

Using Respondent Requests for Help to Develop Quality Data Collection Instruments: The 2000 Census of Agriculture Content Test

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Responsibility for the United States Census of Agriculture was transferred from the U. S. Census Bureau to the U.S. Department of Agriculture's National Agricultural Statistics Service (NASS) for the 1997 Census. Substantial changes are planned for the report forms and instructions to be used in the following 2002 Census of Agriculture. Changes include content, wording, and format of the report forms.

Due to the magnitude of the changes to the 2002 report form, a multi-phase test was conducted to evaluate and improve the quality of the data collected with this form. This Census Content Test was conducted in three phases: 1) cognitive pretesting, 2) split panel pilot test with 3 versions of a new draft report form, and 3) follow up interviews.

A toll free telephone number respondents could call for assistance was printed on all of the report forms mailed out in the second phase of the Census Content Test. This number was staffed by NASS enumerators throughout the data collection period. Calls made by respondents to the help line were evaluated as part of the Census Content Test. The number and type of problems that respondents reported in calls to the toll free telephone line was compared across the different versions of the forms and for different types of respondents. Examples of problems which indicated areas where forms or instructions might be improved are provided. How this evaluation was used to support other types of evaluations in the content test is also discussed.

KEY WORDS: data quality, questionnaire design, questionnaire evaluation

BACKGROUND AND INTRODUCTION¹

Responsibility for the United States Census of Agriculture was transferred from the U. S. Census Bureau to the U.S. Department of Agriculture's National Agricultural Statistics Service (NASS) for the 1997 Census. The quinquennial Census of Agriculture collects information from all agricultural operations in the United States using a mailed self administered report form. Information is collected on land acreage and use, crops,

livestock, sales of agricultural products, income, production expenses, assets, and characteristics of the farm operators.

Data collection instruments and instructions for the 1997 census had already been developed by the Census Bureau and were based on report forms used in past censuses. Due to the timing of the transfer, these report forms were used with only minor modifications for the 1997 Census.

However, substantial changes were planned for the report forms and instructions to be used in the following 2002 Census of Agriculture. Traditionally, changes to the information collected on the Census of Agriculture report forms are made due to requests from data users, emerging issues in

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agriculture and problems identified in the previous Census. For the 2002 Census, NASS was also interested in collecting data in as much the same way as possible as they are currently being collected in ongoing survey programs. In addition, the report form was being formatted to allow data to be scanned and captured from the paper forms using Optical Character Recognition software in lieu of being key entered as in the past.

Due to the magnitude of the changes to the report form for the 2002 Census, a multi-phase test was done in 2000-2001 to evaluate and improve the quality of the data collected on this form. This Census Content Test was conducted in three phases: 1) cognitive pretesting, 2) split panel pilot test with 3 versions of the new report form mailed to respondents, and 3) follow up cognitive interviews.

During the second phase of the Content Test, a toll free telephone number that respondents could call for assistance was printed on all of the report forms. This help line was set up and answered by trained enumerators throughout the data collection period. An evaluation of the calls made by respondents to the toll free telephone help line was used in conjunction with analysis of report form data and the follow up interviews to determine areas where forms or instructions might be improved. This paper discusses how information from the toll free help line was gathered and used.

2 Methods

2.1 Mailing

Report forms were sent out to 14,799 farm operators during December 2000. All states except Alaska and Hawaii were included. A postcard reminder/ thank you was sent a week following the first mailing. Nonrespondents

were also mailed a second report form on February 5, 2001.

2.2 Sample

The mailout sample was selected in two parts. A general sample from NASS's list frame of farm and ranch operators was selected and another special sample of operations with specific characteristics was also selected. The general sample was stratified by value of annual sales for the operation (descriptive information which is carried on the list frame). Operations were selected from all states except Alaska and Hawaii. There were 13,568 operations in the general sample.

The special sample consisted of operations hypothesized to have potential reporting problems. These were of several types, including operations that might not qualify as farms (per USDA definition), operations that raised unusual or specialty commodities, operations that had reported questionable data in the past, or those with atypical operating arrangements. There were 35 types of special cases² with a total of 1,231 operations selected for the special sample.

2.3 Data Collection Instruments

During the second phase of the Content Test, respondents were mailed Test report forms. Three different report forms (or panels) were used, and within each panel there was a long and a short form. All forms carried a due date of February 5, 2001. The panels differed in a

²Special cases were: nonfarms, institutional farms, respondents involved in multiple operations, partnerships, managed operations, tenants, operations with migrant workers, cross state operations, operations with direct sales to consumers, small farms, large farms, contractors, contractees, feedlots, sheep, nursery and greenhouse, citrus grove owners, single rare commodities (16 types), operations with grazing land and operations who reported questionable yield and acreage data in the past.

number of ways both in format and content. (A list of specific differences and copies of the report forms can be obtained from the author.) Respondents from the general sample were equally assigned to each of the panels (and divided across the long and short forms). Respondents in the special sample were all mailed long forms.

The report forms collected comprehensive information about the respondent's operation including land utilization, crop and livestock inventory and production, sales, operating expenses, characteristics and demographic information about the farm operator.

2.4 Follow up Interviews

A subsample of the general sample respondents and all of the special case respondents who returned report forms were selected for follow up interviews. During this interview, the respondent was shown their completed phase 2 report form and asked specific questions about the data they had provided. Most of these questions were designed to determine whether the respondent had understood and answered the questions accurately. Additional questions were asked of all special case respondents related to their type of operation and particular suspected reporting problems. A total of 3471 operations were selected for possible follow up. Of these, 1075 completed a report form and were eligible for follow up and 657 phase 3 follow up interviews were completed.

2.5 Toll Free Help Line

A toll free telephone number was established to provide assistance to respondents during data collection of the mail out. The telephone number was printed on both the front and back pages of each of the panel report forms. For panel #3, the toll free number was also printed

on the top of each page of the report form. Calls were taken beginning on December 15 and ending on March 2.

When respondents called the toll free help line, they were asked for their identification number or name. This was to enable each call to be matched back to other information about that respondent, including the type of form they had been mailed, the type of operation they were, whether they ultimately mailed their forms in, and the data they reported. For each call, the enumerator determined the caller's stated reason for calling. This was categorized into one of the following reasons:

- Needs help completing the form
- Form does not apply to respondent (i.e. respondent is not a farm)
- Operation has gone out of business during or prior to 2000
- Questions about reporting for partnerships
- Questions about reporting land in Conservation Reserve Program or Wetlands Reserve Program
- Questions about receipt of multiple forms
- Request for time extension
- Request for additional or replacement form
- Respondent reports already having sent form in
- Questions about mandatory reporting
- Request from Congressional or Senatorial office, questions about Freedom of Information Act or request to speak to NASS manager
- Question about confidentiality of data (Title 7)
- General Complaint and other situations

If the caller wanted help in completing a particular section or sections of the report form, the enumerator also recorded the section

and item the caller asked about and the specific problem they reported. Finally, the enumerator recorded whether they resolved the call, whether additional follow up was needed from them after the call, whether the call was referred to someone else, or some other action was taken.

3 RESULTS

From December 15 through March 2, 814 calls were received and logged on the toll free line. (A small but unknown number of calls were not recorded due to technical difficulties during the first week. Calls received after March 2 were not recorded.) The table below shows the number of forms mailed and calls received by version.

There was a significantly higher percentage of calls from respondents mailed the long form than the short form. However, there did not seem to be any difference between the three panel versions of the forms.

Contrary to expectations, printing the toll free number on every page of the form (Version 3), did not generate more calls than from the forms with the toll free number only on the form cover and back page. This indicates that the placement of the toll free number did not affect the likelihood that respondents would call.

Special sample respondents did not seem to call at a higher rate than the general sample respondents who received the same versions of the report form. $\chi^2 (5, N=14799) = 5.05, p=.41$

		Form Version					
		Version 1, Short Form	Version 2, Short Form	Version 3, Short Form	Version 1, Long Form	Version 2, Long Form	Version 3, Long Form
General Sample	Number of Forms Mailed	2271	2233	2230	2281	2281	2272
	Number (%) of Calls Received	113 4.98%	86 3.85%	100 4.48%	153 6.71%	132 5.79%	138 6.07%
Special Case Sample	Number of Forms Mailed	0	0	0	1116	60	55
	Number (%) of Calls Received				85 7.62%	4 6.67%	3 5.45%

While overall the special case sample did not make more calls to the toll free line than the general sample, a few types of special case respondents did call at a much higher rate. The number of calls by reason for the call for the entire sample and for a few of these special cases is shown below:

Of the 75 people requesting additional forms, at least 62 of these calls were generated by people who received a reminder post card but had not yet received the actual report form.

Overall, the number one reason that people called the toll free line (327 calls) was to report that they had already mailed in their form, followed by calls for people requesting help completing their forms.

Reason for the Call	Number (%) of Calls			
	All	Aquaculture	Horses	Non-Farm
Claimed Form Already Filed	327 (40.2%)			2 (22.2%)
Needs Help Completing the Form	164 (20.1%)	4 (33%)	1 (25%)	1 (11.1%)
Requests an Additional Form	75 (9.2%)	2 (16.7%)		
Claims to be Out of Business	66 (8.1%)		1 (25%)	1 (11.1%)
Thinks the Form Does not Apply	66 (8.1%)	6 (50%)	2 (50%)	4 (44.4%)
Wants to Know if Reporting is Mandatory	30 (4.4%)			
Wants Time Extension	25 (3.1%)			
Questions about Reporting for Partnerships	9 (1%)			
Questions about Receipt of Multiple Forms	8 (1%)			
Questions about Reporting Land in Federal Programs	7 (.9%)			
Other Reasons	37 (4.5%)			1 (11.1%)
TOTAL (percent of entire mailout)	814 (5.5%)	12 (42.9%)	4 (13.3%)	9 (11.25%)

Calls for Help in Completing the Form. Overall, the second most common reason for calling was 164 calls from respondents requesting help in completing their forms. Fifty three of these calls were for general help or help on the entire form.

For specific sections of the form, most of the calls (59) were for help with the first section of the form which defines the acreage for which the respondent is to report. In this section the respondent reports (a) the number of acres they

own, (b) the number they lease from others, and (c) the number of acres they lease to others. For the remainder of the report, they are to report agricultural activity on the acres derived from (a) + (b) - (c). If this number equals zero, respondents are asked if they operated during the year. If they did not, they should not complete most of the rest of the form. The routing and skip patterns for these questions were complex and had not previously been used on the form. This series of questions was problematic in the Phase 1 pretests of the form

and nine of these calls referred specifically to confusion with these questions.

In the Phase 3 follow up interviews, problems indicated by these phone calls were also confirmed with 28% of 597 follow up interview respondents reporting this as not easy to answer. Since this problem was identified both by calls to the toll free line and in the follow up interviews, recommendations were made to significantly alter or eliminate this series of questions.

Many of the calls (11) about the first section were about whether or not to report agriculture on land that was leased to others. This also appeared as a problem in the Phase 3 follow up interviews, where 44% of the 126 people reporting land rented out incorrectly reported activity on these acres (which should have been reported by the tenant operating the land.)

In addition, in the Phase 3 follow up interviews 3 out of four “potential non-farms” (operations with agricultural activity under \$1000, landlords only, retired from agriculture, or otherwise not believed to be currently operating) stated that they (incorrectly) reported information for land which they did not operate. This information led to recommendations to add clear and specific instructions to the form, the instruction sheet, or both, regarding owned agricultural land that is not operated by the respondent.

While overall, the special sample cases did not make more calls to the toll free line, some specific types of special case operations did. As shown in the table, operations classified as aquaculture operations, horse operations, or non-farms called at a much higher rate than the sample as a whole. Calls from special sample cases also revealed some of their specific problems.

Calls from aquaculture operations were primarily from State or Federal fish hatcheries. These operations were unsure whether they should report or the State/Federal parent agency should report. They were also unsure if they should report their activity if the fish were never sold (i.e. used for restocking). Problems were also reported because practices dealing with fish differ from traditional livestock and the form did not accommodate this (i.e. units were acres, not gallons; salt was used to treat water but is not traditionally considered fertilizer, etc.) These calls led to a recommendation to provide specific supplementary instructions to these types of operations with their forms.

Two of the four calls from operations classified as having horses were from respondents who thought the form did not apply to them. This was not unexpected, since these respondents may not consider themselves a farm, even if they are classified that way by the USDA. These types of special operations may also need individualized special instructions, while other types of special operations did not appear to have reporting problems and may not require special treatment.

4 DISCUSSION AND CONCLUSION

During the 2000 Census Content Test we attempted to use information about the calls made by respondents to support other information from analyses of data collected on the forms mailed out and in follow up interviews. A relatively small percentage of the respondents who we mailed forms to called the toll free number. Since a respondent must take action and initiate this telephone call, we felt that any problems reported on the toll free number were probably relatively serious. Information gained from other sources in the Content Test was evaluated in conjunction with

the information about the telephone calls. Problems that were indicated by multiple sources got thorough review and almost universally lead to recommendations for changes to the report forms, instructions or both.

Types of operations which called the toll free number at a higher rate than the sample as a whole were also examined closely. Recommendations for these operations included changes to the general reporting instructions and providing specific targeted instructions for these types of operations.

The calls received on the toll free line also led to recommendations for things that should be considered in development of procedures, edit and analysis systems, instructions, and information that should be made available for the toll free operators during the 2002 Census. For example, the high number of respondents calling claiming that they had already returned their forms indicates that the mail list for the second mailing probably did not include a large number of returns received just prior to the generation of the mail list. This lag between the generation of the list for the second mailing and the date of the second mailout was clearly too long in the Content Test. For the 2002 Census of Agriculture, this will be considerably shortened.

Another example was the high number of calls from respondents who had received the follow up post card but had not yet received their form. This was likely due to local postal employees delivering the small postcard before the large and bulky Census of Agriculture packages during the busy December mail. This prompted a recommendation to change the date of the postcard mailing to two weeks following the initial mailing instead of one.

Overall, information about calls to the toll

free line provided both unique and corroborative information used to improve the 2002 Census of Agriculture. While normally viewed as an aid to respondents, the toll free line can and should be used as an aid to survey designers as well.