A Comparison of CATI and NONCATI on a Nebraska Hog Survey

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ABSTRACT

This report presents results of a study comparing CATI and nonCATI telephone interviewing on the June 1, 1984, Hog Multiple Frame survey in Nebraska. Comparisons are made in four areas: enumerator productivity, levels of estimates, number of Generalized Edit program errors, and enumerator evaluations of the two interviewing methods. The completion rate for CATI was lower than that for nonCATI primarily due to factors addressed in later versions of CATI software. Differences in estimates and error rates were insignificant. Present non-CATI interviewers adapt well to CATI. Enumerator preference was evenly split between CATI and nonCATI.

CONTENTS

SUMMARY

Previous research in California indicated that using CATI resulted in fewer Generalized Edit errors and subsequent updates, no differences in length of interview or refusal rates, but a difference in estimates for one cattle variable (deaths) (3). This study tested these findings on the Hog Multiple Frame survey in Nebraska and sought interviewer feedback for planning in future CATI states.

Selected strata on the June 1, 1984, Hog Multiple Frame survey in Nebraska were randomly divided into two half-samples. CATI was used for telephone interviewing on one half-sample and regular "nonCATI" interviewing was used on the other. From a total sample of 1622, 550 CATI interviews and 575 nonCATI interviews were completed in the test strata. The study compared the two methods in four areas: productivity, estimates, Generalized Edit (GE) program errors, and enumerator evaluations administered after the September 1 hog survey.

CATI productivity, measured by the number of completed interviews (including refusals), was about 12 percent less than nonCATI. Computer response time and instrument design contributed to this difference. Improvements in the CATI software were made in those two areas after the June 1 survey. There were no significant differences in refusal rates for the two methods of data collection.

No significant differences were found in the levels of estimates for the test strata between CATI and nonCATI. Differences of up to 18 percent for some variables were not significant due to the relatively small sample sizes and small number of hogs in the test strata.

The GE program generated few errors in either sample. Consequently, this measure of relative data quality was inconclusive.

Evaluation forms revealed that enumerators and respondents generally accepted CATI; all enumerators successfully learned CATI, and about half picked CATI as their method of choice on the evaluation forms.

CATI BACKGROUND

Since CATI is a relatively new technology, some background information about CATI in general and about the Statistical Reporting Service's use of CATI in particular is presented prior to discussing this study.

Computer Assisted Telephone Interviewing and the acronym CATI refer to the use of a computer and related software for telephone surveys. CATI systems convert survey questionnaires into executable computer programs (instruments). Telephone enumerators work with a video display terminal and speak with a respondent usually through a telephone headset. The terminal's screen displays each survey question and enumerators record answers via the terminal keyboard. Features of CATI systems can include:

* Automatic question branching
* Pre-programmed on-line edit checks
* Ability to move back and forth in the questionnaire while maintaining the integrity of question branching and edits
* Personalized interviews by inserting information from the present or previous interviews into subsequent questions
* Automatic scheduling of calls and call-backs
* Several report modules:
    - Status of individual cases
    - Overall survey Progress
    - Enumerator evaluation
    - Various analyses of survey data
* Supervisory interview monitoring at a monitoring station
* Assistance in post-survey coding and editing
* Direct data entry

CATI's popularity has recently increased with government, university, and private research organizations, following increased use of telephone interviewing as an alternative to more expensive face-to-face visits and as a means of combating nonresponse in mail surveys.

Government agencies with CATI capability or who are in the process of acquiring it include:

* The U.S. Department of Agriculture (USDA), Statistical Reporting Service (SRS)
* The U.S. Bureau of the Census
* The U.S. Bureau of Labor Statistics
* The National Center for Health Statistics

Other agencies, many more university and private survey organizations, as well as a number of organizations in other countries are now involved with CATI systems .

House discusses some benefits of CATI that contribute to its popularity (3). In general, CATI benefits can be

grouped into two broad, not necessarily distinct, categories:

1. Improved data quality through more standardized interviewing procedures, flexible questionnaire design, on-line editing, and enumerator monitoring.

2. Efficient survey management through automatic report functions, case scheduling, and eliminating a separate data entry step.

However, installing CATI includes:

    1. costs of procuring and maintaining hardware

    2. costs of developing and maintaining software

    3. costs of additional training for interviewers and survey managers.

Hardware costs can be shared if the equipment is used for functions in addition to CATI. Resources needed for developing software and training enumerators would decrease over time in an organization that has a stable interviewer staff conducting repeated surveys.

SRS signed a research agreement with the University of California at Berkeley, Program for Computer Assisted Survey Methods (CSM), in 1981 to jointly investigate the feasibility of using CSM's CATI system in SRS surveys. Future references to CATI in this report refer to the University of California at Berkeley CATI system. Shanks et al describe the ongoing activities of CSM (4).

A site was set up in the California State Statistical Office (SSO) for the first SRS test of CATI on the January 1 Cattle Multiple Frame (MF) survey. House describes the results of this test (3). The California SSO now uses CATI operationally on several surveys - the biennial MF Cattle, June Acreage, and Fall A&P, triennial Rice Stocks and Processing Tomatoes, and monthly Cattle on Feed - as well as for some data entry and list sampling frame maintenance activities. More survey uses are planned. A UNIX-based multi-user operating system supports these activities.

CATI was first introduced in the Nebraska SSO with a test of the January 1, 1984, Cattle MF survey. A sample of operators not in the operational sample was interviewed using CATI. This gave the SSO staff and enumerators their first experience with CATI.

A similar test was conducted in Nebraska with the March 1 Hog MF survey. The SSO staff gained additional experience in using CATI, and research personnel developed and tested an initial CATI hog instrument.

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CATI was then used on the June 1 and September 1 Hog MF surveys and planned for use in all subsequent quarters. In addition, the Nebraska SSO is developing instruments for additional CATI surveys and also plans to use CATI for list sampling frame maintenance activities.

SRS formed a transition team and is preparing to make the Berkeley CATI system operational in an additional eight SSOs in 1985.

STUDY DESIGN

The purpose of this study was to compare CATI and non-CATI telephone interviewing in three areas: interviewer productivity, estimates, and data quality. The study also sought interviewer feedback for future planning. Research in California indicated no differences in length of interview time or refusal rate, a difference in estimates for one cattle variable, and a large reduction in Generalized Edit errors and updates (3). This report in conjunction with those findings should provide guidance for future CATI work in SRS. The section on interviewer feedback will interest CATI survey managers in all field offices.

The June 1, 1984 Hog, survey in Nebraska was a multiple frame survey using both a list and an area frame sample. This report addresses the list sample only. The list sample was selected from the general purpose list frame in 11 strata numbered 81-87, 93-95, and 98. Strata definitions were based on control data size categories, which ranged from hogs unknown to 5000 or more hogs.

CATI interviewing did not include strata 93 and above (extreme operators). Stratum 98 operations were sent directly to the field for personal interviewing. Strata 93-95 were excluded because of SSO desires not to change the method of data collection for this group until CATI was tested further.

Also, some operations with special characteristics, e.g. prior refusals and overlap with another concurrent survey, were preselected for personal interview without telephone contact. The remaining operations were telephoned and, if necessary, sent to field interviewers for followup.

The initial sample of 1,622 units for list strata 81-87 (control data ranging from unknown hogs up to 600 hogs) was randomly divided into two half-samples - one for usual telephone interviewing and one for interviewing by CATI. The preselects defined above were deleted from these half-samples. NonCATI calling was also done in strata 93 and 94 which had 240 selected units.

Interviewers called the evenings of May 24, 25, 29, and 30. Limited telephone calling was also done during the day, primarily on scheduled callbacks. A total of 550 CATI interviews and 575 nonCATI interviews were completed in strata 81-87. An additional 120 nonCATI interviews were completed in strata 93 or 94. Remaining cases were sent to field enumerators for followup.

The study employed a staff of 16 enumerators and 1 supervisor; 13 worked each of the first 3 nights and 12 worked the final night. Several factors prevented assigning enumerators in a manner which would better control any interviewer effects on comparisons in this study. First, only 11 of the non-supervisory enumerators were trained to use CATI; thus, 5 did not use CATI at all but were needed to complete the necessary number of calls. A fairly even mix of CATI and nonCATI callers each night was desired. This desire, coupled with enumerator availability, resulted in 4 enumerators using CATI exclusively, and the remaining 7 mixing methods between nights.

As a result of the enumerator assignments, differences between enumerators could affect the comparisons between CATI and nonCATI made in this report. Enumerators trained for CATI did not have any apparent superiority in interviewing ability, and they were not selected for CATI training on this basis.

The study compared enumerator productivity, levels of estimates, number of SRS Generalized Edit error messages, and enumerator evaluations administered after the September 1 hog survey.

For this analysis, reports in each half-sample were randomly assigned to one of nine replicates across strata. Replicate totals were used in SAS Proc GLM. For a discussion of this method of analysis including formulas see Hall and Ford (2), Appendix C.

PRODUCTIVITY

This section compares the relative productivity of CATI and nonCATI interviewing as measured by two factors - rate of completed interviews and refusal rates. Table 1 shows completion rates, calculated as rate per enumerator hour, and weighted refusal rates for the study. The elapsed time used for calculating completion rates includes about 1 hour of training the first evening for all interviewers as well as 20 minute breaks each evening.

Completed interviews include refusals and usable (good) reports. Refusal rates were calculated by dividing the number of refusals by the number of completed interviews, by stratum, and then weighting by stratum population totals (3). A univariate analysis of variance was run using replicate assignments (2).

Table 1: Comparison of Completion and Refusal Rates, CATI and nonCATI, June 1, 1984, Hog MF Survey, Nebraska

Variable	CATI	nonCATI	% DIFF 1/	Signif. Level
Completion Rate (per enum-hour)	5.3	6.0	- 11.7 %	2/
Refusal Rate	8.9%	8.0%	+ 11.3 %	.68

1/ % DIFF = 100*(CATI - nonCATI)/nonCATI
2/ Not tested for significance because completion rates were not kept by stratum.

Several factors should be considered before comparing completion rates. First, refusal rates were calculated over all strata including strata 93 and 94 in which no CATI calls were placed. Thus, stratum differences and enumerator differences would influence this comparison. Records of hours worked by stratum were not kept, so these strata could not be eliminated from the comparison. The overall effect of these factors is unknown but it is thought to be small.

Second, CATI enumerators experienced delays in computer response time both in searching for cases and in writing cases when finished. While these delays were eliminated in a subsequent version of the CATI software, they negatively affected CATI completion rates.

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Another improvement was made in the CATI instrument after this survey. The introductory items were stream-lined, thus shortening the overall interview time. This shortened version more closely followed the techniques used by nonCATI interviewers. The unstreamlined version used in June also negatively affected CATI completion rates.

Given the delays in machine response and the need for instrument improvement, the completion rates for CATI and nonCATI can be expected to be close, although incor-porating edit checks into the interview tends to make CATI interviews longer. Further efficiencies in CATI interviewing are also expected as enumerators become more experienced and an automatic scheduler is imple-mented.

Refusal rates were not significantly different. Refusal rates tended to be higher in the larger strata for both methods. CATI and nonCATI interviewers had basically the same resources available for dealing with refusals. Additional explanatory or rebuttal information could be built into the CATI instrument for enumerators to use when interviewing reluctant repondents. However, this was not done for this survey.

ESTIMATES

Table 2 compares totals of the seven strata expansions for selected hog variables. Two expansions were calcu-lated for each variable. The first (All) used all data as reported, while the second (Adj) reflects an adjust-ment made for two potential outliers in the CATI sample (one in the unknown hogs stratum and one in the zero hogs stratum). The adjustment removed these two reports from their original strata and set their expansion fac-tors to one. Because positive hogs was a rare event in the lower strata, it was difficult to define outliers. These two candidates were chosen based on visual inspec-tion of the data (both were reports of around 400 hogs in strata where the next largest value was under 70). Because of this subjectivity, both expansions are shown.

Univariate and multivariate analyses of variance were run using replicate totals with SAS Proc GLM (2).

Table 2: Comparison of Direct Expansions, CATI and nonCATI, June 1 1984, Hog Survey, Nebraska, Totals for Strata 81-87

Variable		: CATI (000)	: nonCATI (000)	: % Diff 1/	: Signif. Level
Total Hogs	- All	1680	1618	+3.8 %	.80
	- Adj	1593		-1.5 %	.98
Sows	- All	192	167	+15.0 %	.35
	- Adj	188		+12.6 %	.37
Expect. Farrow.	- All	96.9	83.9	+15.5 %	.41
(June - Aug.)	- Adj	94.5		+12.6 %	.40
Boars	- All	12.0	13.2	- 9.1 %	.64
	- Adj	11.8		-10.6 %	.63
Market Hogs:					
under 60 lbs	- All	599	628	- 4.6 %	.71
	- Adj	553		-11.9 %	.54
60-119 lbs	- All	416	353	+17.8 %	.47
	- Adj	387		+ 9.6 %	.49
120-179 lbs	- All	240	261	- 8.0 %	.53
	- Adj	233		-10.7 %	.60
180 lbs & over	- All	215	191	+12.6 %	.65
	- Adj	215		+12.6 %	.53
Total	- All	1471	1432	+2.7 %	.88
	- Adj	1388		-3.1 %	.89
Prev. Farrowings	- All	85.3	89.6	-4.8 %	.77
	- Adj	82.9		-7.5 %	.68
Avg. Litter Rate	- All	7.47	7.62	-2.0 %	.57
	- Adj	7.48		-1.8 %	.80
Deaths	- All	46.5	48.0	-3.1 %	.79
	- Adj	46.0		-4.2 %	.85
Multivariate Tests 2/					
	- All				.18
	- Adj				.52

1/ % Diff = 100 * (CATI - nonCATI)/nonCATI
2/ Wilks' test on individual variables shown above excluding total hogs and total market hogs.

Multivariate and univariate tests showed no significant differences (at the 0.10 level) for either expansions between CATI and nonCATI. Fairly large differences for some variables were not significant due to the lack of power in the tests. Larger sample sizes must be included before more powerful tests can be done (3).

The study revealed a possible shifting in the size of some inventory items. The CATI expansion for number of sows, and thus expected farrowings, was larger than the nonCATI. An overall shift to heavier weight groups for market hogs also seemed to occur in CATI data. Statistical tests did not find these differences significant, but further testing is needed.

EDIT ERRORS

After interviewing and a statistician review, both CATI and nonCATI data went through the Generalized Edit (GE) edit program. A comparison of GE errors between CATI and nonCATI in strata 81-87 was inconclusive. As previously mentioned, only about 19 percent of the cases in the test strata for CATI and nonCATI had hogs; therefore, total GE errors was quite small. In addition, the amount of manual editing prior to the GE may not have been typical of all hog surveys because editors knew they were in a test situation. Future similar studies should capture the data prior to editing by statisticians.

The only critical errors (errors requiring an update) for either method dealt with the coding of the enumerator code and the quality code boxes. The enumerator code was invalid in four CATI cases. This was corrected in later versions of the instrument. The quality code was invalid in one nonCATI case.

There were 20 non-critical errors in CATI data and 11 in nonCATI data. Only three CATI errors and only one nonCATI error resulted in updates.

Thus, this measurement showed no improvement in the quality of data collected by CATI. However, a similar comparison made in the Cattle MF survey in California revealed 76 percent fewer updates to the CATI data - 20 CATI updates versus 84 nonCATI (3).

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EVALUATIONS

Thirteen enumerators with both CATI and nonCATI experience completed evaluation forms after the September 1 survey (see Appendix A). Results from this small group with limited CATI experience can not be generalized to all future applications, but they can indicate future experiences and can also point to areas in development or training needing further attention.

All enumerators were on the existing nonCATI staff. Seven of the 13 enumerators worked as nonCATI phone enumerators for over 2 years, 5 from 6 months to 2 years, and 1 less than 6 months. CATI experience ranged from 4 surveys in 1984 (1 to 4 nights each) to only 1 survey. Ten enumerators had worked either 2 or 3 CATI surveys.

Other related skills possessed by these enumerators included the following. Eleven of the 13 had farm backgrounds, 5 had previous experience working on a computer terminal, and 11 had fair to good typing ability (2 had no typing skills).

Results from these evaluation forms follow.

1. Comparison by Interview Task and Overall

Enumerators were asked to choose which system worked best for them for several interviewing tasks. One enumerator did not complete this section.

They were then asked which method they would use if given a free choice.

The number of enumerator responses in each category is shown below.

ITEM	CATI	nonCATI	Little Or No Difference
Word Selection	3	3	6
Question Branching	3	4	5
Changing Answers	1	9	2
Entering Numeric Answers	7	5	0
Entering Notes	5	4	3
Checking for Consistency Between Answers	5	5	2
Probing for Answers From Reluctant Resp.	1	6	5
Arranging Callbacks	6	2	4
***			
Overall Choice	6	6	1
***			

Changing answers was seen as a drawback to CATI, probably because special interviewer commands had to be learned to move around in the instrument and to change an answer.

Enumerators were divided as to how well CATI worked in dealing with consistency checks done during the interview, probably reflecting an additional enumerator burden that CATI imposes. Namely, CATI enumerators had to resolve failed edits which involved complicated data relationships. Such edits were not a factor for nonCATI

interviews where enumerators were expected to know only the simpler consistency checks. Resolving these edits implied a subject-matter knowledge often beyond what is expected of a nonCATI enumerator. Also, enumerators often had to move around in the instrument to change answers when resolving edits.

Thus, while enumerators could do edits on-line, this implied learning new CATI skills and also understanding the subject-matter well enough to resolve complicated edits. The extent to which enumerators can be expected to have this subject-matter knowledge and what additional training this implies are issues which must be further addressed.

Probing for answers was also apparently easier with non-CATI possibly because of a general unease with CATI when the interview did not flow as smoothly or directly as it appeared on the screen.

Of the six who chose the CATI interviewing method, all worked the prior three CATI surveys indicating that regularity of use was a preference factor. This conjecture was reinforced by enumerators' comments that more frequent use of CATI - the hog surveys were about 3 months apart - would help them become more proficient and would eliminate a certain amount of relearning each time.

There were no clear differences as to the method preferred between levels of nonCATI experience, typing skills, previous CRT experience, or farm background.

A study by Groves and Mathiowetz found a similar 50 percent split in preference for 31 interviewers on a National Health Interview Survey (1).

2. Training

   Enumerators were asked to rate the level of diffi-
   culty and the amount of training provided to learn
   the CATI and nonCATI interview methods. The number
   responding by category is shown below.

   a. How difficult was it for you to learn?

	CATI	nonCATI
Very Easy	2	4
Somewhat Easy	7	8
Somewhat Difficult	4	1
Very Difficult	0	0

   b. How would you rate the amount of training you
      received?

	CATI	nonCATI
Too Much	0	0
About Right	9	11
Not Enough	4	2

   All enumerators had previous nonCATI experience, so
   that learning CATI was an extension of previous
   skills. New CATI interviewers were given two 4-hour
   training sessions with much of the time devoted to
   individual practice at terminals using mock inter-
   views. More time in these sessions would apparently
   have been valuable for at least four enumerators,
   all four of whom preferred nonCATI.

   There were no clear differences in the level of dif-
   ficulty or the amount of training between different
   levels of typing skills, previous CRT experience
   nonCATI experience, or farm background.

3. Fatigue Level

   Enumerators were asked to rate how they felt after
   an evening of calling using either CATI or nonCATI.

	CATI	nonCATI
Very Tired	1	2
Somewhat Tired	5	4
Only a Little Tired	3	4
Not Tired At all	4	3

   CATI caused no apparent additional fatigue.

4. Respondents Reaction to CATI

   Enumerators were asked to subjectively judge how
   often respondents knew they were using a computer
   during a CATI interview and what their reaction was
   when they did know.

How Often Farmers Knew		Farmers' Reaction	
Always	- 1	Liked the Idea	- 0
Usually	- 2	Did Not Like Idea	- 0
Sometimes	- 7	Did Not Matter	- 13
Very Rarely	- 3		
Never	- 0		

   Enumerators perceived no particular aversion to, nor
   any preference for, CATI by respondents.

5. Other Results
   ----

   a. Attention must be given to adjusting screen angle
      and height and possibly to the use of special
      screen filters. Nine of the enumerators wore
      glasses, seven of whom had bifocals or trifocals.
      Three of these seven indicated some problems
      with reading the terminal screen because of their
      glasses. All three preferred nonCATI.

   b. Most enumerators preferred an over-the-ear type
      headset over the ear-plug type: eight enumerators
      preferred the over-the-ear type, two preferred
      the ear-plug type, and three had no preference.

   c. Enumerators expressed equal preference between
      terminals with amber displays and those with
      green displays: five preferred amber, four pre-
      ferred green, and four had no preference.

   d. Typing skills and previous CRT experience were
      most frequently mentioned as skills that were (or
      would have been) valuable in learning CATI. How-
      ever, other results noted above indicate that
      these skills are not critical to either learning
      CATI or to eventually preferring it.

      Typing skills are a valuable asset for a CATI
      enumerator, particularly in surveys where much
      text needs to be entered. However, SRS surveys
      are mostly factual with numeric responses, and
      thus, the usual qualifications for a good nonCATI
      enumerator should take priority.

CONCLUSIONS

* Interviewer productivity was lower for CATI but it is reasonable to expect that, with the software improvements that have been made and with more experience on CATI, productivity should be at least as high as it currently is for nonCATI.

* No significant differences were detected between the level of estimates for CATI and nonCATI. However, rather large differences for some variables point out the need for further study as CATI capability is added to more States.

* Present nonCATI interviewers adapt well to CATI, although some would have benefited from more training. More frequent use of CATI would help interviewers become more proficient in its use.

* Survey managers should be aware of enumerator preferences in types of headsets, terminals, and of special problems with vision. Enumerators with no experience in typing or use of a keyboard will need to practice, but this alone should not prevent them from becoming good CATI enumerators for SRS surveys.

* Respondents had no discernible aversion to using CATI

RECOMMENDATIONS

* Conduct more research as more surveys and States are added to the CATI program.

* Continue to monitor CATI productivity.

* Compare estimates for other surveys with larger samples. Further test the potential differences in hog items discussed in this study.

* Compare data quality using data prior to any manual review.

* Trainers of CATI interviewers must strive to provide adequate subject-matter training for interviewers to understand and resolve complex edits. Possible improvements in instrument design should continue to be investigated.

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REFERENCES

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INTERVIEWER EVALUATION OF CATI & NON-CATI
Nebraska - Fall 1984

Instructions: Please help us with our evaluation of CATI and
                 "regular" non-CATI telephone interviewing by
                 answering the following questions as honestly and
                 as thoughtfully as possible. Your answers are
                 confidential and you need not sign your name.

                 Your responses will help future CATI enumerators!

                 For each item, check appropriate response(s) and
                 then add any comments that you wish.

                 Thank You !

1. How much CATI experience have you had ?
    (check all that apply)

                 a. January Cattle practice survey
                 b. March Hog practice survey
                 c. June Hog Survey
                 d. September Hog Survey

2. How much regular (non-CATI) telephoning experience
    do you have ?

                 a. Less than 6 months
                 b. 6 months - 1 Year
                 c. 1 - 2 Years
                 d. More than 2 Years

3. Do you have a farm background ?
    (Raised or worked on a farm or gained a fairly extensive
     knowledge of farm activities from others who are farmers)

                 a. Yes
                 b. No

4. How difficult would you say it was for you to learn to interview
    using CATI ?

                 a. Very Difficult
                 b. Somewhat Difficult
                 c. Somewhat Easy
                 d. Very Easy

    COMMENTS:

5. How difficult would you say it was for you to learn to interview using regular (non-CATI) procedures ?

                    a. Very Difficult
                    b. Somewhat Difficult
                    c. Somewhat Easy
                    d. Very Easy

    COMMENTS:

6. How would you rate the amount of training that you received when learning to use CATI ?

                    a. Too Much Training
                    b. About The Right Amount
                    c. Not Enough Training

    COMMENTS:

7. How would you rate the amount of training that you received when learning "regular" (non-CATI) telephone interviewing ?

                    a. Too Much Training
                    b. About The Right Amount
                    c. Not Enough Training

    COMMENTS:

8. Did you have any experience working with a computer terminal prior to learning CATI ?

                    a. Yes
                    b. No

    COMMENTS:

9. Please rate your typing skills prior to learning CATI.

                    a. Never Learned To Type
                    b. Poor
                    c. Fair
                    d. Good

    COMMENTS:

10. Do you think experience with typing, computer terminals, or any other skills you may have had were (or would have been) helpful in learning CATI ?

       a. No
       b. Yes   Please Explain

11. After an evening of interviewing using CATI, describe how you feel.

       a. Very Tired
       b. Somewhat Tired
       c. Only a Little Tired
       d. Not Tired At All

COMMENTS:

12. After an evening of interviewing using "regular" (non-CATI) procedures, describe how you feel.

       a. Very Tired
       b. Somewhat Tired
       c. Only a Little Tired
       d. Not Tired At All

COMMENTS:

13. When using CATI how often do you think farmers knew that you were using a computer to help with the interview ?

       a. Always
       b. Usually
       c. Sometimes
       d. Very Rarely
       e. Never

COMMENTS:

14. When farmers did know that you were using CATI, how do you think
    they usually felt about using a computer in this way ?

                    a. Liked the Idea
                    b. Did Not Like the Idea.
                    c. Did Not Seem to Matter to Them

        COMMENTS:

15. Please rate the following interview tasks as to whether CATI or
    non-CATI worked best for you. (check one for each item)

		CATI	non-CATI	Little or no difference
a.	Word selection when asking questions			
b.	Question branching (which question to ask next)			
c.	Changing answers to previous questions			
d.	Entering numeric answers			
e.	Entering notes			
f.	Checking for consistency between answers (edit checks)			
g.	Probing for answers from reluctant respondents			
h.	Arranging callbacks (day, time, person etc.)			

        COMMENTS:

16. If you were given a free choice to use either CATI or "regular" non-CATI procedures for interviewing, which would you choose?

        a.   CATI
        b.   non-CATI
        c.   No Preference

COMMENTS:

17. Please respond to the following CATI-related items.

    a. What type of headset do you prefer ?

            Clip on with earplug
            Over the head with "ear-muffs"
            No Preference

   Why ?

    b. What type of terminal do you prefer ?

            Brown/beige with amber print (rubout key)
            Grey with green print (clear/delete key)
            No Preference

    Why ?

    c. Do you wear glasses while interviewing ?

            No [Go to Q. 18]
            Yes

      c1. Do you use bifocals ?

            No
            Yes

      c2. Did your glasses cause any problems using CATI ?

            No
            Yes   Explain

18. Please comment on any other advantages or disadvantages that you think
    CATI has. Include any suggestions that you might have on how to
    make CATI better or easier for you to use.

Crop Reporting Board

Statistical Reporting Service

U.S. Department of Agriculture

Washington, D.C. 20250

HOG AND PIG SURVEY
JUNE 1, 1984

Form Approved
O.M.B. Number 0535-0005
Expiration Date 1/31/87

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1—1
9—MF

Stratum	ID	Tract
0 0 __	__ __ __ __ __ __ __	0 1 __

Survey	Response	2 Tel. 3 Int. 7 TR 8 IR 9 Inac.	Optional	S. Unit	H	1 · Has Hogs 2 · No Hogs 3 · Don't Know
813 1	910		911	920	499	

Please make corrections in name, address, and Zip Code, if necessary.

Mr. _____ , I am _____

from _____ . We are now conducting the June 1 Hog and Pig Survey and your name was selected in a sample of farmers in this State. Response to this survey is voluntary and not required by law. However, your cooperation is very important to insure timely and accurate estimates. Your report is confidential and used only in combination with reports from other producers to arrive at State estimates. Thank you for your cooperation.

1. Is your operation known by any name other than _____ ? *(Read above name to respondent)*

☐ NO   ☐ YES ————————▶ Enter name _____

2. Are there now any hogs or pigs regardless of ownership, on the land you now operate?

☐ YES   ☐ NO ————▶ 2a. Have there been any HOGS or PIGS on the land you now operate since March 1, 1984?

☐ YES · *Skip to Item 9, page 2.*

☐ NO · *Skip to Item 18, page 3.*

HOG AND PIG INVENTORY

Now I want to ask you about the hogs and pigs on the land you operate, regardless of ownership.
Include hogs and pigs purchased and still on hand.
First I would like to ask about HOGS AND PIGS FOR BREEDING.

3. How many are:

a. Sows, gilts, and young gilts bred and to be bred? .... `301`

Of the SOWS and GILTS *(reported in Item 3a)* how many are expected to farrow:

(1) From now through June, July and August 1984? .... `331`

(2) During September, October and November 1984? .... `332`

b. Boars and young males for breeding? .... `302`

c. Sows and boars no longer used for breeding? ...... `303`

Now let's talk about the HOGS and PIGS for MARKET and HOME USE in each of the following four weight groups. *(Exclude breeding hogs already reported in Item 3.)*

4. How many are ....

a. Under 60 pounds?
   (Include pigs not yet weaned) .... `311`

b. 60 — 119 pounds? .... `312`

c. 120 — 179 pounds? .... `313`

d. 180 pounds and over? .... `314`
   (Exclude hogs no longer used for breeding)

5. Add Items 3a through 4d:

Then the total hogs and pigs now on the land you operate is .... `300`
Is that correct?

☐ **YES** *Continue*   ☐ **NO** *Correct answers in 3, 4, and 5.*

PREVIOUS THREE MONTHS FARROWINGS

9. How many SOWS and GILTS FARROWED during March, April and May 1984, until now? .... `326`

10. How many PIGS from these *(Item 9)* litters :

a. Now on hand .... `327`

b. Already sold .... `328`

PURCHASES

11. **How many HOGS and PIGS PURCHASED since December 1, 1983
     are now on hand?** *(Include feeder pigs purchased)* ....

     `317` [   ]

> **If Item 11 is zero, skip to Item 13.**

12. How many **FEEDER PIGS** were purchased during May 1984? ....

     `340` [   ]

     a. What was the average **PRICE PER HEAD** ....**Dollars and Cents**

     `341` [. _ _]

     b. What was the average **WEIGHT PER HEAD** ....**Pounds**

     `342` [   ]

DEATHS AFTER WEANING

13. **How many WEANED PIGS and OLDER HOGS died during March,
     April and May 1984?** ....

     `335` [   ]

OPERATION DESCRIPTION OF LAND

Additional information is needed on your operation to assist in detecting possible duplication in reporting.

18. Which of the following best describes your farming or ranching operation?
     *(Check only one unless you, the individual or operation listed on the face page, have
     more than one operating arrangement.)*

     ☐ = 1 Individually operated land.

     ☐ = 2-7 Partnership: Partners jointly operate land and share in the decision making.

     ☐ = 8 Hired manager of land owned by someone else.

     `921` [   ]

     ☐ = 9 Do not now operate land for agricultural purposes.
     (Out-of-business, landlord, retired, etc.),

     Specify _____

Complete Items 19 and 20 only if Partnership is checked.
Please make any corrections if operation description information is entered.

19. Does this partnership or joint arrangement have a name other than that
     listed on the face page?

     ☐ **YES** _____

     (Enter name, then continue on page 4)

     [   ]

     ☐ **NO** · *Continue on page 4.*

19a. Who are the persons in this partnership or joint land arrangement with you?
(Exclude Landlord—Tenant, cash rent or share crop arrangements.)

a. Name _____ Phone _____ | 925 |

      (First)   (M)   (Last)

b. Address _____

      (Rt. or St.)   (City)   (State)   (Zip)

---

a. Name _____ Phone _____ | 926 |

      (First)   (M)   (Last)

b. Address _____

      (Rt. or St.)   (City)   (State)   (Zip)

---

a. Name _____ Phone _____ | 927 |

      (First)   (M)   (Last)

b. Address _____

      (Rt. or St.)   (City)   (State)   (Zip)

20. How many **hogs and pigs** are now on this partnership or joint land? . . . . **Number**

    a. How many of these hogs and pigs were included in Item 5, page 2? . . . . **Number**

22. SSO OPTION: The results of this survey will be released June 21, 1984
Would you like to receive a copy?

        ☐ **YES = 1**

        ☐ **NO** | 099 |

— —

COMMENTS

Please comment on any unusual death loss, average gains, or farrowing problems affecting your answers.

Any comments on problems or factors affecting hog production in your area will be appreciated.

That completes the survey. Another hog survey will be conducted in about three months and we may need to contact you again. Thank you for your help.

Reported by _____   **Telephone Number** _____ _____

                                                     (Area Code)   Number

Enumerator _____   **Date** _____

| 098 |
| 100 |