias of the census statistic. If the bias is small, the gross difference rate can be used as a measure of the simple response variance of the response differences.

It can be shown that if the census and a second survey were independently conducted under the same general conditions, the simple response variance of the response difference as developed above would be twice the simple response variance of the census (or of the second procedure). Therefore, under these conditions g/2 would be an approximate measure of the response variance of the census, and is in fact the measure used in this report. However, the ERC did not use the same enumeration techniques as the Census, and, in fact, the ERC is probably subject to much smaller response variance. This would imply that the measurement g/2 tends to be an underestimate of the variance of the census.

2. Index of inconsistency: $\hat{I} = \frac{g}{2pq} = \frac{g}{p_1 q_1 + p_2 q_2}$

This index shows the ratio of the simple response variance g/2 to pq where p is the average proportion in the census and ERC having the specified characteristic. An[2] estimate of pq is $\frac{p_1 q_1 + p_2 q_2}{2}$. $p_1 = \frac{(a + c)}{n}$ is the proportion of matched persons in the ERC sample having a specified characteristic in the census,

$p_2 = \frac{(a + b)}{n}$ is the proportion of matched persons in the ERC sample having that same characteristic in the ERC,

$q_1 = 1 - p_1 = \frac{(b + d)}{n}$ and $q_2 = 1 - p_2 = \frac{(c + d)}{n}$.

Therefore, $\hat{I}$ is estimated in the following way:

$$\hat{I} = \frac{(b + c)/n}{\left(\frac{a + c}{n}\right)\left(\frac{b + d}{n}\right) + \left(\frac{a + b}{n}\right)\left(\frac{c + d}{n}\right)}$$

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[2]Under other conditions (for example, where there is knowledge that the second survey is subject to much less response variability than the census and it is desired to compare the quality of two census surveys) it would be more appropriate to use a different estimate of pq. In the example mentioned the comparison may be improved if the values of p and q are taken from the surveys responsible for most of the response variability. For the sake of uniformity the same estimator $\frac{p_1 q_1 + p_2 q_2}{2}$ will be used in all of the basic reports in the ER 60 series. For some later analyses of the data, and comparisons of the 1960 Census with other censuses or surveys, a different estimate of pq may be used for some characteristics. For the vast majority of items, the various forms of the estimates produce almost identical data.

A simple interpretation of $\hat{I}$ is as follows:

Assume that a sample of n elements is drawn with equal probability and with replacement. Also, assume that the between element covariance of response deviations is zero—that is, that the quality of response of one person is independent of the quality of response for any other person. Then, for a sample of one element, the total variance can be expressed as the binomial variance, pq. The total variance is, then, the sum of the simple response variance and the "pure" sampling variance. Therefore, the simple response variance is equal to or less than pq. As stated above, g/2 is an estimate of the simple response variance.

As the measurement of the specified characteristic becomes less reliable but remains unbiased, the simple response variance increases and the sampling variance decreases. When the measurement process becomes equivalent to tossing the same coin for each element ($0 < p < 1$ and constant for all trials) the response variance is equal to the total variance. The index of inconsistency is useful in determining the consistency or reliability of a zero-one variate included in the census.

The index of inconsistency lies between 0 and 1, if the assumptions given above hold. However, the estimator of the index can be greater than 1. Such items have been starred in table 6. In all cases, the closer the $\hat{I}$ is to 1, the less reliable is the item.

In most evaluative studies, it is difficult to adhere completely to these assumptions. In particular, the ERC cannot be considered as a repetition of the Census procedure. However, the index I appears to be a useful indicator to help assess the relative consistency of recorded responses, as between characteristics and as between censuses, even with such deviations from the theoretical assumptions.

3. Net difference rate: $\bar{e} = \sum_{i=1}^{n} \frac{e_i}{n} = \frac{c - b}{n}$

This index gives an estimate of the amount of bias in the census statistic. If the sign is negative, there is an understatement in the census.

4. Index of net shift relative to ERC results: $\frac{\bar{e}}{\bar{p}_2} = \frac{c - b}{a + b}$

This index shows the ratio of the net difference to the number in the class reported in the ERC.

5. Percent of population units identically distributed relative to ERC results: $r = \frac{a}{a + b}$.

Since the ERC is taken as the standard, this index gives an indication of the stability of the response relative to the standard. This index has an interesting relationship to the index of inconsistency. When the proportion of persons with the specific characteristic in the ERC is small, the two indexes are complementary. When the proportion of persons with the specific characteristic in the ERC is large, the index of inconsistency provides a more reliable measure of the stability of response. However, "r" appears to be a useful index because its form is simpler than the index of inconsistency. Furthermore, its meaning and implication can be grasped more easily.

ERC Survey Methods and Design

Sample Design

The sample used for the Employer Record Check of the 1960 Census consisted of approximately 2,000 in-scope persons. The persons were selected in the following way. (Steps (a) and (b) of the two-stage area process were part of the selection process for the Response Variance Study; some of the sampling material developed for that study were used in selecting the ERC sample to reduce overhead costs.):

Selection Method in Two-Stage Areas

(a) The district offices in the two-stage areas of the 1960 Census were grouped into 50 strata and within each stratum a single district office was selected with known probability.

(b) Within each of the 50 sample district offices a sample of paired crew leader districts was selected.

(c) A sample of enumeration districts (ED's) was selected within the sample crew leader districts.

(d) Within each of the selected ED's clusters of four sample households were selected with known probability.

Selection Method in One-Stage Areas

(a) To represent the single-stage areas of the 1960 census, 5 strata of district offices were created and a single district office was selected in each stratum with known probability.

(b) Within these selected district offices a sample of ED's was selected and within each of the selected ED's, clusters of four sample households were selected with known probability.

The census report for each household selected in the sample was examined and specific information transcribed onto a form established for this purpose for each person in these households 14 years of age and older. These forms were then examined and all persons in the categories listed below were excluded from this study:

A. Persons enumerated in the census as not employed at the time of the census;

B. Persons in the Armed Forces;

C. Self-employed persons and unpaid family workers;

D. Persons whose occupation and industry entries indicated that they were either farmers, farm managers, farm laborers, or farm foremen.

E. Persons with any of the following entries in "Kind of Work" or "Kind of Business": hatchery, domestic service, private family, or private homes.

F. Persons with name of employer unknown:

G. Persons with no industry information given.

Those persons remaining in the study are referred to as the in-scope sample persons.

Mail Procedures

In March 1961, a form was sent to the employers of all in-scope sample persons requesting occupation and place of work information covering the period April-June 1960 for these sample employees. A letter accompanied the form, explaining the survey and assuring the employers that any information they furnished would be kept confidential. Bureau of the Census report Series ER60 No. 1 - Evaluation and Research Program of the U.S. Censuses of Population and Housing 1960: Background, Procedures, and Forms contains a copy of the forms used in the ERC.

After a reasonable length of time, if an employer had not returned the form, he received a follow-up letter urging him to submit the required information. Efforts were also made to locate employers whose addresses were missing or erroneously reported. The Post Office Department and the Social Security Administration were of particular help in furnishing addresses for many employers who might otherwise have been included in the category "employer form returned, wrong address or insufficient address". As a result of these efforts, replies were received for 91 percent of the cases (although not all the replies contained the required information).

Coding

Before the employers' forms were returned, the transcription sheets, giving the descriptions of occupation, industry, class of worker, and place of work as transcribed from the census schedules, were coded by persons who had coded these items in the decennial census. When the employers' forms were returned, the occupations, as reported by the employers, were coded by this same group of coders. The employers' forms were then sent to the Social Security Administration for information on the industry codes assigned to these establishments in the Social Security Administration records.

Estimation

Because of the way the sample was selected, the probabilities of selection were not uniform for all persons and the sample was not self-weighting. The estimates which appear in tables 1-5 were produced by weighting each sample person by the inverse of his probability of selection.

In tables 1-5, there are rim figures reflecting estimates of census totals for the restricted occupation and industry classifications involved in the study. These totals are based on the coding done by the coders assigned to the ERC project and the estimation procedure described in the previous paragraph. Since no attempt was made to force agreement between the ERC data and published census figures, differences exist because of sampling variability. In addition, since the census entries were independently coded for the ERC, it is possible that some additional differences may have been created if the level of ability and experience of the coders assigned to the ERC differed significantly from that of the personnel coding the decennial census.

Limitations of Data

1. Since the figures in this report are based on sample data, they are subject to sampling variability. Table D indicates the approximate sampling variability of the ERC estimates in this report, as a function of the size of the estimate. The estimates of sampling variability given in this table are expressed as standard errors. (The chances are 2 out of 3 that the difference due to sampling variability between an estimate and the figure that would have been obtained from a complete enumeration is less than the standard error.)

Table D.—APPROXIMATE STANDARD ERRORS OF ERC ESTIMATES

Size of estimate	Standard error of estimate
25,000	35,000
50,000	45,000
100,000	65,000
250,000	100,000
500,000	150,000
1,000,000	200,000
2,500,000	325,000
5,000,000	450,000
10,000,000	575,000

The standard errors in table D apply to the estimates appearing in any cell of the cross-classifications in tables 1-4. The gross difference and net difference are of particular interest. The standard error of these two items can be considered as approximately the same for any characteristic and may be obtained by using the standard error in table D for an estimate of the size of the gross difference. An illustration of the use of table D follows. Table 3 shows that there were 270,000 persons whose occupation was reported as professional, technical, and kindred workers in the census and as clerical and kindred workers in the ERC. By linear interpolation in table D it can be seen that the standard error of 270,000 is about 104,000. The gross difference for the occupation group professional, technical and kindred workers is 1,272,000 and the net difference is 384,000. Table D shows that the standard error of an estimate of 1,272,000 is about 222,000, and this is therefore the standard error of both the gross difference of 1,272,000 persons and the net difference of 384,000 persons.

In view of the size of the standard errors, it may be asked why the data in tables 1-5 are expressed to the nearest thousand. The last digit is clearly not statistically significant for any of the figures in the tables. In fact, in many cases rounding the numbers to the nearest 100,000 would probably be appropriate.

The data are presented in the detail shown purely for the convenience of having the detail in each table consistent with the totals of the columns and rows. Rounding data almost inevitably produces discrepancies between details and totals. Arbitrary adjustments to force the individual cells to add to totals frequently result in inconsistencies among the various tables. The value of expressing the estimates so that the level of accuracy is implied in the way the numbers are shown, does not appear to be great enough to make up for the nuisance of dealing with inconsistencies within tables or among tables.

The fact that data are shown to the nearest thousand should not, however, mislead the reader into assuming a higher order of accuracy than is implied by table D.

2. Errors in published census reports on population characteristics due to response errors by interviewers or respondents can arise in a number of different ways—from poor descriptions of the facts reported by the interviewer or respondent, by omission in the census of persons with the specified characteristics, by duplicate enumeration of some persons, or by errors made in coding. The tables in this report relate only to persons enumerated in the census. The effect on the statistics of persons erroneously enumerated or missed in the census is not included. Comparisons of Census and ERC information for persons who failed to report in either the Census or ERC is of course, also not available.

3. The tabulations prepared for the published census reports included both a manual and a mechanical editing process, which was not performed for the ERC. It is possible that the number of differences between the census and Employer reports, shown in this report, somewhat overstates the true situation because some of the discrepancies would have been resolved in the editing operation.

4. One assumption convenient for a meaningful interpretation of the net error is that the ERC schedule provides a standard of accuracy. Though it seems reasonable to assume that the employer furnished more accurate answers, the ERC is subject to error and it may be more useful to look upon differences as simply the differences between two methods of measurement.

5. As mentioned previously, the measures of quality shown here can only be approximately applied to statistics for local areas. For small areas, the correlations between response errors, caused by enumerators' patterns in making error, is likely to dominate as a source of response variance. The effect of these correlations is not included in this report.

6. Approximately 9 percent of the questionnaires sent to the employers of the ERC sample persons were not returned or were returned unopened because of wrong or insufficient address or the company was out of business. To the extent that the reporting characteristics of these nonresponse cases were different from the responding population, the final cross-tabulations do not accurately represent the restricted U.S. employed population included in the ERC.

Related Reports

The concepts used in determining the classification of the occupation, industry, and place of work data in both the 1960 Census and the ERC are described in the text of 1960 Census of Population: Volume I, Characteristics of the Population. Part 1. United States Summary. The published census tables showing detailed occupation and industry characteristics and place of work data are available in the same volume. For a description of the census itself, see Bureau of the Census, Working Paper No. 16, Procedural Report on the 1960 Censuses of Population and Housing.

Series ER 60 No. 1. Evaluation and Research Program of the U.S. Censuses of Population and Housing, 1960: Background, Procedures and Forms, contains a description of the forms and procedures used in the ERC. Additional reports in the ER 60 series provide data on other aspects of the accuracy of the censuses, e.g., response errors in the censuses of Population and Housing, coverage errors, etc.

For a discussion of some of the indexes of response variance and bias as related to the Current Population Survey, see Bureau of the Census, Technical Paper No. 6, The Current Population Survey Reinterview Program. A more mathematical presentation of some of these indexes is contained in "The Estimation and Interpretation of Gross Differences and the Simple Response Variance" by Morris H. Hansen, William N. Hurwitz and Leon Pritzker, Contributions to Statistics Indiana Statistical Institute, June 1964. Reprints are available from the Bureau of the Census.

A study similar to the 1960 evaluation and research programs, The Post-Enumeration Survey, was conducted in 1950. Results of that study are available in the Bureau of the Census, Technical Paper No. 4, The Post-Enumeration Survey: 1950, as well as in unpublished memoranda, and in articles published by Census Bureau staff members. It is difficult to measure the extent to which the quality of enumeration in the 1960 census is significantly different from the quality of the 1950 census. Reported differences in quality may arise in part from improvement in procedures in the 1960 Evaluation Study, changes in accuracy between the 1950 and 1960 censuses, or both. Any comparisons of the 1960 results with the 1950 data should be made only with appreciation of the above qualifications. On the basis of a preliminary analysis of the data available, Morris H. Hansen and Conrad Taeuber tentatively concluded that in general, the 1960 Census produced somewhat higher quality data than the 1950 census. This is reported in A Preliminary Evaluation of the 1960 Censuses of Population and Housing by Conrad Taeuber and Morris H. Hansen, Demography, Volume 1, Number 1, 1964, pages 1-14. Later reports will present more definitive analyses and comparisons based upon additional data.

Table 1.—MAJOR OCCUPATION GROUP ACCORDING TO PRIMARY JOB TITLE REPORTED BY EMPLOYER AND 1960 CENSUS; FOR CONTERMINOUS UNITED STATES, BY TYPE OF ENUMERATION AREA

(Thousands of persons)

Employer classification and area	Total employed[1]	Occupation not reported	Census classification								
			Occupation reported								
			Total	Professional, technical, and kindred workers	Managers, officials, and proprietors except farm	Clerical and kindred workers	Sales workers	Craftsmen, foremen, and kindred workers	Operatives and kindred workers	Service workers except private household	Laborers except farm and mine
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
UNITED STATES											
Total employed	48,499	420	48,079	5,672	2,673	7,693	4,252	8,619	11,756	4,825	2,589
Occupation unknown	10,374	66	10,308	987	553	1,198	905	2,106	2,570	1,048	961
Employer form not returned	256	-	256	-	-	42	44	73	39	58	-
Employer form returned	10,118	66	10,052	987	553	1,156	861	2,033	2,531	990	961
Wrong address, out of business, insufficient address	3,888	45	3,843	267	165	378	465	813	665	600	490
Retired	43	-	43	20	23	-	-	-	-	-	-
Not with firm or deceased	5,628	21	5,607	656	365	753	360	1,078	1,637	326	432
Occupation not reported	559	-	559	24	-	25	36	142	229	64	39
Occupation reported	38,125	354	37,771	4,705	2,120	6,495	3,347	6,513	9,186	3,777	1,628
Professional, technical, and kindred workers	4,283	-	4,283	3,805	17	150	36	195	38	21	21
Managers, officials, and proprietors, except farm	2,853	119	2,734	107	1,569	204	267	262	191	115	19
Clerical and kindred workers	6,624	21	6,603	270	287	5,511	139	84	71	158	83
Sales workers	3,043	25	3,018	19	122	82	2,689	38	47	21	-
Craftsmen, foremen, and kindred workers	6,165	58	6,107	148	61	173	37	4,996	547	21	124
Operatives and kindred workers	9,037	106	8,931	71	64	261	93	676	7,483	41	242
Service workers, except private household	3,973	-	3,973	262	-	46	-	82	155	3,344	86
Laborers, except farm and mine	2,147	25	2,122	23	-	68	86	180	656	56	1,053
SINGLE-STAGE AREAS											
Total employed	7,847	66	7,781	955	198	479	718	1,318	2,421	716	976
Occupation unknown	2,160	-	2,160	235	132	130	158	357	527	148	483
Employer form not returned	-	-	-	-	-	-	-	-	-	-	-
Employer form returned	2,160	-	2,160	235	132	130	158	357	527	148	483
Wrong address, out of business, insufficient address	956	-	956	-	66	-	158	158	152	148	274
Retired	-	-	-	-	-	-	-	-	-	-	-
Not with firm or deceased	990	-	990	235	66	130	-	133	217	-	209
Occupation not reported	214	-	214	-	-	-	-	66	148	-	-
Occupation reported	5,687	66	5,621	720	66	349	560	961	1,904	568	493
Professional, technical, and kindred workers	704	-	704	636	-	-	-	68	-	-	-
Managers, officials, and proprietors, except farm	200	66	134	-	66	-	-	68	-	-	-
Clerical and kindred workers	433	-	433	-	-	275	-	-	-	158	-
Sales workers	560	-	560	-	-	-	560	-	-	-	-
Craftsmen, foremen, and kindred workers	1,095	-	1,095	-	-	-	-	727	278	-	-
Operatives and kindred workers	1,411	-	1,411	-	-	74	-	68	1,203	-	66
Service workers, except private household	634	-	634	84	-	-	-	-	74	410	66
Laborers, except farm and mine	710	-	710	-	-	-	-	-	349	-	361
TWO-STAGE AREAS											
Total employed	40,652	354	40,298	4,717	2,475	7,214	3,534	7,301	9,335	4,109	1,613
Occupation unknown	8,214	66	8,148	732	421	1,068	747	1,749	2,043	900	478
Employer form not returned	256	-	256	-	-	42	44	73	39	58	-
Employer form returned	7,958	66	7,892	732	421	1,026	703	1,676	2,004	842	478
Wrong address, out of business, insufficient address	2,932	45	2,887	267	99	378	307	655	513	452	216
Retired	43	-	43	20	23	-	-	-	-	-	-
Not with firm or deceased	4,638	21	4,617	421	299	623	360	945	1,420	326	223
Occupation not reported	345	-	345	24	-	25	36	76	81	64	39
Occupation reported	32,438	288	32,150	3,985	2,054	6,146	2,787	5,552	7,282	3,209	1,135
Professional, technical, and kindred workers	3,579	-	3,579	3,168	17	150	36	127	38	21	21
Managers, officials, and proprietors, except farm	2,653	53	2,600	107	1,503	204	267	194	191	115	19
Clerical and kindred workers	6,191	21	6,170	270	287	5,236	139	84	71	-	83
Sales workers	2,483	25	2,458	19	122	82	2,129	38	47	21	-
Craftsmen, foremen, and kindred workers	5,130	58	5,072	148	61	173	37	4,239	269	21	124
Operatives and kindred workers	7,626	106	7,520	71	64	187	93	608	6,280	41	176
Service workers, except private household	3,339	-	3,339	178	-	46	-	82	79	2,934	20
Laborers, except farm and mine	1,437	25	1,412	23	-	68	86	180	307	56	692

- Represents zero
[1] Not equal to total employed in 1960 Census due to exclusion of certain groups. See text for list of exclusions.

Table 2.—MAJOR OCCUPATION GROUP ACCORDING TO PRIMARY JOB DESCRIPTION REPORTED BY EMPLOYER AND 1960 CENSUS: FOR CONTERMINOUS UNITED STATES, BY TYPE OF ENUMERATION AREA

(Thousands of persons)

Employer classification and area	Total employed[1]	Occupation not reported	Census classification — Occupation reported								
			Total	Professional, technical, and kindred workers	Managers, officials, and proprietors, except farm	Clerical and kindred workers	Sales workers	Craftsmen, foremen, and kindred workers	Operatives, and kindred workers	Service workers, except private household	Laborers, except farm and mine
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
UNITED STATES											
Total employed	48,499	420	48,079	5,672	2,673	7,693	4,252	8,619	11,756	4,825	2,589
Occupation unknown	10,374	66	10,308	967	553	1,198	905	2,106	2,570	1,078	961
Employer form not returned	256	-	256	-	-	42	44	73	39	58	-
Employer form returned	10,118	66	10,052	967	553	1,156	861	2,033	2,531	990	961
Wrong address, out of business, insufficient address	3,888	45	3,843	267	165	378	465	813	665	600	490
Retired	43	-	43	20	23	-	-	-	-	-	-
Not with firm or deceased	5,628	21	5,607	656	365	753	360	1,078	1,637	326	432
Occupation not reported	389	-	389	24	-	25	36	142	229	64	39
Occupation reported	38,125	354	37,771	4,705	2,120	6,495	3,347	6,513	9,186	3,777	1,628
Professional, technical, and kindred workers	4,415	-	4,415	3,877	41	171	19	227	38	21	21
Managers, officials, and proprietors, except farm	2,570	119	2,451	87	1,546	165	249	176	143	66	19
Clerical and kindred workers	6,597	21	6,576	270	291	5,531	139	84	20	158	83
Sales workers	2,973	25	2,950	19	100	43	2,707	38	23	20	-
Craftsmen, foremen, and kindred workers	6,139	58	6,081	96	61	170	37	4,892	614	21	190
Operatives and kindred workers	9,226	85	9,141	52	81	301	93	814	7,620	41	139
Service workers, except private household	4,042	21	4,021	281	-	46	-	82	132	3,394	86
Laborers, except farm and mine	2,161	25	2,136	23	-	68	103	200	596	56	1,090
SINGLE-STAGE AREAS											
Total employed	7,847	66	7,781	955	198	479	718	1,318	2,421	716	976
Occupation unknown	2,160	-	2,160	235	132	130	158	357	517	148	483
Employer form not returned	-	-	-	-	-	-	-	-	-	-	-
Employer form returned	2,160	-	2,160	235	132	130	158	357	517	148	483
Wrong address, out of business, insufficient address	956	-	956	-	66	-	158	158	152	148	274
Retired	-	-	-	-	-	-	-	-	-	-	-
Not with firm or deceased	990	-	990	235	66	130	-	133	217	-	209
Occupation not reported	214	-	214	-	-	-	-	66	148	-	-
Occupation reported	5,687	66	5,621	720	66	349	560	961	1,904	568	493
Professional, technical, and kindred workers	704	-	704	636	-	-	-	68	-	-	-
Managers, officials, and proprietors, except farm	132	66	66	-	66	-	-	-	-	-	-
Clerical and kindred workers	433	-	433	-	-	275	-	-	-	158	-
Sales workers	560	-	560	-	-	-	560	-	-	-	-
Craftsmen, foremen, and kindred workers	1,095	-	1,095	-	-	-	-	751	278	-	66
Operatives and kindred workers	1,419	-	1,419	-	-	74	-	142	1,203	-	-
Service workers, except private household	634	-	634	84	-	-	-	-	74	410	66
Laborers, except farm and mine	710	-	710	-	-	-	-	-	349	-	361
TWO-STAGE AREAS											
Total employed	40,652	354	40,298	4,717	2,475	7,214	3,534	7,301	9,335	4,109	1,613
Occupation unknown	8,214	66	8,148	732	421	1,068	747	1,749	2,053	900	478
Employer form not returned	256	-	256	-	-	42	44	73	39	58	-
Employer form returned	7,958	66	7,892	732	421	1,026	703	1,676	2,014	842	478
Wrong address, out of business, insufficient address	2,932	45	2,887	267	99	378	307	655	513	452	216
Retired	43	-	43	20	23	-	-	-	-	-	-
Not with firm or deceased	4,638	21	4,617	421	299	623	360	945	1,420	326	223
Occupation not reported	345	-	345	24	-	25	36	76	81	64	39
Occupation reported	32,438	288	32,150	3,985	2,054	6,146	2,787	5,552	7,282	3,209	1,135
Professional, technical, and kindred workers	3,711	-	3,711	3,241	41	171	19	159	38	21	21
Managers, officials, and proprietors, except farm	2,438	53	2,385	87	1,480	165	249	176	143	66	19
Clerical and kindred workers	6,164	21	6,143	270	291	5,256	139	84	20	-	83
Sales workers	2,415	25	2,390	19	100	43	2,147	38	23	20	-
Craftsmen, foremen, and kindred workers	5,044	58	4,986	96	61	170	37	4,141	336	21	124
Operatives and kindred workers	7,807	85	7,722	52	81	227	93	672	6,417	41	139
Service workers, except private household	3,408	21	3,387	197	-	46	-	82	58	2,984	20
Laborers, except farm and mine	1,451	25	1,426	23	-	68	103	200	247	56	729

- Represents zero.

[1] Not equal to total employed in 1960 census due to exclusion of certain groups. See text for list of exclusions.

Table 3.—MAJOR OCCUPATION GROUP ACCORDING TO COMPOSITE REPORT OF EMPLOYER AND 1960 CENSUS; FOR CONTERMINOUS UNITED STATES, BY TYPE OF ENUMERATION AREA

(Thousands of persons)

Employer classification and area	Total employed[1]	Occupation not reported	Census classification — Occupation reported — Total	Professional, technical, and kindred workers	Managers, officials, and proprietors, except farm	Clerical and kindred workers	Sales workers	Craftsmen, foremen, and kindred workers	Operatives and kindred workers	Service workers, except private household	Laborers, except farm and mine
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
UNITED STATES											
Total employed	48,499	420	48,079	5,672	2,673	7,693	4,252	8,619	11,756	4,825	2,589
Occupation unknown	10,374	66	10,308	967	553	1,198	905	2,104	2,570	1,048	961
Employer form not returned	256	-	256	-	-	42	44	73	39	58	-
Employer form returned	10,118	66	10,052	967	553	1,156	861	2,033	2,531	990	961
Wrong address, out of business, insufficient address	3,888	45	3,843	267	165	378	465	813	665	600	490
Retired	43	-	43	20	23	-	-	-	-	-	-
Not with firm or deceased	5,628	21	5,607	656	365	753	360	1,078	1,637	326	432
Occupation not reported	559	-	559	24	-	25	36	142	229	64	39
Occupation reported	38,125	354	37,771	4,705	2,120	6,495	3,347	6,513	9,186	3,777	1,628
Professional, technical, and kindred workers	4,321	-	4,321	3,877	17	150	19	178	38	21	21
Managers, officials, and proprietors, except farm	2,640	119	2,521	87	1,616	165	249	176	143	66	19
Clerical and kindred workers	6,673	21	6,652	270	282	5,636	139	84	20	158	83
Sales workers	3,011	25	2,986	19	100	45	2,743	38	23	20	-
Craftsmen, foremen, and kindred workers	6,308	58	6,250	96	61	148	39	5,254	509	21	124
Operatives and kindred workers	9,102	106	8,996	71	64	239	93	421	7,786	41	181
Service workers, except private household	3,983	-	3,983	262	-	46	-	82	113	3,394	86
Laborers, except farm and mine	2,087	25	2,062	23	-	68	67	180	554	55	1,114
SINGLE-STAGE AREAS											
Total employed	7,847	66	7,781	955	198	479	718	1,318	2,421	716	976
Occupation unknown	2,160	-	2,160	235	132	130	158	357	517	148	483
Employer form not returned	-	-	-	-	-	-	-	-	-	-	-
Employer form returned	2,160	-	2,160	235	132	130	158	357	517	148	483
Wrong address, out of business, insufficient address	956	-	956	-	66	-	158	158	152	148	274
Retired	-	-	-	-	-	-	-	-	-	-	-
Not with firm, or deceased	990	-	990	235	66	130	-	133	217	-	209
Occupation not reported	214	-	214	-	-	-	-	66	148	-	-
Occupation reported	5,687	66	5,621	720	66	349	560	961	1,904	568	493
Professional, technical, and kindred workers	704	-	704	636	-	-	-	68	-	-	-
Managers, officials, and proprietors, except farm	132	66	66	-	66	-	-	-	-	-	-
Clerical and kindred workers	433	-	433	-	-	275	-	-	-	158	-
Sales workers	560	-	560	-	-	-	560	-	-	-	-
Craftsmen, foremen, and kindred workers	1,170	-	1,170	-	-	-	-	893	277	-	-
Operatives and kindred workers	1,344	-	1,344	-	-	74	-	-	1,204	-	66
Service workers, except private household	634	-	634	84	-	-	-	-	74	410	66
Laborers, except farm and mine	710	-	710	-	-	-	-	-	349	-	361
TWO-STAGE AREAS											
Total employed	40,652	354	40,298	4,717	2,475	7,214	3,534	7,301	9,335	4,109	1,613
Occupation unknown	8,214	66	8,148	732	421	1,068	747	1,749	2,053	900	478
Employer form not returned	256	-	256	-	-	42	44	73	39	58	-
Employer form returned	7,958	66	7,892	732	421	1,026	703	1,676	2,014	842	478
Wrong address, out of business, insufficient address	2,932	45	2,887	267	99	378	307	655	513	452	216
Retired	43	-	43	20	23	-	-	-	-	-	-
Not with firm or deceased	4,638	21	4,617	421	299	623	360	945	1,420	326	223
Occupation not reported	345	-	345	24	-	25	36	76	81	64	39
Occupation reported	32,438	288	32,150	3,985	2,054	6,146	2,787	5,552	7,282	3,209	1,135
Professional, technical, and kindred workers	3,617	-	3,617	3,241	17	150	19	110	38	21	21
Managers, officials, and proprietors, except farm	2,508	53	2,455	87	1,550	165	249	176	143	66	19
Clerical and kindred workers	6,240	21	6,219	270	282	5,361	139	84	20	-	83
Sales workers	2,451	25	2,426	19	100	43	2,183	38	23	20	-
Craftsmen, foremen, and kindred workers	5,138	58	5,080	96	61	148	37	4,361	232	21	124
Operatives and kindred workers	7,758	106	7,652	71	64	165	93	421	6,582	41	115
Service workers, except private household	3,349	-	3,349	178	-	46	-	82	39	2,984	20
Laborers, except farm and mine	1,377	25	1,352	23	-	68	67	180	205	56	753

- Represents zero.

[1]Not equal to total employed in 1960 census due to exclusion of certain groups. See text for list of exclusions.

Table 4.—MAJOR INDUSTRY GROUP ACCORDING TO SOCIAL SECURITY ADMINISTRATION AND 1960 CENSUS; FOR CONTERMINOUS UNITED STATES, BY TYPE OF ENUMERATION AREA

(Thousands of persons. Social Security classification is on basis of SIC. Census classification is modification of SIC)

Social security administration classification and area	Total employed with industry not reported (1)	Agriculture, forestry, and fisheries (2)	Mining (3)	Construction (4)	Manufacturing-durable goods (5)	Manufacturing-nondurable goods (6)	Manufacturing-not specified (7)	Transportation, communication, other public utilities (8)	Wholesale trade (9)	Retail trade (10)	Finance, insurance, and real estate (11)	Business and repair services (12)	Personal services (13)	Entertainment and recreation services (14)	Professional and related services (15)	Public administration (16)
UNITED STATES — Total employed	48,499	213	402	2,611	10,133	6,636	87	3,697	1,663	7,807	2,231	1,009	1,375	414	5,485	2,736

Table 5.—PLACE OF WORK ACCORDING TO EMPLOYER AND 1960 CENSUS; FOR CONTERMINOUS UNITED STATES

(Thousands of persons)

Place of work	Total conterminous United States	Single-stage Census areas	Two-stage Census areas
Total employed[1]	48,499	7,847	40,652
Place of work reported in Census	46,717	7,623	39,094
Place of work reported in ERC	34,078	5,099	28,979
Place of work reported in both Census and ERC	33,638	5,099	28,539
Same place of work reported	28,681	4,685	23,996
Different place of work reported	4,957	414	4,543
Different county or city in same state	4,643	348	4,295
Different state	314	66	248

[1]Not equal to total employed in 1960 Census due to exclusion of certain groups. See text for list of exclusions.

Table 6.—[title illegible]

Employer record class classification

Occupation

Primary job title (table 1)
- Professional, technical and kindred workers
- Managers, officials and proprietors, except farm
- Clerical and kindred workers
- Sales workers
- Craftsmen, foremen, and kindred workers
- Operatives and kindred workers
- Service workers, except farm and household
- Laborers, except farm and mine

Primary job description (table 2)
- Professional, technical, and kindred workers
- Managers, officials and proprietors, except farm
- Clerical and kindred workers
- Sales workers
- Craftsmen, foremen, and kindred workers
- Operatives and kindred workers
- Service workers, except farm and household
- Laborers, except farm and mine

Composite report (table 3)
- Professional, technical, and kindred workers
- Managers, officials, and proprietors, except farm
- Clerical and kindred workers
- Sales workers
- Craftsmen, foremen, and kindred workers
- Operatives and kindred workers
- Service workers, except private household
- Laborers, except farm and mine

Industry (table 4)
- Agriculture, forestry, and fisheries
- Mining
- Construction
- Manufacturing—durable goods
- Manufacturing—nondurable goods
- Transportation, communication, other public utilities
- Wholesale trade
- Retail trade
- Finance, insurance, and real estate
- Business and repair services
- Personal services
- Entertainment and recreation services
- Professional and related services
- Public administration

*The index of inconsistency may exceed 100 when the assumptions underlying the estimator are not met.

1See "U.S. Censuses of Population and Housing 1960, Principal Data Collection Forms and Procedures" for an explanation of single stage and two stage areas in 1960 Census.

2Estimate of number of persons is according to ERC classification. It includes estimates for only those persons whose occupation or industry was reported in both the ERC and Census.