STUDY SERIES

(Survey Methodology #2007-13)

Results of Three Classroom Experiments with Census of Population and Housing Questionnaire

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U.S. DEPARTMENT OF COMMERCE Social and Economic Statistics Administration BUREAU OF THE CENSUS Washington, D.C. 20233

September 11, 1972

MEMORANDUM FOR Thomas B. Jabine Chief, Statistical Research Division

From: Donny Rothwell

Subject: Questionnaire Research Reports--Series A, Report 3

The attached report is the third in a proposed series describing formal experiments designed to obtain information for improvement of self-administered census questionnaires. For the recommendations which accompany it, however, results of informal tests have also been considered.

Like its predecessors the report is the result of group effort. Jerry Cooper made the arrangements for the test. Beverley Causey was responsible for all of the statistical analysis and for the programming. I made the selections from the data Mr. Causey provided and wrote the report. It also seems appropriate to credit James A. Bayton, professor of psychology at Howard University, as the consultant who proposed that the Census Bureau conduct classroom experimental research.

The three experiments on which the report is principally based required four hours of field work and very low budget. Data were available within a few weeks after each test was conducted. All delays in reporting can be attributed to report writing, table design, etc., and could be averted by a shift in my priorities or alternative Bureau staff assignments.



U.S. DEPARTMENT OF COMMERCE Social and Economic Statistics Administration BUREAU OF THE CENSUS Washington, D.C. 20233

September 7, 1972

Statistical Research Division Response Research Staff Report No. 72-14

Subject: Questionnaire Research Report--Series A, Report 3

Results of Three Classroom Experiments with Census of Population Housing Questionnaires

Introduction

The first of the three experiments which are the subject of this report was described in detail in RRB Report No. 71-18. Two subsequent experiments were conducted with the identical forms and similar procedures. In addition, data from the National Edit Sample were tabulated in categories making comparison with experimental results possible.

The experiments were intended to be the first in a projected series having the objective of obtaining information for the improvement of self-administered questionnaires. Results have been sufficiently consistent from experiment to experiment, and between the experiments, a 1970 census study, and some observations of people filling the census-like forms, that further experimentation with the same questionnaires now seems unnecessary. Two alternative new formats for a census questionnaire are attached as exhibits 2 and 2a and are recommended for testing.

Procedures Employed for Experiments

Procedures employed for all three experiments were the same in these essential respects:

- 1. Mr. Cooper arranged to have people convene for one hour in classroomlike groups. At the start of each session he was introduced, and he then read a standard introduction (shown as attachment 1 to RRB 71-18).
- 2. Monitors* who were professional employees of the Census Bureau

^{*}The initial experiment was conducted in the evening and the last one on a Saturday morning. Monitors volunteered their own time to participate in them and thus deserve additional appreciation for their work. The following people acted as monitors in all three experiments: Patricia Fuellhart and David Koons (SRD). The following people participated in both of the nonworking hours tests: Barbara Amos and Sheila Salesky (Hsg), Wilbert Williams (Fld), Kathryn Flynn (SMD). One time participants include the people whose names are listed as monitors for the first experiment and Anitra Rustemeyer (SRD) who served as a monitor in the last experiment.

distributed 16 variants of a standard census-like form in prearranged order. Then they read standard instructions (attachment la to RRB 71-18).

- 3. As each participant completed his form he reinserted it in the envelope in which it had been distributed. The monitor wrote time of completion and gave him a "What-Do-You-Think" questionnaire to fill and clip to the envelope (attachment 2 to RRB 71-18).
- 4. Results were double-coded, once by clerical coders and independently by a professional staff member. The project director check-coded the work of clerical coders, revised a few code categories to remove ambiguities, and reconciled differences between clerical and professional coders! work.
- 5. Data were tabulated and analyzed.

Some minor changes from the procedures described in past reports were made for the second and third experiments. The experiment involving use of pen and pencil (described in RRB 71-18) was dropped; participants worked in larger groups; and no PA system was needed nor was a recorded appeal for cooperation used in the introduction.

Questionnaire Variants Used for Experiments

The 16 questionnaire variants were distributed in accordance with a method which insured that nearly equal numbers of each kind of form would be filled. (A description of the method for accomplishing this appears in the Census Bureau's Technical Notes 5: Causey, B., Problems in Equalizing Numbers of Different Items Among Different Groups.)

The information requested on all the forms included: names, relationship, sex, race, ethnic origins, and age; three coverage questions to check on the completeness of the household roster; number of living quarters, kind of access, telephone, kitchen and bathing facilities, tenure, and value or rent.

Form 1 (see exhibit 1) is the basic form which would be used if a census were taken at the time the experiments were conducted. It is not the form used in the 1970 Census. Variations on the basic form are as follows:

Variant 1 has selected instructions within the body of the form printed in red.

Variant 2 has printed additional instructions for population items in the left margins of the page on which these items are printed. The housing instructions are printed on page 2 and an instruction appears

^{1/}A description of how Form 1 was designed appears on page 2 of Response Research Branch Report No. 70-16.

above the housing items to "Fold down page 2 for instructions..." In both cases the wording of these instructions is the same as that on the yellow information sheet provided with other variants. (The yellow instruction sheet which accompanies this form has a filled example and a question and answer section, which are identical to all other instruction sheets.)

Variant 3 does not require respondents to do FOSDIC marking for age. (Space is provided for FOSDIC age marking by office enumerator.)

Variant 4 has three changes from form 1:

- (a) Coverage questions are printed under the population questions.
- (b) Questions about color or race and about ethnic origins are in separate columns and the ethnic origins question is differently worded.
- (c) Separate questions about piped water, flush toilet, and bathtub or shower are asked.

The variations were combined into the 16 forms which provide a complete factorial design for the study of the four variants and interaction effects. The combination of forms shown below also describe the four variants as shown in the headings of Tables 1, 2 and 4:

				•
Kind of Form (actual designation of forms used is shown in parentheses)	Black vs. Red Print	Additional Instructions in Yellow booklet vs. On Form	FOSDIC vs. Non-FOSDIC Age Reporting	Standard vs. Alternative Format for Coverage, and two other Questions
1 (1) 2 (2) 3 (4) 4 (6) 5 (5) 6 (8) 7 (10) 8 (11) 9 (1c) 10 (2c) 11 (4c) 12 (6c) 13 (5c) 14 (8c) 15 (10c) 16 (11c)	B B B B B B R R R R R R	Y Y Y O O O Y Y Y Y Y O	F F N N F F N N F F N N N F F N N	S A S A S A S A S A S A

Exhibits 1 and 1a, between them, illustrate all the variations described above.

Participants in the Experiments

Although the forms and procedures were essentially the same, the participants in the three experiments differed greatly as the following summary of some of their characteristics indicates:

Some Characteristics of Participants in the Experiments	All Experiments	Woodson Night High School (May 1971)	Groups Funded by United Planning Organization, the Community Action Agency of the Office of Economic Opportunity* (August 1971)	U.S. Army Reserve Cente
LETBORIE MANAGET TO COMMENS AND THE PROPERTY CONTROL OF THE PROPERTY CONTROL O	BBT (MANDER ES LA COLOS CARACITATES CONTRACTOR CONTRACT	1.12 (A) and a company of the compan	(August 17/1)	Linove in Del. Tal
Total Number of Participants	3391/	103	102	134
Percent of partici- pants:	in dann barr basa babar barr dann			athen dies meter with the most
Age	1.00	100	100	1.00
Under 20 20-39 40 or over Not ascertained	14 56 18 12	22 36 19 23	23 58 5 14	1 70 28
Sex	. 100	100	100	100
Male Female Not ascertained	50 40 10	22 57 21	13 74 13	99 1 0
Race or Color	<u>100</u>	<u>100</u>	100	100
White Negro Other Not ascertained	36 62 1 1	0 100 0 0	1 94 3 2	• 90 7 2 1
Educational Level	100	100	<u>100</u>	100
Less than 12 years 12 years only More than 12 years Not ascertained	45 12 39 4	100**	49 36 6 9	0 2 94 4

^{*}American Learning Systems; Training, Research & Development, Inc.

Three hundred and four of the 339 participants were randomly selected to obtain equal number of persons in each experimental treatment group. The remainder of this report describes the

304 forms filled by that group.

^{*}Participants were not asked to report their education because it was assumed they were all working toward High School degrees. This assumption may not be completely correct. According to the school principal, a small but unknown proportion of the women in the dressmaking class were already high school graduates.

The relatively high proportions of persons in the "not ascertained" categories for age and sex are a by-product of the procedure employed for obtaining the information. Those people who signed their name on the back of the form were identified by the age and sex shown in the body of the form. Those who did not sign the back of the form could not be identified.

In the second and third experiments, monitors requested that participants write their educational level on the form as they turned it in.

Analysis of Forms

Each participant filled only one of the sixteen variants of the questionnaire. In order to expedite analysis, equal numbers of each kind of form
were selected. On a random basis, therefore, 35 forms were excluded from
the analysis. Twenty three of these were excluded from the first experiment
because of difficulty of obtaining nearly equal numbers of forms from 16
classes ranging in size from 3 to 30 students per room. In the two subsequent experiments, however, groups were larger and more evenly divided.
Hence, it was possible to achieve more nearly equal numbers of each kind
of filled schedule. Analysis involving the use of all 339 rather than the
selected 304 questionnaires has indicated that similar conclusions would
be drawn.

The forms collected were used for standard complete 4-way layout with each factor dichotomized, as described above. A complete analysis of variance was made for each of 45 data items or variables, many of which are shown in the stubs of Tables 1 and 2. These data items or variables include, for example, the number of minutes the subject took to fill the form; whether he correctly and completely FOSDIC marked the sex of each person in his household; whether he followed the skip instructions for rent and value correctly; whether he found the print on the form too small or large enough. Thus, the items analyzed describe how well the subject completed the form and some of his opinions about it.

Hypotheses about the possible effects of the variants on the results were tested. An example of one such simple hypothesis is: "There is an instruction to print names. If the instruction is printed in red, more people will print names."

The findings described in the body of this report were obtained as a result of analysis in which "main effect" differences—i.e., differences involving only one factor at a time— were estimated for each of four factors; factors being color of instructions within the form, placement of additional instructions, etc. These "main effect" differences were compared with a "residual sum of squares" based on variations of the values of the items among the 16 variants of the questionnaire. Interactions involving joint effects

^{1/}This analysis and similar additional technical information is available in the Statistical Research Division for anyone interested in technical aspects of the analysis.

of two or more factors were also measured. Finally, "residual" correlation coefficients between pairs of variables were computed. The findings reported here do not constitute complete results of these analyses which are copious. They represent a selection among those results which have practical application for improving questionnaire design and which were observed to be significant at the 5 percent level by use of standard t-tests.

Description of National Edit Sample Study

In addition to the results of classroom experiments, this report includes some comparable data obtained from the 1970 Census, used merely to see whether the errors made on filling standard census questionnaires by the experimental subjects resemble those made by respondents in the census.

A number of caveats about the experimental method were described in RRB 71-18, on pages 10-13. The purpose of using Census data was to see whether there was any similarity between experimental and census results which might make it possible to loosen some of those otherwise necessary restrictions on interpretation of experimental results.

The Census data were collected and tabulated in the following manner:

- 1. A subsample of about 800 questionnaires was selected from a portion of the National Edit Sample. The portion included mailed-back forms from the centralized and decentralized office areas. It excluded, by definition, forms from the "conventional" census areas because mailed-back self enumeration was not employed in them.
- 2. The questionnaires sampled were reproduced as they arrived. Thus, they were in a form as nearly equivalent as possible to that of the questionnaires used in the experiments.
- 3. A much more detailed coding system was employed than that used for the experiments. For example, each response on each line representing a person in the population section of the census form was coded separately.
- 4. Data were grouped in a computer program to produce classifications equivalent to those used in coding the experimental questionnaires, which had been coded only in summary fashion for the population section of the form.

The essential similarity between the results based on the National Edit Sample and the classroom experiments is that both represent unedited work; that is, both describe forms exactly as completed by respondents. The difference is that the National Edit Sample respondents represent a sample of householders in the United States who received forms, were requested to and did mail them back. (Forms were mailed back from nearly 90 percent of occupied housing units in the mail census areas.) In comparison with the

National Edit Sample population, people in each experimental group were relatively homogeneous in demographic charateristics, were all residents of the Washington, D.C. area, and were given no option about filling or turning in the form.

Findings

A similar general level of performance, as measured by complete and correct FOSDIC marking of questions, was observed for questionnaires filled in classroom experiments and those obtained from the National Edit subsample. Similar differences in levels of performance for different items also characterized the results. Such similarities contribute some confidence that the following experimental results might apply in a general population:

1. A principal finding is that format, spacing and positioning of questions can have a strong effect on response rates for them--independent of typography, the general appearance of the form or specific question wording.

The best illustration of that finding is provided by the three coverage questions. Placement of coverage questions at the top of the housing section rather than at the bottom of the page of population questions increased the likelihood of having them answered (see Table 1). This finding is consistent with an apriori hypothesis.

As Table 2 shows, the finding is also consistent for each of the three experiments separately. Although the proportion who answered the coverage questions correctly ranged from three fifths in the first experiment to more than nine tenths in the third, the form which had coverage questions in the more visible position produced better response rates within each group.

The 1970 decennial census questionnaire was designed so that the coverage questions were at the bottom of the form. Results from the National Edit Sample study (described on page 6 of this report) indicate that about two thirds of the people who mailed back their census questionnaire answered and correctly FOSDIC marked the coverage questions (see Table 3). When the results of the three experiments are combined, 59 percent of those who were given a form similar to the census form in terms of placement of coverage questions, correctly filled these questions, but 90 percent or more of those who were given the form with the coverage questions in a more prominent position answered them. This illustrates a large potential for improved response rates.

2. A second finding is that carry over effects exist; more specifically, that the inclusion of a difficult or seemingly unreasonable item in

the questionnaire affects the completion rate of items which follow it. Observations made on an individual basis where one staff member watched one person trying to fill a census form (described in RRB 71-16 and 71-20) suggest two kinds of effects. Some are discouraged about continuing with a task which began to appear too hard for them. Others are antagonized and become less cooperative.

The illustration for the finding that a carry-over effect exists is the response to identically worded and designed questions about coverage and housing, following the questionnaire version which calls for FOSDIC age marking as compared with the version which does not. A consistently higher proportion of completely and correctly marked coverage and housing questions is shown in Table 1 for the version which does not require FOSDIC age marking. The differences are statistically significant for all the housing questions and approach being so for the coverage questions.

Experimental results indicate that the potential for improvement is provided principally by less well educated people, since the response rate to housing questions for the well educated approaches 100 percent anyway (see Table 2).

The National Edit Sample results in Table 3 show that the housing questions as a group were correctly marked by most people in the 1970 Census but indicate that there might be some small potential for improvement, if FOSDIC age marking were not required.

3. Even minimal format changes may have a marked effect on response rates.

The illustration for this generalization is less clear cut than it might otherwise be because wording change accompanied the format change. The initially recommended format for the questions about race or color and ethnicity has one heading, "Origin," over a double column separated by a dotted line. The alternative format has two completely separated columns and a question printed in the second column (see exhibits 1 versus la). The alternative permits the majority of respondents to reply "no" to a question about whether they are of Mexican, Puerto Rican or other Spanish descent, whereas the standard version requires that they mark themselves in the last category as "None of these."

Regardless of the format and wording, the question about ethnicity was among the less well answered, particularly by the predominantly Negro and less well educated participants. It was as if, having described their race as Negro or Black, they felt that further questions about ethnicity did not apply to them. Yet, for them, as well as for the predominantly white and well educated participants in the third experiment, the format and wording which clearly indicated a second question, was far more successful. For all experiments

combined, Table 1 shows that about twice as many people answered the variant as the standard question about ethnicity. Table 2 shows that the difference was greatest for the first experiment but remained large for all three experiments.

There was no comparable question about ethnicity on the 1970 basic census questionnaire.

4. Some early reports from Internal Revenue Service indicated that two color print might be effective. Moreover, new printing equipment makes it possible to use two color print for government forms without much more difficulty or expense. As exhibit la shows, red ink was substituted for black for nine instructions selected as critical ones. Accompanying hypotheses were prepared. The small number of cases made it impossible to test some hypotheses but for those which were tested, the use of red instead of black print as it was employed in the experiments had very little effect.

Table 1 shows that by one criterion—the correct listing of the head of household on the first line—the black instructions appeared better; and by another—the consistent marking of two related property description questions—the red instructions seemed better. With these exceptions, which might have occurred by chance, the remaining outcomes show no significant differences between forms with red or black printed instructions. For example, red printed instructions about FOSDIC age marking produced no larger number nor more consistent responses, nor did color of instructions affect reporting of kitchen facilities or tenure. Moreover, no generalized aura or carry over effects can be seen in Table 1 results.

As described in the seventh finding of this report, there was some difference between the way participants perceived the forms with red versus black printed instructions.

5. Alternative explanations had been prepared to explain the outcome if more or fewer people completed a form which had additional instructions printed on it rather than in an accompanying booklet. Had more completed such a form, the explanation would have been that closer-at-hand assistance is advantageous; had fewer completed it, the explanation and recommendation would have been to keep to a minimum the amount of "clutter" on the form. In fact, however, the transfer of instructions from a separate booklet enclosed with the questionnaire to the form itself produced no measurable effect on completeness.

Not one statistically significant difference between the forms with or without additional instructions was observed. Of the 25 items shown in Table 1, 12 had a few more replies on the standard form, 12 had a few more on the form which had booklet instructions printed on it, and one had identical number of replies on both kinds of forms. The only effect of the variation was in perception of the form, as described in the seventh finding.

6. An experiment using one summary question versus an expanded group of three detailed questions produced identical results for both versions. This, however, may be a function of the level of living rather than a questionnaire effect.

No difference was observed in response rate to the question about plumbing facilities when it was asked in summary form ("Do you have complete plumbing facilities?") or when three separate "plumbing facilities" questions were asked about hot piped water, flush toilet, and bathtub or shower. The combined question on plumbing facilities was printed on the form which had coverage and housing questions in the same column and the separate questions appeared on the version which had coverage questions at the bottom of the page of population questions. As Table 1 shows the variation in form did not affect response. Unfortunately, however, the experiments were not very useful for testing the effect on distribution of replies resulting from alternative format and wording because so few of those who answered the question marked any but the first category, "Yes, for this household only."

7. Experiments show that people find the census form easier to fill than they initially expect it will be. Yet, with one exception, described in paragraph (3) below, their initial perception of difficulty does not correspond to their performance.

In order to interpret the results shown in Table 4 and summarized above, the following explanation is provided:

- a. Participants rated the census form they filled in two ways—how difficult it appeared when they opened the envelope and looked at it, and how difficult it turned out to be. Both of these ratings were made immediately <u>after</u> they filled the form.
- b. Ratings vary from 1 to 4; 1 represents very hard and 4 very easy, with two intermediate categories. Data in Table 4 show averages of ratings. Thus, the higher the number in Table 4, the easier, on the average, participants reported the forms appeared or were.

In every experimental group and for every version of the questionnaire, participants found the census form easier to fill than it appeared to be. On the average, the census form appeared at first sight to be between "somewhat hard" and "fairly easy" to fill. Reports about how it turned out averaged between "fairly easy" and "very easy" to fill.

Here are the results by type of form:

(1) The form with all black print appeared easier to more people

than the form with a few red instructions, but there were no differences in reported ease as "it turned out." Such results suggest that, in a census, the response rate might be lower for the form which had red ink but that the completeness and quality of returned forms would be the same.

- (2) The version with the instructions in the book and fewer on the questionnaire was described as easier in appearance and, though not statistically significant, the differences in opinion were in the direction of easier filling for all three experiments. Yet, results described earlier show no difference between the forms in how well they were filled. The greater difficulty perceived did not contribute to more omissions or errors.
- (3) Participants who used the form which did not call for FOSDIC age reporting expected it to be easier to fill than those who used the one which required FOSDIC age reporting. The difference in perception persisted and the non FOSDIC-for-age form was found to be easier by more people than the FOSDIC-for-age form. Moreover, as shown previously, the easier to fill version was better filled. This is the exception to the finding that perceptions of difficulty did not correspond to ability to complete the form correctly.
- (4) Two major findings were about significant differences between variants of the form which had the coverage questions differently placed and a differently designed ethnic origins questions. Yet Table 4 shows that participants neither anticipated nor found differences in difficulty between the versions which had differently placed coverage questions or differently designed ethnic origins questions. Although this finding is consistent with common sense (why should difficulty be perceived in questions one never sees?), it serves as an illustration of the limitation on judging questionnaires according to people's opinions of them. While these opinions may critically affect mail back rates, they do not necessarily indicate what the quality of response will be.
- (5) Despite marked differences in performance between participants in the third and first two experiments, there was little difference between the groups in their evaluation of the questionnaires. College graduates were as likely as those with less than high school education to rate the questionnaires as difficult in appearance. They were, however, a little more likely to describe the completed task as having been relatively easy.

Although the major findings described here are consistent with those reported when the only data available were from the first experiment, there are some differences in results. Principally, there was a sharp reduction in the number of interaction effects when three experiments were combined.

Table 2 of RRB 71-18 showed a frequent effect of color of print for instructions within the body of the form combined with variants related to the positioning of additional detailed instructions on the form. The particular interactions described indicated that it would be better to make neither or both kinds of changes than to make one of them. When data from three experiments were combined, however, the number of such interactions which were significant at the 5 percent level declined from 16 to 5, and three of these affected the closely related coverage questions. Interactions among other variables remained at the low level initially described. The present outcome of the analyses for the combined experiments is consistent with common sense expectations. There was no plausible explanation for the initial results.

Another kind of data shown in Table 1 of RRB 71-18, but omitted from this report, are summaries showing levels of completeness of the form. Summaries are available but, in the context of the experiments, they provide no more information than is found in data for separate items.

Recommendations

Previous reports in this and the B series, which described informal tests with the basic Census questionnaire, included recommendations for revision based on findings. In lieu of such written recommendations, exhibits 2 and 2a illustrate the kinds of changes in the census form which are recommended either for further experimentation or for pretesting.

The following comments are offered by way of explanation:

- 1. As described above, all revisions are based on findings. As such, they are conservative and do not represent any effort to develop an "ideal" questionnaire. Such an effort would probably result in far more radical revision.
- The principal distinction between the two forms is in the organization and wording of the housing questions. Revision of these questions, however, required alternative placement of the coverage questions. One of the results of the experiments which is not within the scope of this report (because it does not deal with a variant of the questionnaire) is that 83 percent of the participants wrote their names and the date on page 4. This indicates greater visibility for questions printed on the back of the form than is provided in the space under the population questions. In addition, there seemed to be some advantage in combining the coverage questions with the replies based on them which have always been printed on the back. Consequently, on the 2a version which contains the new approach to housing items, all coverage questions appear on the back of the form. Although omitted from the design exhibited, it also will be necessary to add the telephone question to the back where the present rewording of the question would make its placement more logical for respondents.

- 3. Rationale for all revisions is provided in this and in Reports A1 and A2, B1 and B2. As examples, findings in this report support a decision to have FOSDIC age marking as an office or enumerator operation rather than request respondents to do the coding; the need for indicating a starting point or the desirability of a two or four fold form were made apparent in the informal tests and were the subject of monitor comment in the experiments.
- 4. In some respects, the exhibits only approximate what the recommendations would be. For example, during observation described in Report B1, it appeared as if the fine line italic print used for instructions was particularly difficult to read. A set of experiments comparing some other kind of print with the type used in the 1970 Census would be desirable. In that same report, there is some evidence that the double line for writing names may confuse some persons and a partially sketched alternative to that format is appended as exhibit 2b.



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If the address she identification, pl number or locatio	ease	write	s the wror the correc	g apartment it apartment
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How to Fill This Form

- 1. Use a black pencil to answer the questions.

 This form is read by an electronic computer. Black pencil is better to use than ballpoint or other pens.
 - Fill circles "O" like this: @

The electronic computer reads every circle you fill. If you fill the wrong circle, erase the mark completely, then fill the right circle.

When you write an answer, print or write clearly.

- 2. See the filled-in example on the yellow sheet.

 This example shows how to fill circles and write in answers. If you are not sure of an answer, give the best answer you can.
 - If you have a problem, look in the instructions.

 All instructions are numbered the same as the questions on the form.
 - If you need more help, call the Census office.
 You can get the number of the local office from telephone "Information" or "Directory assistance."

 Your answers are CONFIDENTIAL. The law (Title 13, United States Code) requires that you answer the questions to the best of your knowledge.

Your answers will be used only for statistical purposes and cannot, by law, be disclosed to any person outside the Census Bureau for any reason whatsoever.

The householder should make sure that the information is shown for everyone here.

If a boarder or roomer or anyone else prefers not to give the householder all his information to enter on the form, the householder should give at least his name, relationship, and sex in Questions 1 to 3, then mail back the form. A Census Taker will call to get the rest of the information directly from the person.

 Check your answers. Then, mail back this form on Census Day, or as soon afterward as you can. Use the enclosed envelope; no stamp is needed.

> Your cooperation in carefully filling out the form and mailing it back will help make the census successful. It will save the government the expense of calling on you for the information.

> > PLEASE OPEN UP FORM AND START WITH PAGE 3

INSTRUCTIONS FOR QUESTIONS 10 THROUGH 18

Q. 10 - Living quarters are usually a house, apartment, flat, trailer, a group of rooms, or a single room which is occupied by a household that lives and eats separately from any other household in the building. Living quarters may also be vacant.

This address means the house or building number where your living quarters are located.

- Q.11 Mark Yes and enter telephone number, even if telephone is in another apartment or building.
- Q. 12 Mark the second circle only if you must go through someone else's living quarters to get to your own.
- Q. 13 Mark one of the "Yes" circles even if the kitchen sink, stove, and refrigerator are not in the same room.

Also used by another household means that someone else who lives in the same building, but is not a member of your household, also uses the equipment. Mark this circle also if the occupants of living quarters now vacant would also use the equipment.

- Q.14a Mark the "Yes" circle even if you do not have hot water at all times.
- Q.14b, c Instructions for Question 13 give the meaning of also used by another household.

Q.15 - Owned or being bought means that the living quarters are owned outright or are mortgaged. Also mark Owned or being bought if the living quarters are owned but the land is rented.

Mark Rented for cash rent if any money rent is paid. Rent may be paid by persons who are not members of your household.

Occupied without payment of cash rent includes for example, a parsonage, a house or apartment provided free of rent by the owner, or a house or apartment occupied by a janitor or caretaker in exchange for services.

Q.16b - A commercial establishment is easily recognized from the outside; for example, a grocery store or barber shop. A medical office is a doctor's or dentist's office regularly visited by patients.

If your house is on a place of 10 acres or more and also contains a commercial establishment or medical office, mark Yes, 10 acres or more.

- Q.17 Include the value of the house, the land it is on, and any other structures on the same property. If the house is owned but the land is rented, estimate the combined value of the house and the land.
- Q. 18 Report the rent agreed to or contracted for, even if the furnishings, utilities, or services are included.

If rent is not paid by the month, answer both parts of 18b. For example:

\$20 per <u>week</u>

\$1,500 per year, etc.

PLEASE TURN THIS FLAP IN BEFORE FOLDING THE FORM

INSTRUCTIONS FOR QUESTIONS 1 THROUGH 9

Answer Questions 1 through 9 about the people in your household. A household may be:

- (a) One family
- (b) A person living alone
- (c) Two or more families who live and eat together
- (d) Any group of persons, related or unrelated, who share living arrangements

Q.1 - List in Question 1:

- Family members living here, including babies still in the hospital
- Relatives living here
- Lodgers or boarders living here
- Servants or hired hands living here
- Other persons living here
- © College students who stay here while attending college, even if their parents live elsewhere
- Persons who usually live here but are temporarily away (including children in boarding school below the college level)
- Persons with a home elsewhere but who stay here most of the week

Do not list in Question 1:

- Any person away from here in the Armed Forces
- Any college student who stays somewhere else while attending college
- Any person who usually stays somewhere else most of the week
- Any person away from here in an institution such as a home for the aged or mental hospital
- Any person staying or visiting here who has a usual home elsewhere

Q.2 - If two or more unrelated people live together and share living costs, mark the first one you list Head. Mark the rest Other nonrelative.

A stepchild or legally adopted child of the head should be marked Son or daughter.

Page 3	anyana mang ay paraga awa awa an	up madazanakalisti irinatir suumismoina nooma eelengulejolopaasiisii a
1. WHAT IS THE NAME OF EACH PER		2. HOW IS EACH PER
who was living here on Census Day o	or who was	RELATED TO THE
staying or visiting here and had no of	iher home?	OF THIS HOUSEHO
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ACCOUNTS OF THE PROPERTY OF TH		O Head O Wife or husband
		O Son or daughter
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		O Roomer, boarder
		O Patient or inmate
First name	Middle initial	O Other nonrelative
	and and the continuous and an interest control and are also as more personal control and dependent of the control and the cont	O Head
		O Wife or husband
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	•	O Roomer, boarder.
First name	Middle initial	O Patient or inmate O Other nonrelative
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(3) Last name	***************************************	O Other relative of
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The last side of the same and t		O Patient or inmate
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7) Last name		O Other relative of
		O Roomer, boarder.
First name	Middle initial	O Patient or inmate
And a first contract to the co		O Other nonrelative
3. If you used all 7 lines — Are there any	. 1	eave anyone out of Que
persons in this household?		f he should be listed -
O Yes - On page 4 give the name of the others; we will cal	i	e hospital, or a lodger
O No to get the information.	O Yes -	On page 4 give no
5-261(C)	T 0 140	reason left out.

**************************************	Fill one	Fill one circle	4b. Is this person of Mexican, Puerto Rican, or other Spanish descent?	5. DATE OF BIRTH (Mont and year of birth and age last birthday If not known, give your bes estimate. Print	
	O Male	O White	O Yes O No		O Jan-Mar O Apr-Jun O Jul-Sep O Oct-De
		O Negro or Black O Indian (American)	Which of these?	Month	- \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
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	O Male	O White O Negro or Black	O Yes O No		O Jan-Mar O Apr-Jun O Jul-Sep O Oct-De
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3 - P - 1		O Chinese	O Puerto Rican	Year	O 188- O 191- O 194- O 197-
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	O Female	O Indian (American)	Which of these?	Month	V O 100. O 103. O 135. O 132.
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i h.		Specify			
* ₽ 00(11175	ause you were le, a new baby	8. Did you list anyone i			anyone stay here on Census Day who is not
i so h	as another home	? in a hospital?	example, on a vacation	. .	ady listed?
and			e 4 give name(s) and		Yes - On page 4 give name of each visitor for whom there is no one at his home address:
		1	the second of the second	0	to no one or mo nome address

TOTATION CASES & NOT IN TRUCTIONS for Questing	18 10 through 18. 5 1342					
10How many living quarters, occupied and	15. Are your living quarters -	Mily of Art (MIL) has stated a species species of the Superior Superior Constitution (Mily Superior Su	M	the fact of the state of the st	AMPICATION POLICY	-1
* vacant, are at this address?	O Owned or being bought	by you or by someone	DO 1	YOT MARK		
O One O 2 apartments or living quarters	else in this household	1? Do not include] ral	THI.	S COLUMN		
O 3 apartments or riving quarters	cooperatives and cond O A cooperative or condor		\	- principal of the second of t	-γ	_
O 4 apartments or living quarters	owned or being bought	by you or by	34. Block	a5. Serial		ļ
O 5 apartments or living quarters	someone else in this h		Number	number		
O 6 apartments or living quarters	O Rented for cash rent?		N			
O 7 apartments or living quarters	O Occupied without payme	ent of cash rent?	N8000			
O 8 apartments or living quarters	50 1 11			0001		
O 9 apartments or living quarters	16a. Is this building a one-family			20002		
O 10 or more apartments or living quarters	O Yes, a one-family house O No, a building for 2 or m			3 0 0 0 3 1 0 0 0 4		
O This is a mobile home or trailer	or a mobile home or tra	nore families Biler	N. J.		0	
11. Is there a home telephone on which we	- Dela		N E		0	
can call you in case any of your answers	b. If "Yes" - Is this house on a	a place of 10 acres	150005			
are incomplete?	or more, or is any part of this	property used as a	160006	0006	The state of the s	Ma!
O Yes→ What is the	O Yes, 10 acres or more.	medical office?	70007	0007	(2)	no
number?	O Yes, commercial establishment	shmant or	80008	0008	0	mar
(Phone number)	medical office	Similarit Of	N	0009	0	in this
O No	O No, none of the above		N I		0	marg
			N			
12. Do you enter your living quarters —	17. If you live in a one-family hou	se which } Red			-Patricipa (varyage	1
O Directly from the outside or through	you own or are buying -	~	A. Type of un quarters	it or	(3)	
a common or public hall?	What is the value of this prope	erty; that is, how much	N		0	
O Through someone else's living	do you think this property (hou for if it were for sale?	ise and lot) would sell	M Ci		0	
quarters?	O Less than \$5,000	The state of the s	Occupied	<u>!</u>	0	.0
The state of the s	O \$5,000 to \$7,499	If this house	O First fo	ırm		0
13. Do you have complete kitchen facilities?	O \$7,500 to \$9,999	is on a place	O Continu	ation	ток жанарар ке кезуруу.	10
Omplete kitchen facilities are a sink		of 10 acres or more, or if			4	0
and a refrigerator.	O \$10,000 to \$12,499	any part of	Vacant		O	i
O Yes, for this household only	O \$12,500 to \$14,999	this property	O Regular		ŏ	0
O Yes, but also used by another	O \$15,000 to \$17,499 O \$17,500 to \$19,999	is used as a commercial	O Usual re	f	o	0
household		establishment	elsewi			
O No, lacking some or all kitchen	O \$20,000 to \$24,999	or medical office, do not	Y		**************************************	0
facilities	O \$25,000 to \$34,999	answer this	Craun aug		(3)	0
	O \$35,000 to \$49,999 O \$50,000 or more	question.	Group qua		0	
is there hot and cold piped water in	- posted of mate		O First for O Continua	1	0	
this building?	18. Answer this question if you pay		V Continua	111011	0	
O Yes, hot and cold piped water	living quarters.	rem for your J Rex	V		- Charles	
in this building	a. If rent is paid by the month -		B. Vacancy sta	tus	***************************************	
O.No, only cold piped water in	What is the monthly rent?				(6)	
this building) to \$119	Year round	1		8.6 - 1 -
O No piped water in this building) to \$149	O For rent	٠ ا	0	Make no
S. C.) to \$199	O For sale		0	mark
1. Ca you have a flush tollet?) to \$249) to \$299	O Rented o		0	in
Yes, for this household only	O \$60 to \$69 O \$300	1	Occupie		ADEMINATOR MATERIAL	this margir
Yes, but also used by another	O \$70 to \$79		O Held for	occasional (D	
nousehold	O \$80 to \$89		use	1		
No flush toilet	O \$90 to \$99	\	O Other vac	ant	0	
63 you have a bathtub or shower?	b. If rent is not paid by the month -	- FRack)		0	
Yes for the	What is the rent, and what period		O Seasonal		0	[7]
Yes, for this household only	It cover?				- Continue C	
Yes, but also used by another household			1		-	Na de Bi
no bathtub or shower	\$00 per		O Migratory	-		
oathub or shower	(Nearest dollar) (Week, I	half-month, year, etc.)				
and the second of the second o		/	j		XIII	
ON THE PRODUCTION OF THE PRODU		er to so describe accountrate describe even en section de la constitución de la constituc	AND THE PROPERTY OF THE PROPER	en consensation and consensation of con-	romensus d	

PLEASE MAKE SURE

YOU HAVE FILLED OUT

THIS FORM COMPLETELY

A	
1)	
Grant.	

Check to be certain you have:

- 1. Filled out Questions 2 through 5 for every person listed in Question 1 on page 3.
- 2. Answered Questions 7 through 18.



Write here the name of the person who filled the form and the date.

Name	•	•			~		•		•		***						·							Date	
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Then fold the form the way it was sent to you. Mail it back in the envelope addressed to the U.S. Census Office. No stamp is required.

Thank you very much.

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SPACE FOR ANSWERS TO QU	ESTIONS 6, 7,	, 8, AND 9		INCOME. TO JOY AND CAPERAGE
6. Name of any other person(s) in this household:	reneme e vezer a betalla est. Els est hidrories e vibrata a sacra a vez desta la sua descripión describencios	eff den die St. Ausgeg gewordt der siede Mittelle und der siede volgt in den den Gelie gebergene gebie	O Mac Part Per rent Pur F side land car be disconsistent of a finite business of the contract	noime more annual parace,
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7. Name of person(s) left out and reason:	derson et frankliken kan kelleker berk kenner, ik franklind en bjel en klade de strekt vilser inklimationska	e de materiale em productivo de estructura de la estructura de estructur		of the continuence specific sp
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8. Name of person(s) away from home and reason away:			· ·	Andrew Andrews and Andrews
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9. Name of visitor(s) for whom there is no one at his home address				America II. No co de
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TABLE 1

SUPPLIES OF ANALYSIS BY QUESTION::275 VARIANTS (Numbers shown are counts of all forms)

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SUMMARY OF RESULTS OF ANALYSIS BY QUESTIONNAIRE VARIANTS (Numbers shown are counts of all forms)

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TABLE 1 (cont.)

SURMARY OF RESULTS OF ANALYSIS ST QUESTIONNAIRE VARIANTS (Numbers shown are counts of all forms)

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SUMMARY OF RESULTS OF ANALYSIS BY QUESTIONNAIRE VARIANTS (in percents)

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fference significant at 5% level. fference significant at 1% level.

SUMMARY OF RESULTS OF ANALYSIS BY QUESTIONNAIRE VARIANTS (in percents)

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ference significant at 5% level. ference significant at 1% level.

SUMMARY OF RESULTS OF ANALYSIS BY QUESTIONNAIRE VARIANTS (in percent)

	Replies		<u>100</u>	16	83	16.	95	. 92	8	94.	72
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	nt of ge Ques- etc.2/	Variant	100	06	78*	92	Q.	92	87	72	73
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VARIANTS	Detail o Age Repo	FOSDIC		* 100 000 000 000 000 000 000 000 000 00	**//	** *** ***	Pro LANCE STRUCTURE CONTRACTOR	0	10 00		*99
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	Color of Instructions within Form	Black	100	76	82	63	95	16	\$	78	*49
	iousing items ¹ /		ent on which following stions were correctly ked:	of living quarters	ephone	hod of entry to unit	plete kitchen facil-	iire.	ent on which only ropriate questions ut value or rent were	ent which did mt e redundant entries value, rent, acreage, type of property2	ent on which questions ut kind of property e correctly & consist- ly marked

lerence significant at 5% level. Jerence significant at 1% level.

Footnotes for Table 1 and 1s

- counts include forms which have FOSDIC entries (rather than write-in or underlined replies), have Results are summarized from codes which provide detailed information about whether an item which The summary should be FOSDIC marked is; whether the appropriate number of circles are used; and, for the only the appropriate number of circles, and, in the case of population questions, have such population questions, whether the information is available for all persons listed. entries for all persons listed.
- Standard has coverage questions printed above housing questions; questions about color or race in Worded ethnic origins question; and three separate questions about piped water, flush toilet and the same column as ethnic origins question; and a combined question about plumbing facilities. Variant has coverage questions printed under population questions; a separate and differently bathroom or shower.
- on which inappropriate questions were answered include those on which rent was reported by persons 2 This is the number of forms on which no inappropriate questions were answered. Examples of forms There were a few other redundancies -- owners of 5 acres or more or commercial properties who marked that they were owner occupants or value reported by those who marked that they were reporting value or rent are examples. renters.

4/The base for the percentages is 76 instead of 152.

RESULTS FOR SELECTED ITEMS $^{1/}$ BY QUESTIONNAIRE VARIANTS SHOWN SEPARATELY FOR EACH OF THREE EXPERIMENTS AND FOR ALL VARIANTS AND EXPERIMENTS COMBINED (Numbers shown are percents)

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	Total Replies		100	. 49	60 65 94	T.	C 999		75	59 63 94	
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	COVERAGE QUESTIONS		OPMS ns likely to be missed	1 3 experiments	First Second Third	ns away from home 1 3 experiments	First Second Third	ns staying here, listed	13 experiments	First Second Third	

se include all items whose results were identified in Table I with a star, indicating that statistically significant ferences in those items were observed between any questionnaire variants.

RESULTS FOR SELECTED ITEMS¹/BY QUESTIONNAIRE VARIANTS SHOWN SEPARATELY FOR EACH OF THREE EXPERIMENTS AND FOR ALL VARIANTS AND EXPERIMENTS COMBINED (Numbers shown are percents)

	Total Replies		100	16	81 90 93	,	80 68 95	16	. 89 98	и О	7, 16, 66, 66, 66, 66, 66, 66, 66, 66, 66	
	nt, of cle.2/	Variant	100	. 60	75 92 98	78	, 70, 8 98	92	\$ 8 8 8 8 8 8 8 8	r. Q	2 2 2 2	
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g#	Detail of Age Reporting	Non- FOSDIG	100	\$28	** 86 60 60	** ** ***	85 79*	95*	88 88 8	*66	100* 96 100	The state of the s
STEVENYA	Detail. Age Rej	TO SO S	100	** ** ** ** **	100 43 *	*	22.33	* ** **	28 27 27 37	* 16	* 0 00	
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	f Li ons Porn	Ned	00.1	89	100	83	83 69 94	06	988	95	888	
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hese include all items whose results were identified in Table 1 with a star, indicating that statistically significant illerences in those items ware abramand the TABLE 2 (cont.)

RESULTS FOR SELECTED ITEMS 1/BY QUESTIONNAINE VARIANTS SHOWN SEPARATELY FOR EACH OF THREE EXPERIMENTS AND FOR ALL VARIANTS AND EXPERIMENTS COMBINED (Numbers shown are percents

	Total Replies			95	. 65 00		72	7 200	7.5
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	Placement of . Coverage Ques- tions, etc.2/	1		56	76	0	70	53	
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VAIGLE COS	SA 1 - 1 1 - 1	hery case	100.	*75	* * * * * * * * * * * * * * * * * * * *) (0	*99	52	92
	pt of mal doms	<u>8</u>	<u> </u>	6	2,5 2,5 3,5 4,5 5,5 7,5 7,5 7,5 7,5 7,5 7,5 7,5 7,5 7		E-	7.09	75 0
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		502	90.		C &		*94	\$\langle \tilde{\infty} \inft	to o
	Color of Tostructions vithin Fore	B] ack		96	066	00	67%	0 7	* & &
	WSING QUESTIONS (cont.)		FORMS	plete plumoing lacilities.	First Second	Third a of property	11 3 experiments	First	Third

nese include all items whose results were identified in Table 1 with a star, indicating that statistically significant ifferences in those items were observed between any questionnaire variants. TA THE LATE CLASSES ANTIONED BRIT SHEAKE LATES TO SPECIFIED (01 STILLS AND THE LATE CLASSACE ENTER THE TATE OF THE

	PERCLUS OF FORMS ON	WHICH SPECIFIED OUE	STIONS WEST COSSICE	
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		nderen de servicio de la companya de		

Footnotes for Table 3

a single census-like format. For example, the percentages shown for the three coverage items are for The percentages in this column are for whichever combination of features was judged to resemble most all versions which have those questions printed under the population items as they were in the 1970 These versions include forms with red and black instructions; with additional instructions respondents. Similarly, the percentages shown for the housing items are for all versions which did not require the respondent to do FOSDIC marking for age, regardless of other design features. printed in the booklet or on the forms themselves; with and without FOSDIC age marking requested of That differed from item to item and does not represent closely the census version of the question, Census.

The percentages in this column are for whichever combination of features provided the highest percent Such a determination would require enough more forms to provide data complete and correct response for the specified item. It is not, however, a theoretically "best" version of the questionnaire. Such a determination would require eno about each of the 16 variants rather than about combinations of them.

 $\mathcal{Z}_{ ext{None}}$ of the variants produced a higher response rate than the census-like version.

 $^{4/}$ These percentages are based on 76 instead of 152 forms.

 $\mathcal{S}_{ ext{The}}$ alternative version did not require respondent to FOSDIC mark age.

AVERACE VALUES 1 OF REPLIES TO FOLLOWING TWO QUESTIONS: A! When you opened the envelope and looked at the Census form, did it look as if it would be: Very hard to fill? Somewhat hard? Fairly easy to fill? Very easy?, and B. "How did it turn out? Would you say it turned out to be: Very hard to fill?..etc."

		nt of c Ques- etc.2/	Variant	2.78 2.85 2.80 2.80 2.71 3.37 3.37 3.37 3.40 3.45	29
		Decrent of Coverege Que	Stand- ard	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	4.00 Very easy
		Dotail of Age Reporting	Non- FOSDIG	33.33 8 17 4 8 17 4 8 17	3.00 Fairly easy
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