

**DOES A FAMILIAR FACE INCREASE RESPONSE?
Using consistent interviewer assignments over multiple survey contacts**

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1. INTRODUCTION

There are several methods used to decrease refusal rates in surveys. These include data collection mode, sponsorship, increasing respondent knowledge, interviewer training, and good questionnaire design.

All of these methods are used by the National Agricultural Statistics Service (NASS), of the United States Department of Agriculture. NASS conducts several hundred surveys a year on agricultural inventory, production, and farm economics. Most of these surveys are done by contacting farm operators directly about their operations. An individual farm operator could be contacted several times during any given year and across years on any number of surveys.

Throughout the past few decades, refusal rates have risen dramatically. It is often hypothesized by NASS employees that if we were able to give more personal attention to farm operators, they would refuse less often. One way to give operators more personal attention is to have the same interviewer contact them for all NASS surveys. The idea is that as a farm operator and an interviewer develop rapport, the operator feels comfortable with the interviewer, trusts her/him, and learns more about our Agency. At the same time, the interviewer knows the operator's schedule, feels comfortable calling instead of visiting for every contact, and comes to know the operator more personally. Hence, NASS would see a decrease in the overall refusal rates for these operators and possibly reduce some enumeration costs.

There has been no statistical evidence that such personal relationships would increase response rates for farm operators. Since most data collection for NASS is done by phone, operations that consistently have the same interviewer over time are large operations, operations who have indicated that they will only cooperate if the same interviewer contacts them, and operations that have the same interviewer by chance.

This research attempts to quantify the concept of permanently assigned interviewers by randomly assigning operations with such an interviewer. However, it was not set up as a rigorous study that could

definitively determine whether such assignments are helpful in terms of lowering refusal rates for all states and all surveys. We wanted to analyze the effects of the assignments to determine if it was feasible to implement them on a large scale in other states.

2. METHODS

To look at whether a more personal relationship with farm operators would increase response rates, "Permanent Interviewers" were assigned to a sample of operations in South Dakota. In order to be cost effective and to handle the larger operations whose data are necessary for producing accurate production statistics, we used operations with larger values of sales.

First, the entire list frame in South Dakota was divided into three random groups (for doing this and other evaluations). We selected one of these groupings, and then selected the 500 operations with the highest value of sales (based on control data) in that grouping. This number was selected with consideration to enumeration and staff workloads, cost, and statistical reliability. These operations had values of sales of \$600,000 or more in the 1998 list classification. There were 1,126 operations with at least \$600,000 value of sales in the other two groups combined. These 1,126 operations were used as a base for the control group, and were assigned interviewers as they normally would (sometimes the same interviewer, sometimes not).

Permanent interviewer assignments were made in June and July 1999 for the 500 selected operations. All NASS contacts made for the next two years (August 1999-July 2001) were to be made by the same interviewer for these operations.

The first time interviewers visited permanent assignments, they filled out a Profile Form which contained information about the operation that may be helpful in future contacts with the operation. The intent of keeping this information was to develop a closer relationship with the operation, so it was often more personal than information traditionally recorded. Interviewers were also asked to tell the operator that they would be the only person from the South Dakota Agricultural Statistics Service who would contact them for information. Interviewers could call or visit an operation during any subsequent survey.

This analysis includes all NASS surveys that were conducted in South Dakota during the two year period after the assignment of permanent interviewers and the two year period before the assignment. It includes surveys on pesticide use, farm economics, labor, agricultural yield, and crop and livestock inventory and production. The analysis does not include any state sponsored surveys that may have been done or the 1997 Census of Agriculture that was conducted in early 1998.

There was a total of 78 NASS surveys done in South Dakota during the two-year period from August 1997 through July 1999 (the two year period before the assignment of permanent interviewers) and 85 surveys during the period from August 1999 through July 2001 (the two year period after the assignment of permanent interviewers). Each individual operation could have been selected for any number of these surveys throughout the four years.

2.1 Effective Sample

After selecting the sample of operations to be assigned a permanent interviewer, some cases were removed from each group for various reasons. A total of 47 operations were removed (15 from the experimental group, 32 from the control group) because they had pre-existing interview arrangements that involved having the same interviewer contact them even before this more formal evaluation project started. In addition, 33 operations were removed from the permanent group because they had already requested mail or phone interviewing in the past. Four operations were moved from the control group to the permanent group because the control group operation was combined with an experimental group operation and the resulting operation was assigned a permanent interviewer. Therefore, the results in this paper are based on a total of 456 operations in the experimental group and 1,090 operations in the control group.

2.2 Up-front Interviewer and State Office Issues

Due to a variety of circumstances, the same interviewer could not always visit a selected operation during the two year period. Some interviewers left the Agency, some moved, and some changed their work schedule. In general, though, permanently enumerated operations were contacted by fewer field interviewers than those in the control group. Table 1 shows the percentage of farm operations that were interviewed by a given number of *field* interviewers. The table only includes operations who were contacted more than once and only contacts made by a field interviewer.

Table 1: Number of field interviewers who contacted an operation from August 1999 through July 2001 *

| Number of Interviewers | Experimental Group | Control Group |
|------------------------|--------------------|---------------|
| | ----percent---- | |
| 1 | 71.24 | 53.68 |
| 2 | 24.18 | 34.56 |
| 3 | 4.25 | 10.66 |
| 4 | 0.00 | 1.10 |
| 5 | 0.33 | 0.00 |
| N | 306 | 272 |

* only includes operations who had two or more contacts, only includes operations interviewed by a field interviewer

As shown in Table 1, having the same field interviewer contact an operation for all surveys was difficult to implement. Although operations in the experimental group were contacted by fewer field interviewers than those in the control group, only 71% had the same interviewer for all contacts. We did not envision implementation to be a problem for this many cases. In addition to those reasons already mentioned, part of the problem was that when a survey was nearing completion, the office had to contact large operations whose data was critical to make an estimate. If the permanent interviewer was not able to complete the survey, another interviewer may have been asked to contact the operation.

In order to make permanent interviewer assignments, the South Dakota State Statistical Office had to spend more time making assignments and more money on training and travel costs. These factors must be weighed against any benefits seen from the assignment.

Table 2 shows how often operations were sampled during the two year period of the permanent interviewer project. Keep in mind that this analysis only includes operations with at least \$600,000 value of sales, so the numbers in this table are higher than they would be for smaller operations.

Table 2: Percentage of operations sampled for x surveys after the assignment of permanent interviewers (8/99-7/01)*

| Number of surveys | Experimental Group | Control Group |
|-------------------|--------------------|---------------|
| -----percent----- | | |
| 0 | 14.9 | 8.1 |
| 1-3 | 30.7 | 32.2 |
| 4-6 | 20.4 | 26.1 |
| 7-10 | 17.8 | 15.9 |
| 11-20 | 9.7 | 12.6 |
| 21-30 | 4.6 | 3.3 |
| 31+ | 2.0 | 1.9 |
| N | 456 | 1,090 |

*includes all operations regardless of interview mode, the largest number of times an operation was sampled for the experimental group was 44 and 42 for the control group

As seen in Table 2, most operations with at least \$600,000 value of sales were contacted at least once during the two year experimental period. Most operations (about 66% of each group) were contacted 0-6 times during the two year period.

3. RESULTS

3.1 General Information

A variety of results are presented below including refusal rates, inaccessible or non-contact rates, and the direction of operator refusal rates after the assignment of permanent interviewers. Non-contact rates for the operations in the control group and the experimental group (permanent interviewer group) are compared for two different periods: the two year period before the assignment of permanent interviewer groups (August 1997-July 1999) and the two year period after the assignment (August 1999-July 2001).

In almost every survey and research study, refusal rates by mode are very different. It is well known in the survey field that face-to-face interviewing results in lower refusal rates than telephone interviewing. Therefore, most of the results presented in this paper only include those interviews done by field interviewers. If the results included all cases, regardless of mode, the refusal rates for the experimental group would be lower strictly

because of the increased use of face-to-face interviewing, not because of the assignment of the *same* face-to-face interviewer.

For the operations in the experimental group, interviewers could conduct an interview on the phone, but only after they had established a relationship with the respondent and discovered the mode most agreeable to the respondent. This is why all cases done by field interviewers are included.

Contact made by phone are not included in either the experimental group or the control group unless they were done by field interviewers. A small number of cases are given an interviewer code that indicates office interaction, so these cases are not included in the field interviewing rates.

3.2 Refusal rates

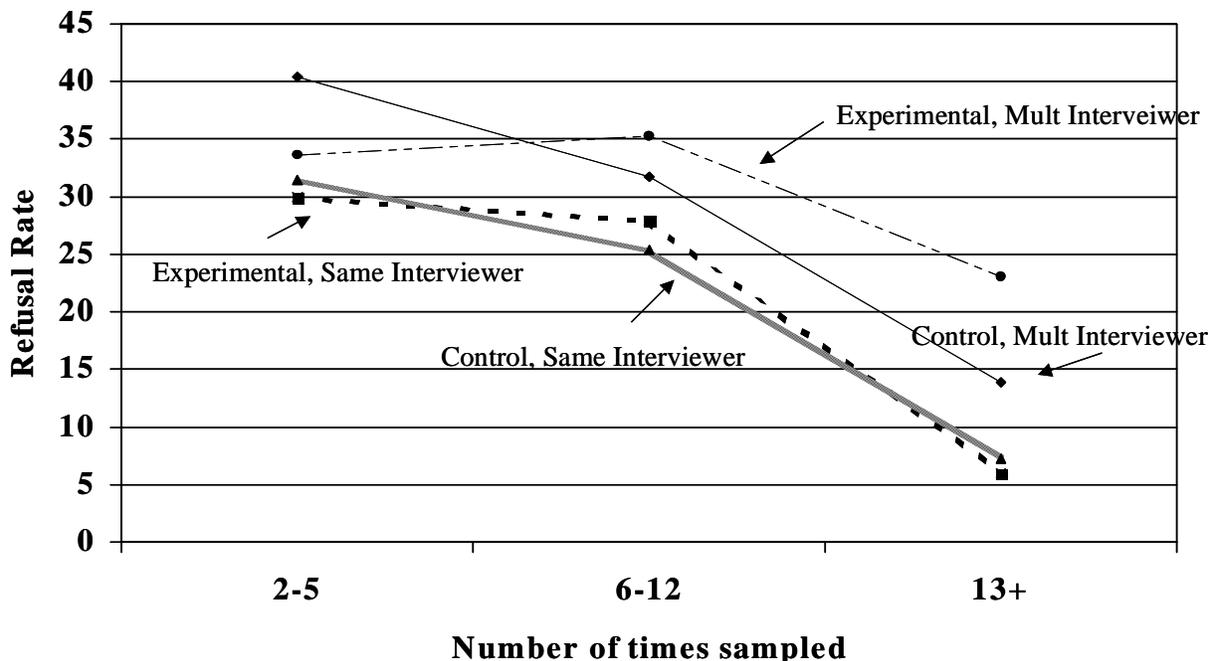
Refusal rates were calculated using the following formula:

$$\text{(Refusals + estimated refusals) / (Completes + refusals + estimated refusals + out-of-business)}$$

If we knew ahead of time that an operation did not have the commodity of interest (called a "known zero"), this case was not included in the calculation. Also, non-contact cases were not included.

Graph 1 shows the refusal rates for the experimental and control groups after the assignment of permanent interviewers (August 1999 through July 2001). Rates are further divided by whether an operation had one interviewer or multiple interviewers. The rates are shown by the number of times an operation was sampled by NASS and contacted by a field interviewer.

Graph 1: Refusal Rates After Assignment of Permanent Interviewers*



*Includes: (1) completes, out of business, and refusals (2) operations contacted by a field interviewer at least twice

As shown in Graph 1, refusal rates for operations contacted by the same interviewer were lower than the rates for operations contacted by more than one interviewer for both the experimental group and the control group.

The refusal rate is virtually identical for the experimental and control group for operations who had the same interviewer for all contacts. This may indicate that the additional treatment of notifying the respondent of their special treatment and collecting personal information did not seem to affect refusal rates. Simply sending the same interviewer was enough to lower refusal rates. Also, because in several cases the same interviewer did NOT contact the operation, it is probably a good idea not to tell operators that no other interviewer will contact them from NASS.

The graph only includes interviews that were done by field interviewers. Keep in mind that the non-contact cases and “known zeros” are NOT included in these numbers. Therefore, an increase in the number of non-contact cases did not adversely affect the refusal

rate for either group (see information on non-contact rates later in the report).

In Graph 1 and subsequent graphs, the “number of times sampled” is the number of times an operation was sampled and contacted by a field interviewer during that particular time period.

Notice in Graph 1 that the refusal rates do not increase as the number of times an operation is in sample increases. In fact, the rate decreases. This is true for all cases as well, regardless of interview mode. This validates data in an earlier report by McCarthy and Beckler (2000) that show that increasing the number of requests from an operation does not decrease the response rates for those operations. This contradicts the widely accepted view that as operations are sampled more, they will respond less. However, this could be a function of the size of the operation, not the number of times they are contacted.

Table 3 shows the direction of field enumeration refusal rates between the two time periods (before and after the permanent interviewer assignments) for both groups of operations. Once again, only cases

interviewed by one field interviewer for all contacts are included. There were 330 operations in the experimental group and 577 in the control group that were contacted at least once during the four year period by a field interviewer. Operations who were interviewed by a field interviewer during only one time period (113 operations in the experimental group, 352 in the control group) were not included. Therefore, of the original 340 and 577 operations in the experimental group and control group respectively, the table only represents 67% of the eligible operations in the experimental group and 39% in the control group.

Table 3: Direction of Refusal Rates after the assignment of permanent interviewers by group*

| Direction of Refusal Rate | Experimental Group | Control Group |
|--------------------------------------|--------------------|---------------|
| Lower Refusal Rate after assignment | 17% | 11% |
| Higher Refusal Rate After Assignment | 25% | 27% |
| Equal Refusal Rates | 58% | 58% |
| N | 227 | 225 |

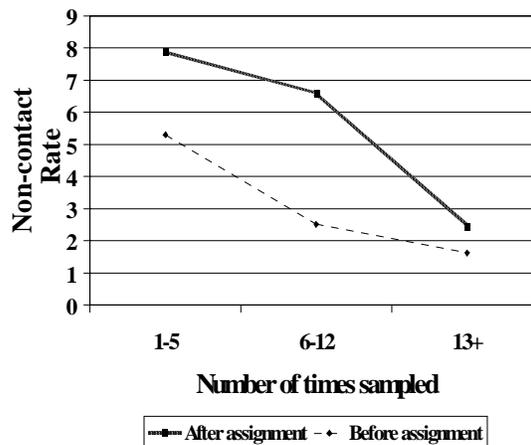
*-includes operations interviewed by the same field interviewer for each contact, and only completes and refusals, includes 67% of total eligible operations in the experimental group, 39% in control group

As shown in Table 3, after the assignment of permanent interviewers, the experimental group showed lower refusal rates compared to the control group. This could indicate that assigning the same interviewer to an operation does impact that operation’s propensity to respond. However, the number of operations is too small to make strong statements about the two groups.

3.3 Non-contact rates

Non-contact rates for the experimental group were higher after the assignment of permanent interviewers, especially for operators who were not sampled often. This is shown in Graph 2.

Graph 2: Non-contact Rates*
 Period before assignment vs. Period after assignment
 *Includes: (1) cases attempted by a field interviewer only
 (2) operations in the experimental group only



Non-contact rates are calculated using the following formula:

$$\frac{\text{Non-contacts} + \text{estimated non-contacts}}{\text{Completes} + \text{refusals} + \text{estimated refusals} + \text{OOB} + \text{non-contacts} + \text{estimated non-contacts} + \text{known zeros}}$$

In Graph 2 the “number of times sampled” is the number of times an operation was sampled and contacted by a field interviewer during that particular time period. For example, an operation may have been contacted by a field interviewer in four surveys during one period, and seven surveys during the other. Therefore, that operation would show up at different points on the two lines in the graph. Also, since there were several more operations interviewed by field interviewers during the period after the assignments, there are more operations represented in the “after assignment” line of the graph.

The increase in the non-contact rate for the experimental group is probably due to the increased use of face-to-face visits for these operations instead of using telephone or mail contact. Also, because we wanted the same interviewer to contact the operation for each survey, a substitute interviewer may not have been used even for surveys with short survey cycles. Although field interviewers were told they could conduct interviews on the telephone, they did not utilize this mode of data collection very often.

The difference in non-contact rates is most pronounced for operations that only had one or two contacts during the two year period. Presumably, after an interviewer had interviewed an operation more than once or twice, they were better able to find them available for an interview.

The fairly large non-contact rate could be detrimental to NASS data. Although they are not refusing, we are not obtaining data from these

operators. This increase should factor into any decisions made about making permanent interviewer assignments.

3.4 State office/Interviewer Concerns and Feedback

Assigning permanent interviewers was sometimes burdensome and costly for the office staff and supervisory interviewers. They had to include some interviewers in a survey for just a handful of permanent enumerated cases, when normally, they could have trained and used fewer interviewers. In addition, these cases had to be flagged for each survey and separated from the control group. Also, initial training had to be done for interviewers working on the project.

Most interviewers liked the idea of assigning permanent interviewers. When asked in a debriefing session about their opinions, 26 interviewers provided written feedback. Of those, 15 thought it was a good idea, five thought it was a bad idea, and six were mixed in their reaction. About half (14 of 26) thought they got better response from operations because they were assigned as their permanent interviewer.

Interviewers complained about keeping the profile forms with information about farm operations in their homes since it was confidential information. If such forms are used in the future, they should be handled differently to avoid this fairly widespread discomfort on the part of interviewers.

Interviewers also discussed the possibility of having a different interviewer visit an operator once the operator has refused the same interviewer two or three times.

3.5 Limitations

There are several limitations to this study that must be considered. First of all, the state of South Dakota was not randomly selected. Secondly, only operations with at least \$600,000 value of sales were eligible for the experimental group. Also, refusal rate comparisons are difficult because of the variety of modes and number of interviewers that contacted each operation. Finally, cost was not tracked very well, making it difficult to assess how effective the permanent assignments were for the dollar.

One of the biggest limitations to this study is that the treatment was not carried out consistently. We did not realize how difficult it would be to implement a permanent interviewer assignment to an operation. This needs to be considered in any future assignments.

4 CONCLUSION

Because we did not randomly select South Dakota as our test site, nor did we randomly select interviewers, the results shown in this report cannot necessarily be expanded to all states or all interviewers. However, in practice, the results can give other states some information to use when deciding on methods to decrease refusal rates on NASS surveys.

In South Dakota, refusal rates were lower for operations that were contacted by just one interviewer when compared to operations contacted by multiple interviewers. However, non-contact rates were higher. Therefore, assigning permanent interviewers on a large scale may not be a good idea. However, an individual assignment on a case by case basis or based on the influence of an individual operations' data on survey results may prove effective for certain operations. Indeed, several interviewers felt that there were at least a few operators who responded only because they were the person asking for information.

If permanent assignments are made, there is no need to formally present this idea to an operation. In fact, a substantial number of operations in this study who were supposed to be assigned a permanent interviewer could not be for a variety of reasons. Therefore, it is probably better NOT to promise that only one person from the agency will contact an individual operation.

The assignment of permanent interviewers is not necessarily time or cost effective, but it does seem to decrease refusal rates. Also, there are many specific situations and specific farm operations where the assignment of one interviewer will positively impact response. A case by case assignment process may help retain certain farm operators while containing overall costs.

In general, operations that are contacted more do not refuse more. Although it is "nice" to reduce the number of contacts made to an operation, it does not seem to affect overall response in South Dakota. This same result was found in data analyzed by McCarthy and Beckler (2000). Further analysis of this will be done in other states to see if the same result is found. If so, less resources can be spent reducing the number of contacts and more on making the contacts more productive.

REFERENCE

McCarthy, Jaki Stanley and Beckler, Daniel G. (2000). An Analysis of the Relationship Between Survey Burden and Non-response: If We Bother Them More, Are They Less Cooperative? USDA/NASS Research Report Number RD-00-02, May 2000.