A PARTIAL EVALUATION OF AN EXPERIMENT CONCERNING THE POSSIBILITY OF ESTABLISHING A FARMERS' CONTINUOUS SYSTEM OF REPORTING INCOME, EXPENDITURES AND RELATED DATA

Thesis for the Degree of M. S.

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Olan Dean Forker

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By

Olan Dean Forker

A THESIS

Submitted to the College of Agriculture of Michigan State University of Agriculture and Applied Science in partial fulfillment of the requirements for the degree of

MASTER OF SCIENCE

Department of Agricultural Economics

1958

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The author, of course, assumes responsibility for any errors remaining in this thesis.

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ABSTRACT

The purpose of this study was to evaluate an experiment relating to the possible establishment of a system of reporting farmers' income, expenditures and related data on a continuous basis. A panel was established in December, 1956 and maintained through the calendar year 1957. This evaluation was conducted early in 1958.

Assuming that data of a local nature are needed, a farmer panel reporting actual data at regular intervals would furnish detailed data more timely and realistic of the farm situation than any present known data gathering system.

Changes in trend can be quickly noted and recorded as the change occurs. The data collected by the continuous reporting system are indicative of the current farm situation as it pertains to farm and off-farm income, the time and method of marketing, the prices paid and received by farmers, and the time and amount of farmer investments. Time series of this data would be useful in supply and demand types of analysis. It may be possible to use the panel advantageously for investment and expectation studies.

As a panel system progresses over time, the value of the data collected would increase at an increasing rate.

The objectives of the experiment were partially fulfilled. The study describes and analyzes the problems and costs of establishing and maintaining a farmer panel.

Experience in the establishment of the farmer panel was as follows: (1) Of the 678 eligible farmers contacted, 70 percent consented to answer questions regarding their operation. (2) Forty-four percent of the eligible farmers enrolled in the project as panel members. (3) Of the enrolled farmers, 25 percent failed to submit the first report. In the more agricultural counties a higher enrollment rate was realized.

To increase enrollment special attention would need to be given smaller sized farms, older operators, part-time farmers, and low income farmers. Steps would need to be taken to decrease uncertainty in the minds of the prospective panel members regarding the purpose and intent of the project.

Redefining the population to include only the farms with an income level of over $1200, (this omits the $150-$1199 income level that is included in the census definition of a commercial farm) would, it appears, make it possible to increase the enrollment rate and the representativeness of the panel.

Refusals and drop-outs appear to be a problem in establishing and maintaining a panel representative by age of operator, size of farm, and level of income. However, the enrolled and completed group did not seem to be biased with regard to type of farm.

Forty-five percent of the enrolled farmers failed to report information for a complete 12-month interval. The large drop-out rate, however, did not significantly alter the studied characteristics of the panel. Follow-up procedures apparently did not increase the number of completing farms.

Apparently estimates obtained from a farmer panel contain a high sampling error. If, however, the response error is small, the panel system of continuously collecting data may be as accurate and as useful as other methods.

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CHAPTER I

INTRODUCTION

Purpose of Study

This study is an attempt to evaluate the extent to which objectives were fulfilled in an experiment relating to the possible establishment of a continuous system of reporting farmers' income, expenditures, and related data. Field aspects of the experiment were initiated in December of 1956 and carried out through the calendar year of 1957.

This evaluation includes consideration of statistical and operational problems in both the field and office phases of data gathering and processing. The study includes a review of the development of farm accounting projects in the United States, and the present status of farm account projects in land grant colleges. Particular emphasis is given to the farm accounting program at Michigan State University to show how this experiment is related to total research and extension effort as it relates to farm record work at this University and to similar programs elsewhere.

Procedure and Source of Data

1. Review literature pertaining to farm records and other methods of collecting data to see how the MSU Farmer Panel[1] is related to other work formerly or presently being conducted along these same lines.

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[1]Panel, as used herein, refers to a group of selected farmers, or others as specified, who submit information on a continuous basis.

2. Restate and interpret the objectives of the MSU Farmer Panel project.

3. Review the development of and method of handling farm records at Michigan State University.

4. Study the procedure and method of handling farm accounts (the Mail-In Farm Account system) during the operation of the project.

5. Study the problems of establishing the original panel. Analyze the records kept by the interviewers[2] (Appendix D) and the characteristics of the interviewers. Compare the characteristics of the farmers who enrolled in the panel with the ones who refused.

6. Determine as far as possible the extent to which the original panel and the completed panel are representative of agriculture in the respective counties.

7. Study the problems of maintaining the original enrollment through to completion.

8. Attempt to determine some of the potentialities of a farmer panel.

9. Determine the costs of the project and compare these with the costs of enumerative type surveys.

10. Develop some conclusions and recommendations concerning the above in regard to establishing a permanent farmer panel.

The data used concerning the panel members were collected by the interviewers as a part of the experiment (Appendix D). The characteristics of the interviewers were taken from their application blanks.

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[2]Interviewers, as used herein, refers to the field workers who had the job of interviewing and enrolling panel members in the project.

The author had no part in the collecting of these data and establishing the panel.

To enlarge upon the information collected during the experiment, the author, in January and February of 1958, interviewed by mail questionnaire the interviewers (Appendix A) and the county agents of the counties involved (Appendix B) and in March 1958 the cooperators who completed the project (Appendix C).

One hundred percent response was obtained with the interviewer and county agent questionnaires; 74 percent response with the farm cooperators questionnaire. The results of the latter two questionnaires are summarized in the respective appendices.

Review of Literature--Farm Accounts

The history of the collection of information from farmers, both cost information and other data, dates back to the late 1800's. Prior to 1902 the United States Department of Agriculture used mail type questionnaires to obtain farmers' estimates of costs. Farm record plans were instituted about this same time in New Jersey and Kentucky to investigate sorghum costs and corn costs respectively. After 1902 the route method was developed by the United States Department of Agriculture whereby information was collected on a daily basis from a small group of farms by a personal interview.[3] This method was also used in Minnesota and Illinois. In 1903, with the help of G. F. Warren, the survey method became popular for the collection of farmers' estimates.

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[3]M. K. Bennet, Farm Cost Studies in the United States, (Stanford University Press, 1928).

F. W. Peck in 1921 made a classification of the methods of study available in farm management cost analysis:

I. Accounting Method
   1. Route plan
      a. Entire farm business
      b. Enterprise and farm business study
      c. Extension enterprise study
   2. Occasional visit and book plan
   3. Correspondence Plan

II. Survey Method
   1. Farm Business Analysis
      a. Single entensive survey
      b. Continued surveys
      c. Periodic repeated surveys
   2. Enterprise Cost Studies
      a. With farm business analysis
      b. Without farm business analysis
   3. Questionnaire

III. Combination of I and II[4]

Bennett in his studies stated that the expansion or contraction at the United States level of such cost accounting projects and the collection of such information depended on the farmers dissatisfaction or satisfaction respectively of farm prices more than any other individual reason.[5]

Warren in his farm management book listed a very detailed method of cost accounting by enterprise in the year 1927.[6]

Many people about this time recognized the unreality of using results of cost studies as an approach to a pricing policy. In 1925,

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[4]F. W. Peck, Methods of Conducting Cost of Production and Farm Organization Studies, (USDA Bulletin 994, 1921), p. 14.

[5]Bennett, op. cit.

[6]G. F. Warren, Farm Management, New York: The Macmillan Co., 1927.

Myers pointed out several ways of measuring farm income.[7]

Case in the summary of his book[8] discussed the characteristics of three methods of collecting farm data. The first one was by the means of cost studies which was very expensive. However, it did point out the relative influence of various cost items on the total cost and income and brought out the problem to be dealt with in gaining greater efficiency in farm operations. The second method or survey provided a means of obtaining current data. This developed under the influence of G. F. Warren between 1903 and 1908 and was used on a very wide scale. At this time few farmers really kept farm records that were suitable for analytical comparison. Thus the survey records resulted in certain difficulties. It was this situation that brought the emphasis on farm accounting records. Most of the land grant colleges and universities in the United States have at some time or another carried on farm account projects.

The preliminary report of the farm records sub-committee of the North Central Regional Farm Management Research Committee[9] shows that there is a wide variation in the nature of the farm record programs in different states. Of the ten schools in the Midwest having farm account projects as a part of the university or as a part of the farm business

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[7]W. I. Myers, "Farm Business Analysis," Journal of Farm Economics, Vol. 8, No. 1, January, 1926.

[8]H. C. M. Case and D. B. Williams, Fifty Years of Farm Management, University of Illinois Press, Urbana, 1957.

[9]G. A. Pond, T. R. Nodland, A. G. Mueller, and C. W. Crickman, "Preliminary Report of Farm Records Sub-Committee to North Central Regional Farm Management Research Committee," Sections 1 and 2, unnumbered mimeograph report.

associations, only two, Illinois and Minnesota, have continued to receive major research support. In the rest of the states the farm account project is mainly under the control and supervision of the extension program.

Illincis cites as the main purpose of their work "to promote efficient farm management among cooperating farmers through an extension, research, and service program and otherwise to promote the general welfare of agriculture in Illinois."[10]

Glenn Johnson[11] states that the purpose of farm accounts are as follows: (1) To produce descriptive data, (2) as a source of data for analytical research, (3) to support extension activities, and (4) to get political support for the agricultural economic institution. He suggests that you cannot accomplish all four with one set of accounts.

H. C. M. Case in the final statement of his book states, "Above all the farm management worker must recognize that agriculture is highly dynamic and that a farm management research, teaching or extension program must be of necessity dynamic to fulfill the responsibility to agriculture."[12]

In the last few years at the annual meeting of the American Farm Economics Association there has been a series of discussions dealing with the data needed and the problems involved in collecting data for

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[10] Ibid.

[11] Statement by G. L. Johnson, Agricultural Economics Department, Michigan State University.

[12] Case and Williams, Fifty Years of Farm Management, op. cit., p. 368.

agriculture research, extension and teaching. Most of them emphasize that census data imposes numerous problems in the estimation of the livestock numbers, etc. However, the biggest problem is that these data are only collected every five years and by the time the information is published it is two years old. The articles point out that for research purposes, extension purposes, teaching purposes and for the purposes of business firms there is a need for local data on a county basis.[13] Benedict, Kuznets, and Bachman emphasize a need for reorganizing and re-emphasizing the agricultural data collection and processing methods.[14]

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[13]Frank V. Beck, "Making Existing Local Data More Available and Useful," Journal of Farm Economics, December, 1955.

Doris D. Brown, "Local Data Wanted by Business Firms," Journal of Farm Economics, December, 1955.

George T. Blanch, "New Data Requirements by Areas: How Can They Be Met?" Journal of Farm Economics, December, 1955.

Doris D. Brown and J. B. Claar, "Agricultural Data Requirements in Extension Work," Journal of Farm Economics, December, 1956.

Marion D. Thomas, "Data Requirements in Agricultural Administration and Research," Journal of Farm Economics, December, 1956.

E. C. Wilcox, AMS, "Local Data Requirement in Areas of High Agricultural Specialization," Journal of Farm Economics, December, 1956.

Jay Hurley, "Livestock Data Problems in the Census of Agriculture," Journal of Farm Economics, December, 1957.

[14]Benedict and Kuznets, "Better Basic Data for Agriculture: Some Possible Approaches," Journal of Farm Economics, May 1958.

K. L. Bachman, "Discussion: Better Basic Data for Agriculture," Journal of Farm Economics, May 1958.

Other Means of Collecting Data

Since 1950, Michigan State University has been running a consumer panel that submits a weekly diary listing all food purchases. Shaffer listed the following advantages and disadvantages of the consumer panel.

Advantages of the Consumer Panel

1. Minimizes memory loss
2. Avoids association biases
3. Includes purchases regardless of source
4. Relates purchases to consumer characteristics
5. Measures quantitative movement of goods
6. Increases availability of personal information
7. Permits the probing analysis
8. Utilizes mail reporting effectively
9. Insures greater reliability with a small sample
10. Provides information concerning dynamic relationships
11. Permits low unit cost
12. Provides data for many thesis problems
13. Supplies store of timely information for the solution of many unforeseen problems

Disadvantages

Limitations and problems of the consumer purchase panel: "All survey techniques have sampling, cooperation, reporting, and tabulation problems but these problems are magnified, complicated and compounded in the case of the continuous panel."

1. Mechanical difficulties
2. High total cost
3. Requires large full-time staff
4. Dangers of over-use of the panel
5. Subject to conditioning
6. Some special markets inadequately reported
7. Difficulties in maintaining cooperation and resulting sampling problems[15]

The panel has most of the problems of the survey method, and in addition has the problem of maintaining the sample through time.

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[15]James D. Shaffer, "Methodological Basis for the Operation of a Consumer Purchase Panel," Ph. D. Thesis, Michigan State University, 1952.

The Doane Agricultural Service, Inc. conducts the Doane Countrywide Farmer Panel for the purpose of collecting farm data. This "panel" is run on intermittant rather than a continuous flow basis so cannot be called a panel as defined in this thesis. It is composed of approximately 2000 farmers who submit information as requested by Doane. The panel members are not recruited from a probability sample.

As far as the author knows there is not presently available a continuous flow of data on a local basis concerning what the farmers spend, what they spend it for, what the farmers' income is, and from what his income is obtained. From the numerous articles written on this subject, the many problems involved in research, the many problems involved in political groups publishing inaccurate data, and the statistical problems of survey, it is evident that a current and continuous flow of information is needed.

Need for the Project

Alfred G. Dale states:

> The accumulation of data is never more than a means to an end . . . assumptions regarding the future can be projected on the basis of current facts; and in the face of economic situations that are essentially dynamic, the question which should always be resolved from a survey is not so much "where we are" as "where we are going."[16]

It is believed that a panel by accumulating continuous and current data can show "where we are going" more accurately than can surveys.

The United States Department of Agriculture and Michigan State University agreement (Appendix H) listed the following as the needs for

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[16]Alfred G. Dale, An Economic Survey Method for Small Areas, Bureau of Business Research, University of Texas, Austin, 1955.

Farmer Panel information:

(1) One time enumerative surveys of farm operators have been too few and far between.

(2) It is important to have frequent and accurate data concerning farm income and expenses.

(3) There is a need for significant changes in the agricultural situation to be recorded quickly. This is not being done. At present, for instance, the farm machinery situation is taken from industrial production reports. It is not known whether certain changes are occurring at the farm level or in dealer inventories.

A continuous reporting system at the farm level would indicate what and when a change is occurring at the time it is occurring. An alternative then is to establish representative groups of farmers who would report regularly, perhaps monthly or quarterly, on information concerning income and expenditures.

This research project was established to determine the feasibility of such a project, the adequacy of the information collected, and the problems of a technical nature that might occur.

An attempt will be made in the following pages to evaluate the successfulness of the experiment.

CHAPTER II

THE PROJECT

Development of Farm Accounting at MSU

Farm accounting originated at Michigan State University in 1913 when cost account records were kept on single enterprises by 25 farmers. Cost accounting continued until 1953. Table I-1 shows the average number of farm records analyzed each year.

TABLE I-1

AVERAGE NUMBER OF FARM ACCOUNT RECORDS ANALYZED PER YEAR IN MICHIGAN, 1913-1953*

Year	Cost Accounts		Farm Accounts		
	Single Enterprise	Total Farm	Extension	Other	Total
1913-14	25	-	-	-	25
1915-19	50	-	-	-	50
1920-24	-	70	-	-	70
1925-29	35	-	114	-	149
1930-34	363	-	833	58	1,255
1935-39	171	-	1,239	246	1,656
1940-44	88	-	1,147	-	1,235
1945-49	120	-	873	-	993
1950-53	50	-	653	-	703

*Compiled by Dr. E. B. Hill, Department of Agricultural Economics, MSU.

Complete farm account records have been kept by Michigan farmers as a part of the cooperative extension program since 1929. In general, all the accounts from that date have included an itemization of expenses, income, crop production, livestock produced, and beginning and ending inventories. They normally have not included complete enterprise accounts.

The procedure for collecting information at MSU was such that at the close of the accounting year the books were brought to a central location in the county where they were checked for completeness and accuracy by an extension specialist using a cross check technique. The books were then brought to MSU for processing. Before 1950 all steps in this operation were accomplished by hand.

Beginning in 1950 the summarization process started a transition process which culminated in the Mail-In Account System.

(1) In 1950, on a trial basis, selected annual data from individual farms were punched on IBM cards.

(2) In 1951, photostatic copies were made of the summary, crop and inventory pages. This enabled the record books to go back to the farmers faster. IBM cards were then punched from the photostats and selected pages were placed on microfilm.

(3) In 1952 and 1953, every page of the account book was put on microfilm and primary data were punched on IBM cards. Individual calculations were run by IBM machine.

(4) In 1954, microfilming was discontinued and hand summaries were made from which IBM cards were punched directly.

(5) In 1955 and 1956, a pilot group was established to test the feasibility of a mail-in-type farm accounting system. All primary information was placed on IBM cards.

(6) In 1957, all farm records were kept by the mail-in accounting system.

The number of farms handled by the mail-in accounting system progressed from 75 in 1955 to 1719 in 1957 (Table I-2).

TABLE I-2

NUMBER OF FARM ACCOUNT COOPERATORS 1954-1957, AT MSU

Year	Farm Account Record Book	Mail-In Account		Total
		Regular	Probability Sample	
1954	545			545
1955	539	75		614
1956	526	119		645
1957	Enrolled	1420	299	1719
	Completed*	1282	161	1443

*This number mailed in a complete series of reports for their 1957 business. A small portion of these were not used in the farm business analysis.

The Mail-In Farm Account Project

The members of the regular project are those Michigan farmers who volunteer to participate. The members mail in monthly, an itemized statement of financial transactions on uniform ledger type sheets (Appendix E). These forms provided space in which the farmer was required to list, in any order, the expenses and receipts incurred in the farm operation with the amount and the date of the transaction.

It was suggested but not required that the farmer list the person being dealt with, check number for items being paid by check, and quantity purchased. The farmer made out these forms in duplicate, mailed one copy to MSU and retained one copy for reference.

Besides this an inventory was taken at the beginning and end of the year. Other pertinent data, such as farm size, livestock program, and crop program were collected.

When the farmer's form is received at MSU the following operations take place:

(1) A clerk-typist opens the mail and checks the farm number and name against a master roster to make sure they have been recorded correctly. At this same time any notes that the farmer might have made are marked so they will be brought to the attention of the appropriate persons.

(2) A code-clerk writes a code number in a column by each transaction.

(3) Another code-clerk checks this coding.

(4) A comptometer operator adds all of the columns on the form for use in verification.

(5) IBM cards (Appendix I) are punched.

(6) The cards are then verified on an IBM verification machine.

(7) The cards are run through a collator where all cards of a given code number are matched with a master set of code cards.

(8) Then the alphabetic descriptions are gang punched in the individual detail cards.

(9) The cards are then sorted and arranged in numerical order by farm code number.

(10) Individual cards are interpreted so that material represented may be read at the top of each card.

(11) A tabulation is then made in triplicate on printed forms (Appendix E) so that for each farm, each transaction is listed in a uniform manner with totals and subtotals for certain major categories.

(12) Finally, these printed sheets are sorted and separated. One copy is mailed back to the farmer, one copy is kept on file at MSU and one copy is mailed to the county agent in the cooperators's respective counties.

The Research Project

The project was named "Experiments Relating to the Possible Establishment of a Farmers' Continuous Reporting System of Farmers' Income, Expenditures and Related Data." Warren Vincent, Associate Professor of Agricultural Economics at MSU, was designated project leader for MSU and Nathan Koffsky and Wylie D. Goodsell for the Agricultural Marketing Service and the Agricultural Research Service respectively.[1]

Objectives. The main objectives of the project were to study:

1. The problems involved in establishing a representative farmers' continuous reporting system and in keeping it representative.
2. The kinds of information that can be obtained from such a reporting system including the feasible length of a survey form.
3. Comparison of costs as between enumerative surveys and farmers' continuous reporting system.

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[1]The Project Outline (Appendix H).

4. A quality check to the extent possible of comparing differences in results between enumerative surveys and farmers' continuous reporting system.[2]

The Sample. The sample was drawn by the "Area Probability Sampling Procedure"[3] in four selected counties of Michigan. As an experiment and to stay within the limits of the budget 300 farms were to be drawn. Assuming a 33-1/3 percent dropout rate it was hoped that 200 would complete. The four counties selected were Mason, Shiawassee, Kalamazoo and Huron (Figure 2-1). They were picked for the following reasons and weighted as indicated below:

(1) Mason County was selected to represent the lower income area of the north. It was desired that the enrolled sample be composed of 60 farms.

(2) Shiawassee County was picked to represent the general farming and part-time farming area of south-central Michigan. This sample was to be composed of 75 farms.

(3) Kalamazoo County was selected to represent the part-time farming and diverse soil and agricultural production area of southern Michigan. Seventy-five farms were desired for this sample.

(4) Huron County was selected to represent an area of high agricultural output and little part-time farming. Since this is a more important agricultural area it was weighted with 90 farms. The distribution of selected area segments by counties are shown in Figures 2-2, 2-3, 2-4, and 2-5.

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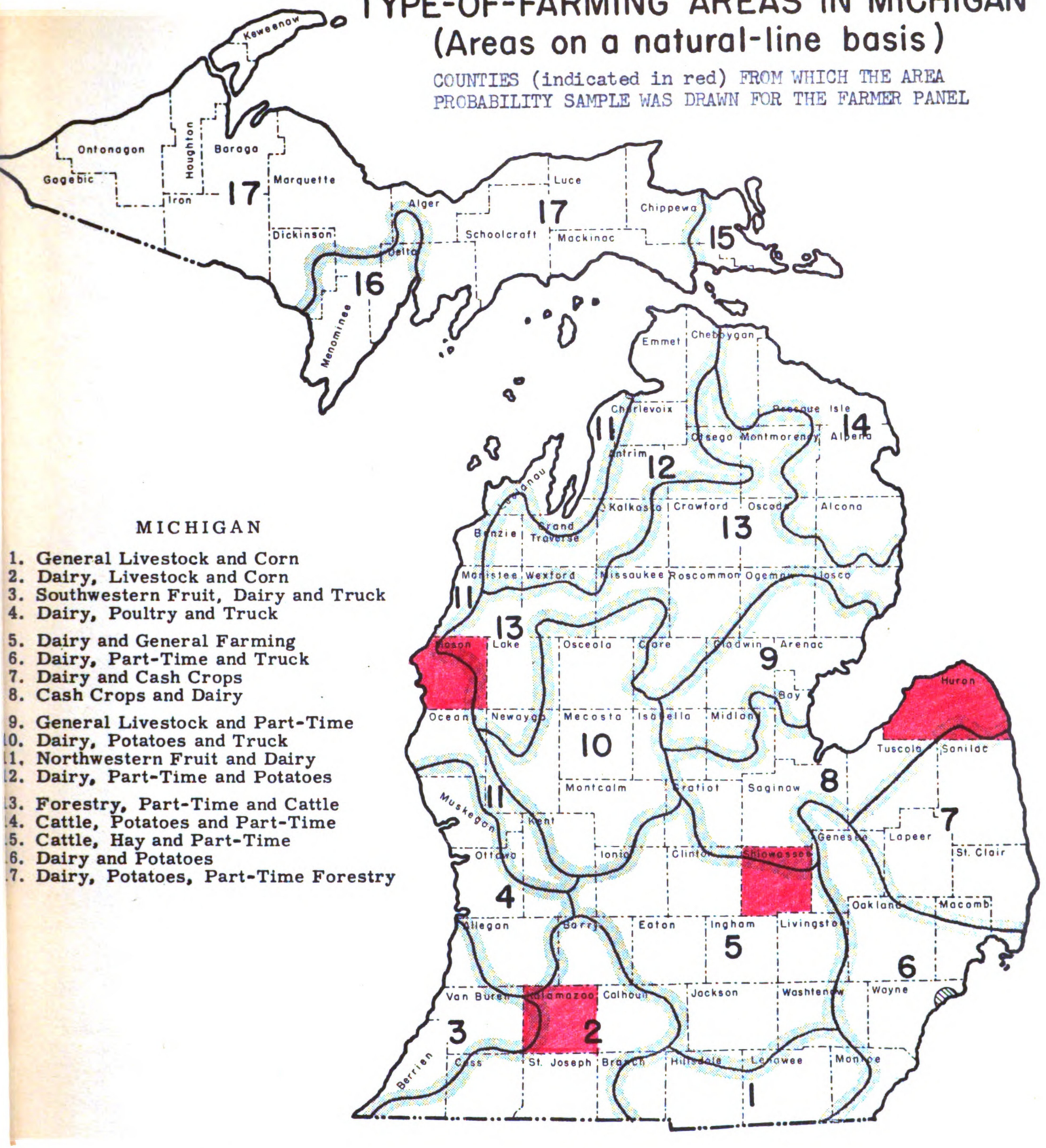
[2]Ibid.

[3]Earl E. Houseman, "Application of Probability Area Sampling to Farm Surveys," Agricultural Handbook No. 67, U. S. Government Printing Office, Washington D. C., May 1954.

FIGURE 2-1

TYPE-OF-FARMING AREAS IN MICHIGAN
(Areas on a natural-line basis)

COUNTIES (indicated in red) FROM WHICH THE AREA PROBABILITY SAMPLE WAS DRAWN FOR THE FARMER PANEL



MICHIGAN

1. General Livestock and Corn
2. Dairy, Livestock and Corn
3. Southwestern Fruit, Dairy and Truck
4. Dairy, Poultry and Truck
5. Dairy and General Farming
6. Dairy, Part-Time and Truck
7. Dairy and Cash Crops
8. Cash Crops and Dairy
9. General Livestock and Part-Time
10. Dairy, Potatoes and Truck
11. Northwestern Fruit and Dairy
12. Dairy, Part-Time and Potatoes
13. Forestry, Part-Time and Cattle
14. Cattle, Potatoes and Part-Time
15. Cattle, Hay and Part-Time
16. Dairy and Potatoes
17. Dairy, Potatoes, Part-Time Forestry

The 83 counties in Michigan are here grouped into 17 type-of-farming areas as indicated in this map. The "natural" boundaries of these areas do not, however, follow county boundaries, but lines representing the influences of soil, climate and markets.

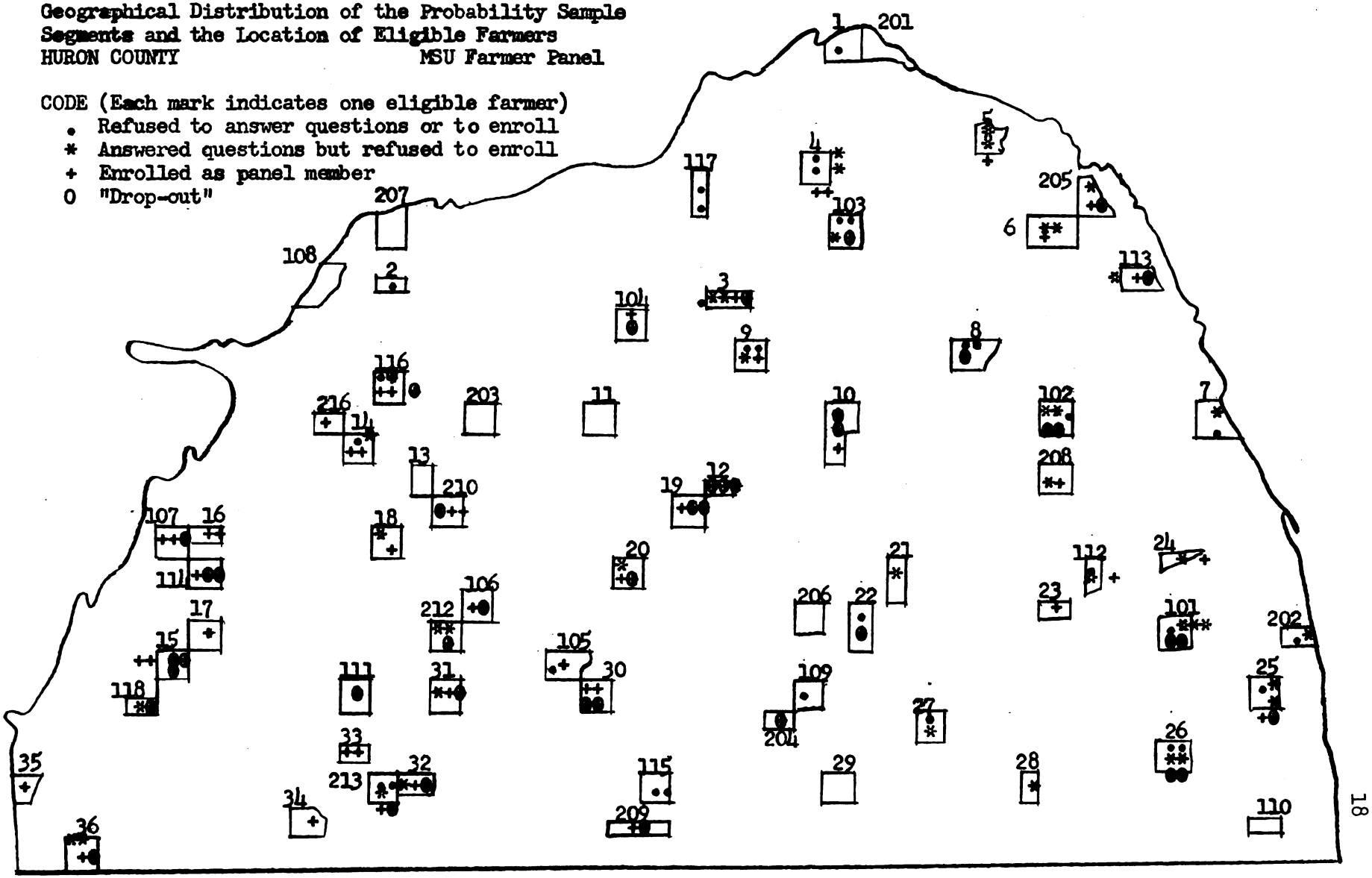
FIGURE 2-2

Geographical Distribution of the Probability Sample Segments and the Location of Eligible Farmers

HURON COUNTY MSU Farmer Panel

CODE (Each mark indicates one eligible farmer)

- . Refused to answer questions or to enroll
- * Answered questions but refused to enroll
- + Enrolled as panel member
- 0 "Drop-out"



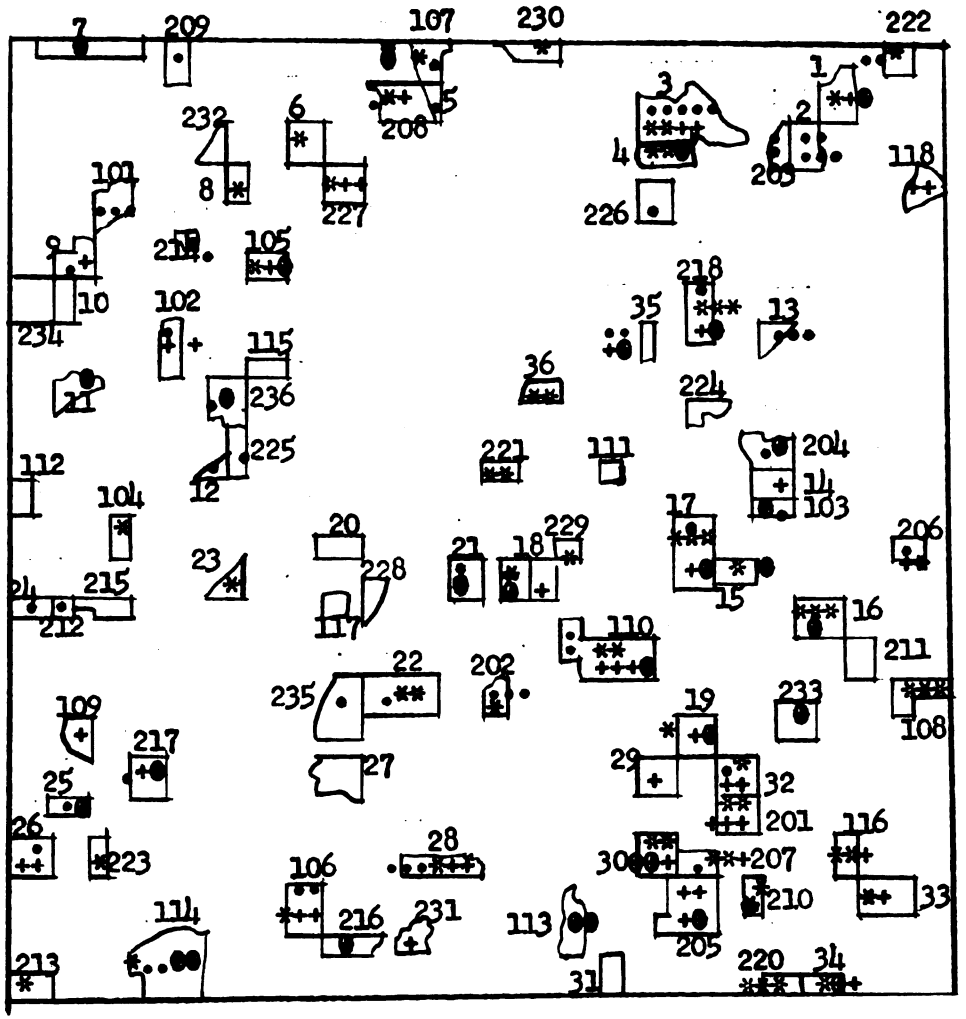


FIGURE 2-3

Geographical Distribution of the Probability Sample Segments and the Location of Eligible Farmers MSU Farmer Panel

KALAMAZOO COUNTY

CODE (Each mark indicates one eligible farmer)

- • Refused to answer questions or to enroll
- * Answered questions but refused to enroll
- + Enrolled as panel member
- 0 "Drop-out"

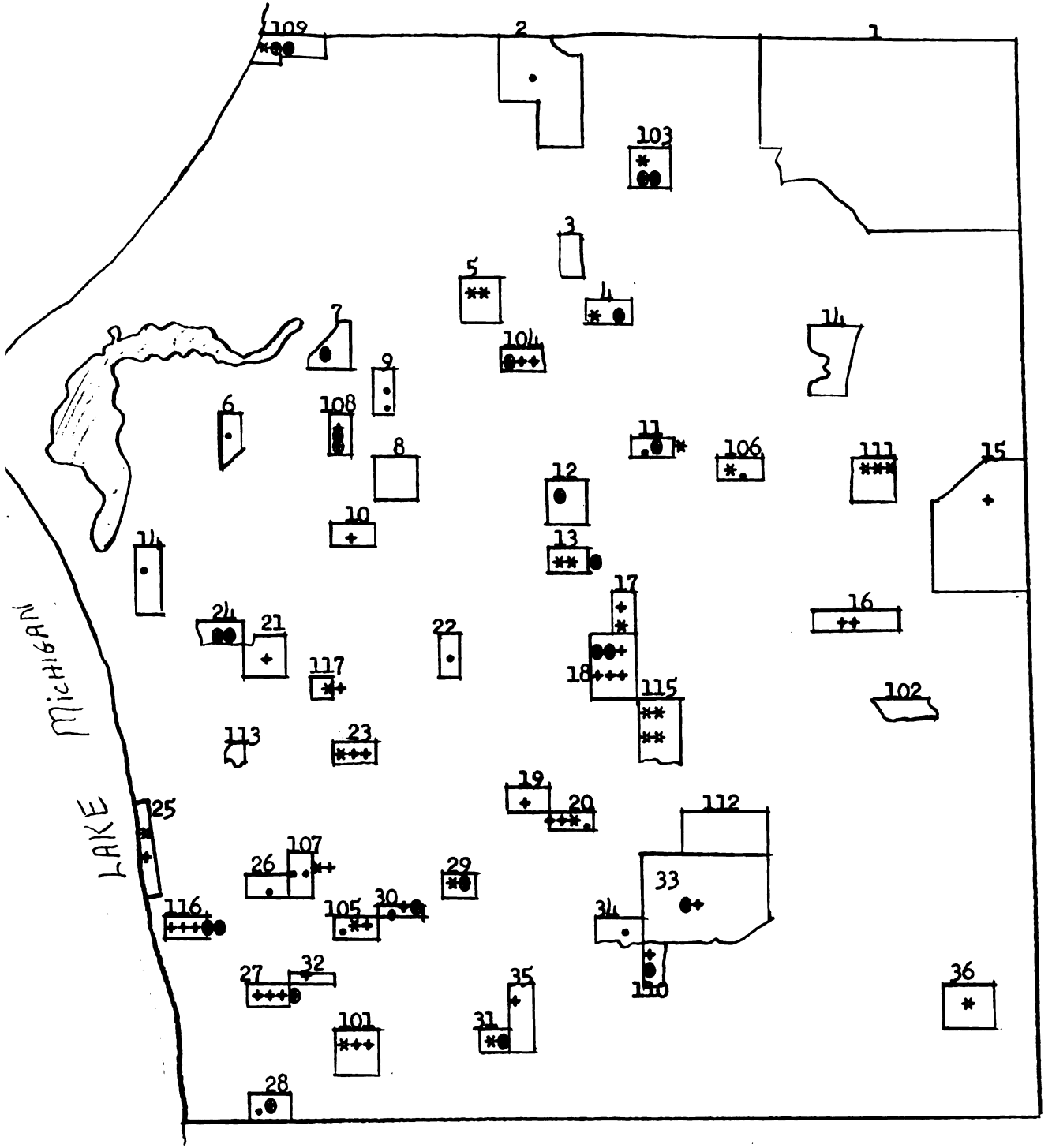


FIGURE 2-4

Geographical Distribution of the Probability Sample Segments and the Location of Eligible Farmers
MASON COUNTY MSU Farmer Panel

CODE (Each mark indicates one eligible farmer)

. Refused to answer questions or to enroll
* Answered questions but refused to enroll
+ Enrolled as panel member

0 "Drop-out"

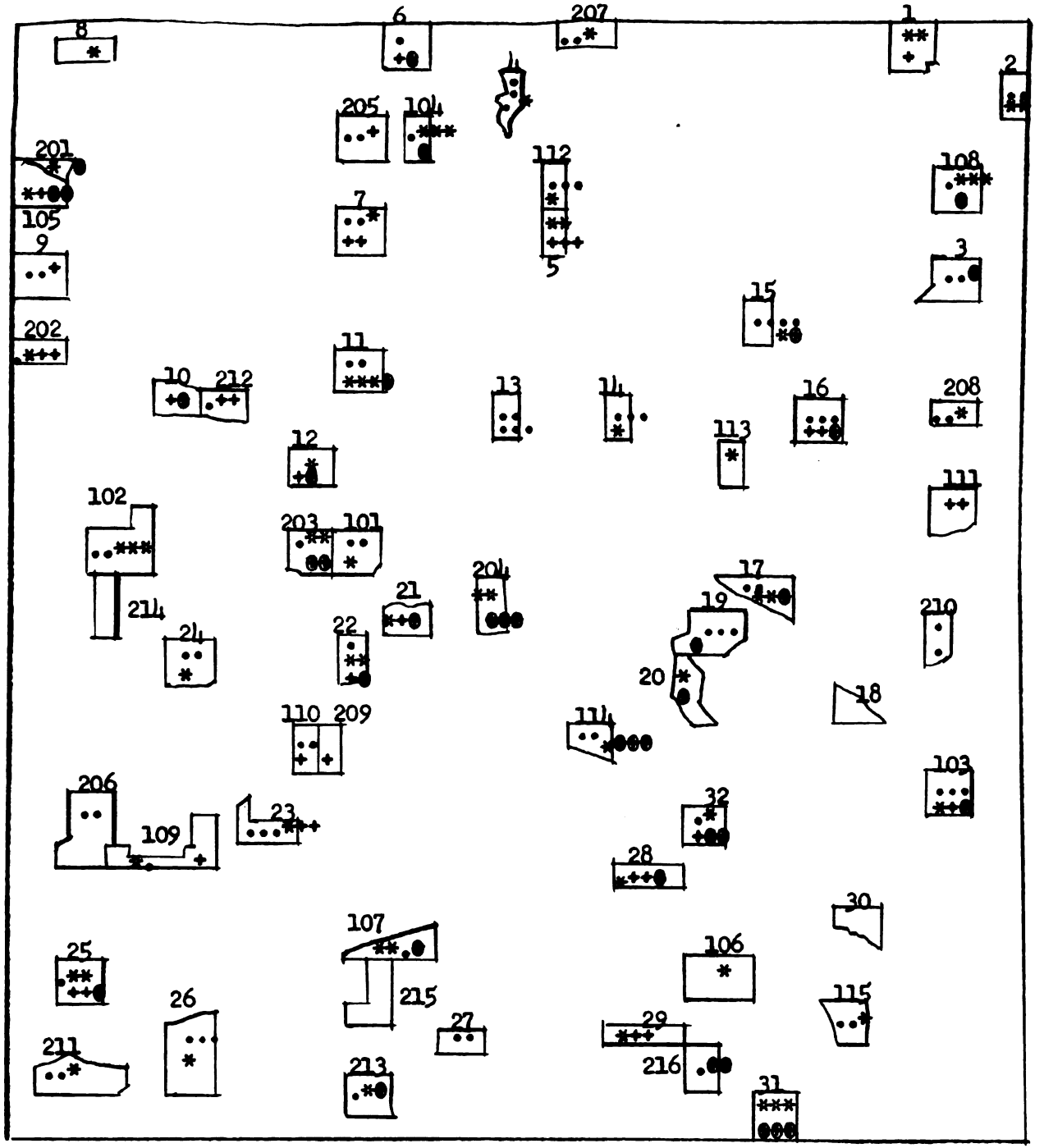


FIGURE 2-5

Geographical Distribution of the Probability Sample Segments and the Location of Eligible Farmers SHIAWASSEE COUNTY MSU Farmer Panel

CODE (Each mark indicates one eligible farmer)

- . Refused to answer questions or to enroll
- * Answered questions but refused to enroll
- + Enrolled as panel member

0 "Drop-out"

A primary drawing was made and the segments numbered 1-100 in which interviewing was done in any order. Assuming that all segments would be exhausted a secondary drawing was made and numbered 101-200. The quota was not fulfilled from the two drawings so a tertiary drawing was made and numbered 201-300. In the latter two drawings, numerical order of interviewing was not maintained.

The Panel Member. A farmer was eligible to be a member of the panel if he (1) sold over $250 worth of farm products in 1956, (2) farmed a place of 3 or more acres of land, (3) intended to farm in 1957, and (4) the farmer's bookkeeper lived in the designated segment.

For operational purposes these panel members became a part of the regular MSU Mail-In Farm Accounting Project. They were required to submit information as discussed above (Appendix E).

Selection and Training of Field Workers. The interviewers duties were such that he had the responsibility of interviewing and of salesmanship. His interviewing duties consisted of taking a survey schedule on every eligible farmer. His salesmanship duties required him to explain the accounting system, and if possible, enroll the farmer in the project for the complete year of 1957.

Interviewers were selected on the basis of farming background, academic training, general character and personality. The interviewers were given a one-day training session in which they were instructed as to the objectives of the project, the proper field procedure, and the proper way to act as a representative of Michigan State

University.[4] They were then sent out into Shiawassee County for a one day trial run in which they applied the principals taught the day before. The next half day was spent discussing the problems encountered in the field the previous day. The balance of the day was spent in packing and getting ready for the two weeks run in the field.

Field Work. The interviewers were given specific segments in which to work. They were to contact all residences in these segments, determine their eligibility and attempt to enroll them as a panel member. In the case where residents were not at home, three repeat calls were to be made.

The interviewers each received a map of the county in which they were to work with the segments marked. When they received an assigned segment, they were to drive directly to that segment, orient themselves, drive around the segment and indicate the location within the segment of all residences by drawing a map on their report. They were to arrange their material and then contact each resident in the segment.

After introducing themselves, they were to explain their purpose and fill out a brief field schedule (Appendix D). They were to obtain the name of the operator, age of operator, number of people living at the residence, age and relationship of persons living there, the tenure status of the operator, the size of farm, the sources of income and relative importance of each, the level of cash marketing for the farm,

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[4]Unpublished mimeograph, "Interviewer's Reference Manual for an Experiment Relating to the Possible Establishment of a Farmers' Continuous Reporting System of Income, Expenditures, and Related Data," Agricultural Economics Department, Michigan State University, 1956.

an estimate of the 1956 expenses for selected expense items and an indication of their investment intentions for the year 1957. Upon completing the questionnaire they were to explain the accounting system and attempt to enroll the farmer in the project.

Upon completing the interview and after leaving the farm they were to fill out the farm identification report (Appendix D) to establish a record of the residence number, name and address of operator, the date contacted, indicate whether the survey schedule was completed or not, indicate whether this unit visited was an "eligible" farm, and if so, was the farmer enrolled in the project. At the end of each day, the interviewer was to place in the mail a report (Appendix D) to the project leader indicating the county and segment number he worked in, the number of farms visited, the number of farm operators contacted, the schedules taken, the enrollments made that day and the enrollments to date along with the mileage covered. For the first few days information was telephoned into the project leader at the end of each day by one individual from the county.

CHAPTER III

PROBLEMS IN ESTABLISHING THE FARMER PANEL

Introduction

The purpose of this chapter is to indicate the experience gained and the problems encountered in establishing the experimental farmer panel. The following are considered:

(1) The number of farmers enrolled are compared to the number of contacts and eligible farmers.

(2) The interviewers' characteristics are compared to their performance record to see if a relationship exists.

(3) To determine the relationship, if any, between certain characteristics of the farmers contacted and their refusal to enroll, the enrolled groups and the non-cooperator groups are compared. Characteristics considered are age of operator, size of farm, tenure status of operator, type of farm and level of income. Chi-square tests are used to test the significance of the difference.

(4) The county agents contributions are discussed.

(5) The method of initially informing the farmer about the project is discussed, and other possible methods are considered.

Rate of Enrollment

The sample established an enrolled panel of 299 farmer members (Table III-1). The sixteen interviewers had made 1,728 farm calls of

which 1,257 were actual farmer contacts. Of the farmers contacted 678 were eligible; 190 refused to answer the questions on the schedule or to enroll; 189 answered questions but refused to enroll in the project.

Proportionally, 44 percent of the eligible farmers or 24 percent of the total farmers contacted were enrolled in the project.

TABLE III-1

ENROLLMENT RATE AND THE DEGREE OF PARTICIPATION OF FARMERS CONTACTED IN THE ESTABLISHMENT OF THE MSU FARMER PANEL
(December 1956)

County	Number of Farmers						Enrollment as Percent of	
	Calls Made	Contacted	Eligible	Refused[1]	Schedule[2]	Enrolled	Eligible	Contacts
Huron	317	261	159	30	129	90	57	34
Kalamazoo	631	424	198	61	137	75	38	17
Mason	324	224	103	15	88	60	58	27
Shiawassee	456	348	218	84	134	74	34	21
Total	1,728	1,257	678	190	488	299	44	24

[1]This group refused to answer schedule questions or to enroll.

[2]Answered schedule questions but refused to enroll.

More success in enrollment was experienced in Huron and Mason counties where alternatives other than agriculture are relatively few. A high refusal rate was experienced in Shiawassee and Kalamazoo counties where off-farm opportunities are more abundant.

The Field Worker

Rate of Enrollment. Sixteen interviewers worked in the field an average of nine days each (Table III-2). They made an average of 13.3 calls per day; 8.1 of these were actual face to face contacts. Of these 8.1 contacts, an average of 4.5 were eligible. Of the eligible, the interviewers obtained 3.1 survey schedules per day and enrolled an average of two panel members per day. The range of enrollment as a percentage of eligible contacts ranged from 88% for interviewer No. 16 down to 24% for interviewer No. 8. Interviewer No. 1 only worked one day and was not considered in this analysis. Seven of the interviewers enrolled more than 45% of the eligible contacts which they made.

Characteristics. Table III-3 shows the age of each interviewer, the number of years of schooling completed, major in college, the average grade, and an indication as to whether or not the interviewer had prior survey experience. All interviewers had prior farm background. Although no statistical tests were made to substantiate it, the hypothesis held on the basis of observation is that there was no causal relationship between the interviewer characteristics and the rate of enrollment or the rate of completion. The interviewers having a completion rate of 25% or over of the eligible farmers were of no special age group nor were they in the category of the higher years of completed education. Although all of the interviewers who had a grade average of over 3.0 had a relatively good completion record, there is no indication that this can be used as a sole criterion in selecting the interviewers. This study, although it cannot be considered as

TABLE III-2

AVERAGE DAILY PERFORMANCE OF INTERVIEWERS IN ESTABLISHING THE MSU FARMER PANEL
(December 11-27, 1956)

Interviewer Number	Counties[1] Worked	Days in Field		Daily[3] Calls	Daily[4] Contacts	Daily Eligible Contacts	Schedules[5] Taken	Daily Enrollment	
		Total[2]	Working					Total	Percent of Eligible
1	S	2	2	15.0	12.0	6.5	3.0	1.0	15
2	S, H	14	12	8.3	3.9	3.3	2.7	2.3	70
3	S, K	11	9	22.7	16.0	4.0	2.4	1.3	32
4	S, M	11	10	14.0	8.0	4.0	2.5	1.5	38
5	S	10	10	10.3	8.8	6.4	5.2	3.1	48
6	S, M	11	10	15.1	10.3	4.8	3.8	2.4	50
7	S	8	8	19.4	13.0	6.4	4.5	2.5	39
8	S, K	11	10	13.6	7.7	5.7	3.2	1.4	24
9	S	7	7	13.1	7.6	4.0	3.1	1.0	25
10	S, H	13	12	9.5	5.3	4.0	3.1	1.4	35
11	S, H	12	11	9.4	5.8	5.0	3.5	2.4	48
12	K	8	7	18.3	13.7	5.9	4.0	2.7	46
13	S, M	14	11	11.8	7.3	3.0	2.5	2.0	66
14	S, K	12	10	13.4	9.8	3.9	2.6	1.6	41
15	S, K	10	9	14.8	10.2	5.2	5.1	2.0	38
16	S, H	14	12	12.3	5.1	2.6	2.4	2.3	88
Average for all		10	9	13.3	8.1	4.5	3.1	2.0	44

[1]S=Shiawassee, H=Huron, M=Mason, K=Kalamazoo. Every interviewer worked one day in Shiawassee as a period of the training experience.

[2]Includes traveling time spent to and from the county.

[3]Includes calls whether anyone home or not.

[4]Represents face-to-face contact with someone at the farm but not necessarily the most appropriate person for the purpose of the call.

[5]See Appendix D for schedule.

TABLE III-3

INTERVIEWER CHARACTERISTICS AND THEIR FARMER ENROLLMENT RECORD IN ESTABLISHING THE MSU FARMER PANEL

Interviewer Number	Days In Field	Age Dec. '56	Years[1] Education Completed	College Major	All-[2] College Grades	Farm Background	Survey Experience	Farms Enrolled	Percent* Enrolled	Percent* Completed
1	2	21	15	Ag. Econ.	2.74	yes	yes	2[3]	15	7
2	12	27	15	Ag. Econ.	3.69	yes	no	28	70	42
3	9	27	14	Ag. Econ.	3.49	yes	no	12	32	19
4	10	28	14	Ag. Econ.	2.12	yes	no	17	38	25
5	10	37	15	Ag. Educ.	2.86	yes	no	31	48	26
6	10	22	16	Ag. Econ.	3.49	yes	no	24	50	35
7	8	31	16	Extension	3.19	yes	yes	21	39	22
8	10	20	14	Ag. Educ.	2.46	yes	no	15	24	16
9	7	26	15	Extension	2.82	yes	no	7	25	11
10	12	25	14	Ag. Econ.	2.42	yes	no	15	35	14
11	11	21	14	Ag. Econ.	2.08	yes	no	25	48	16
12	7	22	15	Extension	2.59	yes	no	19	46	31
13	11	30	18	Sociology	3.34	yes	yes	22	66	29
14	10	25	15	Ag. Econ.	2.19	yes	yes	14	41	23
15	9	21	14	Ag. Econ.	2.51	yes	no	20	38	17
16	12	22	14	Ag. Educ.	2.32	yes	yes	27	88	42

[1]For example, 14 would mean college sophomore year completed and was a junior December, 1956.

[2]Grade point as of Winter term, 1958, where A=4, B=3, C=2, D=1.

[3]This interviewer worked in field only two days.

*As a percent of eligible farms contacted.

conclusive, shows no relationship between rate of enrollment and prior survey experience.

Field Worker Technique. Field workers, in an attempt to sell the project to the farmer and to enroll him in the project, emphasized the following points.[1]

(1) It is an advantage and aid to the farmer in respect to bookkeeping, farm accounting and income tax purposes.

(2) In the long run you, the panel member, will benefit from the research which this data makes possible.

(3) This information is necessary so that your situation will be realistically represented in data used for agricultural policy decisions.

(4) Information will benefit all people, including you, the farmer, interested in descriptive statistics of agriculture.

(5) You are receiving something for nothing.

The interviewers indicated that approach numbers 1 and 3 were most successful. They were not successful when they used techniques bordering on high pressure salesmanship, nor when they tried to push the project on the farmer. When illustrations were used involving present agricultural programs they were often interpreted as taking sides on a political issue and were not successful.

Teamwork. In some counties the interviewers worked as a team, that is, they met each night after working in the field, discussed

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[1]Response of interviewer questionnaire (Appendix A).

their problems of the day, and made recommendations to each other on techniques that were successful and those that were not. This procedure seemed to give them a fresh start for the morning. In other counties they did not do this and the interviewers acted more on their own. Therefore, the question was asked the members (Question No. 11 of the questionnaire) how they operated, what way they thought was the best and why.

Most of them seemed to prefer the team approach, even those who operated on the "lone wolf" basis thought the team approach would be better. They seemed to feel that working as an individual during the day, coming back in the evening to discuss problems and plan as a team, and then working as an individual the next day, was the best method. This seemed to increase the esprit'-de-corps' of the team and to focus their attention more on the problems of others. This decreased their own personal problems and made the whole method of interviewing and selling the project more uniform.

The feeling taken from the interviewers' questionnaire seemed to be that in order to have success in interviewing and enrolling farmers and in not being too ill at ease in selling the project, the interviewer had to have a sound understanding of and appreciation for the farmer's situation.

The Field Worker--Student or Other. The census utilizes local people to interview for the census. Would other than students be more capable in enrolling farmers in this project? The county agents indicated that although someone within the county could do the enrollment work, college students would do better (Appendix B).

Characteristics of Cooperators and Non-Cooperators

To determine some of the problem areas of enrollment, the age of operator, tenure status, size of farm (acres), type of farm, and level of income were compared for the two groups. Chi-square tests of significance were computed for the latter two to test the significance of any difference in distribution.

For the farmers who refused to enroll (non-cooperators), the data are limited to those who consented to give information to the interviewer (Appendix D). In the same respect, it can not be determined which group represents the population of the county nor which group might cause a bias in the sample. The information here will only point out problem areas of enrollment.

In computing the chi-square tests actual number of farms in each category were used rather than percent figures as given in most tables.

Age of Operator. The average age of the farm operators who enrolled in the four counties was five to nine years younger than the average for the farmers who refused to enroll (Table III-4).

TABLE III-4

AVERAGE AGE OF COOPERATORS AND NON-COOPERATORS IN THE ESTABLISHING OF THE MSU FARMER PANEL
(December 1956)

County	Cooperator	Non-cooperator[1]
Huron	45	50[2]
Kalamazoo	45	54
Mason	49	54
Shiawassee	41	-

[1]Average for non-cooperators are for only those who completed the survey schedule.
[2]Average computed for 80 farms.

As data were incomplete for the Shiawassee County non-cooperators, no computation was made for them.

Tenure Status. A farmer was classified as an owner operator when he owned over one-half of the land that he operated. On the average a larger percent were owner operators in the enrolled group (Table III-5). It is the author's opinion that this difference is not important in that it would not bias the financial information collected. A probability sample of this type, however, could and should show the tenure status of the area and the trend in tenure over time.

TABLE III-5

PERCENT OF OWNER-OPERATORS IN EACH GROUP* INVOLVED IN ESTABLISHING THE MSU FARMER PANEL
(December 1956)

County	Cooperators	Non-cooperators
Huron	79	75
Kalamazoo	78	68
Mason	98	93
Shiawassee	82	78

*See Table III-1 for number of farms.

Size of Farm. The average size of the farm was larger in respect to total acreage and tillable acreage for the enrolled farms in all four counties (Table III-6). Chi-square tests did not show this difference to be significant except in Shiawassee county, where there was an evident tendency for smaller farmers to refuse to enroll.

TABLE III-6

RELATIVE FREQUENCY DISTRIBUTION BY SIZE OF FARM IN THE NON-COOPERATOR AND ENROLLED GROUPS

	Huron		Kalamazoo		Mason		Shiawassee	
	Non-Cooperator	En-rolled	Non-Cooperator	En-rolled	Non-Cooperator	En-rolled	Non-Cooperator	En-rolled
Number of Farms--	39	90	62	75	28	60	60	74
Average Size								
Total acres	123	159	123	165	109	126	98	161
Till. acreage	98	129	94	128	70	90	72	130
Total Acres--percent of total farms								
0 - 59	9	14	37	28	24	23	32	13
60 - 119	44	36	25	29	35	52	32	44
120 - 179	28	29	17	19	28	15	26	22
180 - 299	19	16	11	15	10	10	10	13
300 - 599	0	5	10	9	3	0	0	8
Chi-square[1]	1.2649		1.3308		3.1286		9.7705*	
df	3		4		3		3	

[1]Actual number of farms used in computation.

*Significantly different at the 10 percent level.

Type of Farm. Farmers interviewed indicated the relative amount of income which they received from different sources. Farms were classified as follows:

(1) Part-time--over 50 percent of total income from off-farm sources.

(2) Dairy--over 50 percent of total income from the sale of dairy products and dairy cattle.

(3) Livestock--over 50 percent of total income from the sale of livestock (i.e., beef, sheep, hogs).

(4) Poultry--over 50 percent of total income from the sale of poultry and poultry products.

(5) Grain, etc.--over 50 percent of total income from the sale of grain, vegetables, fruits or nuts.

(6) General--50 percent or less of the total income from any one of the above sources.

Chi-square tests showed a significant difference in distribution in only Shiawassee County. In Shiawassee County, farms with a larger share of off-farm income were less inclined to enroll. There was no significant difference apparent in the other three counties (Table III-7).

Level of Income. Farmers interviewed indicated the dollar volume of farm products sold for 1956 (exclusive of off-farm income) by economic class.

The distribution in each county was significantly different at the 10 percent level in all counties (Table III-8). Observation of the relative frequency distribution indicates that a problem existed in enrolling farmers in economic class VI ($0-1199).

TABLE III-7

RELATIVE FREQUENCY DISTRIBUTION BY TYPE OF FARM
FOR THE ENROLLED AND NON-COOPERATOR GROUPS
1956 INCOME

	Huron		Kalamazoo		Mason		Shiawassee	
	Non-Cooperator	En-rolled	Non-Cooperator	En-rolled	Non-Cooperator	En-rolled	Non-Cooperator	En-rolled
Number of Farms--	37	88	66	71	29	59	61	73
Type of farm*--percent of total farms								
Part-time	22	18	38	31	31	32	41	33
Dairy	16	16	20	24	40	29	10	31
Livestock	0	5	2	6	3	8	2	3
Poultry	0	0	0	4	3	0	2	0
Grain, etc.	35	40	19	13	14	22	25	10
General	27	21	21	22	7	9	20	23
Chi-square[1]	.8842		1.5354		.5664		12.5033[2]	
df	3		3		2		3	

*A farm was classified by type when over 50 percent of the total farmers income came from any one source. All other farms were classified as general farms.

[1]Actual number of farms used in computation.

[2]Significantly different at the 10 percent level.

TABLE III-8

RELATIVE FREQUENCY DISTRIBUTION BY LEVEL OF INCOME IN THE NON-COOPERATOR AND ENROLLED GROUPS
1956 INCOME

	Huron		Kalamazoo		Mason		Shiawassee	
	Non-Cooperator	En-rolled	Non-Cooperator	En-rolled	Non-Cooperator	En-rolled	Non-Cooperator	En-rolled
Number of Farms--	44	90	69	75	29	60	73	74
Level of Income--percent of total farms								
$0- 1,199	34	18	40	25	41	22	38	17
1,200- 9,999	46	67	48	52	48	57	41	60
10,000-24,999	9	14	6	13	4	17	4	19
25,000- +	2	1	0	3	4	3	0	0
Refused to Ans.	9	0	6	7	3	1	17	4
Chi-square test[1]	4.811*		6.047*		5.120*		14.580*	
df	2		2		2		2	

[1]Actual number of farms used in computation.

*Significantly different at the 10 percent level.

Reasons for Refusing to Enroll

Interviewers were asked to indicate on their farm identification report (Appendix D), reasons as to why an eligible farmer refused to enroll in the project. In each county the most predominant reason given for not enrolling in the project was as follows (Table III-9):

(1) Mason County--"poor health"

(2) Kalamazoo County--"going out of farming"

(3) Shiawassee County--"thinks business too small"

(4) Huron County--"inappropriate bookkeeping system"

The "poor health" reason given is consistent with the high mean age of the non-cooperators in Mason County. "Thinks business too small," it should be noted, is a reason given by the farmers and not by the interviewers. This latter reason was fairly predominant in both Shiawassee and Kalamazoo counties which are composed of a large number of part-time smaller farmers.

Since there was a high percent of "Reasons not given," the interviewers were asked (Appendix A) to rank according to importance what they thought were the most important reasons stated or implied that certain farmers refused to enroll. Although there was no consistent ranking, the computed ranking showed "afraid of how records will be used" as the most important reason (Table III-10).

This latter reason along with the ones "afraid of government" and "afraid to try something new" are added to the predominant reasons given by farmers.

The reasons given indicate only one consistent pattern and that is one of uncertainty. These uncertainties would have to be overcome to

TABLE III-9

FARMERS' REASONS FOR NOT ENROLLING IN MSU FARMER PANEL
(December 1956)

	Shiawassee		Huron		Kalamazoo		Mason	
Farms eligible--	218		159		198		103	
Farms enrolled--	74		90		75		60	
Eligible not enrolled--	144		69		123		43	
Reasons for not enrolling	Number	Percent	Number	Percent	Number	Percent	Number	Percent
"Going out of farming"	10	7	3	4	17	14	4	9
"Inappropriate system"	2	1	8	12	3	2	0	0
"Prefers own books"	4	3	0	0	0	0	0	0
"Thinks business too small"	13	9	2	3	6	5	0	0
"Afraid of the government"	3	2	0	0	0	0	3	7
"Afraid of how records will be used"	2	1	1	1	2	2	0	0
"Poor health"	3	2	0	0	6	5	6	14
"Can't understand English"	0	0	0	0	2	2	0	0
"retiring soon"	9	6	4	6	6	5	2	5
Reasons not given	98	69	51	74	81	65	28	65

TABLE III-10

INTERVIEWERS ORDERING OF IMPORTANCE OF REASONS NOT GIVEN
(January 1958)

Rank	Reason	Rank Score*
1.	Afraid of how records will be used	86
2.	Going out of farming	84
3.	Afraid of government	82
4.	Prefers own books	82
5.	Business too small	80
6.	Afraid to try something new	69
7.	Inappropriate system	29
8.	Doesn't want responsibility	16
9.	Too much bother	13
10.	Closed mouth attitude	7
11.	Farm in soil bank	4
12.	Doesn't keep records and won't	2
13.	Fear of MSU representative	1

*Based on judgment of 16 interviewers where first was weighted 8, second 7, etc.

enroll the non-cooperative members in the project. To accomplish this would probably entail an increase in time and cost per farm enrolled.

The County Agents Role

The county agents at the onset were in favor of the project and agreed with the need for it and it's objectives (Appendix B). Prior to operating in counties, permission was asked of the county agents. They were asked to participate in the establishment if they so desired. However, a deliberate attempt was made to not require their participation nor put any responsibility on their position. The success or failure of the project then can not be attributed to the county agents. None of the agents spent more than one day assisting in establishment.

Advertising the Project

As this project was set up there was no advance notice given to the people selected as panel members. In most cases the farmers interviewed had no prior notice or knowledge of this project.

All but two of the interviewers (Appendix A) thought they would have had more success had the farmers had prior knowledge of their call. They felt too much time was taken in simply explaining who they were and what they were doing there. This might, or might not, have hindered enrollment. Two interviewers felt that they would have had less success had the farmers had prior warning. They gave as their reasons: (1) "good salesmanship cannot have a substitute," (2) if they had had time to discuss the project they might have tended to shy away from it and make prior decisions concerning the project. The interviewers who thought they might have had more success if the farmers had had prior information as to the object of the project gave as their reasons: (1) the farmers wanted more time to consider the whole project before committing themselves, (2) and they did not like to take the word of the interviewer alone for the advantages of the project.

One interviewer ran into the situation where the people in some of the segments which he interviewed did have prior knowledge concerning the project and had discussed the program in their Farm Bureau meetings. These people were much easier to talk to and much easier to enroll. Of course, this is as a result of the organization accepting the project. If the organization had rejected the project the opposite would have been true.

Several interviewers seemed to think that the lack of advance notice was the big stumbling block. Farmers are not quick to make decisions of this sort and perhaps, therefore, need a little more time than the one interview for considering enrollment in such a long-term project. One interviewer stated, "Selling the program is a minor problem. Making them believe you are actually who you are and not a book salesman, . . . is the greatest problem."

The county agents were asked, "Would prior warning help enrollment?" (Appendix B). Three of the county agents indicated that this would help enrollment. When asked what type of forewarning they would use, one indicated letter and two indicated newspaper advertisement. The interviewers seemed to think that contacts through the county agent by way of farm organizations would be the most effective.

Summary

The original assumption of a 50 percent enrollment rate was too optimistic in that only 44 percent[2] of the eligible farmers contacted were enrolled in the project.

Although no statistical tests were made to substantiate it, an observable relationship between the characteristics of the interviewers and their performance was not evident. Hence, an interviewer, with the intelligence of an average college senior or above, with a pleasing personality, and an understanding of the farmers situation, can adequately interview and enroll in establishing a farmer panel.

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[2]Subsequently it was discovered that 27 percent of these farms made no response. Hence, were not technically enrolled.

The above analysis indicates that problems are associated with the following:

(1) Smaller size farms,

(2) Older operators,

(3) Part-time farmers, and

(4) Low income farmers (Economic Class VI) are less inclined to enroll in the project.

(5) The uncertainty about the whole project as indicated by many of the ones who refused to enroll is a problem area.

(6) Forewarning as to the objectives and needs of the project as well as to the interviewers call might have increased enrollment--mainly by reducing uncertainty as in (5) above.

Significance tests on data indicate that no problem existed as to type of farm. However, there was a significant difference in the two groups as to income level in all four counties.

CHAPTER IV

REPRESENTATIVENESS OF THE PANEL

Introduction

In studying the representativeness of this panel the following were cited as relevant questions.

(1) Was the group of total eligible farms representative of the population?

(2) Was the group of refusals with schedules representative of the population?

(3) Was the group of refusals with schedules representative of all refusals?

(4) Was the group of enrolled farms representative of the population?

(5) Was the group that completed representative of the population?

(6) What was the relative sampling and response error?

A discussion will be presented concerning the sampling and response error and the accuracy of reporting. In Chapter III it was shown that the non-cooperator and enrolled groups were significantly different in respect to certain characteristics.[1] Since no information was available concerning the farmers who refused to answer the survey questions and the above difference existed, the answers to the first three questions were not determinate with the existing data.

An attempt will be made in this chapter to answer (4) and (5).

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[1]Refer to Chapter III summary for details.

The census figures for the year 1954 are used as the best available estimate of the population in the studied counties.[2] A comparison is made to test the hypothesis that the enrolled group and the completed group are representative of the population (total farms in the county as defined by the census). The enrolled and completed groups are compared directly in the next chapter.

Keep in mind that the census data were taken in 1955 covering the 1954 situation and the information concerning the panel was collected in 1956. Although no adjustment is made here, it is obvious that some change took place during the interim period. No trend adjustment was made because it was felt that the small change would not bias the study.

The criticisms of Olson concerning census data are worth noting:

> 1. Census figures are averages for size of income classes by geographic areas. Within each area considerable variation exists; therefore, the size class figures are averages for farms that not only differ in type of organization but which also operate at various positions on their average cost curves. 2. Classification of farms on the basis of gross sales as reported by the census tends to place in larger sized groups, farms with higher yields but otherwise similar to farms with low yields and classified in the smaller sized group. Also farms having larger sales from inventories tend to fall in higher income classes and similar farms with smaller sales from inventories. 3. As Stigler has pointed out the "regression fallacy" is involved in the procedure used in this study. He illustrated that the same kind of data and procedures could yield opposite conclusions if farms were classified on the basis of number of workers instead of on the basis of sales per farm. His criticism is valid for much of the cross tabulation that has been done in farm managment.[3]

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[2]Bureau of the Census, "A Statistical Abstract Supplement—County and City Data, Michigan 1954," U. S. Government Printing Office, Washington, D. C., 1956.

[3]Russell O. Olson, "Review and Appraisal of Methods Used in Studying Farm Size," Resource Productivity, Returns to Scale and Farm Size, edited by E. O. Heady, G. L. Johnson, L. S. Harsin, Iowa State College Press, 1956, p. 55.

Rate of Completion

Of the 299 farmers enrolled in the project, 217 actually started by submitting the first report (Table IV-1). One hundred and sixty-one completed the project by submitting records on income and expenditure for the complete year of 1957.

TABLE IV-1

NUMBER OF FARMERS STARTING AND COMPLETING AS MEMBERS OF THE MSU FARMER PANEL (1957)

	Huron	Kalamazoo	Mason	Shiawassee	Total
Number of Farms Enrolled	90	75	60	74	299
Number of Farms Submitting 1 or more reports	56	61	46	54	217
*Submitting 12 reports	44	45	35	37	161

*This is the completed group of the panel.

Twenty-seven percent of the farmers enrolled made no response. Fifty-four percent of those enrolled completed the project. Of the eligible farms, twenty-four percent completed (Table IV-2).

Representativeness by Selected Characteristics

Representativeness is important in making certain types of estimates concerning the population being sampled. The representativeness of the MSU Farmer Panel was studied in terms of the age of operator, size of farm, tenure status, type of farm, and level of income. They were not necessarily listed in the order of importance or was any one considered more important than the others.

TABLE IV-2

RATE OF COMPLETION IN THE MSU FARMER PANEL
(1957)

	Completion as a Percent of	
	Eligible Farms	Enrolled Farms
Huron	28	49
Kalamazoo	23	60
Mason	34	58
Shiawassee	17	50
Total	24	54

For a measure of representativeness, the characteristics of the panel members were compared directly to the 1954 census data. Chi-square tests were made to indicate the significance of the difference between the census and enrolled group and the census and completed group as separate comparisons. The 10 percent level was arbitrarily selected to test the significance of the difference. The appropriate level of significance might vary above or below this level depending on the purpose and use of the data collected.

Age Distribution. The only available census comparison for age distribution was for the whole state of Michigan. The enrolled group was significantly different than the census group in Huron, Kalamazoo, and Shiawassee counties. Dropout changed the distribution so that only Mason and Shiawassee were significantly different upon completion (Table IV-3).

TABLE IV-3

RELATIVE FREQUENCY DISTRIBUTION BY AGE OF OPERATOR IN THE CENSUS AND THE ENROLLED AND COMPLETED GROUPS OF THE MSU FARMER PANEL

	Michigan Census 1954	Huron		Kalamazoo		Mason		Shiawassee	
		En-rolled	Com-pleted	En-rolled	Com-pleted	En-rolled	Com-pleted	En-rolled	Com-pleted
Number of farms	146,888	90	44	75	45	60	35	74	37
Age of Operator - percent of total farms									
20 - 34	13	22	18	19	18	15	28	19	24
35 - 49	35	36	34	45	40	34	36	36	33
50 - 64	34	23	32	24	33	34	16	9	3
65 +	18	8	9	12	9	17	20	5	3
Unknown		11	7					31	37
Mean Age	50.4	45	47	45	47	49	48	41	38
Chi-square test[1]		16.362*	2.925	10.444*	3.463	.5454	10.805*	23.008*	23.872*
df		3	3	3	3	3	3	3	3

[1]Actual number of farms used in computation--each column is compared to the census.

*Significantly different from the census at the 10 percent level.

The value of the comparison is doubtful in Huron and Kalamazoo Counties because of the large number of unknown ages. Also since the census data are for Michigan and not for the individual counties, some variation is expected.

Size of Farm. The average size of farms for the sample was larger than for census farms. The relative distribution was significantly different for both the enrolled and completed group in all counties except Mason (Table IV-4).

Tenure Status. The enrolled and the completed groups when compared to census figures show a bias in favor of tenant operators. Mason and Shiawassee show very little relative difference (Table IV-5).

It is believed that a sampling error here will not seriously affect the information collected other than as to the degree of tenancy.

Type of Farm. The panel farms were classified by type of farm in a manner similar to the census (See Type of Farm--Chapter III).

No significant difference was found between the enrolled and completed group when compared to the census except in the Mason County enrolled group. Dropout changed the distribution so that the completed group was closer to the census distribution (Table IV-6).

It is evident that this type of panel could be established representative of the population in terms of type of farm with very little difficulty.

Level of Income. In all cases the panel is composed of a larger percent of Economic Class VI farms than the census. The sample drawn

TABLE IV-4

RELATIVE FREQUENCY DISTRIBUTION BY SIZE OF FARM IN THE CENSUS AND THE ENROLLED AND COMPLETED GROUP OF THE MSU FARMER PANEL

	Huron			Kalamazoo			Mason			Shiawassee		
	1954 Census	En-rolled	Com-pleted	1954 Census	En-rolled	Com-pleted	1954 Census	En-rolled	Com-pleted	1954 Census	En-rolled	Com-pleted
Number of farms	3,524	88	43	2,265	75	45	1,377	60	35	2,539	72	37
Total acreage - percent of total farms.												
Under 10 A.	3	1		11	4	4	3	2	3	4	1	
10 - 29	3	7	9	14	7	7	5	3	5	9		
30 - 49	7	1		14	12	18	15	7	5	12	3	3
50 - 69	5	25	24	7	14	7	8	3	3	8	8	
70 - 99	20	14	9	15	12	9	25	23	17	19	23	24
100 - 139	21	20	30	11	16	18	17	25	26	15	19	30
140 - 179	17	11	8	9	13	11	11	22	20	12	20	24
180 - 219	10	12	16	5	9	11	6	5	6	7	3	3
220 - 259	6	7	4	4	7	9	5	5	6	5	7	8
260 - 499	7	2		8	12	2	4	5	9	8	15	5
500 - 999	1			2	4	4	1			1	1	3
Average Acreage	136	159	152	114	165	153	117	126	135	119	161	150
Chi-square test[1]		19.205*	15.314*		18.291*	12.844*		13.413*	8.652		23.507*	14.276*
df		6	6		8	8		5	5		6	4

[1]Actual number of farms used in computation.

*Significantly different at the 10 percent level of significance.

TABLE IV-5

TENANTS AS A PERCENT OF TOTAL OPERATORS IN THE CENSUS, ENROLLED, AND COMPLETED GROUPS OF THE MSU FARMER PANEL

County	1954 Census	Enrolled	Completed
Huron	11.0	21	21
Kalamazoo	7.7	22	20
Mason	3.8	2	3
Shiawassee	10.1	11	17

indicates a larger percent of Economic Class I farms in two counties, Kalamazoo and Shiawassee. The distribution was significantly different from the census in all cases except in the completed group comparison in Shiawassee County (Table IV-7).

The sample is composed of a larger percentage of lower income farms than the census would indicate for the population. Considering that in the previous chapter low income farms were considered to be difficult to enroll, there appears to be an inconsistency in our study. It should be noted that the completed group distribution is more similar to the census than the enrolled group in all but Kalamazoo County.

The Kalamazoo County agent stated that the sample was composed of too many low income farmers. This seems to verify his claim.

Since the low income farmers seem to be a problem area in enrollment and in representativeness, what would happen to the representativeness if the population were redefined to exclude the $0-1199 group? Bachman[4] indicated that the need for data from this group is different

[4]K. L. Bachman, "Discussion: Better Basic Data for Agriculture," Journal of Farm Economics, Vol. XL, May 1958.

TABLE IV-6

RELATIVE FREQUENCY DISTRIBUTION BY TYPE OF FARM IN THE CENSUS AND THE ENROLLED AND COMPLETED GROUPS OF THE MSU FARMER PANEL[2]

	Huron			Kalamazoo			Mason			Shiawassee		
	Census	En-rolled	Com-pleted	Census	En-rolled	Com-pleted	Census	En-rolled	Com-pleted	Census	En-rolled	Com-pleted
Number of Farms	3,238	89	44	1,368	68	43	927	58	34	1,981	70	35
Type of Farm--percent of total farms												
Dairy	19	22	27	24	28	28	58	45	41	38	49	49
Livestock	6	6	5	17	15	11	5	10	9	7	7	3
Poultry	1	0	0	7	9	7	4	2	0	2	3	5
Grain, etc.	53	57	52	40	35	42	24	38	41	40	28	26
General	21	15	16	12	13	14	9	5	9	13	13	17
Chi-square test[1]		3.255	2.913		1.764	0.664		7.968*	5.784		4.625	3.542
df		3	3		4	3		3	3		3	3

[1]Actual numbers of farms used in computation.

[2]Farms classified by census definition.

*Significantly different at the 10 percent level.

TABLE IV-7

RELATIVE FREQUENCY DISTRIBUTION BY LEVEL OF INCOME IN THE CENSUS AND THE ENROLLED AND COMPLETED GROUPS OF THE MSU FARMER PANEL

	Huron			Kalamazoo			Mason			Shiawassee		
	Census	En-rolled	Com-pleted	Census	En-rolled	Com-pleted	Census	En-rolled	Com-pleted	Census	En-rolled	Com-pleted
Number of farms	3,238	90	44	1,478	75	45	942	60	35	1,986	74	35
Level of Income--percent of total farms												
25,000 +	1	1	0	4	3	5	3	4	6	1	3	7
10,000 - 24,999	16	14	8	16	14	14	7	17	23	15	14	11
1,200 - 9,999	78	67	68	72	56	52	73	57	60	79	62	71
0 - 1,199	15	18	14	8	27	29	17	22	11	5	21	11
Chi-square test[1]		28.839*	6.987*		34.478*	27.252*		9.809*	12.130*		32.794*	2.436
df		2	2		2	2		2	2		2	2

[1]Actual number of farms used in computation.

*Significantly different at the 10 percent level.

than for the commercial farms of over $1200. He suggests that the low production, low income farms and large to medium commercial farms be carried separately and that the information collected be tailored to fit data requirements.

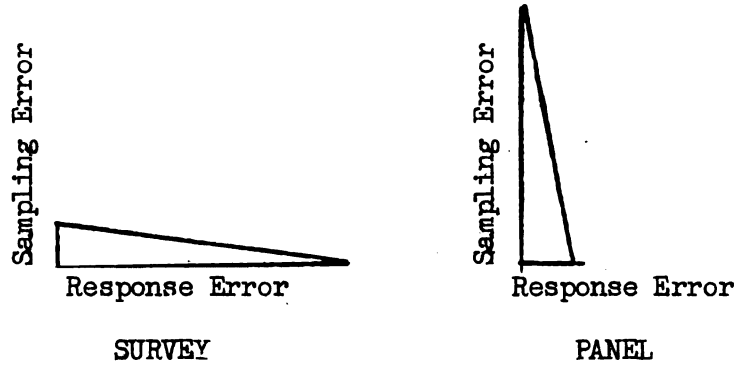
If the low income ($0-1199) farms were dropped from our comparison, the remaining distribution is similar to the census (Table IV-8).

Sampling and Response Error

Assuming that the sampling error is small and the response error large for surveys in general, the total relative error can be indicated by the hypotenuse of a triangle (Figure 4-1).

Figure 4-1

Relative Total Error of Survey and Panel Compared as a Result of Sampling and Response Error—An Estimate



Prior findings herein indicate that the sampling error of this panel is large. It is assumed since the farmers report actual figures, not estimated, that the response error is small.

The hypothesis that the response error is small suggests that, despite the large sampling error, the panel system could provide data at least as useful as that from surveys.

TABLE IV-8

RELATIVE FREQUENCY DISTRIBUTION BY LEVEL OF INCOME (OMITTING ECONOMIC CLASS VI) IN THE CENSUS AND THE COMPLETED GROUP OF THE MSU FARMER PANEL

	Huron		Kalamazoo		Mason		Shiawassee	
	Census	Completed	Census	Completed	Census	Completed	Census	Completed
Number of Farms	3,078	38	1,368	32	782	31	1,876	31
Level of Income--percent of total farms								
25,000 - +	1	0	5	7	4	7	1	8
10,000 - 24,999	17	11	17	20	8	26	15	12
1,200 - 9,999	82	89	78	73	88	67	84	80
Chi-square test[1]	0.169		0.191		10.743*		0.207	
df	2		2		2		2	

[1]Actual number of farms used in computation.

*Significantly different at the 10 percent level.

Reporting Bias of Panel

The reporting bias of a panel, reporting actual income and expenditures, may be in only one direction. Certain farmers will by choice or by neglect fail to report all of their transactions. Very seldom will anyone report more income or more expenses than actually occurs. There is the possibility then that actual transaction data collected from a panel will be biased in the negative direction. It is believed that this reporting error is small. However, more research needs to be done to determine a cardinal estimate of this error.

Summary

In this chapter the hypothesis that the panel enrolled and completed was representative of the agriculture in the respective counties was tested. Assuming that the 10 percent level of significance using chi-square tests is indicative of the possibility of the sample coming from the same population as the census of 1954 the following areas appear to be representative:

(1) The type of farm in all cases but one (the enrolled group in Mason County was significantly different) was representative.

(2) The level of income, when Economic Class VI farms were omitted, was representative of the population. (Only Mason County comparison was significantly different.)

The panel appeared to be non-representative of the population in the areas of:

(1) Distribution by age of operator (in Huron and Kalamazoo Counties the completed groups were not significantly different from the census group),

(2) Distribution by size of farm,

(3) Tenure status, and

(4) When all income groups are considered the level of income.

The significant difference between the panel and the census indicates that it is difficult to establish a representative panel. This does not exclude the usefulness of this data for other purposes at which the 10 percent level of significance is not important.

Assuming conditions similar to those in the experiment, the sampling error of a panel is quite large. However, if the response bias is quite small the net error is possibly comparable to that of a survey.

For mechanical reasons it is assumed that the response error will be only in a negative direction—(i.e., that of under-reporting). It is believed that this error is quite small but more research needs to be done in this latter area before a definite statement can be made.

CHAPTER V

MAINTAINING THE FARMER PANEL

Introduction

Forty-six percent of the farmers who enrolled in the panel failed to mail in twelve monthly reports. Why did these panel members not fulfill the necessary requirements?

What are the problems of maintaining a continuously reporting panel? What are the characteristics of the "drop-outs"? Would the farmers who did complete be willing to continue for another year?

In an attempt to answer these questions, the following areas have been studied.

(1) The drop-out rate.

(2) The follow-up program.

(3) The county agent's role.

(4) Selected variables as they are related to drop-outs, such as: The interviewer, age of operator, size of farm, type of farm and level of income.

(5) Reasons given by farmers for not completing.

(6) Attitude of farmers who completed.

(7) The problem of communication.

It should be remembered that this panel was operated as a sub-sample of the regular MSU Mail-In Account Project (the latter with

membership on a voluntary basis) and received no special attention other than the one follow-up discussed later in this chapter.

"Drop-Out" Rate

"Drop-outs" are those who enrolled but failed to submit a complete series of twelve monthly reports. One hundred thirty-eight farmers were of this category. Of these, fifty-nine percent failed to submit even the first report. Although they accepted the proper forms and told the interviewer, either implicitly or explicitly, that they would become a member, they in actuality, did not even start the project. Of the other 41 percent of the non-completing members, 20 percent of them mailed in one to three reports, 14 percent mailed in from four to six reports and seven percent mailed in seven to eleven reports.

In Huron County 74 percent of the non-completing members submitted no report. It is possible in this county that a large number of the people who accepted the book had no intention of actually becoming a member of the project. In Chapter III is was noted that Huron County had one of the largest enrollment rates. This was counteracted by the large drop-out rate.

Perhaps an increase in enrollment rate by various means would only result in an increased drop-out rate.

The "Follow-Up"

Ellywn Stoddard, a graduate student in the Sociology Department who was also a member of the original interviewing team, was hired during the spring of 1957 to go into the field in an attempt to obtain better rapport. In addition he attempted to obtain reasons why these people

TABLE V-1

NUMBER OF "DROP-OUTS" AND EXTENT OF PARTICIPATION IN THE MSU FARMER PANEL

	Huron	Kalamazoo	Mason	Shiawassee	Total
Number of incomplete records	46	30	25	37	138
Percent "drop-outs"	51	40	42	50	46
Percent of incompletes submitting no reports	74	47	56	54	59
Percent of incompletes submitting 1-3 reports	10	23	12	35	20
Percent of incompletes submitting 4-6 reports	9	23	20	8	14
Percent of incompletes submitting 7-11 reports	7	7	12	3	7

failed to report. The reasons which he obtained will be given later in this chapter.

This follow-up work was conducted mainly in Shiawassee County with some work being done in the other three counties. He assisted many farmers in filling out their first three monthly reports. Very few of these submitted reports after his visit.

There is no indication that the follow-up decreased the number of incompletions to any substantial extent.

County Agent's Role

In Kalamazoo County the assistant county agent spent approximately 36 days during the year 1957 in explaining and maintaining the original sample (Appendix B). The county agents in the other counties spent from two and one-half to eight days each.

It is the author's belief that this is the reason for the lower drop-out rate in Kalamazoo County and for the more even distribution in the percentage figures as to the extent of participation (Table V-1). It is important to note here that although this county agent spent over four times as much time as any other county agent, the drop-out rate is only two percent less than Mason County and only 10 percent less than the other counties.

The county agents felt that the drop-out rate could have been reduced by making the tabulated report (coding classification) more nearly fit the income tax report. This is being changed in the 1958 Mail-In Account Project.

The project helped the county agents to contact and work with additional farmers in many instances.

"Drop-Out" Rate Compared with Selected Variables

Interviewer. There was a large variation in the drop-out rate amont interviewers (Table V-2). Interviewer No. 11 had a 64 percent drop-out rate while Interviewer No. 12 had a 32 percent drop-out rate. Again as in Chapter III there is no apparent relationship between the studied characteristics and the drop-out rate.

Time Spent with Interviewees. There does appear to be a relationship between the time spent by the interviewer in enrollment and the rate of completion. On the average, six minutes more were spent with the panel members who completed the project than with the incompletes (Table V-3).

TABLE V-2

"DROP-OUT" RATE BY INTERVIEWER

Interviewer	Number Enrolled	Number Drop-out	Percent Drop-out
1	2	1	50
2	28	11	40
3	12	5	42
4	17	8	47
5	31	14	46
6	24	7	37
7	21	10	48
8	15	6	40
9	7	4	57
10	15	8	53
11	25	16	64
12	19	6	32
13	22	12	55
14	14	5	36
15	20	11	55
16	27	14	52
Total	299	138	46

TABLE V-3

AVERAGE HOURS SPENT BY INTERVIEWERS PER ENROLLMENT IN THE MSU FARMER PANEL

County	Complete	Incomplete
Huron	1.3	1.2
Kalamazoo	1.3	1.1
Mason	1.3	1.2
Shiawassee	1.5	1.4

This would indicate a direct relationship between time spent in explaining the project and the rate of completion.

Age of Operator. Tests of significance did not show a significant difference in age distribution between the enrolled group and the "drop-out" group (Table V-4). In Mason and Shiawassee counties the average age of the farmers who failed to complete was higher than for those who completed. In Kalamazoo drop-outs did not change the mean age. In Huron County the average age of those not completing was lower than those enrolled.

Size of Farm. The average size of farm for the incompletion group was higher in three counties (Huron, Kalamazoo and Shiawassee) than the average of the original group. This would indicate a tendency for larger farms to not complete (Table V-5). Tests of significance, however, indicate that this difference in distribution is possible by chance and is not significantly different from the original group.

Tenure Status. Owner-operators and tenants showed almost equal tendency to complete the project (Table V-6).

In Mason County all drop-outs were owner-operators. This, however, does not indicate that tenants are more likely to complete as there were only two percent tenancy in the original group. The other three counties show little variation.

Type of Farm. In the type of farm comparison the difference in distribution was not significantly different in three of the counties.

TABLE V-4

RELATIVE FREQUENCY DISTRIBUTION BY AGE OF OPERATORS IN THE ENROLLED AND "DROPOUT" GROUPS OF THE MSU FARMER PANEL

	Huron		Kalamazoo		Mason		Shiawassee	
	Enrolled	Dropouts	Enrolled	Dropouts	Enrolled	Dropouts	Enrolled	Dropouts
Number of Farms	90	46	75	30	60	25	74	37
Age of Operator—percent of total farms								
20 - 34	22	25	19	20	15	8	18	11
35 - 49	36	37	45	53	34	46	36	30
50 - 65	23	15	24	10	34	25	10	16
65 +	8	16					31	35
Mean Age	45	42	45	45	49	52	41	47
Chi-square test[1]	1.94		2.758		.658		2.436	
df	4		3		2		4	

[1]Actual number of farmers used in computation. No significant difference at the 40 percent level.

TABLE V-5

RELATIVE FREQUENCY DISTRIBUTION BY SIZE OF FARM IN THE ENROLLED AND "DROP-OUT" GROUPS OF THE MSU FARMER PANEL

	Huron		Kalamazoo		Mason		Shiawassee	
	Enrolled	Dropouts	Enrolled	Dropouts	Enrolled	Dropouts	Enrolled	Dropouts
Number of farms	90	46	75	30	60	25	74	37
Size of Farm (acres)--percent of total farms								
0 - 59	14	14	28	25	23	32	13	20
60 - 119	36	43	29	34	52	40	44	32
120 - 179	29	19	19	17	15	20	22	20
180 - 299	16	19	15	14	10	8	13	14
300 - 599	5	5	9	10			8	14
Mean Acreage (total)	159	166	165	187	126	112	161	172
Mean Acreage (till.)	124	134	126	140	90	83	124	144
Chi-square test[1]	1.983		.353		1.353		2.802	
df	4		4		3		4	

[1]Actual number of farms used in computation. No significant difference at the 50 percent level.

TABLE V-6

PERCENT OF OWNER-OPERATORS IN THE ENROLLED AND "DROP-OUT" GROUPS OF THE MSU FARM PANEL

County	Enrolled	Drop-Out
Huron	79	80
Kalamazoo	79	76
Mason	98	100
Shiawassee	82	81

The two groups were significantly different at the 10 percent level in Huron county where it appeared that part-time and grain farms showed a greater tendency to not complete than did the other types.

TABLE V-7

RELATIVE FREQUENCY DISTRIBUTION BY TYPE OF FARM IN THE ENROLLED AND "DROP-OUT" GROUPS OF THE MSU FARMER PANEL

	Huron		Kalamazoo		Mason		Shiawassee	
	En-rolled	Drop Outs	En-rolled	Drop Outs	En-rolled	Drop Outs	En-rolled	Drop Outs
Number of Farms-	88	45	71	28	59	24	73	37
Type of Farm--percent of total								
Part-time	18	20	31	29	32	46	33	32
Dairy	16	13	24	21	29	29	31	35
Livestock	5	5	6	7	8	8	3	5
Poultry	0	0	4	7	0	0	0	0
Grain, etc.	40	44	13	11	22	13	10	9
General	21	18	22	25	9	4	23	19
Chi-square test[1]	8.3532*		0.1066		2.1128		.5438	
df	3		3		2		2	

[1]Actual number of farms used in computation.

*Significantly different at the 10 percent level.

Level of Income. There was a variation in the distribution by economic class as a result of certain farmers not completing the project. However, the difference in distribution was not significant (Table V-8).

Reasons Given for Non-Completion

Of the 138 drop-outs reasons for discontinuing were obtained from 54, either from their correspondence or from Stoddard's follow-up report. A summarization of the reasons given is shown in Table V-9. Stoddard found that nine of these 54 farmers were so disinterested in the project that they probably should not have been enrolled in the first place. The most predominant reason for dropping out was, "Going out of farming." The next most predominant reason was, "Business too small."

Such reasons as "going out of farming" and "moving to a different farm," would automatically eliminate the panel member from the project. In the maintaining of a continuous panel, the problem of replacing these members would exist continuously.

When asked as to reasons why these people did not complete the county agents responded in the following manner (Appendix B): One county agent said that these people were just not the cooperative type. The Mason County agent thought that the farmers who dropped out of the project had businesses which were too small to maintain their interest. The Kalamazoo County agent gave reasons such as: "health too poor" and "moved" as being most important; "inappropriate system" and "thinks business too small" as other reasons, with another reason that "it was just too much bother."

TABLE V-8

RELATIVE FREQUENCY DISTRIBUTION BY LEVEL OF INCOME IN THE ENROLLED AND "DROPOUT" GROUPS OF THE MSU FARMER PANEL

	Huron		Kalamazoo		Mason		Shiawassee	
	Enrolled	Dropouts	Enrolled	Dropouts	Enrolled	Dropouts	Enrolled	Dropouts
Number of farms	90	46	75	30	60	25	74	37
Level of Income--percent of total farms								
25,000 - +	1	2	3	0	3	0	3	0
10,000 - 24,999	13	9	15	25	18	12	14	15
1,200 - 9,999	68	67	56	35	57	52	61	54
0 - 1,199	18	22	26	40	22	36	22	31
Chi-square test[1]	.544		2.79		2.35		1.171	
df	2		2		2		2	

[1]Actual number of farms used in computation. No significant difference at the 25 percent level.

TABLE V-9

REASONS FOR DROP-OUTS FROM CORRESPONDENCE AND FOLLOW-UP INTERVIEWS DURING SUMMER OF 1957

	Number of Farms				
	Huron	Kalamazoo	Mason	Shiawassee	Total
Total drop-outs	46	30	25	37	138
Reasons for drop-outs:					
"Going out of farming"	1	5	6	3	15
"Inappropriate system"	1	2	1	2	6
"Prefers to keep own books"	2				2
"Business too small"	2	1	3	1	7
"Fear of the government"	1			1	2
"Fear of how information might be used"			1	1	2
"Serious illness or death"	1	2	2	1	6
"Moved to different farm"	1	1			2
"Illiterate"			1		1
"Too much bother"		2			2
*"Should not have been enrolled"	6	2		1	9
Total	15	15	14	10	54

*From Stoddard's follow-up report.

A study of these reasons seems to coincide with previous data in that one of the problem areas would be with the small farmers. The other areas of importance here seem to be areas in which drop-outs would occur by normal attrition and change in agriculture.

The Attitude of Farmers Who Completed

The 161 panel members who completed the year were asked to indicate their reason for originally enrolling in the project (Appendix C).

One hundred nine responded and gave reasons as follows:

1. (56 respondents) To assist them with their accounting and as an aid in filing income tax reports.
2. (28 respondents) Just to cooperate with Michigan State University.
3. (14 respondents) To help the government and Michigan State University in collecting statistical data on the farm situation.
4. (6 respondents) Good salesman.
5. (5 respondents) As an experiment.

To determine the acceptability by farmers of this type of project they were asked the questions, "Would you continue in such a project if it were originated again?" and "Would you recommend this project to others?" Sixty-eight of the panel members responding said that they would enroll in such a project again; 43 said they would not. When asked as to whether they would recommend this project to others, 91 farmers said yes and only eight said no. It must be remembered here that this questionnaire bore no appeal of any kind. It also needs to be remembered that this questionnaire was mailed in the early spring when one could expect respondents to give relatively little thought to their answer. However, it is noteworthy that a 74 percent response was obtained.

Communication Problem

Aside from the original personal contact between the interviewer and the panel member all other contacts were by mail. A formal letter was mailed to each panel member in January of 1957 welcoming them to

the project and giving them instructions on the procedure to follow in submitting reports. Changes and other instructions were mailed out during the year.

It was each panel member's responsibility to complete and mail in his report at the end of each month. During the first year of operation, the tabulated reports were mailed back at irregular times and often a month or more after the farmers' reports were received.

Too many changes and letters of instruction created disgust and confusion on the part of the panel member. It is possible that too little correspondence might cause the panel member to feel unimportant and not remember to mail in his report.

To determine the optimum amount and sequence of correspondence, further research and experimentation should be done. It is felt that regular correspondence with a minimum of detail would approach the optimum.

Summary

Under conditions similar to those experienced in this study, it can be expected that approximately 46 percent of the farmers enrolled will not complete a full year.

The following appeared to create problems in maintaining the panel:

(1) The amount of time spent in enrolling the panel member and explaining the project was directly related to the completion rate.

(2) The larger size farms tended to drop out during the project.

(3) Older farmers tended to not complete as health failed.

(4) There was a problem of communication which bears further study.

Problems were not associated with the following:

(1) Follow-up did not appear to increase rate of completion.

(2) Although there was a large variation in completion rate between interviewers no one characteristic seemed to be important.

(3) Age of operator.

(4) Size of farm.

(5) Tenure status.

(6) Type of farm.

(7) Income level.

The most predominant reason given for not completing was "going out of farming." This is normal attrition. Sixty-one percent of the farmers who responded to the questionnaire upon completion of the project indicated that they would join the project if it was put into operation again and if asked. Ninety percent of the farmer cooperators responding indicated that they would recommend this project to others.

CHAPTER VI

POTENTIALITIES OF A FARMER PANEL

The purpose of this chapter is to indicate some of the potentialities of a continuous system of reporting farmers' income, expenditures and related data. Such a system would make available a current and continuous flow of agricultural statistics which, as far as the author knows, has not been approached by other farm account undertakings in either public or private institutions.

For a survey to provide similar information as current it would have to be taken on a monthly basis. The average cost of a survey would have to be multiplied several times to compare to the yearly cost of running a project of this kind.[1]

The following is a discussion of some of the comparisons and studies actually made as a part of this experiment, a discussion of work now in progress, and a discussion of some of the as yet untried potentialities of the system.

Information Available

The operational procedure as being carried out at Michigan State University involves the use of a system where all the information

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[1]See Chapter VII for further discussion of costs. To collect information from the same farmer on repeat calls the cost per month would diminish. Part of the $25 average cost is in originally locating and isolating the group of farmers to interview (see page 92).

collected is placed on IBM punched cards. The farms are coded by (1) type of farming area, (2) county, and (3) farm number. Thus the information can be sorted by area or by county or by individual farms. A seven digit code is used; two for the area, two for the county and three for the farm number within the county (Appendix I).

Detailed transactions are classified by using a five digit code. As a result of experimentation done in 1957 the coding system and classification has been revised (Appendix F). Since the 1958 system is simpler, yet has lost little, if any, of the original detail, it is presented here rather than the one actually used in 1957. This classification gives a complete breakdown of farm operating expenses, farm machinery purchases, farm and non-farm receipts, and investments, such as, buildings, land, improvements, and livestock.

A six digit code is used for the quantity column allowing for example, the sale of 999,999 bushels of potatoes in one transaction. It has been found particularly useful for numbers of livestock, both sold and purchased, pounds of milk sold, etc., where there is a uniform quantity figure used throughout the state. It would be possible by using standard units to cover most of the items purchased and sold.

The system then provides figures on the actual farming expenses, actual farm receipts and actual farm investments with much quantity information available. Such descriptive data can be used for various purposes including use by public officials, extension workers, teachers and others. Sub-samples could be taken from an established panel to be used for certain types of analytical research. Once the panel is

established information of importance could be collected to fulfill additional needs.

A Study of Some Selected Farm Expenses

In an attempt to compare results of the panel with those obtained from recall surveys the farmers were asked in December, 1956 to estimate their 1956 expenditures for (1) hired labor, (2) purchased feed, (3) fertilizer and (4) gas, oil and other fuels.[2] The data then were compared to the actual expenditures on identical farms during the year 1957 and the percentage change computed (Table VI-1). The question arose as to whether these changes were typical of those found in other farms. Since the only similar data available were found in the records of extension project members the average change for these was recorded and the two compared (Table VI-1).

There was a large variation in the percent of change between groups. This might discredit the value of the recall survey but some say the change indicated by the panel group was more true than that indicated by the actual figures from the extension group. Although this is inconclusive evidence as far as evaluating the accuracy of the panel, the study does show that fertilizer and fuel expenditures are relatively consistent from year to year while hired labor and feed expenditures may be quite erratic. Whether erratic or constant this continuous flow of current data can indicate the trend and the rate of change by the month, by the quarter or by the year. It is important to note that the

[2]By interviewer in December, 1956 per field schedule (Appendix D).

TABLE VI-1

CHANGES IN AVERAGE ANNUAL EXPENDITURES 1956 TO 1957 FOR SELECTED ITEMS OF RESEARCH PANEL MEMBERS AND EXTENSION PROJECT MEMBERS BY COUNTIES

County + Change	Hired Labor		Feed Purchased		Fertilizer		Gas, Oil, Fuel	
	Panel	Extension	Panel	Extension	Panel	Extension	Panel	Extension
Huron--No. farms	43	5	42	6	42	6	42	6
1956*	$397	301	750	2048	919	1209	604	634
1957	$182	171	1425	1900	815	1106	654	773
Percent change	-54	-43	+47	-7	-11	-9	+8	+18
Kalamazoo--No. farms	45	14	44	15	44	15	44	15
1956*	292	1019	893	2387	520	1056	384	677
1957	248	1014	758	2873	550	1027	402	743
Percent change	-15	-1	-15	+17	+6	-3	+5	+10
Mason--No. farms	35	9	35	9	35	9	35	9
1956*	1256	377	492	1364	458	751	475	762
1957	1280	708	489	1326	468	652	578	1033
Percent change	+2	+47	-1	-3	+2	-13	+18	+26
Shiawassee--No. farms	30	7	34	7	33	7	33	7
1956*	327	2122	569	1705	415	2441	473	1435
1957	103	2532	491	2956	433	2044	467	1571
Percent change	-69	+16	-14	+42	+4	-16	-1	+9

*Data for panel are 1956 estimates (Appendix D).

extension group operates at a higher average level of expenditure than the panel.

A Study of Investment Intentions

Investment information needed in outlook work is available for industry but not farms. At the time of the original interview with the panel member, they were asked to indicate by quarter their investment intentions for the year 1957 in regard to major building improvements for the home and farm buildings, a new or used tractor, a new or used automobile and other new or used machinery (Appendix D). The yearly intentions were tabulated and compared to actual investments (Tables VI-2, VI-3, VI-4 and VI-5).

Building improvement intentions were not fulfilled in most instances and machinery was purchased in 1957 that had not been anticipated in December of 1956. Did the economic situation or the individual situation on the farm change to such a degree that it was necessary for them to change their plans? Perhaps this was indicative of the approaching recession.

Investment intention questionnaires could be mailed to a sub-sample of an established farmer panel and the information collected could be useful in prediction. The current and continuous flow of actual investments would be useful in checking on any change in expectations at the farm level.

Potentialities of the Panel Records Compared to Extension Records

As discussed earlier, farm account projects have been carried on at land grant colleges for many years. Johnson says that the data from

TABLE VI-2

1957 INVESTMENT INTENTIONS AS OF DECEMBER, 1956 AND ACTUAL 1957 INVESTMENTS OF HURON COUNTY COOPERATORS IN THE MSU FARMER PANEL
44 FARMS REPORTING[1]

Building Investment			Tractor Purchases			Auto Purchases			Machinery Purchases		
Farm No.	Intended	Actual	Farm No.	Intended	Actual	Farm No.	Intended	Actual	Farm No.	Intended	Actual
135	$2500	$599	167	$ 0	$400	167	$1750	$ 0	096	$ 0	$ 80
167	0	33	126	0	2795	102	0	1500	097	0	163
154	0	186	111	3500	0	126	0	1850	087	0	135
098	0	284	139	500	0	111	0	150	167	400	2840
111	0	995	116	0	110	116	0	2000	102	0	1894
132	150	0	158	400	400	132	1000	0	155	0	417
129	0	359	117	500	0	120	1000	1400	110	0	34
158	300	0	83	700	1400	142	0	1300	098	1700	0
117	200	0	105	500	0	108	2250	1900	126	0	728
105	200	0	100	0	1400	169	0	2082	088	0	538
106	3000	0	168	0	153				139	1800	2065
100	0	1208							129	0	937
119	1000	0							158	0	130
142	500	0							117	0	150
168	1000	0							105	0	325
173	600	0							120	1300	1000
									106	2000	0
									100	0	406
									150	0	45
									142	0	1035
									168	700	0
									133	0	745
									169	0	1350
									173	800	0
									134	0	651
Average	$591	$229		$555	$605		$600	$1218		$348	$627

[1]Farms not listed above have zero in both columns. The averages are computed for only the farms listed.

TABLE VI-3

1957 INVESTMENT INTENTIONS AS OF DECEMBER, 1956 AND ACTUAL 1957 INVESTMENTS OF KALAMAZOO COUNTY COOPERATORS IN THE MSU FARMER PANEL
45 FARMS REPORTING[1]

Building Investment			Tractor Purchases			Auto Purchases			Machinery Purchases		
Farm No.	Intended	Actual	Farm No.	Intended	Actual	Farm No.	Intended	Actual	Farm No.	Intended	Actual
183	$ 150	$ 0		$	$	183	$ 0	$1771	149	$ 0	$ 25
158	2000	0				158	1200	0	201	0	350
198	175	0				198	1500	0	198	850	0
184	50	0				176	0	100	184	500	0
191	300	0	191	0	132	105	2000	0	191	100	0
133	500	0	133	1200	0				133	0	2145
144	550	1052				144	1300	0	144	3500	2700
179	200	0							179	100	0
182	480	0	186	0	300				186	0	90
187	170	0	146	700	0				146	100	0
28	750	0	190	0	211				28	1200	2421
209	1500	0	209	700	0				209	500	50
162	0	242	210	400	0				162	300	2521
202	400	296	202	0	45				202	100	0
127	1000	0				127	0	900	127	250	225
195	2000	0							195	250	185
189	500	75							142	1000	1410
150	60	0							203	0	205
									210	100	0
									190	0	42
									189	100	0
									150	100	70
									173	0	125
									147	500	100
Average	$599	$93		$375	$86		$857	$396		$398	$528

[1]Farms not listed above have zero in both columns. The averages are computed for only the farms listed.

TABLE VI-4

1957 INVESTMENT INTENTIONS AS OF DECEMBER, 1956 AND ACTUAL 1957 INVESTMENTS OF MASON COUNTY COOPERATORS IN THE MSU FARMER PANEL
35 FARMS REPORTING[1]

Building Investment			Tractor Purchases			Auto Purchases			Machinery Purchases		
Farm No.	Intended	Actual	Farm No.	Intended	Actual	Farm No.	Intended	Actual	Farm No.	Intended	Actual
137	$ 250	$ 0	154	$ 800	$2372	61	$ 700	$ 0	154	$ 0	$ 492
136	200	0	112	0	1050	157	0	225	157	0	150
97	1000	0	143	2000	0	97	0	305	130	530	0
105	200	0				110	500	0	136	300	0
111	1000	2119							117	150	125
138	0	411							97	400	204
125	825	0							142	0	575
117	0	314							150	0	1271
									139	500	0
									61	0	100
									112	0	1700
									145	2500	3520
									105	0	214
									90	0	1086
									143	0	1204
									138	0	2850
									109	0	358
Average	$434	$356		$933	$1141		$300	$133		$258	$815

[1]Farms not listed above have zero in both columns. The averages are computed for only the farms listed.

TABLE VI-5

1957 INVESTMENT INTENTIONS AS OF DECEMBER, 1956 AND ACTUAL 1957 INVESTMENTS OF SHIAWASSEE COUNTY COOPERATORS IN THE MSU FARMER PANEL
37 FARMS REPORTING[1]

Building Improvement			Tractor Purchases			Auto Purchases			Machinery Purchases		
Farm No.	Intended	Actual	Farm No.	Intended	Actual	Farm No.	Intended	Actual	Farm No.	Intended	Actual
157	$ 500	$ 0	157	$ 0	$ 350	098	$ 0	$1439	99	$ 0	$ 261
146	3000	0	163	400	0	146	1000	1675	146	0	300
103	150	0	169	50	0	150	0	362	150	2000	196
134	1000	525	111	400	0	149	1000	0	134	700	5188
104	1000	0	123	0	1500	171	0	1050	153	600	400
159	2500	0							159	500	454
105	200	100							105	0	225
120	0	241	120	0	3681				167	500	695
143	100	897	143	0	1550				143	150	298
131	100	0							131	120	2884
151	200	0							151	125	163
126	2000	0							132	1000	239
129	1500	0	129	1500	2150				129	1800	0
139	100	0							139	0	30
149	200	0							005	0	375
108	400	0							126	1200	1507
111	200	0							120	250	820
141	800	0							104	700	0
102	400	0							098	1200	1300
171	0	409							103	250	0
									122	250	0
									149	0	1347
									169	590	105
									111	200	3
									123	200	0
									136	0	125
									102	0	285
									106	0	500
									171	0	4252
Average	$718	$109		$294	$1154		$400	$905		$425	$757

[1]Farms not listed above have zero in both columns. The averages are computed for only the farms listed.

farm record projects[3] tend to produce unreliable production functions. It, therefore, seems desirable to compare the characteristics of this panel to those of a normal extension account project.

By observation it appears that the panel was more representative of agriculture in the respective counties than the extension group. The acreage distribution, the distribution by type of farm, and the distribution by level of income for the panel varies over a wide range and is more similar to the population as defined than is the extension group (Table VI-6). To the extent that the usefulness of data depends on representativeness of the sample, information from the panel would be more useful and less misleading than data from the extension group. The wider distribution of characteristics in the panel would allow greater freedom in selecting and drawing "purposive sub-samples" for use in certain research activities.

Research Potential

Farm account records have been used in the past to develop marginal productivity analysis of investments and expenditures[4] and to derive Cobb-Douglas value productivity functions.[5]

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[3]G. L. Johnson "Classification and Accounting Problems in Fitting Production Functions to Farm Record and Survey Data," Resource Productivity, Returns to Scale, and Farm Size, Edited by E. O. Heady, G. L. Johnson, L. S. Hardin; Ames, Iowa State College Press, 1956.

[4]Robert V. Wagley, Marginal Productivity of Investments and Expenditures, Selected Ingham County Farms, 1952, Unpublished MSC thesis, 1953.

[5]Louis S. Drake, Problems and Results in the Use of Farm Account Records to Derive Cobb-Douglas Value Productivity Functions, unpublished Ph. D. thesis, Michigan State College, 1952.

TABLE VI-6

SELECTED CHARACTERISTICS OF THE FARMER PANEL COMPARED TO THOSE OF THE MSU EXTENSION ACCOUNTS BY COUNTY
1957 ACCOUNT MEMBERS
(Panel Data are for Completed Farms)

Characteristics	Huron			Kalamazoo			Mason			Shiawassee		
	Census	Panel	Ext.	Census	Panel	Ext.	Census	Panel	Ext.	Census	Panel	Ext.
Number of farms	[1]	44	11	[1]	45	17	[1]	35	7	[1]	37	15
Size of Farm--Average												
Total acreage	136	152	195	114	153	262	117	135	272	119	150	263
Tillable acreage	--	123	169	--	120	210	--	96	183	--	117	218
Acreage Distribution--Percent of Total Farms												
0 - 69	18	39	0	46	36	0	31	16	0	33	3	0
70 - 139	41	39	37	26	27	18	42	43	14	34	54	7
140 - 219	27	24	27	14	22	35	17	26	57	19	27	33
220 - 259	6	4	9	4	9	6	5	6	0	5	8	13
260 - +	8	0	27	10	6	41	5	9	29	9	8	47
Distribution by Economic Class--Percent of Total Farms												
0 - 1,199	15	14	0	8	29	0	17	11	0	5	11	0
1,200 - 9,999	78	68	9	72	52	6	73	60	14	79	71	20
10,000 - 24,999	16	8	73	16	14	76	7	23	86	15	11	53
25,000 - +	1	0	18	4	5	18	3	6	0	1	7	27
Distribution by Type of Farm--Percent of Total Farms												
Dairy	19	27	27	24	28	71	58	41	57	38	49	93
Livestock	6	5	18	17	11	12	5	9	14	7	3	0
Poultry	1	0	0	7	7	5	4	0	0	2	5	0
Grain, etc.	53	52	27	40	42	0	24	41	0	40	26	0
General	21	16	28	12	14	12	9	9	29	13	17	7

[1]Number of farms reporting for the census varies for each comparison. Refer to Chapter IV for the number of farms in each case.

Current and continuous information collected by the Consumer Panel at Michigan State University has been used in demand analysis.[6] Information from the Mail-In Farm Account has been used to study risk and uncertainty in dairy farming.[7]

With the broader and more representative coverage of the panel type system established on a probability basis, useful supply and demand type analysis could probably be made. Research in the area of expectations could be done by using a "spot" questionnaire system on sub-samples of the panel.

By adding a "home account" record to the farm account the panel could be used to study farm and home inter-relationships.

Purposive or stratified samples for research projects could use a selected sub-sample of the project or if the panel was not extensive enough to fulfill requirements, additional observations could be taken. Assuming these are all processed by the Mail-In Account IBM summarizing system, overlapping of research data requirements could make maximum use of the panel data and minimize or lower the cost of data collection in the other research projects (Figure 6-1).

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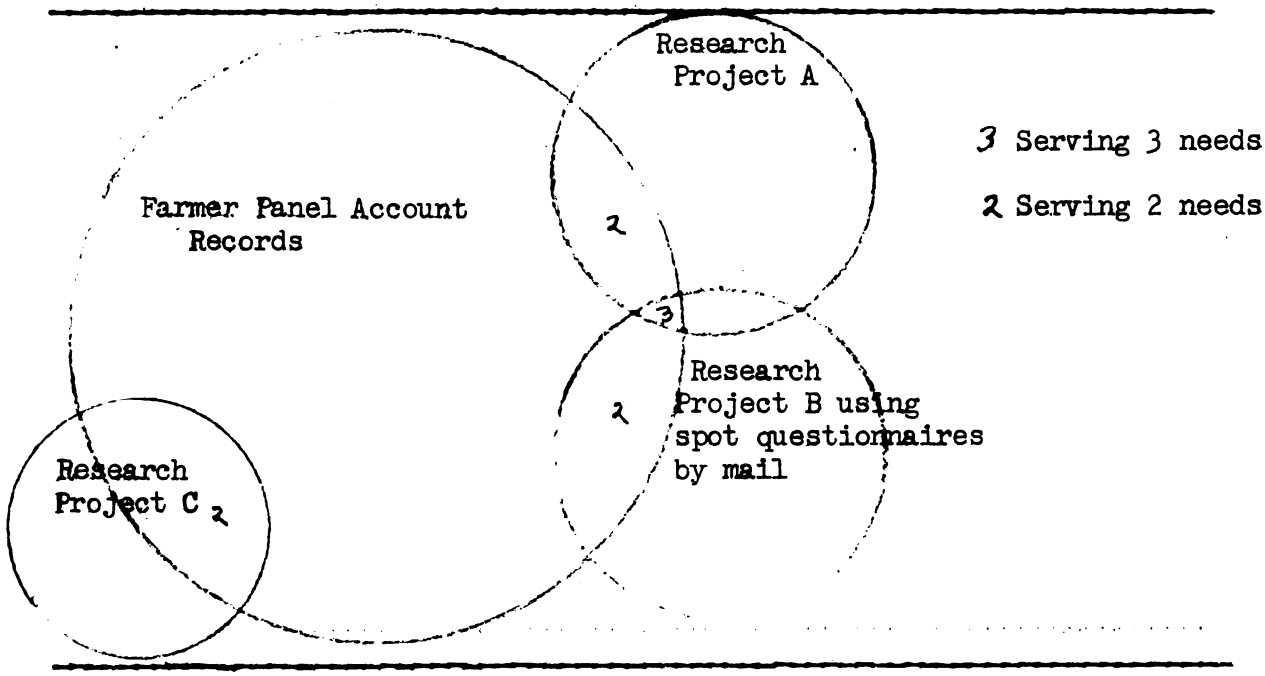
[6]G. G. Quackenbush, "Demand Analysis from the MSU Consumer Panel," Journal of Farm Economics, Volume 36, No. 3, August, 1954.

[7]John Ronald Brake, Financial Seasonality of Dairy Farming and Its Relation to Risk and Uncertainty, unpublished M. S. thesis, Michigan State University, 1956.

Figure 6-1

Overlapping Use of Data Collected by Farm Account Records



In the past little has been done to make maximum use of the farm account data.[8] Some even say that the research potential of farm record data is limited.[9]

If a farmers' continuous reporting system was to be maintained, the monthly data available would be useful in studying trends. As the number of time series increased, the value of the data would increase at an increasing rate. The full utilization of such a project would only be realized over a period of years.

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[8]Milton L. Manuel, "Historical Development and Evaluation of the Farm Management Associations in the United States," Unpublished Ph. D. Thesis, University of Minnesota, 1952.

[9]Preliminary Report of Farm Records Subcommittee to North Central Regional Farm Management Research Committee, Section 2.

Full utilization would require consolidation of the data requirements and coordination of the data collecting processes as they pertained to different research activities at the institution controlling the panel (Figure 6-1).

Work in Progress

Warren Vincent, project leader, is compiling, quarterly, an average of farm expenditures, income, and investments from the monthly accounts of the farmers cooperating in the MSU Mail-In Farm Accounting Project.[10] This is purely descriptive data using averages of the farms reporting.

The value of this type of information is in its timeliness. Actual investments, income and expenditures are quickly noted and the change if any from the previous like period is quickly known by interested parties.

Summary

A farmer panel as defined in this study has many potentialities. So far data collected by farm account records have not been fully utilized. The broader and more representativeness of the panel when compared to the extension groups would make the data collected more valuable for all uses.

Such a panel could have the following potentialities:

(1) It would make available descriptive data for political and institutional uses.

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[10]Published in "Farm Management Guidepost," Agricultural Economics Department, Michigan State University.

(2) It would make available on a quarterly basis current data concerning estimates of farm expenditures, farm income, and farm investments.

(3) By periodic questionnaires to a sub-sample of the panel, investment intentions could be estimated for agriculture as is now being done in industry.

(4) The data, coming from a sample more representative of the population than the extension accounts, would be less misleading when used for political ends.

(5) The panel could be used for some types of research in expectation studies.

(6) The panel could be used for the study of home and farm interrelationships.

(7) Purposive or stratified sub-samples could be taken in whole or in part from the panel. Data could be used directly as collected or additional questionnaires could be completed by mail or personal interview depending on needs of the research project in question. Coordination would be necessary here to fully utilize the project.

(8) A quarterly summary (any other period in multiples of monthly data is possible) is possible giving a current picture of the actual agriculture situation as it occurs on the local basis.

More research is needed in this area to determine the full potentiality of such a panel and how to make maximum use of the data collected.

CHAPTER VII

A COST STUDY

Introduction

Cost is one of the major problems of collecting data by farm accounting projects. Since establishing and maintaining a panel of this type has not previously been tried, it seems desirable to record the cost involved.

It should be remembered that this was the first year of the mail-in account project on a large scale and an experimental year for the panel. It is therefore expected that the costs are higher than might be expected the following years.

The study includes (1) the cost of establishing the panel (field expenses), (2) the cost of operation through the year 1957 (operational expenses), and (3) overhead expenses. These costs will be compared to the cost of collecting similar data by the survey method.

Field Expenses

There was some variation among interviewers in the cost of establishing the panel. The range of from $21.59[1] per day to $30.40 per day with an average of $25.70 per day per interviewer (Table VII-1).

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[1]Interviewer No. 1 not considered as low because of the small proportion of days worked in the field. However, his expenses are computed in the total and average costs.

TABLE VII-1

FIELD AND SALARY COSTS OF INTERVIEWERS IN ESTABLISHING THE MSU FARMER PANEL
(December 11-27, 1956)

Interviewer Number	Number of Days Field	Number of Days Total	Field Expenses Mileage	Field Expenses Other	Field Expenses Total	Field Expenses Per Day[1]	Salary Total	Total Expenses Amount	Total Expenses Per Day[2]
1	2	5	18.55	2.05	20.60	10.30	69.20	89.80	17.96*
2	12	15	141.26	107.14	248.40	20.70	207.60	456.00	30.40
3	9	12	69.65	50.37	120.02	10.00	166.08	286.10	23.84
4	10	12	75.11	51.72	126.83	12.68	166.08	292.91	24.41
5	10	12	78.12	14.87	92.99	9.30	166.08	259.07	21.59
6	10	12	73.99	64.54	138.53	13.85	166.08	304.61	25.38
7	8	8½	64.61	14.09	78.70	9.84	117.64	196.34	23.09
8	10	12	75.53	55.65	140.18	14.02	166.08	306.26	25.52
9	7	8	56.07	7.98	64.05	9.15	109.92	173.97	21.75
10	12	15	107.38	94.36	201.74	16.81	207.60	409.34	27.29
11	11	15	103.60	91.63	195.23	17.75	207.60	402.83	26.86
12	7	8	60.76	44.30	105.06	15.01	109.92	214.98	26.87
13	11	14	143.36	84.50	227.86	20.71	183.76	411.62	29.40
14	10	12	77.21	63.21	140.42	14.04	166.08	306.50	25.54
15	9	11	62.72	53.07	115.79	12.86	152.24	268.03	24.37
16	12	15	107.39	100.69	208.08	17.34	207.60	415.68	27.71
Total	150	186½	1315.31	909.17	2224.48	14.83	2569.56	4794.04	25.70

Average Cost Per Farm Enrolled $15.98 — Average Cost per Survey Taken $9.82

[1]Average per day in the field.

[2]Average per total days worked.

*Only two out of five days in the field.

The total field costs of establishing a panel of 299 farmers was $4,794. This is an average of $15.98 per farm enrolled or an average of $9.82 per schedule (Appendix D) taken.

Considering that only 161 farms completed the project, the average cost per completed record was $29.77 (Table VII-2).

Operational Expenses

The actual labor payroll for work done on records was $4,875. The machine charges for punching IBM cards, verification, collating, sorting, tabulating, etc. was $1,475, office supplies and materials cost $600. Cooperators' supplies cost $1,000.

The field follow-up conducted by Ellywn Stoddard cost $683. This covered Mr. Stoddard's part time salary and field expenses between May 20 and June 8, 1957. Professional travel expenses included travel to Washington to consult with United States Department of Agriculture officials.

The total maintenance and operation cost was $9,033, or $30.14 per farm enrolled, or $56.09 per farm completed.

Overhead

An exact figure for overhead costs is not available. It is estimated, however, that the overhead costs for this project are approximately equal to operational costs. Overhead costs would include the following:

(1) A share of permanent inventory (i.e., buildings, office machines, and office equipment) used to facilitate the project but not included in the above operational cost.

TABLE VII-2

COSTS OF ESTABLISHING AND MAINTAINING THE MSU FARMER PANEL

Item Classification	Totals		Per Farm Enrolled[1]	Per Farm Completed[2]
Field Expenses				
Mileage for Interviewers	$1,315			
Subsistence for Interviewers	909			
Salary of Interviewers	2,570			
Total Field Expenses*		$4,794	$15.98	$29.77
Maintenance and Operation				
Labor on records	$4,875		$16.25	$30.27
IBM charges	1,475		4.95	9.16
Cooperators Supplies*	1,000		3.33	6.21
Supplies, Services, etc.	600		2.00	3.73
Field Follow-up*	683		2.28	4.24
Professional Travel Expenses	400		1.33	2.48
Total Main. and Operation		$9,033	$30.14	$56.09
Total Operation and Field Expenses		$13,827	$46.12	$85.86

[1]299 Farms

[2]161 Farms

*Charged directly to the project as per agreement described in Appendix H. The other items are computed by allocating a portion of the total costs of the farm accounting project at Michigan State University to this project.

(2) Salaries of professional staff. The project leader spent approximately 10 percent of his time in the direction and supervision of the experiment. The County Agents spent 54 days of their time in working with the project.

Cost of Survey and Panel Compared

A recent survey conducted here at Michigan State University cost $22.77 per interview record completed (Table VII-3). The daily cost per interviewer per day was $24.86. A similar survey in Iowa cost $25.65 per interview completed.[1]

To be as current as the panel which collects data by mail, the survey system would consist of monthly interviews. Assuming that monthly interviews were made the cost for similar data would be approximately $150.[2]

Summary

The average cost of establishing (field expenses) the farmer panel in December 1957 was $15.98 per farm enrolled. The operation and maintenance cost was $30.14 per farm enrolled. This latter includes placing the detailed information on IBM cards and includes classifying and summarizing of the information for each farm.

---

[1]Annual Report to the Kellogg Foundation on Evaluation of the Iowa Farm and Home Development Program 1957-58.

[2]The estimate is $150 rather than $300 ($25 x 12) because of the diminishing cost of interviewing the same group of farmers on successive months.

TABLE VII-3

FIELD AND SALARY COSTS OF INTERVIEWERS IN SURVEYING FARMS IN THE TOWNSHIP AGRICULTURAL PROGRAM KELLOGG RESEARCH PROJECT, 1956

Interviewer	Number of Days		Field Expenses				Salary	Salary	Total Expenses	
	Field	Total	Mileage	Other	Total	Per Day	Per Day	Total	Amount	Per Day
1	101	111	738.12	408.47	1146.59	11.35	$15.00	$1,665	2811.59	25.32
2	58	68	415.03	252.55	667.58	11.51	15.00	1,020	1687.58	24.81
3	53	63	327.88	218.20	545.98	10.30	15.00	945	1490.98	23.66
4	36	46	208.67	170.75	379.42	10.53	15.00	690	1069.42	23.24
5	34	36	265.02	115.50	380.52	11.19	15.00	540	920.52	25.57
6	19	20	162.69	80.66	247.35	13.01	15.00	300	547.35	27.36
7	15	16	135.45	64.21	199.66	13.31	15.00	225	424.66	26.54
Total	316	360	2252.86	1310.34	3567.10	11.28		5,385	8952.10	24.86

Total interviews taken = 393 Average cost per interview = $22.77

Assuming that the overhead cost equaled the cost of operation, the total cost of operating the experiment for the year 1957 was $22,860.

It is believed that, by moving from an experiment to a continuous and prescribed operation, the cost per record of such a data collecting system could be substantially reduced.

CHAPTER VIII

CONCLUSIONS AND RECOMMENDATIONS

The purpose of this chapter is to summarize some of the conclusions drawn from the study. Also, certain recommendations are made that might be useful in the establishment of a similar or larger panel. More detailed findings have been summarized at the end of each of the preceding chapters.

Conclusions

(1) A review of literature leads one to the conclusion that there is a need for more and better agricultural data, especially with regard to current farm information.

(2) The objectives of the experiment were partially fulfilled. The study provided information concerning the problems and costs of establishing and maintaining a farmers' continuous reporting system and, to a degree, the kind and quality of information that can be obtained therefrom.

Concerning the Establishment of the Panel.

(1) Less than 50 percent of the eligible farmers enrolled in the project. About 70 percent consented to answer questions regarding their operation. About 25 percent of the farmers who enrolled submitted no reports. In the more agricultural counties a higher enrollment rate was obtained.

(2) Smaller size farms, older operators, part-time farmers, and low income farmers were less inclined to enroll in the project.

(3) There was apparently sufficient uncertainty in the minds of the prospective panel members in regard to the purpose and the intent of the project to hinder ready acceptance.

Concerning Representativeness of the Panel.

(1) Comparison of the panel characteristics to census data indicates that the sample was not seriously biased in regard to the type of farm.

(2) It appears that refusals and drop-outs were a problem, however, in establishing a panel representative by age of operator, size of farm, and level of income.

(3) Unless a method can be found to correct the above, a farmer panel is likely to have a large sampling error.

(4) It appears that representativeness could more easily be established by the probability sampling method in a population defining eligible farms as those having an income of over $1200 (thus omitting economic Class VI).

Concerning the Maintenance of the Panel

(1) Approximately 45 percent of the enrolled farmers did not report information for a complete twelve month period.

(2) Follow-up procedures included reminder letters and a summer farm visit to those who had sent no information. These procedures did not appreciably increase rate of participation.

(3) Despite the losses in number of cooperators, the characteristics of the panel were not significantly changed.

Concerning the Potentiality of a Farmer Panel.

(1) Assuming that data of a local nature are needed, a farmer panel reporting actual data at regular intervals could furnish detailed data more timely and realistic of the farm situation than any presently known data gathering system.

(2) Once cooperator rapport was established many types of supplementary research projects could be conducted, such as, those dealing with investment intentions and expectations.

(3) Assuming the panel was sufficiently large, it would be possible to draw appropriate sub-samples for other types of research. These might include estimating marginal productivity of certain resources, enterprise cost studies and others.

(4) Such a system could provide information useful in supply and demand analysis.

(5) Trend data could be quickly noted and recorded as changes occur. The value of these time series would increase at an increasing rate over time.

Recommendations

(1) Because of the difficulties of establishing the part-time and low income portions of the panel, it is recommended that the population be redefined to exclude those farms with an income from farm products of less than $1200.

(2) Assuming that an increased enrollment rate is desired the following recommendations are made with regard to establishing a panel:

(a) After the sample segments are determined first contact all farms to determine identity and eligibility.

(b) Seccndly, promotion of the objectives and advantages of the project could be directed toward the prospective panel members. For example, personal correspondence, brochures, and assistance of farm organizations in the area may be used.

(c) A time lag between the original visit (a) and the enrollment visit is recommended. This would help to remove the feeling of uncertainty felt by both the interviewer and the farmer when a quick decision was demanded.

(d) College students make desirable interviewers. However, there may be ways to use local farm people in either the promotional or enrollment phases of the work.

(3) It is recommended that local county extension personnel be utilized to maintain rapport and to assist in keeping administrative records current.

Suggestions for Further Study

(1) With the possibility that the response error might be small, it is recommended that further study be made to determine the size and significance of the response error. This could be done by comparing selected response items with known data, such as, milk income, breeding fees, gas and oil expenditures, etc.

(2) The effect, of certain farmers refusing to enroll, on the representativeness of the panel could be determined more accurately if data were available for all eligible farmers contacted. It is suggested that recommendation 2 (a) above would place more emphasis on obtaining these data. If another panel is established, it is suggested that a greater attempt be made to obtain the characteristics of all eligible farms and a direct comparison be made to determine the difference between the sample (all eligible farmers contacted) and the enrolled and completed groups.

(3) A study should be made to determine the feasibility of using sub-samples of such a panel for research purposes.

(4) If such a panel method was to be expanded to other states, it is suggested that a study be made first to determine the existence of duplicating efforts in the data collection process.

(5) It is suggested that a study be made to determine the reliability of the data as they are used for various purposes.

(6) The optimum length of the time lag as suggested above and the increased cost of having a time lag is unknown. A study should be made to determine the optimum length of the time lag and the significance, if any, of increased efficiencies.

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APPENDIX A

MAIL QUESTIONNAIRE TO INTERVIEWERS CONCERNING THE USDA-MSU RESEARCH PROJECT

Questionnaire to Interviewers Concerning the USDA-MSU Research Project

1. (a) In mid-December 1956, you received approximately two (2) days training on the purpose and objectives of the research Mail-In Project. To the best you can remember - what was your concept of the project objectives?

   (b) In the training program what approach to the farmer were you advised to use?

   (c) What were some of the problems encountered in the field?

   (d) Was the training geared to the problems encountered?

   (e) How much time in training was spent on filling out properly the survey form? Was this sufficient training? Explain.

   (f) Please suggest ways that you think your training could have been improved?

2. What different techniques of "selling" the program to the farmer do you recall using?

   (a)

   (b) Which technique was most successful?

   (c) Which technique was not successful?

3. From your interview we obtained a breakdown by counties the reasons that some of the eligible ones did not enroll. Of the eligible, quite a few have "no reason" for not enrolling. The table below gives such figures. Please indicate in which county(s) you worked. To the best of your ability, rank the reasons (explicit or implicit) according to importance as to why you think these people did not enroll.

	Shiawassee	Mason	Kalamazoo	Huron
No. eligible for schedule	229	119	180	164
No. enrolled	73	57	70	95
Not enrolled with reason for not enrolling	38	23	36	36
No. giving "no reason"	118	49	74	33

Rank according to importance the county in which you worked the following reasons:

Going out of farming	____	____	____	____
Inappropriate system	____	____	____	____
Prefers to keep own books	____	____	____	____
Business too small	____	____	____	____
Fear of the government	____	____	____	____
Fear of how figures would be used	____	____	____	____
Afraid to try something new	____	____	____	____
Other: _____	____	____	____	____

4. When you started your work each morning did you have a specific goal of how many farmers you would sign up for that day? _____ If yes, how many? _____
Did your daily goal change from the beginning to the end of the period? _____
If so, how many at the first part of the period? _____ Middle _____ End _____

5. Did you feel that you had accomplished the mission set forth when you had completed the work? _____

6. It has been suggested by some cooperators that they should have had a longer period to study the merits of the project before enrolling and a longer advance period for instruction before mailing first reports. This would require students, if employed, to delay their academic program one term. Was the remuneration and experience sufficient for you to recommend to a student that he take the position? _____

7. Do you feel that a representative sample of farming was obtained from the area in which you interviewed? _____ If your answer is "no", do you think it is possible to obtain a representative sample? _____ If you answered "yes", what method would do the job? If your answer is "no" why is it not possible?

8. Was the survey form that you used (copy enclosed for your reference) too short? _____ Too long? _____ or of about the proper length? _____

9. What information did you have the most difficulty in obtaining? (a)

The most ease in obtaining? (b)

Was the balance of the information fairly easy to obtain? (c)

10. Compared to the success you did have in signing up farmers do you think you would have had more or less success if the farmers involved had had prior warning and information on the purpose of your call. _____ Explain.

11. Did you feel that during your work you were operating as a "lone wolf" so to speak, or as a member of a team? _____ If you operated in different counties did you feel differently at any time during your job? _____ Would you recommend the "lone wolf" approach? _____ The team approach? _____ Why?

2/11/58
CF/yl

APPENDIX B

SUMMARY OF AND THE QUESTIONNAIRE DIRECTED TO THE COUNTY AGENTS

Questionnaire Concerning the USDA Research Portion of the MSU Mail-In Farm Account Project to County Agents of the Four Counties Involved (Mason, Huron, Kalamazoo, Shiawassee).

1. How much time in 1956 if any did you spend in helping to set up the sample on this research project? _____. How much time during 1957 did you spend explaining to the Research Cooperators what it was all about? _____. How much time in maintaining or keeping on the ones that originally signed up? _____.

2. What was your attitude towards the research project when you first heard about it? _____

_____

_____

_____

What is your attitude now? _____

_____

_____

_____

3. Does the sample of farmers obtained and completed represent accurately the agricultural and farming picutre in your county? _____

_____

_____

_____

4. Below is a list of the farmers in your county who enrolled but did not complete the project? If possible please describe their farm setup and give reasons for their not completing by each name.

1.	7.	13.	19.
2.	8.	14.	20.
3.	9.	15.	21.
4.	10.	16.	22.
5.	11.	17.	23.
6.	12.	18.	24.

5. Attached is a list of those completing 12 months by records. What percent of these farms (a) have you visited? _____. (b) knew before 1957? _____. (c) called on you for help? _____ (d) know well enough to describe? _____.

6. Since the research project has stopped, how many if any of the farmers (per question 5) have asked to join the regular MSU "Mail In" Farm Account system? _____. Did you ask any that did not ask you? _____. If yes, how many? _____. How many were reenlisted? _____.

7. I presume you are acquainted with the method of enrolling the representative sample using students from MSU. Could any other type of person be used with more success? _____. If so, what type of individuals? _____

8. In your opinion, would the farmers be willing to give the personal information asked of them to, say, another farmer from the county, (such as done for the Census Bureau) who might be employed to do this type of interviewing? _____

9. Has the enrollment of the research sample of farmers into the project helped you to work with more farmers in your county? _____. Has it facilitated or hindered your work in any other way? _____. Explain. _____

10. Would the data obtained from these surveys and from the continuous reports of expenses and receipts be of use to you in your county extension work? _____ If so, in what way? _____

What specific and/or general information would be of special interest to you?

11. What part of the project would be of special influence to the farmer in causing him to continue sending in information? _____

12. Would you add anything to the project as a way to get the representative interest in the project and in causing them to continue with the project? _____

13. Would it be possible to hire within your county individuals who would and could capably carry out the actual survey and interview work as done by MSU students in December 1956? _____

_____

_____

_____

14. Would a larger or smaller percentage of enrollment be obtained if all farmers concerned had been given prior warning and information on the reasons for the project and their part in it? _____.
Please suggest one way that the group selected in the segments could have been forewarned. _____

_____

_____

Thank you for your information. Please place in enclosed envelope and mail today.

Olan D. Forker
Graduate Assistant
Dept. of Agricultural Economics

Results obtained from a mail questionnaire to county agents in counties included in the MSU Farmer Panel.

No.	Nature of the Question	Huron	Kalamazoo	Mason	Shiawassee
1.	a) Days spent in helping set up sample.	1	0	1	½
	b) Days spent explaining project to co-operators.	5	15	2	½
	c) Days spent maintaining original sample.	3	21	3	2
2.	a) Original attitude toward project.	Favor-able	Favor-able	Accept-able	Favor-able
	b) Post project attitude.	"	"	"	" But quit too soon.
3.	Opinion as to representativeness of sample.	Many w/ low yield farms	Too many small farmers	OK	OK for census definition*
4.	Drop Outs - Reasons for drop outs.				
	1) Going out of farming				Not Cooperative Type----
	2) Inappropriate system		4		
	3) Prefers to keep own books				
	4) Thinks business too small		4	10	
	5) Fear of government				
	6) Fear of how information might be used				
	7) Health too poor		6		
	8) Moved		5		
	9) Illiterate				
	10) Too much bother		2		
	11) Retiring soon				
5.	Of those completing--what % have you visited?	45	56	99	38
	% knew before 1957	5	45	99	33
	% called on you for help	10	51	"	25
	% know well enough to describe	45	58	"	25
6.	a) How many have asked to join regular project?	8	4	5	2
	b) How many did you ask to join regular project?	0	1	6	0
	c) How many were re-enrolled in regular?	6	3	7	1
7.	Could any other type interviewer have been more successful?	No OK	Most any OK	Use Farm Managers experience	Follow up* needed. OK

No	Nature of the Question	Huron	Kalamazoo	Mason	Shiawassee
8.	Would farmers give information to another farmer from county?	No	No	No	Yes
9.	Has this project helped you work with more farmers?	Yes	Yes	Yes	Few
	Has it facilitated or hindered work in any way?	No	Helped	No	-
10.	Would information obtained be of use to you and your county?	Yes	Yes	Yes	No
	In what way? --- Income level	x			
	Show trends & timing of buying and selling.		x		
	Comparison of off-farm income to farm income.			x	
	Regular mail-in reports more useful				x
11.	How could dropouts be reduced?				
	1. Follow-up calls.	x			x
	2. Greater breakdown of income & expenditures, enterprise analysis & more nearly fit income tax report.		x		
	3. Bookkeeping.			x	
12.	What would you add to keep representation.				
	1. More follow-up calls.	x	Same as No. 11,(2)	No Change	
	2. Fit it w/ income tax report.				x
13.	Would it be possible to hire someone in county to do interview work?	Yes	Yes but college better	?	No
14.	Would prior warning help enrollment?	Yes	Yes*	?	Yes
	What method of forewarning? Newspaper		x		x
	Letter	x			

APPENDIX C

SUMMARY OF AND QUESTIONNAIRE TO FARMER COOPERATORS

Questionnaire to Farmer Cooperators of the MSU-USDA Research Project

Name_____ Farm No. _____

1. The following have been given as reasons for carrying on the project. Please check the reason you would consider most important.

   _____a. There is a need by those working in and for agriculture to have reliable representative farming information which has not been previously available. This could be obtained by full cooperation by farmers in a project like this.

   _____b. Michigan State University has an obligation to assist farmers with their accounting problems.

   _____c. Michigan State University has an obligation to assist farmers with their management problems.

   _____d. Other: _____

2. What was your main reason for joining the project?

3. Did you realize that this was an experimental effort? _____.

4. If the project were to continue as it was carried out in 1957 and you were not to be charged, would you continue to cooperate in the project? _____ If yes, for one year only? _____ or for more than one year? _____

5. What changes would you recommend to improve the project?

6. If your answer to No. 4 was no, would you continue if the changes were made? _____

7. Would you recommend this project to others? _____

ODF/yl

Results obtained from mail questionnaire to farmer cooperators of the Research Project.

No.	Nature of the Question	Huron	Kalamazoo	Mason	Shiawassee
	Number of respondents	33	38	26	23
1.	Reasons for project-check most important				
	a. Need for information by those working in and for agriculture.	26	33	21	21
	b. MSU has obligation to assist farmers in their accounting problems.	2	2	2	
	c. MSU has obligation to assist farmers with management problems.	2	3	1	1
	d. Other		3	1	
2.	Main reason for joining the project.				
	1) Help government & MSU solve farm problems.	3	2	3	2
	2) Assist with my accounting & bookkeeping.	12	19	7	8
	3) As an aid to income tax record & filing.	2	2	1	5
	4) Believed it to be worthwile project.	3		1	
	5) Just to cooperate with MSU.	5	11	9	3
	6) As an experiment.	2		2	1
	7) Salesman sold me "bill of goods".	4	1	1	
3.	Did you realize this was an experimental effort?				
	Yes	30	34	26	19
	No	2	2		2
4a.	Would you continue in such a project?				
	Yes	16	26	12	14
	No	15	11	11	6
7.	Would you recommend this project to others?				
	Yes	23	32	17	19
	No	3	1	3	1

APPENDIX D

FORMS USED BY INTERVIEWERS IN THE ESTABLISHMENT OF THE MSU FARMER PANEL

Michigan State University
East Lansing, Michigan

AMS ARS U.S. DEPT. OF AGR.
Washington, D. C.

M.S.U. FARMER PANEL
Farm Identification Report

County _____
Segment Number _____
Interviewer _____

Farm Operator			3.	4.	5.	6.
Residence No.	1. Name and Address	2. Farm Key No. (leave blank)	Contact Date(s)	Was Schedule Completed? Yes or No (if No, explain)	Is This Unit a "farm"?	If Yes to 5, Was Farmer Enrolled? (If no, explain)
				Yes ☐ No ☐	Yes ☐ No ☐	Yes ☐ No ☐
				Yes ☐ No ☐	Yes ☐ No ☐	Yes ☐ No ☐
				Yes ☐ No ☐	Yes ☐ No ☐	Yes ☐ No ☐
				Yes ☐ No ☐	Yes ☐ No ☐	Yes ☐ No ☐
				Yes ☐ No ☐	Yes ☐ No ☐	Yes ☐ No ☐

TOTAL NUMBER OF SCHEDULES COMPLETED _____ TOTAL NUMBER OF FARMS ENROLLED _____

COOPERATIVE EXTENSION WORK
IN AGRICULTURE AND HOME ECONOMICS
STATE OF MICHIGAN

MICHIGAN STATE UNIVERSITY
U. S. DEPARTMENT OF AGRICULTURE
COOPERATING

COOPERATIVE EXTENSION SERVICE
AGRICULTURAL ECONOMICS

Prof. Warren Vincent
Agricultural Economics Department
Michigan State University
East Lansing, Michigan

Date _____

Dear Prof. Vincent:

Today I worked in _____ county, segment number(s) _____.

1. FARMS VISITED	Forenoon	Afternoon	Evening	Total

2. FARM OPERATORS CONTACTED	First Call	Second Call	Third Call	Total

3. SCHEDULES	Completed	Not Completed	Total	Reasons for not completing

Remarks on schedules: _____

4. ENROLLMENTS TODAY	No. with Complete Inventory	With Incomplete Inventory	Total

5. ENROLLMENTS TO DATE	Before Today	Days before Today	Total to Date	Average per day

6. MILEAGE	Reading at start	Reading at end	Miles today

Comments, problems, questions: _____

_____.

Yours truly,

_____

M. S. U. FARMER PANEL

FIELD SURVEY

Interviewer_____

County_____

Segment_____

Visitation Time Record

	First Call	Second Call	Third Call
Arrival Time			
Departure Time			

East Lansing, Michigan

M. S. U. FARMER PANEL

Field Survey

December 1956

A. Name of Operator _____

Post Office Address _____

B. Family

1. How many persons are now living in this house? _____

2. What are their names, ages, and relationship to you (the farm operator)?

name	age	relationship

3. Are there other members of your family living in other dwellings on this farm? Yes / / No / /. If YES, what are their names, ages, and relationship to you (the farm operator)?

4. In 1956, did you farm as a manager ____, in a partnership ____, or for yourself ____?

IF YOU ARE A HIRED MANAGER, the remaining questions should be answered for your employer and should relate to the operations you managed.

IF YOU ARE A PARTNER, the remaining questions should be answered for the whole farm. We will avoid contacting both partners. Does he live in this segment? Yes No What is his name? _____

C. Tenure and Farm Size

1. Do you own the farm you operate?____ Rent____? Own and rent also____?

2. (A) How many acres are there in the farm you plan to operate in 1957 ____?

   (B) How many acres tillable? _____

3. If you both own and rent, how many acres of rented land will there be? _____. How much tillable? _____

4. If you rent, what rental arrangements do you have?

acres	Cash	50/50 share	1/3-2/3 share	2/3-1/3 share	Other
Tillable	____	_____	_____	_____	_____
Non-tillable	____	_____	_____	_____	_____

D. Classification

We would like to be able to classify your farm by two methods -- by the sources of income and also by the volume of sales. To do this, would you please

1. Estimate the percent or proportion of total receipts (from sale of farm products and off-farm family income) "taken in" in 1956 that came from these various sources:

Kind	Percent
Off-farm sources	_____
Dairy	_____
Beef	_____
Hogs	_____
Sheep	_____
Poultry	_____
Wheat	_____
Other crops) _____) _____) _____) _____) Beans	_____
Other crops sold	_____
	100

2. If you omit the off-farm income and consider only farm products sold, which of the following value groups would include your farm business for the past year (Check one)

0 to $1,199	____
$1,200 to $9,999	____
$10,000 to $24,999	____
$25,000 and over	____

E. 1956 Expenses

Next, we would like to see how some important expense items vary from year to year. If you can tell us how much you spent for these in 1956, it would be of much interest to compare them with your actual results in 1957. Therefore, please give to the best of your ability the amount spent for each of the following in 1956.

Hired labor	$____
Purchased feed	$____
Fertilizer and lime	$____
Gas, oil and other fuel	$____

F. Investment Intentions

(TO BE ASKED OF FARMERS WHO HAVE GIVEN INDICATIONS THAT THEY WILL BE COOPERATORS

Now, my last questions is of a little different nature. One of the very useful kinds of information used by economists in forecasting business conditions is the investment intentions of industry. This information has been volunteered by businessmen but farmers have not been given the opportunity to indicate their investment plans.

(continued on next page)

1. As things stand now, do you plan to:

	Jan. 1-Mar. 31 1957	Apr. 1-June 30 1957	July 1-Sep. 30 1957	Oct. 1-Dec. 31 1957
(a) Build a new home or make Major improvements on your present home next year..... Yes ☐ No ☐ IF YES: During which quarter? About how much do you expect to spend?.....				
(b) Build new farm buildings or make major farm building improvements next year Yes ☐ No ☐ IF YES: During which quarter? About how much do you expect to spend?.....				
(c) Buy a new or used tractor next year?.....Yes ☐ No ☐ IF YES: During which quarter? About how much do you expect to spend (amount above trade-in)?.....				
(d) Buy a new or used automobile next year.....Yes ☐ No ☐ IF YES: During which quarter? About how much do you expect to spend (amount above trade-in)?.....				
(e) Buy other new or used machinery (including trucks) next year.....Yes ☐ No ☐ IF YES: During which quarter? About how much do you expect to spend (amount above trade-in)?.....				

APPENDIX E

"MAIL IN" FARM ACCOUNT FORMS

Confidential

MICHIGAN STATE UNIVERSITY

Mail-In Accounting Project

Year 19.....

Name of Farm Operator:.....Address.....
County.....Farm No.....
Do you (Check one): Own your farm..... Rent your farm..... Own and rent.....
Did you work full time on the farm this accounting year? ☐ Yes ☐ No
If not, how many months did you work off the farm AND what was the nature of your off farm work?.....
.....
Was the off farm income reported on your monthly income sheets? ☐ Yes ☐ No
If not, how much did the off farm income amount to? $.....
Did your wife receive income from off farm work?..... How many months..... Income $.....
Did any other member of your family living with you receive income last year not included in your report? ☐ Yes ☐ No.
If so, for how many months?..... Income $.....

Names and ages of children in your family (circle those not at home).....
.....

Please estimate the number of 10 hour days of labor contributed to farm work during the year by your wife and children over 12 years of age.....

Were the reported telephone charges the total bill.....or the farm share only.....?
If the total bill was reported, what percent of this total should be considered the farm share?.....%

Were the reported electricity charges the total bill.....or the farm share only.....?
If the total bill was reported, what percent of this total should be considered the farm share?.....%

Were the reported automobile charges the total bill.....or the farm share only.....?
If the total bill was reported, what percent of this total should be considered the farm share?.....%

IF YOU RENTED LAND: 1. What would you estimate as the value of all land rented?.....$.....
2. If you used buildings on rented land, how much do you think they could be insured for.....$.....
3. What is your best estimate of taxes on all rented land and buildings.....$.....
4. Estimate the amount of money the landlord spent during the record year for the following items not already entered in your monthly reports

Insurance on buildings	$.....	Fertilizer	$.....
Custom work hired	$.....	Lime	$.....
Repairs—Buildings and Fences	$.....	Seed and Plants	$.....
Crop harvesting supplies	$.....	Other items	$.....

DO NOT WRITE BELOW THIS LINE

Total acres	4		Average number of cows	3		Total crop value	6	
Tillable acres	4		Milk sold (pounds)	6		Crop value per tillable acre	5	
Average number of men	2		Dairy product sales	5		Fertilizer expense per tillable acre	4	
Days of work: Total	4		Milk sales per cow (lbs.)	5		Crop yield index	3	
Per man	3		Milk sale per man (lbs.)	6		Row crop acres	4	
Per tillable acre	3		Average number of beef cows	3		Grain crop acres	4	
Gross Income: Total	6		Percent beef calf crop	3		Sod crop acres	4	
Per man	5		Average number sows	3		Pct. of tillable acres seeded to legumes	3	
Per tillable acre	5		Pigs weaned per litter	3		Pct. of tillable acres barnyard manured	3	
Per $1,000 machinery	5		Lambs per 100 ewes	3		Pct. of tillable acres in legumes	3	
Per $100 expense	3		Average number of hens	5		Pct. of tillable acres green manured	3	
Years to equal investment	2		Egg sales per hen	4		Soil index	4	

FARM FINANCIAL SUMMARY

A. NET INCREASES AND NET DECREASES

	Landlord	Operator	Total	Per Ti.. A
1. Crops				
2. Dairy				
3. Cattle				
4. Poultry				
5. Hogs				
6. Sheep				
7. Other				
8 GROSS INCOME				
9. Expenses and Net Decreases				
10.	Landlord	Operator	Total	
11. Hired Labor				xxxxxxx xxx
12. Feed Purchased				
13. Crop Expense				
14. Machinery Expense				
15. Improvement Expenses				
16. Taxes				
17. Family Labor				
18. Other Expenses				
19. Total Expenses				
20. Net Income				
21. Total Labor				
22. Total Expenses				
23. Custom Work Expense				
24. Other Crop Expense				
25. Machinery Purchased (See Column B, line 30)				
26.				
27.				
28.				
29. Improvements (See Column B, line 31):				
30.				
31.				
32.				

B. CASH FARM RECEIPTS AND EXPENDITURES

	Landloard	Operator	Total	Pct. of All
1. Crop Sales and Gov't Payments				
2. Dairy Products				
3. Dairy Cattle				
4. Beef				
5. Eggs				
6. Poultry Meat				
7. Hogs				
8. Sheep and Wool				
9. Custom Work:				
10. Labor Off Farm:				
11. Machinery Cash Sales				
12. Improvement Receipts				
13. Other Receipts				
14. Total Cash Receipts				100
15. Hired Labor				
16. Feed Purchased				
17. Seeds and Plants Purchased				
18. Machine Hire				
19. Supplies Purchased				
20. Machinery Repair & Maintenance				
21. Improvement Repair & Maintenance				
22. Livestock Expense				
23. Fertilizer and Lime				
24. Gasoline, Fuel and Oil				
25. Taxes				
26. Insurance on Property				
27. Electricity, Telephone (F.S.....)				
28. Automobile Upkeep (F.S.....)				
29. Livestock Purchased				
30. Machinery Purchased				
31. Improvement Investments				
32. Other Cash Expense				
Total Cash Expense				

33. INVESTMENTS 34.	Landlord		Operator		TOTAL	
	Beginning	Ending	Beginning	Ending	Beginning	Ending
35. Orchard						
36. Land						
37. Farm Improvements						
38. Machinery and Equipment						
39. Feed and Crops						
40. Dairy Cattle						
41. Beef Cattle						
42. Hogs						
43. Sheep						
44. Poultry						
45.						
46.						
47. TOTAL FARM INVESTMENT						

48. Residence		56.	
49. Conservative Real Estate Market Value		57.	
50. Improvement Investment Per Animal Unit		58.	
51. Machinery Depreciation		59.	
52. Improvement Depreciation		60.	
53.		61.	
54.		62.	
55.		63.	

34. INVENTORY CHANGE	Landlord	Operator	Total
35. Farm Improvements			
36. Machinery			
37. Feed and Crops			
38. Dairy Cattle			
39. Beef Cattle			
40. Hogs			
41. Sheep			
42. Poultry			
43.			
44. Total			
45. Net Inventory Change			
46. Net Cash Income			
47. Inventory Change			
48. Net Income			
49. Family Labor Charge @ $.....			
50. Net Farm Income			
51. Interest on Investment			
52. Labor Income			
53. Type of Farm			
54.			
55.			

Michigan State University
East Lansing, Michigan

MSU FARMER PANEL

Farm Inventory January 1, 19___

Improvements & Machinery

Name_____ County_____ Farm No._____

Item	Value	Depreciation	Item	Value	Depreciation
Tenant House			Forage chopper		
Dairy Barn			Manure spreader		
Other Barn (s)			Manure loader		
Milk House			Feed grinder		
Corn Crib			Milking machine		
Granery			Milk cooler		
Hog House					
Poultry House					
Machine Shed					
Garage					
Silo					
Storage					
Well & water system					
Fencing					
Tiling					
TOTAL IMPROVEMENTS	$	$			
MACHINERY					
Auto (farm share %)					
Truck					
Trailer					
Wagons					
Tractor #1					
Tractor #2					
Tractor #3					
Plow(s)					
Disc					
Cultivator(s)					
Harrows					
Cultipacker					
Corn Planter					
Grain Drill					
Combine					
Mower			TOTAL MACHINERY	$	$
Hayrake					
Hay baler					

Michigan State University
East Lansing, Michigan

MSU FARMER PANEL
Farm Inventory January 1, 19__
Feed & Livestock

Name _____ County _____ Farm No. _____

Item	Amount	Value	Item	Amount	Value
Feed			**Hogs**		
Corn Silage T.		$	Brood Sows		$
Corn Grain (sh.bu.)			Gilts		
Oats bu.			Boars		
Wheat bu.			Summer Pigs (Jun-Jul)		
Hay T.			Fall Pigs (Aug-Dec)		
_____			Other Hogs		
_____			TOTAL HOGS	xxx	$
_____			**Sheep**		
Seeds			Ewes		
Fertilizer on hand			Lambs		
TOTAL FEED	xxx	$	Rams		
Dairy			Feeders		
Cows			Wool		
Heifers over 1 year			TOTAL SHEEP	xxx	$
Bulls over 1 year			**Poultry**		
Calves under 1 year			Hens		
Other			Pullets		
TOTAL DAIRY	xxx	$	Broilers		
Beef			Roosters		
_____			Ducks		
_____			Geese		
_____			Turkeys		
_____			TOTAL POULTRY	xxx	$
TOTAL BEEF	xxx	$	TOTAL LIVESTOCK	xxx	$

Name..... County..... Farm No.....

LIVESTOCK PRODUCTION INFORMATION

19.....

HOGS

Farrowing Record

Date	Litters Farrowed	Pigs born	Pigs weaned
TOTAL			

Predominant Breed:.....

If feeder pigs were bought, what was their approximate weight?.....

Notes:.....

.....

.....

DAIRY

Predominant Breed:.....

Milk Market:.....

Used: ABA..... Own Bull..... this year.

Approximate percent of herd freshening from August 1 to December 31.....

Herd on some milk testing program?..... If so, which one? ..... Herd B. F. Record.....

Notes relevant to this year's production record:.....

.....

.....

.....

.....

BEEF CATTLE

Beef herd		Calving record	
Date	Cows calving	Calves born	Remarks
TOTAL			

Predominant Breed:.....

Cattle feeding: Grade of cattle fed this year: Common..... .....

Medium..... Good..... Choice.....

Approximate Average Weight of cattle bought this year:.....

Was this usual weight?.....

Notes:.....

.....

SHEEP

Lambing Record

Date	Ewes Lambing	Lambs Born	Remarks
TOTAL			

Predominant Breed:.....

Number of Sheep Sheared.....

Pounds of wool.....

Notes:.....

.....

.....

NOTE: One copy of this record must be mailed to MSU with the December report or before.

Name Alex Farmer County Ingham Farm No. 05-33-193

CROPS RAISED AND LAND UTILIZATION 1957

SAMPLE

Field Number	CROPS	Owned Land: Acres	Owned Land: Yield per Acre	Owned Land: Total Production	Rented Land: Acres	Rented Land: Yield per Acre	Rented Land: Total Production	Rented Land: Landlord's Share	REMARKS
	Corn for Silage	10	7	70 ton					
	Corn for Grain (report yield on shelled corn basis)	31	40	1240 bu.	12	41	492 bu.	246	
	Oats	35	30	1050 bu.					
	Barley				8	20	160 bu.	53	
	Wheat	10	25	250 bu.	12	23	276 bu.	0	
	Soybeans	5		none		Drowned out			
	Beans								
	Potatoes								
	Hay—Alfalfa (No. of cuttings 2)	10	2½	25 ton		First cutting in silo			
	" (1)	10	2	20 ton		Pastured 2nd cutting			
	Clover (No. of cuttings.....)				10	2	~~20 ton~~ ~~200 lbs~~ 10 ton		
	Mixed (percent legumes 60)	12	2	24 ton					
	Timothy								
	Grass Silage (circle acres if already shown as hay)	10	3	30 ton					
	Other Crops:								
	Sugar Beets				10	9	90 ton	45	
	Summer fallow	5							
	TOTAL CROP ACRES	128	Hay Yield Equivalent Estimate		52	Cash Rent: $ 100 for 12 A.			
	Tillable Pasture—Alfalfa	11				Share Rent: Landlord 1/3- Tenant 2/3 8 A.			
	Sweet clover					Landlord 1/2- Tenant 1/2 32 A.			
	Sudan					Landlord 2/3- Tenant 1/3 — A.			
	Mixed (% legume 30)	10				TOTAL RENTED ACREAGE 52 A.			
	June Grass								
	Idle Tillable Land								
	Total Tillable Acres	149			52				
	Non-Tillable Pasture	3							
	Woods not pastured								
	Farmsteads, roads, lanes, etc.	8							
	TOTAL ACRES	160			52				

The same

PLEASE CHECK CAREFULLY

1. Do the figures shown in acres column add to the correct total?
2. Is production reported for every crop? (If not harvested, estimate yield)
3. Has all rented land been accounted for?
4. ~~Has all information asked for on the back of this sheet been provided?~~

Do not enter crops received as rent from land which you rented to another person. If such crops are fed on the farm you operate they should be entered as purchased feed on the expense report so that this farm will not receive the credit for the value of such crops.

Name..... County..... Farm No.....130.....

FARM INCOME

For the month of.....19.....

LIVESTOCK SALES

Code (Leave Blank)	Date	Description	Where Sold	Weight	Price	OK for Sch. D?	Gross Receipts
							$

(Enter deductions on expense sheet for this month.)

MILK SALES

Code (Leave Blank)	Date			
	xxxxxx	Number of cows in herd this month		
		Base Milk Sold: First pay period		lbs.
		Second pay period		lbs.
		Excess Milk Sold: First pay period		lbs.
		Second pay period		lbs.
	xxxxxx	Base Price $..... Excess Price $.....		
	xxxxxx	Test		
		Receipts: Total for first period	$	
		Total for second period	$	
		Total for the month	$	
		Milk or Cream sold not included above		lbs.
		Milk or cream sold not included above	$	

(Deductions for the farm shown on milk statement should be entered on expense sheet.)

EGG SALES

Code	Date	Dozen	Size or Gr.	Price	Receipt
					$
	TOTAL EGG SALES				$

OTHER INCOME

Code	Date	Kind of Receipt	Amount
			$
	TOTAL "OTHER" INCOME		$

LIVESTOCK CHECK TABLE

Item	Number (include young stock)				
	Dairy	Beef	Hogs	Sheep	Poultry
Number at beginning of month					
Number bought this month					
Number born this month					
TOTAL TO ACCOUNT FOR					
Number sold this month					
Number butchered this month					
Number died this month					
Number on hand at end of month					
TOTAL ACCOUNTED FOR					

TOTAL CASH INCOME $

Name..... County..... Farm No. 131

FARM EXPENSES

For the month of.....19.....

	Code (leave blank)	Date	Item: What is it? How much of it? What used for?	Person Receiving Payment	Check No.	Total Bill	Total Cash Paid: Operator	Total Cash Paid: Landlord	Inventory? ✓
1						$	$	$	
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
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25									
26									
27									
28									
29									
30									
31									
32									
33									
34									
35									
36									
37									
38									
39									
40									

NOTE: If there were purchases which should be inventoried, please complete the tables on the back of this sheet. This is necessary if inventories are to be kept accurately.

QUESTIONS AND COMMENTS:.....

.....

.....

.....

.....

.....

FARM INVENTORY INFORMATION

Farm Machinery

THE TRADE-IN					THE NEW ITEM		
What was Traded	What was its inventory book value?		What was the allowance?		How should the item be described in your inventory book?	Depreciation	
						Years of Expected life	Method*
	$						

* (1) Straight Line or (2) Declining Balance or (3) Sum of the Years Digits
NOTE: Be sure the amount recorded on the opposite side of the sheet is the total cost excluding trade-in allowances.

Farm Buildings

1. The expense(s) recorded on line(s).....on the opposite side of this sheet should be added to the value of the .....shown in the inventory book.
(which building?)

2. The expense(s) recorded on line(s).....should be added to the value of the.....
(which building?)
shown in the inventory book.

3. The expense(s) recorded on line(s).....are for a new.....which should be depreciated over.....years using the.....method of depreciation.
(which building?)

Name Alex Farmer County Ingham Farm No. 05 - 33 - 193

LIVESTOCK FEED & SEED ON HAND AT END OF YEAR Dec. 31 1957

Item		Amount	Price	Total Value
FEED AND SEED				
Silage—Corn	ton	70	$ 7	$ 490
Grass	ton	—		
Grain—Corn (shelled)	bu.	1000	1.16	1160
Oats	bu.	500	.75	375
Wheat	bu.	50	2.00	100
Barley	bu.	—		
Beans	bu.	—		
Potatoes	bu.	—		
Hay—Alfalfa	ton	40	20	800
Clover	ton	—		
Mixed	ton	20	17	340
Straw	ton	12	12	144
Seeds (alfalfa and clover)	lbs.	30	.50	15
Fertilizer (on hand)	ton	—		
Growing Wheat	acres	13	22	286
TOTAL FEED AND SEED				$3710

Item	Number	Total Value
DAIRY CATTLE		
Cows	24	$ 4800
Heifers Over 1 Year	16	2000
Bulls Over 1 Year	—	
Calves Under 1 Year	10	500
Dairy Steers Raised	2	75
TOTAL DAIRY	(52)	$ 7375
BEEF CATTLE		
Feeder Cattle	10	$ 800
Breeding Herd		
TOTAL BEEF	(10)	$ 800
HOGS		
Brood Sows	6	$ 420
Gilts	2	100
Boars	—	
Summer Pigs (June-July)	—	
Fall Pigs (Aug.-Dec.)	54	810
TOTAL HOGS	(62)	$ 1330

Item	Number	Total Value
SHEEP		
Ewes		$
Lambs		
Rams		
Feeder Lambs		
Wool (lbs. on hand)		
TOTAL SHEEP		$
POULTRY		
Hens	1190	$ 1190
Pullets	950	950
Broilers		
Roosters		
Turkeys		
TOTAL POULTRY	XXXXXXX	$ 2140
TOTAL LIVESTOCK	XXXXXXX	$ 15,355

ADDITIONAL INFORMATION (Very Important)

1. Cows on hand (milking and dry) first of month:
   Jan. 24 Feb. 25 Mar. 25 Apr. 24 May 24 June 24
   Jul. 24 Aug. 25 Sep. 25 Oct. 25 Nov. 25 Dec. 24
   Average number of cows for the year 24.5
2. Hogs—Number litters farrowed during year 14
   Number of pigs weaned during year 94
3. Sheep—Number of ewes at lambing time 24
   Number of lambs raised 25
4. Poultry—Approximate number of layers in flock first of each month:
   Jan. 2000 Feb. 1950 Mar. 1900 Apr. 1850 May 1700 Jun. 1675
   Jul. 1600 Aug. 1650 Sep. 3000 Oct. 2275 Nov. 2200 Dec. 2140
   Average number of hens for the year 1995
5. LIVESTOCK CHECK TABLE FOR THE YEAR

Item	Number (include young stock)			
	Dairy	Beef	Hogs	Sheep
Number at beginning of year	49	0	20	24
Number bought and received as gifts	0	10	0	0
Number born during year	25	0	98	25
TOTAL TO ACCOUNT FOR	74	10	118	49
Number sold and given away	17	0	50	47
Number butchered during year	2	0	2	0
Number died during year	3	0	4	2
Number on hand at end of year	(52)	(10)	(62)	0
TOTAL ACCOUNTED FOR	74	10	118	49

TOTAL TO ACCOUNT FOR should equal TOTAL ACCOUNTED FOR

FINANCIAL STATEMENT

MICHIGAN STATE UNIVERSITY "MAIL-IN" ACCOUNTING

EAST LANSING, MICHIGAN

NAME

P. O. ADDRESS

COUNTY

MO.	YEAR

PROJECT	FARM CODE

CODE	ITEM	ITEM AMOUNT	TOTAL PREVIOUS MONTHS	TOTAL TO DATE

APPENDIX F

THE MSU "MAIL IN" FARM ACCOUNTING PROJECT IBM CODE BOOK

THE M.S.U. "MAIL-IN" FARM ACCOUNTING PROJECT

IBM CODE BOOK

March, 1958

A Cooperative Extension Project
Sponsored by County Extension Workers
and The Agricultural Economics Department, Michigan State University.

MSU Mail-In Account Code — FARM OPERATING EXPENSES

Code	Item
10100	LABOR EXPENSE
10	Housing for labor
20	Labor board, etc.
30	Labor social sec.
40	Labor wkmns comp.
10200	FEED EXPENSE
	Grain
	Mill feed
	Hay
	Other roughage
	Bedding
	Minerals
	Salt
	Grinding
	Pasture rent
	Stilbesterol
	Aureomycin
	Terramycin
10300	SEEDS
11	Barley seed
12	Buckwheat seed
13	Seed corn
14	Seed oats
15	Rye seed
16	Spelts seed
20	Legume or grass seed
21	Alfalfa seed
22	Clover seed
23	Fescue seed
24	Orchard grass seed
25	Red top seed
26	Rye grass seed
27	Sudan grass seed
28	Timothy seed
29	_____
31	Seed beans
32	Beet seed
33	Flax seed
34	Seed potatoes
35	Seed wheat
41	Asparagus seed
42	Cabbage seed
43	Melon seed
44	Celery seed
45	Seed peas
46	Cucumber seed
47	Lettuce seed
48	Pumpkin seed
49	Onion seed
10400	PLANTS
	Transplants
	Seedlings
	Trees
	Sets
	Roots

Code	Item
10500	FERTILIZER
10	Fertilizer
20	Manure
30	Mulch
10600	LIME
10	Lime
20	Marl
10700	MISC. CROP EXPENSE
10	Crop insurance
20	Crop marketing
	Overpayment on loan
	Crop inspection
	Hauling crops to mkt.
	ASC loan fee
	Apple stamps
	Co-op entry fee
	Crop sales tax
30	Stor. & warehousing
40	Seed treatment
50	Crop supplies
	Binder twine
	Bale ties
	Containers
	Tags & tickets
	Frost prev. supp.
60	Soil testing
70	Spray material
80	Bee expense
10800	SUPPLIES
10	Small equipment
20	Syrup equipment
30	Equipment for labor
10900	MACHY HIRE & CUSTOM
01	Machine hire
02	Baling
03	Bean pulling
04	Beet lifting
05	Beet harvesting
06	Blocking
07	Chopping
08	Combining
09	Corn picking
10	Cultipacking
11	Cultivating
12	Discing
13	Drying
14	Fert. spreading
15	Harrowing
16	Hauling
17	Lime spreading
18	Manure loading
19	Manure spreading
20	Mowing
21	Planting

Code	Item
10922	Plowing
23	Potato digging
24	Raking
25	Sawing
26	Shelling
27	Silo filling
28	Spraying
29	Trucking
11000	MACHY REPAIR MAINT.
10	Tractor rep. & maint.
20	Farm equipment repair
30	Trailer license
40	Wagon license
11100	TRUCK UPKEEP
	Truck repair
	Truck oil
	Truck grease
	Truck antifreeze
10	Truck fuel
20	Truck insurance
30	Truck license
11200	AUTO UPKEEP
	Auto repair
	Auto oil & lub.
	Auto antifreeze
10	Auto fuel
20	Auto insurance
30	Auto license
11300	GAS, OIL, FUEL
	Oil
	Grease
	Antifreeze
10	Tractor or motor fuel
11400	IMPROVEMENT MAINT.
10	Building repair
20	Fencing repair
30	Tile repair
40	Drive or yard maint.
50	Hdwre & bldg. mat'l
60	Electrical maint.
70	Water system maint.
80	Heating system maint.
11500	SOIL, WATER CONS. EXP.
01	Bulldozing
02	Drainage ditches
03	Earthen dam
04	Pond
05	Brush eradication
06	Windbreak
07	Terracing

Code	Item
11600	FIRE & WIND INSURANCE
11700	VET. & MEDICINE
	Worming
	Dehorning
	Penicillin
	Castrating
	Bag balm
	Blood testing
	Sulmet
	Vaccination
	Caponizing
11800	BREEDING EXPENSE
11900	LIVESTOCK EXPENSE
10	Milk testing
20	Dairy supplies
	Washing compounds
	Strainer pads
	Inflation rubbers
	Water softener
	Strip cups
	Testing bottles
30	Registration
40	Livestock rent
50	Poultry supplies
	Egg cartons & crates
	Leg bands
	Egg washing compound
	Litter
60	Brooder fuel
70	Heater fuel
80	Sheep shearing
90	Livestock supplies
	Fly spray
	Louse powder
	Sheep dip
	Syringes, needles, etc.
	Dilators
	Whitewash barn
12000	LIVESTOCK MARKETING
	Trucking lvstk for sale
	Commission
	Stockyard charges
	Lvstk advertising
	Showing lvstk
	Meat storage
	Livestock sales tax
12100	MILK MARKETING
	Hauling & tax
	ADA
	Association dues
	Revolving fund
12200	TAXES
10	Real estate taxes
20	Personal prop. taxes
12300	INTEREST (Farm Debt)
12400	RENT
12500	ELECTRICITY
12600	TELEPHONE
12700	MISCELLANEOUS EXPENSE
	Rat poison
	Water rent
	General advertising
	Safety deposit box rent
	Checking acct. serv. chge.
	Dog tax
10	Farm subscriptions
20	Organization dues
30	Bus. meetings & travel
40	Legal fees
50	Liability insurance
51	Loan insurance
60	Freight
70	Income tax service
80	Office supplies
90	Bee supplies
13000	MERCHANDISE FOR RESALE
13100	EGGS FOR RESALE
13200	MILK FOR RESALE
13300	APPLES FOR RESALE
13400	POTATOES FOR RESALE
13500	NURSERY STOCK FOR RESALE
13600	STUMPAGE
13700	_____
13800	_____
13900	_____

Code	Item
20000	MACHY PURCHASED
001	Adding machine
002	Airplane
003	Auger
004	Auto
005	
006	
007	Bale loader
008	Baler
009	Baskets
010	Bean cooker
011	Bean harvester
012	Bean puller
013	Beet harvester
014	Beet lifter
015	Beet planter
016	Beet thinner
017	Belt
018	Binder
019	Blower
020	Buck rake
021	Bulk tank
022	Bulldozer
023	
024	
025	Canvas
026	Cement mixer
027	Chicken brooder
028	Chopper
029	Clippers
030	Clodbuster
031	Combine
032	Compressor
033	Conveyor
034	Corn binder
035	Corn picker
036	Corn planter
037	Crates
038	Cream separator
039	Cultihoe
040	Cultipacker
041	Cultivator
042	
043	
044	Disc
045	
046	
047	Egg cooler
048	Egg grader
049	Egg washer
050	Egg waxer
051	Electric drill
052	Electric fence
053	Electric motor
054	Elevator
055	
056	

Code	Item
20057	Fan
058	Fanning mill
059	Feed cart
060	Feed grinder
061	Feed mixer
062	Feeders
063	Fertilizer spreader
064	Field cultivator
065	Fire extinguisher
066	Fork lift
067	Fruit brusher
068	Fruit grader
069	
070	
071	Garden tractor
072	Gas pump
073	Gas tank
074	Gasoline motor
075	Grain drill
076	Gutter cleaner
077	
078	
079	Hammer mill
080	Harness
081	Harrow
082	Hay conditioner
083	Hay crusher
084	Hay dryer
085	Hay rack
086	Hay rake
087	Hay rope
088	Hoist
089	
090	
091	Irrigation equip.
092	
093	Jeep
094	
095	Ladder
096	Lawn mower
097	Lime spreader
098	
099	Manure loader
100	MACHY PURCHASED
101	Manure spreader
102	Milk cans
103	Milk cooler
104	Milkhouse heater
105	Milk pails
106	Milk tank
107	Milker
108	Milker washer
109	Mower
110	
111	
112	Nests
113	

Code	Item
20114	Office furniture
115	
116	Picker sheller
117	Picking sacks
118	Pickup
119	Plow
120	Portable hay bag
121	Portable poultry house
122	Post hole digger
123	Potato digger
124	Potato grader
125	Potato loader
126	Potato planter
127	Pruner
128	
129	
130	Roller
131	Rotary hoe
132	
133	Sacks
134	Saw
135	Scales
136	Seed treater
137	Seeder
138	Sheller
139	Silo filler
140	Silo unloader
141	Slings
142	Small tools
143	Sprayer
144	Stalk shredder
145	Steel squirrel
146	Stone boat
147	Straw Debaler
148	Sub-soiler
149	Syrup equipment
150	Scraper
151	Tines
152	Tarp
153	Tent
154	Tractor
155	Trailer
156	Tree digger
157	Truck
158	Typewriter
159	Water tank
160	Waterer
161	Wagon
162	Wagon box
163	Wagon rack
164	Wagon unloader
165	Water heater
166	Weeder
167	Welder
168	Wheelbarrow
169	Wiggle hoe
170	Windrower

MSU Mail-In Account Code

BUILDING, FARM IMPROVEMENT INVESTMENTS & LIVESTOCK PURCHASES

Code	Item
30000	BUILDINGS
01	Tenant house
02	Barn
03	Machine shed
04	Storage
05	Garage
06	Shop
07	Hog house
08	Poultry house
09	Milkhouse
10	Milking parlor
11	Silo
12	Corn crib
13	Granary
14	Bath house
15	Laborers house
16	Toilets
17	Drying floor
18	Greenhouse
19	Cold frames
20	Hot houses
21	Well house
22	Sugar house
23	_____
24	_____
25	_____
26	_____

Code	Item
30100	FARM IMPROVEMENTS
01	Tiling
02	Fencing
03	Land clearing
04	Road
05	Bridge
06	Culvert
07	Gates
08	Pump & water system
09	Water cups
10	Stanchions
11	Paved barnyard
12	Wiring
13	Sidewalk
14	Orchard
15	Windmill
16	Well

Code	Item
40100	DAIRY CATTLE BOUGHT
10	Dairy cows bought
20	Dairy calves bought
30	Dairy heifers bought
40	Dairy bulls bought
40200	BEEF CATTLE BOUGHT
10	Beef cows bought
20	Beef calves bought
30	Beef heifers bought
40	Beef bulls bought
50	Beef steers bought
40300	SWINE BOUGHT
10	Sows bought
20	Pigs bought
30	Gilts bought
40	Boars bought
40400	SHEEP BOUGHT
10	Ewes bought
20	Lambs bought
30	Rams bought
40500	OTHER LIVESTOCK BOUGHT
10	Horses bought
20	Rabbits bought
30	Goats bought
40	Fur animals bought
15000	POULTRY BOUGHT
10	Chicks bought
20	Pullets bought
30	Hens bought
40	Roosters bought
50	Ducks
60	Geese
70	Turkeys

Code	Item
50100	DAIRY CATTLE SOLD
10	Dairy cows sold
20	Dairy calves sold
30	Dairy heifers sold
40	Dairy bulls sold
50	Dairy steers sold
60	Butchered dairy sold
50200	BEEF CATTLE SOLD
10	Beef cows sold
20	Beef calves sold
30	Beef heifers sold
40	Beef bulls sold
50	Beef steers sold
60	Butchered beef sold
50300	SWINE SOLD
10	Sows sold
20	Pigs sold
30	Gilts sold
40	Boars sold
50	Hogs sold
60	Butchered hogs sold
50400	SHEEP & WOOL SOLD
10	Ewes sold
20	Lambs sold
30	Rams sold
40	Wool sold
50500	POULTRY SOLD
10	Hens sold
20	Pullets
30	Broilers sold
40	Dressed poultry sold
50	Ducks sold
60	Geese sold
70	Turkeys sold
50600	OTHER LIVESTOCK SOLD
10	Horses sold
20	Rabbits sold
30	Goats sold
40	Dogs sold
50	Fur animals sold
51100	FEED GRAINS SOLD
10	Barley
20	Buckwheat
30	Corn
40	Oats
50	Rye
60	Spelts
51200	SEEDS SOLD
10	Alfalfa seed
20	Clover seed
30	Grass seed

Code	Item
51300	CASH CROPS
10	Beans
20	Soybeans
30	Sugar beets
40	Flax
50	Potatoes
60	Wheat
70	Mint
80	Popcorn
90	Onions
51400	ROUGHAGES & STRAW
10	Hay
11	Alfalfa hay
12	Clover hay
13	Mixed hay
14	Timothy hay
20	Silage
21	Corn silage
22	Grass silage
30	Straw
51500	TRUCK CROPS
01	Asparagus
02	Canning beans
03	Celery
04	Sweet corn
05	Cucumbers
06	Cauliflower
07	Cantaloupe
08	Cabbage
09	Lettuce
10	Pumpkins
11	Radishes
12	Squash
13	Tomatoes
14	Watermelon
15	Rhubarb
51600	FRUIT
01	Apples
02	Apricots
03	Red cherries
04	Sweet cherries
05	Peaches
06	Pears
07	Plums
08	Prunes
09	Cider
10	Blackberries
11	Black raspberries
12	Blueberries
13	Boysenberries
14	Grapes
15	Red raspberries
16	Strawberries
17	Currants
18	Gooseberries

Code	Item
51700	SOIL BANK PAYMENTS
51800	ASC GOV'T PAYMENTS
10	Tiling
20	Fertilizer
30	Ponds
52000	DAIRY PRODUCTS
10	Milk
20	Cream
53000	EGGS
10	Hen eggs
20	Turkey eggs
54000	CUSTOM WORK
	(See Section 109 for kind)
55000	FORESTRY PRODUCTS
01	Syrup
02	Standing trees
03	Lumber
04	Posts
05	Logs
06	Fuel wood
07	Christmas trees
08	Evergreens
09	Nuts
56000	MACHINERY SOLD
	(See Section 200 for kind)
56100	MACHINERY SOLD
	(See Section 201 for kind)
56200	MACH. INS. SETTLEMENT
57000	IMPROVEMENT RECEIPTS
10	Buildings sold
20	Insurance settlement
58000	MISCELLANEOUS RECEIPTS
01	Gas tax refunds
02	Bags
03	Rebates or discount
04	Fertilizer sold
05	Fuel sold
06	Dividends
07	Tenant house rent
08	Warehouse services
09	Honey
10	Interest from co-op
11	Cooperative stock

Code	Item
60000	OPERATOR NON-FARM INCOME
	Milage
	Wages
	Fees
	Sales commissions
60100	FAMILY INCOME
10	Sale of real estate
20	Pensions
30	Rent (non-farm prop.)
40	Interest (non-farm)
50	Social security
60	Unemployment ins.
70	Oil lease
70100	FARM DEBT PAYMENTS
70200	FAMILY DEBT PAYMENTS
80000	NON-FARM EXPENSE

Code	
80100	FOOD
10	Food for home use
20	Meals & snacks away
30	Beverages
40	Vitamins
50	Butchering
80200	HOUSING & UPKEEP
10	Rent
20	Upkeep on house & grounds
	Electrical
	Plumbing
	Carpentry
	Painting
	Seeding
30	Taxes on house
40	Insurance on house & equip.
50	Interest on house debt
60	Lodging or accomodation
80300	HOUSEHOLD OPERATION
10	Utilities
	Telephone & telegraph
	Electricity
	Water
20	Fuel & ice (home share)
30	Supplies
	General household supplies
	Stationery & postage
	House plants, flowers, garden supplies
40	Household help
	Wages
	Social security
50	Repair & installation of equip. & furnishings
60	Miscellaneous household services
	Frozen food service
	Laundry service
	Water softening
	Moving & storage
	Pest control (home share)
70	Minor equipment & furnishings
	Kitchen utensils
	Small tools
	Non-durable furnishings

Code	
80400	CLOTHING
10	Outer wear
	Ready-made garments
	Suits, coats, dresses
	Sweaters, skirts, shirts
	Overalls, work clothes
	Jackets, playsuits
20	Underwear & accessories
	Hats, gloves, purses
	Lingerie, underwear
	Ties, belts, scarves
	Jewelry & repair
	Umbrellas
30	Footwear
40	Clothing care & storage
50	Materials & services
	Clothing material
	Dressmaking
	Mending supplies
80500	MEDICAL CARE*
10	M.D. doctor bills
20	Oculist & glasses
30	Dental bills
40	Medicine & drugs
50	Medical supplies
60	Hospital bills
70	Hospital insurance premiums
80	Travel for medical care
80600	EDUCATION & RECREATION
10	School expense
20	Reading material
30	Paid admissions & party expense
40	Sports & hobbies
	Equipment & upkeep
	Licenses
50	Music & instruments
	Instruments & upkeep
60	Toys, bicycles & games
70	Instruction & lessons
80	Social & non-professional dues
90	Pets & care
80700	TRANSPORTATION
10	Auto upkeep (home share)
	Repair
	Oil & lubrication
	Antifreeze
	Fuel
	Insurance
	License
20	Non-business travel

Code	
80800	CONTRIBUTIONS*
	Church
	Salvation Army
	Red Cross
	Community Chest
	Non-profit schools
	Non-profit hospitals
	Veterans' organizations
	Scouts
	Drives (polio, heart, multiple sclerosis)
80900	GIFTS & CARDS
	Gifts to non-family
	Wrappings, cards
81000	PERSONAL
10	Toilet articles
20	Barber, beauty services
30	Smoking needs
40	Allowances
50	Photos
60	Miscellaneous personal property
81100	TAXES, CLASS I*
10	Non-farm personal tax
20	Non-farm real estate tax
30	State income tax
40	Intangibles tax
50	Sales tax
81200	TAXES, CLASS II
10	Federal income tax
20	Inheritance tax
30	Gift tax
40	Miscellaneous tax
81300	NON-FARM INTEREST*
81400	MISCELLANEOUS EXPENSES
10	Non-farm legal fees
20	Health & accident insurance
30	Funeral and special events
40	Union dues
50	Bank charges, deposit box
90000	NON-FARM INVESTMENTS
10	Stocks & bonds
20	Saving & retirement plans
30	Life insurance premiums
40	Real estate investment
50	Social security (self)

Code	
90100	MAJOR REMODELING
	Home additions
	Landscaping
90200	MAJOR EQUIPMENT & FURNISHINGS
	China, silver, glass
	Cleaning equipment (vacuum cleaner)
	Clocks, mirrors & pictures
	Drapes, window fittings
	Furniture coverings
	Furniture & lamps
	Humidifier
	Major kitchen equipment
	Major laundry equipment
	Mattresses, linens, bedding
	Rugs & carpets
	Sewing machine
	_____
	_____
	_____
	Major garden equipment
	_____
	Luggage
10	Radio, T.V., record player, piano
	Records
	Repairs
20	Auto
	Purchased auto (home share)
90300	EXPENSE ON NON-FARM INVESTMENT
	Upkeep on investment properties

* These totals may be used if you file the long form (1040) income tax return.

APPENDIX G

FINANCIAL SUMMARY FORM USED IN THE 1958 "MAIL IN" FARM ACCOUNTING SYSTEM

FARM CODE			PROJECT	YEAR

FINANCIAL SUMMARY

MICHIGAN STATE UNIVERSITY
"MAIL-IN" ACCOUNTING
EAST LANSING, MICHIGAN

ITEM CODE	ITEM	MO.	QUANTITY	COR. CODE	OPERATOR		LANDLORD	
					CURRENT	TOTAL TO DATE	CURRENT	TOTAL TO DATE
					$	$	$	$

145

APPENDIX H

PROJECT OUTLINE OF THE EXPERIMENT RELATING TO THE POSSIBLE ESTABLISHMENT OF A FARMERS' CONTINUOUS REPORTING SYSTEM OF FARMERS' INCOME AND EXPENDITURES AND RELATED DATA MICHIGAN STATE UNIVERSITY, NOVEMBER 6, 1956

To: Persons interested or involved in the Michigan State University farmer panel
From: Warren H. Vincent, Michigan State University
Subject: Preliminary report of research aspect of mail-in project
Date: November 6, 1956

I. Cooperative agreement with United States Department of Agriculture

A. Name of project--Experiments relating to the possible establishment of a Farmers' Continuous Reporting System of farmers' income and expenditures and related data.

B. Leaders
1. Warren Vincent for the Michigan Agricultural Experiment Station
2. Nathan M. Koffsky for the Agricultural Marketing Service
3. Wylie D. Goodsell for the Agricultural Research Service

C. Location--4 counties in Michigan

D. Headquarter--East Lansing, Michigan

E. Need for study--In the past the USDA has relied on one-time enumerative surveys of farm operators for much of the basic information relating to farmers ' incomes and expenditures. These surveys have been few and far between. For example, the 1955 Survey of Farmers' Expenditures was 9 years after the previous nationwide survey which was of limited significance and almost 15 years after the previous comprehensive survey of 1942. In view of the importance of maintaining accurate farm income and expense data, it is essential that the Department have available means for obtaining such information much more frequently. Furthermore, the results of enumerative surveys do not become available usually for as much as a year or two after the survey has been completed. The Department should consider the alternative of establishing representative groups of farmers who would report in regularly, perhaps monthly, on information relating to income and expenditures. One great advantage of a Continuous Reporting System is that significant changes are recorded quickly. For example, actual information on farmers' expenditures for farm machinery in 1956 are not presently available. It is known that farm machinery production is down sharply from 1955. But there is the question as to how much of the decline reflects smaller farm purchases or reductions in dealers' inventories. A continuous reporting system would indicate what was actually happpening to farmers' purchases at the time. But there are many questions of technical nature which would require answers before the Department would be in a position to know whether such an approach on a nationwide basis is feasible and would provide adequate information. The ARS is also interested in testing out the procedure as a means of getting the data needed for analyzing costs and returns by type of farm, production, adjustments, and the financial positions of farmers. For these reasons the Agricultural Marketing Service, the Agricultural Research Service and the Michigan Agricultural Experiment Station are conducting cooperative research.

F. Objectives: the main objectives are to study:

1. The problems involved in establishing a representative Farmers' Continuous Reporting System and in keeping it representative.

2. The kinds of information that can be obtained from such a reporting system, including the feasible length of survey form.

3. Comparison of costs as between Enumerative Surveys and Farmers' Continuous Reporting Systems.

4. A quality check to the extent possible, of comparing differences in results as between Enumerative Surveys and Farmers' Continuous Reporting System.

G. Prccedure--The cooperating parties will establish a probability sample of about 200 farms in 4 counties in Michigan for the purpose of providing monthly information on farmers' income and expenditures and related data. The sample will be representative of agriculture in the selected counties Tests will be devised to determine the effects on the representativeness of the sample of refusals to participate, and the effects of dropouts after the Continuous Reporting System has been established. The sample will be contacted for the purpose of obtaining information on farm characteristics, and selected income and expense items in the preceding year and eliciting participation. Mail-in reporting forms will be designed to test types of information that can be obtained, and how much can be obtained without jeopardizing the sample or results. Consideration will be given to a possible recall survey of cooperators to determine selected income and expense items in 1957 without recourse to monthly records as well as information on how the monthly records were kept. Cost data on the project will be maintained for comparison with other survey costs.

1. Agricultural Marketing Service

   a. Will provide the services and travel expenses of its regular staff members for planning and consultation in this study.

   b. Will provide not to exceed $5000 for reimbursement to the Michigan Agricultural Experiment Station for salaries of enumerators and clerical assistance, travel expenses and machine tabulations in connection with this work.

2. Agricultural Research Service

   a. Will provide the services and travel expenses of its regular staff members for planning and consultation in this study.

   b. Will provide not to exceed $5000 for reimbursement to the Michigan Agricultural Experiment Station for salaries of enumerators and clerical assistance, travel expenses and machine tabulations in connection with this work.

3. Michigan Agricultural Experiment Station

a. Will assume the major responsibility for all field work, coding and machine tabulations in this study.

b. Will provide office space and other facilities for the project staff.

c. Will provide the services and travel expenses of its regular staff members for planning and consultation in this study.

H. Mutual Agreements

1. It is mutually understood and agreed that:

a. The estimated expenditures for this project will be approximately as outlined in the following budget. Reimbursement by AMS and ARS to the Michigan Agricultural Experiment Station will be made quarterly for specific expenditures for each previous quarter as listed in detail on properly executed invoices or vouchers prepared by the Michigan Agricultural Experiment Station to each cooperator.

b. Follow up on this study will be made by personal review and consultation between the parties and reports will be prepared by the Michigan Agricultural Experiment Station as agreed upon.

c. The results or information obtained from these studies herein outlined may be used jointly by the cooperators or by either of the parties separately, but any manuscripts prepared by either shall be submitted to the other parties for suggestions and approval prior to publication. In the event of disagreement, either party may publish results on its own responsibility, giving proper acknowledgment of cooperation.

d. In connection with the performance of work under this agreement the Michigan Agricultural Experiment Station agrees not to discriminate against any employee or applicant for employment because of race, religion, color, or national origin. The aforesaid provision shall include but not be limited to, the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship. The Station agrees to post hereafter in conspicuous places, available for employees and applicants for employment, notices to be provided by the Department setting forth the provisions of the nondiscrimination clause. The Station further agrees to insert the foregoing provision in all sub-agreements hereunder, except agreements for standard commercial supplies or raw materials.

e. No member of or delegate to Congress or resident commissioner, shall be admitted to any share or part of this agreement or to any benefit to arise therefrom, unless it be made with a corporation for its general benefit.

f. This agreement shall become effective October ___, 1956 and shall continue in force until June 30, 1957, subject to renewal from year to year by mutual agreement of the parties in writing. Either party may terminate this agreement upon 90 days' notice in writing to the other parties.

MICHIGAN AGRICULTURAL EXPERIMENT STATION

By:_____

AGRICULTURAL MARKETING SERVICE

BY:_____
Administrator

AGRICULTURAL RESEARCH SERVICE

By:_____

I. Approximate budget of expenditures for the period October 1, 1956 to June 30, 1957.

Item	Michigan	AMS	ARS	TOTAL
Salaries				
Professional		$ 750[1]	$ 750[1]	
Enumerator and clerical		2500[2]	2500[2]	
Other				
Travel and per diem		1750[3]	1750[3]	
Machine tabulations		1000[2]	1000[2]	
Supplies, equipment, etc.				
	$10,000	$6000	$6000	$22,000

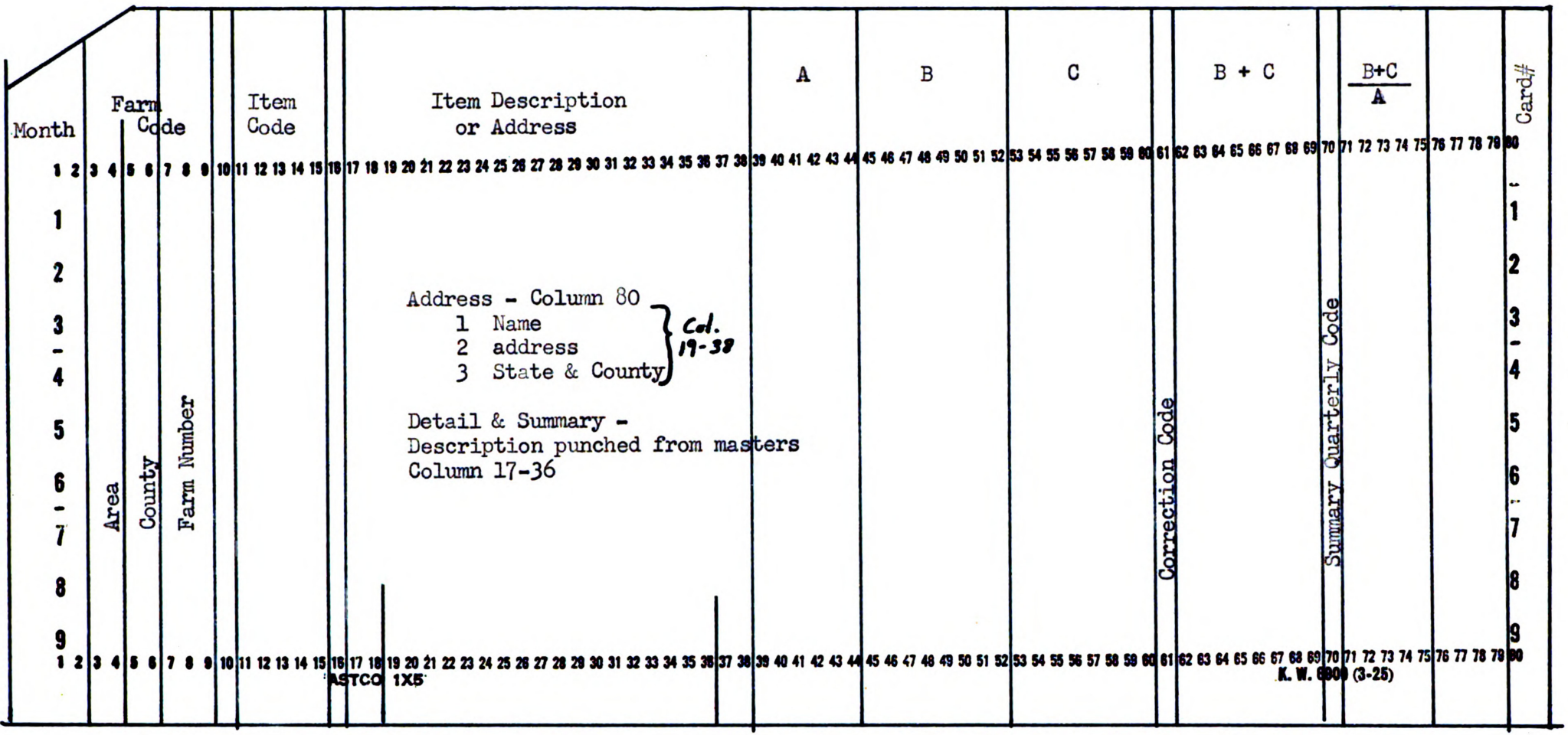
[1] Non-reimbursable item. Represents portions of salaries of staff members of ARS and AMS.

[2] For reimbursement to the Michigan Agricultural Experiment Station.

[3] Approximately $250 is for travel expenses of staff members of AMS and ARS. About $1500 is for reimbursement to the Michigan Agricultural Experiment Station.

APPENDIX I

IBM CARD "FORMAT" USED IN THE MSU "MAIL IN" FARM ACCOUNTING SYSTEM



Column 61---1=plus
2=minus

IBM Card "Foremat" as used in the
MSU Mail-In Farm Accounting System
1958