

THE RELATIONSHIPS BETWEEN THE SOCIO-ECONOMIC CHARACTERISTICS
OF FARMERS IN BRITISH COLUMBIA AND THEIR CONTACTS WITH
DISTRICT AGRICULTURISTS

by

ISAAC ADEFOLU AKINBODE

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Department of Agricultural Economics

The University of British Columbia
Vancouver 8, Canada

Date April 11th, 1969

ABSTRACT

The purpose of the study was to measure the communication between farmers and the Agricultural Extension Service in British Columbia by analyzing the nature and number of contacts, as well as the relationship of such contacts to the socio-economic characteristics of farm operators. Two hypotheses were tested to ascertain whether there were any statistically significant differences in the level and kind of contact with District Agriculturists among farmers of varying socio-economic characteristics. The analytical survey method was used, and the data were collected by personal interviews with 256 farm household heads.

The areas studied included Peace River, Northern Tier, North Thompson and Salmon Arm in rural British Columbia. In general, the respondents had similar characteristics to farm operators in other rural areas in the province. The respondents had a median of eight years of schooling, median net farm income of \$2,000 to \$2,999, and about one half of them had no off-farm jobs.

Contacts between the respondents and the District Agriculturist were mainly through impersonal rather than personal sources of information, and the respondents reached by the two types of contact were not the same. The number of respondents who had personal contacts varied from 16 to 35 per cent, while the number obtaining information through the impersonal sources varied from 81 to 93 per cent, depending on the type of contact.

The farmers had an average of 3.71 different types of contact during the year 1966. These included an average of 1.05 personal and 2.66 impersonal contacts. Farmers with higher

socio-economic status reported more contacts than did lower status farmers. More personal contacts with the District Agriculturist were reported by farmers with more education. There were statistically significant differences between the users of all extension contacts and non-users, with respect to thirteen socio-economic characteristics.

Four characteristics, including years of school completed, distance travelled for goods and services, social participation and amount of gross farm income, accounted for 34 per cent of the variation in the use of all types of extension contact combined. Between 13 and 27 per cent of the variation in each individual type of contact was accounted for by differing combinations of socio-economic characteristics.

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CHAPTER 1

INTRODUCTION

Agriculture today is experiencing an accelerated rate of change as a result of new agricultural technology. Agricultural innovations have no value unless they get to farmers who have need for them, but farm people have little direct contact with agricultural scientists.¹ The Agricultural Extension Service which serves as a link between the laboratory and the farmer is one of the principal channels of disseminating new technology from scientists to farmers.² Consequently, the nature of the relationship between extension workers and farm operators is crucial in the diffusion and adoption of agricultural innovations.

II. PURPOSE OF THE STUDY

The purpose of this study is to measure the degree of communication between farmers and the Agricultural Extension Service in British Columbia by analyzing the nature and extent of contacts, as well as the relationship of such contacts to the socio-economic characteristics of farm operators.

The specific purposes are (1) to determine the extent and types of contacts which farmers have with the District Agriculturists (D.A.) in selected communities in British Columbia (B.C.); (2) to determine the socio-economic characteristics of farmers at different

1 Everett M. Rogers and Harold R. Capener, The County Extension Agent and His Constituents, Wooster, Ohio Agricultural Experiment Station Research Bulletin 858, June 1960, p. 4.

2 The Agricultural Extension Service carries out its extension work through the agricultural extension agents. For more details on the roles of extension agents, see Claude H. Job, "A Study of the Roles of Selected Agricultural Extension Agents in British Columbia", (unpublished M.S.A. Thesis, Department of Agricultural Economics, University of British Columbia, Vancouver, 1965), pp. 16 and 28-71.

contact levels; and (3) to measure the degree of association between different contact levels and the socio-economic characteristics of farmers.

III. HYPOTHESES

The following two hypotheses are tested:³

1. There are no significant differences in the level of contact with District Agriculturists among farmers of differing socio-economic status.
2. There are no significant differences in the kind of contacts with District Agriculturists among farmers of differing socio-economic status.

IV. DEFINITION OF TERMS

In this study, certain terms are used which require specific definition. Thus, for the purpose of this study the following terms are used:

1. Socio-economic status refers to the position assigned to an individual respondent on the basis of how much he possesses of personal, educational, social and economic characteristics studied. This status refers to all or some of the characteristics at any one time. Socio-economic level is used interchangeably with socio-economic status. They both mean the same thing.
2. Socio-economic characteristics or factors refer to the personal, educational, social and economic indices used in this study to measure the socio-economic status or level of the sample.

³ The hypotheses will be phrased in the null form for statistical testing where appropriate.

V. AGRICULTURAL EXTENSION IN BRITISH COLUMBIA

The relationship between agricultural extension and the farmer may be a reflection of the organizational pattern developed to conduct extension work; therefore, it is appropriate to discuss the organization of agricultural extension in B.C. The present organizational pattern was established in 1964⁴, (Figure 1) whereby, extension work is performed by certain branches of the Provincial Department of Agriculture, but only as an adjunct to the several roles performed by each branch.

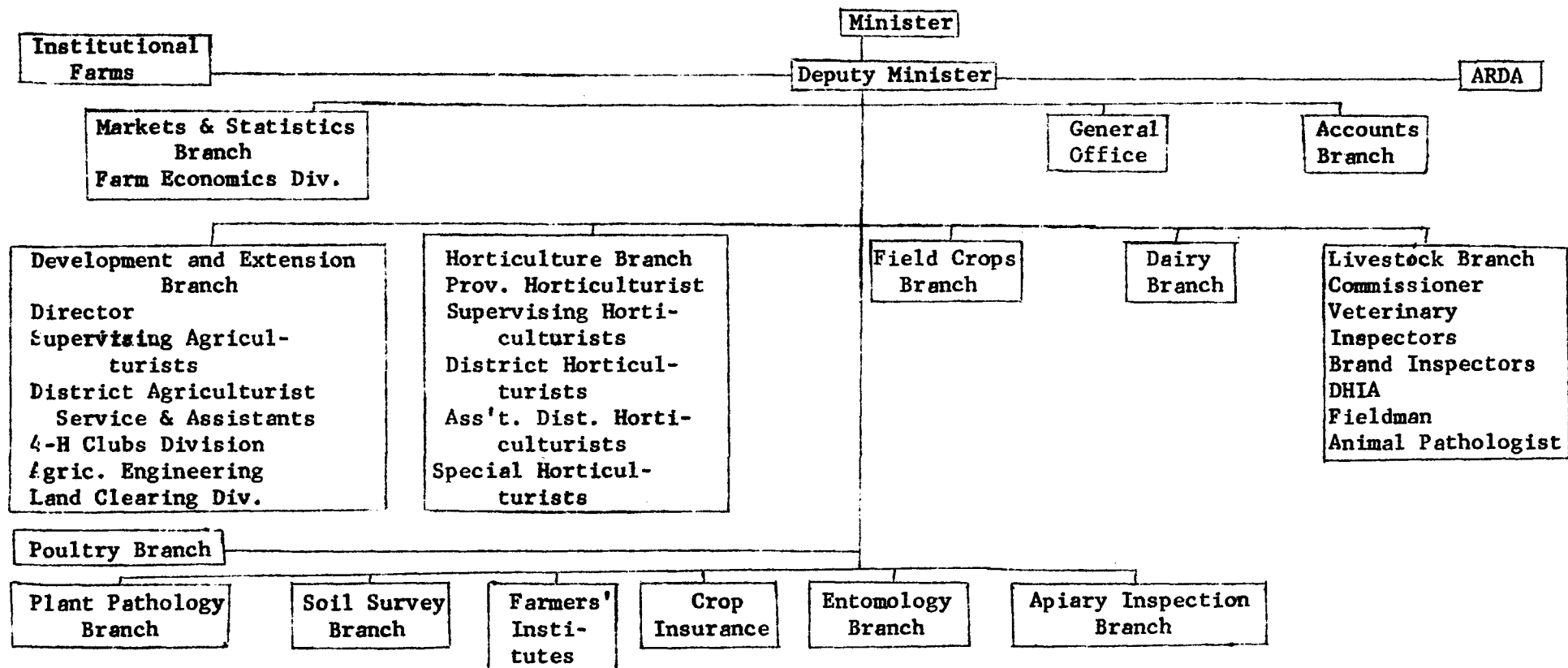
The Horticultural Branch does extension work with farmers producing fruits, vegetables and ornamentals. The Field Crops Branch, in addition to performing advisory work relating to the production of such crops as cereals, pastures, hay and potatoes, carries out soil analysis and experiments on the suitability of weedicides and commercial fertilizers. The Dairy Branch is primarily concerned with the enforcement of the Milk Industry Act, including the sampling and testing of milk and the issuance of licences to dairy operators. The Poultry Branch offers extension service to poultry producers.⁵ The Livestock Branch engages in the promotion and supervision of the livestock industry, and provides veterinary services affecting disease control regulations; it also supervises stock brands, inspects dairy and fur farm practices, and licensed abattoirs too small to qualify under federal inspection

⁴ Claude H. Job, op. cit., p. 3.

⁵ Ibid, p. 4

FIGURE 1

ORGANIZATIONAL CHART OF BRITISH COLUMBIA DEPARTMENT OF AGRICULTURE*



* Source: - modified from Canada's Agricultural Extension Services, p. 76.

services.⁶

The Administrative Branch is responsible for the general direction of agricultural policies, the administration of legislation affecting agriculture, and the compilation of reports and publications. This branch also maintains direct supervision over other branches of the Department of Agriculture.⁷

Extension work is a secondary activity for these branches, so that any educational work that they might do is incidental to their primary function. Furthermore, the policing function which the field worker in these branches must perform is undoubtedly a barrier to educational activities.

The Development and Extension Branch is the only one in the Department whose function is solely educational, in that it is responsible for extension work of a general nature, including all types of crops and livestock, 4-H clubs and land development. This branch offers general information services to farmers through its 17 district agriculturists and 2 associate district agriculturists.

VI. THE STUDY SETTING

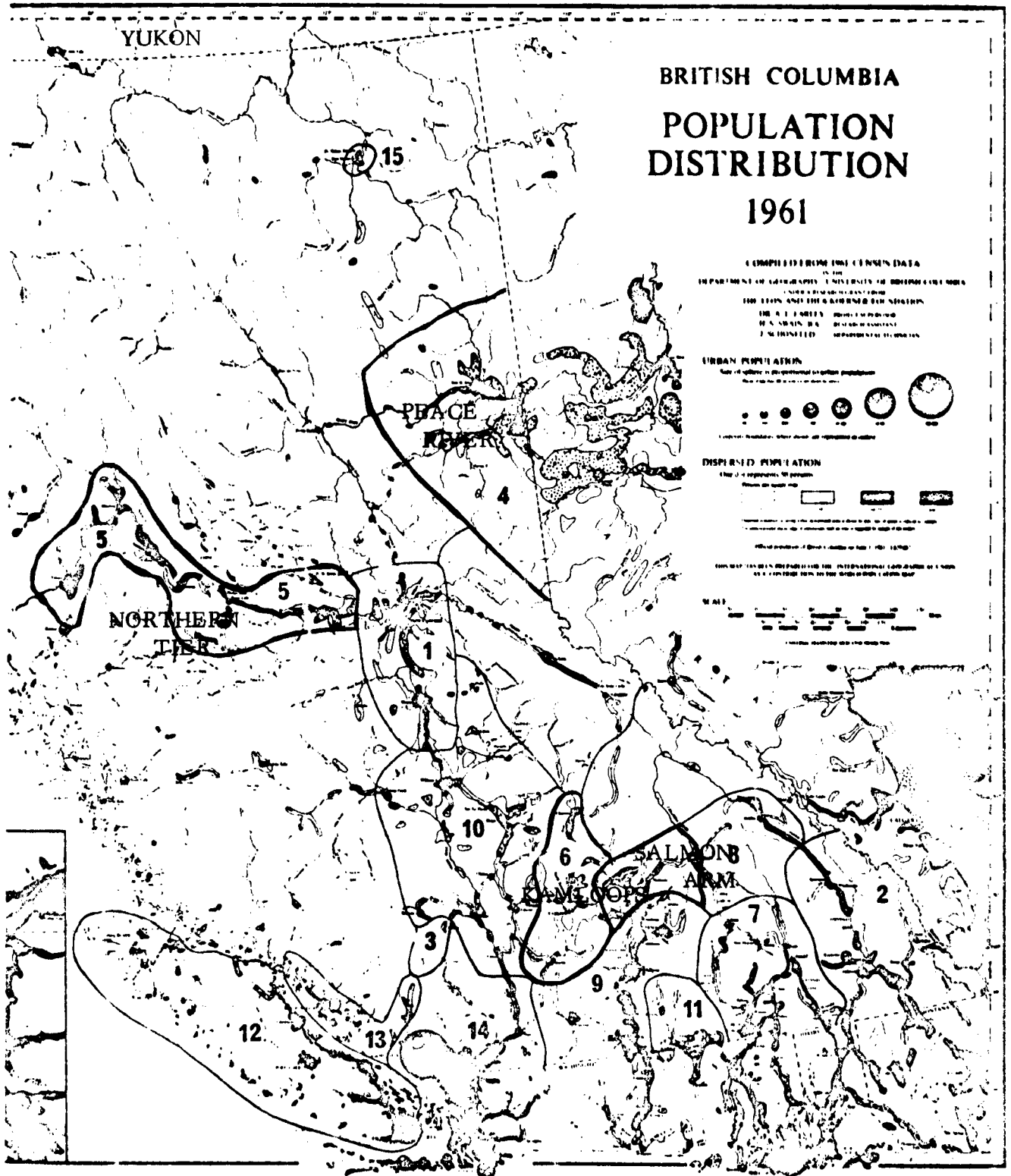
This study was conducted in four rural communities of British Columbia, namely: Peace River, Northern Tier, North Thompson and Salmon Arm, all of which are representative of rural British Columbia. (Figure 2). There is a wide variety of land-forms in rural B.C. varying from rugged mountains to low plains, with most of the area in mountains. The temperature range is wide and unpredictable. Broadly speaking, however, the summers are short

⁶ Dominion Bureau of Statistics, Canada Year Book: 1965, Ottawa, Queen's Printer, 1965, p. 460.

⁷ Ibid.

FIGURE 2

THE STUDY AREAS



but reasonably warm and the winters are long and cold. Annual total precipitation (rain and snow) are uniform on the plains.

Rural B.C. has a diversified economy. At one time agriculture was the main-stay of the economy but this situation has now changed. Today the economy is much broader, involving both the primary and manufacturing phases of agriculture, forestry, mining and a variety of secondary and tertiary service industries such as transportation, tourist-catering, and retail and wholesale trades.⁸

The total population of B.C. in 1966 was 1,873,674 with a rural population of 463,181.⁹ Though the relative proportion of rural to total population of the province has declined within the last two and a half decades, from 46 per cent in 1941 to 25 per cent in 1966, there has been an increase in the population classified as rural. The total population of British Columbia in 1941 was 817,861 with a rural population of 374,467.¹⁰

Rural amenities vary considerably depending upon the distance from farm to trade centres. Paved roads, electric power and telephone services are generally well distributed to the rural population within close proximity of larger places, but as distance increases the availability of these amenities becomes less. Other rural amenities, including public hospital services, agricultural services and schools, follow the same pattern of distribution.¹¹

8 Province of British Columbia, Department of Lands, Forestry and Water Resources, Victoria, Bulletin Area Nos. 6, 7, 8 and 10, 1966, pp. 18-28, 17-25, 21-33, and 21-29 respectively.

9 Dominion Bureau of Statistics, Census of Canada 1966, Advance Bulletin A-4, Ottawa, Queen's Printer, 1967, p. 2.

10 Dominion Bureau of Statistics, Eighth Census of Canada: 1941, Vol. II, Table 37, Ottawa, Queen's Printer, p. 548.

11 British Columbia Department of Lands, Forests and Water Resources, Bulletins, op cit., pp. 31; 28; 37-38; and 33 respectively.

VII. PROCEDURE

Source of Data

This study is part of a larger analytical socio-economic survey conducted under the Canadian Land Inventory in British Columbia. The Canadian Land Inventory is a study of rural land and the socio-economic survey is a study of the people on that land. Accordingly, the basis for sampling was the land rather than the people, even though the data were collected from people about themselves. This approach to sampling differed from that usually encountered in socio-economic studies of rural areas, where the normal basis for sampling is either the population or the households.

The rural land area of British Columbia is either held in trust by the crown or pre-empted by private owners. Pre-empted land is that land which has been transferred to private ownership through sale by government or through homesteading. Corporations, such as lumbering or pulpwood companies, may acquire pre-empted land in the same way as private individuals. Pre-empted plots of land may range in size from residential lots to ranches, farms or tree farms, and the land plots may or may not contain residences or be owner-occupied.¹²

The Sample

Pre-empted land plots are numbered; the ownership is recorded in the Provincial Land Office and each numbered plot is identified precisely on provincial land maps, so that the number and location of pre-empted plots in an area can be determined.

¹² Coolie Verner, Planning and Conducting a Survey, A Case Study, Ottawa: Rural Development Branch, Department of Forestry and Rural Development, October, 1967, p. 8.

On the appropriate land maps for each survey district the pre-empted plots were re-numbered, and using a standard table of random numbers¹³ a ten per cent sample was drawn of the pre-empted rural plots in the areas studied.

A total of 640 household heads were interviewed in the rural areas included in this study. Of this number, 265 (41.4 per cent) were classified as farmers and 375 (58.6 per cent) as nonfarmers (Table 1). The distribution among the areas studied is shown in Table 1. This study is concerned only with the farm household heads. A chi-square value of 34.65 obtained is significant at the .001 level, indicating that there were differences between the respondents by farm and non-farm categories.

The Interview Schedule

The interview schedule used in this study is found in Appendix 1. This schedule recorded pertinent socio-economic data about respondents, as well as special information related to the extent and type of contacts with the local District Agriculturists. The schedule was used first in the Prince George Special Sales Area in the summer of 1966, and was subsequently revised. The revised schedule was used in this study and the interviews conducted during the summer of 1966 served as a pre-test for the schedule.

Interviews were conducted from May 7 to August 5, 1967. Each interview required from twenty to forty minutes, and the majority were completed on the first call. In a few instances, a second visit was required to complete the interview. The completed schedules were checked in the field in case re-interviewing was necessary.

¹³ M.G. Kendall and S.B. Babington, Tables of Random Sampling Numbers, London, Cambridge University Press, 1951, pp. 2-60.

TABLE 1
PERCENTAGE DISTRIBUTION OF FARM AND
NON-FARM RESPONDENTS BY DISTRICTS

Districts	Total		Farm		Non-farm	
	No.	%	No.	%	No.	%
Peace River	201	31.4	113	56.2	88	43.8
Northern Tier	217	33.9	65	30.0	152	70.0
North Thompson	101	15.8	32	31.7	69	68.3
Salmon Arm	121	18.9	55	45.5	66	54.5
Total	640	100	265	41.4	375	58.6

$$\chi^2 = 34.65: \text{ d.f. } = 3: p < .001, c = .35$$

Analysis of the Data

The original survey included both farm and non-farm rural residents. Hence, for the purposes of the present study those classified as farmers were extracted.

The following criteria were set for selecting the respondents included in the analysis:

1. Respondents must be engaged in farming at the time of the study. This ensured that the respondents were interviewed on all the relevant questions on the schedule.
2. Respondents must provide all the information asked on the schedule, since the program used for regression analysis does not allow for missing data. This ruled out respondents who did not provide certain information as was the case with income in some instances.

The 256 respondents who satisfied the first criterion were included in the simple frequency distribution and chi-square analyses. On the basis of the second criterion, the 222 respondents who fulfilled this condition were included in the correlation and regression analyses.

The data were transferred to punch cards for machine processing after the schedules had been coded. After punching, the data processing was done on an IBM 7044 in the Computing Centre at the University of British Columbia.

To test for relationships between the contact with D.A. and the socio-economic characteristics which presumably influence the contact, three types of analyses were used. A simple correlation analysis was used to examine the overall relationship between contact with the D.A. and the socio-economic characteristics of the farmers.

The chi-square analysis was used to test the hypothesis that two discrete variables are independent in the population from which the sample was drawn. The contingency coefficient was calculated for the significant chi-square values obtained in order to determine the degree of association between the variables under investigation. The Spearman rank correlation coefficient¹⁴ was used to check the results obtained from the simple correlation analysis. This method is adapted for determining the correlation between pairs of characteristics of the objects or individuals being studied, when the individuals are ranked according to a criterion of measurement of the characteristics under investigation. Another advantage of the Spearman rank correlation is that no assumptions whatsoever need be made about the distributions of the underlying population, as is the case with simple correlation, which assumes that the population has a bivariate normal distribution. The formula used to determine the rank correlation coefficient R, is: $R = 1 - \frac{6 \sum d^2}{N(N^2-1)}$,

where R = the rank correlation coefficient

d = the difference between a pair of ranks

N = the number of pairs of ranks

In order to help resolve the problem of reliability between the results of the two correlation analyses, tests of goodness of fit for normal distribution were carried out for a pair of variables selected arbitrarily. These were age and number of years farming.

¹⁴ This program was obtained from Social Sciences Statistical Centre, Vancouver, University of British Columbia.

Contact with the District Agriculturist is probably influenced by numerous variables, and the real relationship between contact and each independent variable may be obscured by the effect of the other variables. The stepwise regression analysis was used to overcome this problem. This statistical analysis was made by using Trip multiple regression program.¹⁵ (Triangular Regression Package). This program handles several independent variables. It determines their relationships with each of the dependent variables and eliminates those which give little explanation. The independent variables are entered one at a time into the regression equation in order of decreasing contribution to the reduction of variance of the dependent variable under consideration. Specifically, at each step the following operations are carried out.

- (1) The independent variables already included in the regression are tested for significance. If any are found to have dropped below the significance level designated (.05 level of significance), the least significant is eliminated from the regression by reversing the corresponding inversion steps;
- (2) If no variable needs be eliminated, the designated independent variables not yet included in the regression are tested for significance of the contribution each would make if included next. If any are above the significance level designated, the most significant is included in the regression by an appropriate inversion step.

¹⁵ J.H.R. Dempster, A.E. Gagne and R. Hogan, Trip: Triangular Regression Package, Vancouver, Computing Centre, University of British Columbia, April, 1965, pp. 5-6.

- (3) The modified regression equation resulting from either step (1) or step (2) is printed. Output includes the regression coefficients, their standard errors, F ratios and F probabilities, together with the name of each variable as it is brought in.
- (4) If neither of steps (1) and (2) calls for action, the process is terminated. The final regression equation should now contain just those independent variables (selected from the ones included in the analysis) which contribute significantly to the variance of the dependent variable.¹⁶

The tests of significance for regression coefficients are based on the ratio between the Y variance explained by the X in question and the residual variance of Y after inclusion of X. Thus, significance tests for regression coefficients were carried out using the null hypothesis, $\beta = 0$, at a .05 level of significance. The tests were based on the magnitude of F ratios. Thus, if an F ratio was high, which consequently led to low F probabilities (which should be lower than .05) then the null hypothesis was rejected and β accepted as greater than zero. The coefficient of determination, r^2 , was determined to show the proportion of variation in extension contacts accounted for by the socio-economic characteristics which showed association.

VIII. PLAN OF THE STUDY

Before analysing the relationships existing between the socio-economic characteristics of farm operators and their contacts with District Agriculturist, it was necessary to examine the social

¹⁶ Ibid.

and economic factors which describe the farmers included in the study. Chapter III presents the socio-economic characteristics of the sample and lays the ground-work for the examination of how these characteristics influence the contacts made with District Agriculturists. Chapter IV analyses the contact methods used by the sample and the frequency of use of each method.

The principal focus of the thesis is in Chapter V, which analyses the relationship existing between the socio-economic characteristics of the sample and contacts with District Agriculturists. It also examines the characteristics of farmers who use contact media, as well as the characteristics of the farmers at different contact levels. The final chapter summarises the findings of the study and draws some conclusions.

CHAPTER II

REVIEW OF LITERATURE

In order to understand the theoretical setting in which the relationships between the Agricultural Extension Service and farm operators are being analyzed, it is necessary to examine the roles of the Agricultural Extension Service, problems of contact with farmers and the results of previous extension contact studies.

I. THE ROLES OF THE AGRICULTURAL EXTENSION SERVICE

The Agricultural Extension Service is a public organization and its effectiveness depends upon the extent to which it is able to fulfill its roles. Like many other public organizations, the objectives of the Extension Service are found in many official documents.

Mellor¹ identified three roles of the Agricultural Extension Service. First, it must stimulate a framework of farmer attitudes and aspirations conducive to acceptance of technological change. This role constitutes the most important function of the Service in the early stages of agricultural development. The second role is to disseminate to farmers the results of production-increasing research and to carry farmers' problems back to research organizations. In order to perform each of these communication functions, extension programs must be closely tied to research organizations in such a manner that clear communication in both directions is possible. The third function, which Mellor identified, was that the Agricultural Extension Service should provide training and guidance to farmers

¹ John W. Mellor, The Economics of Agricultural Development, Ithaca, New York, Cornell University Press, 1966, pp. 356-358.

in decision-making, since good farm management involves the acceptance of appropriate innovations, and perhaps more importantly, the rejection of inapplicable and unprofitable innovations.

The Cooperative Extension Service is the official educational agency of the United States Department of Agriculture and the extra-mural educational agency for each state college of agriculture and home economics. As Coleman observed:

Its purpose is to 'extend knowledge', primarily to people not reached through the schools and colleges, and to provide a continuing program to follow and supplement training in the regular school system. Extension tries to translate technical information and research findings into everyday language and to get the information into the hands of the ordinary citizens who can use it.²

Some writers have emphasized that both rural farm and non-farm people should be reached by extension work. In recent times, some have advocated that the Agricultural Extension Service should serve all people, regardless of place of residence or occupation. This attitude is an indication of the changing role of extension service.

Fenley and Williams³, writing on the organization of extension service in Western Nigeria, pointed out that the fundamental objective of extension was to raise the level of living and income of the farming population. Kelsey and Hearne⁴ viewed the ultimate objective towards which extension work was being directed as more fruitful lives and better living for all people. Siemens and Weir,

2 Lee Coleman, "Differential Contact with Extension Work in a New York Rural Community", Rural Sociology, 16: 1951, pp. 207-216.

3 John Fenley and S.K. Taiwo Williams, Background for Extension Workers in Western Nigeria, Ibadan, MANR Extension Training Bulletin No. 3, Nigeria, February 1964, p. 9.

4 Lincoln D. Kelsey and Cannon C. Hearne, Cooperative Extension Work, Ithaca, New York, Comstock Publishing Associates, 1963, p. 124.

identifying one of the widely stated objectives of extension in Canada, noted:

Extension that does not have for its ultimate purpose the building and growth of rural men, women and youth has not caught the spirit of extension but is dealing with its bones.⁵

All extension work aims at changing the outlook towards their problems of people in rural areas. Its main role is to teach rural people how to raise their standard of living by their own efforts, using their own resources of manpower and materials, with educational assistance from the government. Coleman⁶ stated: "Whether or not all rural people are to be served, it seems clear that the intended clientele is at least as broad as all farm people". This statement implies that the official instruments which established the Agricultural Extension Service intended it to serve all farm people, regardless of their social and economic status.

II. PROBLEMS OF CONTACT WITH EXTENSION SERVICE

The problem faced by the extension worker in reaching his clientele is not an easy one. The extension worker, as an adult educator, is attempting to influence the behavior of large numbers of people in life situations, which are subject to continual change, as the result of economic and social developments. Farm operators have diverse interests and vary greatly in education, training, age, cultural background, level of living and other socio-economic characteristics. These characteristics influence their response to educational stimuli.

⁵ L.B. Siemens and J.R. Weir, "The Responsibilities of the Universities," Proceedings of the Canadian Society of Rural Extension, June, 1961, January, 1962, pp. 70-79.

⁶ Lee Coleman, op. cit. p. 208.

Ideally, the Agricultural Extension Service should have either equal contact with all members of its constituency, or else, more contact with those constituents who have the greatest need for educational assistance. Rogers and Capener⁷ noted that the people making the most use of agricultural extension are actually those segments of the rural population which have the least need for educational assistance. Hurd⁸ stated that agricultural extension had for the most part failed to reach the people who most needed help.

Various reasons have been suggested to explain this differential contact. Some attribute it to the voluntary nature of the educational service provided by extension.⁹ This attitude implies that the Extension Service can only involve those who desire and seek help through its programs. Others have associated the phenomenon with a high clientele-agent ratio.¹⁰ A few others felt that because of the heterogeneous nature of extension clientele and the limits to its resources, it was difficult for the Extension Service to give the type of attention needed in all cases. It had to choose those farmers to whom it devoted most of its attention.¹¹

7 Everett M. Rogers and Harold R. Capener, op. cit. p. 5.

8 Lorne Hurd, "What Farmers Expect of Extension", Proceedings of the Canadian Society of Rural Extension, Sixth Annual Meeting and Convention, November, 1965, p. 10.

9 Ibid.

10 Province of British Columbia, Department of Agriculture, Victoria, Agricultural Outlook Conference: 1966, Report of Proceedings, pp. 184-185 and Meredith C. Wilson, How and to What Extent is the Extension Service Reaching Low-Income Families, Extension Service Circular 375, Washington, United States Department of Agriculture, December, 1941, p. 13

11 Claude H. Job, op. cit., p. 115.

In recent years these views have been changing, and many are beginning to feel that the Agricultural Extension Service should reach all segments of the rural farm population.

Hurd noted:

ARDA, if it means anything, means that these reasons for not reaching the people who need help the most are no longer valid. ARDA is designed in large part to provide the means to assist the provinces in working in an intensified way to overcome the problems of the people that, up till now, the agricultural extension program has failed to reach.¹²

III. PREVIOUS STUDIES ON EXTENSION CONTACT

Most of the extension contact studies that have been made were done in the United States. A few studies in B.C. have made reference to extension contact¹³ in passing. Verner and Millerd,¹⁴ and Verner and Gubbels,¹⁵ in their recent studies of the adoption of

12 Lorne Hurd, op. cit., p. 10

13 Claude H. Job, op. cit., Paul B. Keesing, "A Study of Provincial Agricultural Extension Services in Canada", (unpublished M.S.A. thesis, Department of Agricultural Economics, U.B.C. 1965), pp. 159-162, and Coolie Verner, Frank W. Millerd and Gary Dickinson, A Socio-economic Survey of the Prince George Special Sales Area, Vancouver, Faculty of Education, University of British Columbia, August, 1967, pp. 60-62.

14 Coolie Verner and Frank W. Millerd, Adult Education and the Adoption of Innovations, Rural Sociological Monograph # 1, Vancouver, Department of Agricultural Economics, University of B.C., 1966, pp. 43-47.

15 Coolie Verner and Peter M. Gubbels, The Adoption or Rejection of Innovations by Dairy Farm Operators in the Lower Fraser Valley. Publication No. 11, Ottawa, Agricultural Economic Research Council of Canada, 1967, pp. 53-54.

innovations in B.C., reported contacts between the farmers and the agricultural extension agents in relation to the adoption of innovations.

In assessing extension contacts, researchers in Canada and the United States used three classes of contacts: individual, group, and mass media. Rogers and Capener categorized contacts into "personal" and "impersonal" methods.¹⁶ They defined personal contacts as those that "entail a face-to-face communication with the county extension agent", while impersonal contacts include reading or listening to mass media communications.¹⁷ Both Rogers and Havens,¹⁸ and Verner and Millerd,¹⁹ adopted this two-contact-methods classification system. Some other investigators were content with looking at the contact methods in terms of sources of agricultural information, without categorizing them. Slocum²⁰ and others listed eighteen such sources. The concepts of personal and impersonal contacts were used for analysis in this study.

16 Everett M. Rogers and Harold R. Capener, op. cit., p. 10

17 Ibid.

18 Everett M. Rogers and A. Eugene Havens, Extension Contact of Ohio Farm Housewives, Research Bulletin 890, Wooster, Ohio Agricultural Experiment Station, November, 1961, p. 4.

19 Coolie Verner and Frank W. Millerd, op. cit., p. 43.

20 Walter L. Slocum, Owen L. Brough Jr., and Murray A. Straus, Extension Contacts, Selected Characteristics, Practices and attitudes of Washington Farm Families, Agricultural Experiment Station Bulletin 584, Washington, Institute of Agricultural Sciences State College of Washington, April, 1958, p. 16.

IV. FACTORS INFLUENCING CONTACT WITH EXTENSION SERVICE

Wilkening²¹ developed the hypothesis that farmers of higher socio-economic status tend to utilize the formally organized sources of information, while those of lower socio-economic status tend to utilize to a larger extent those sources which are incidental to the everyday contacts of the farmers. Consequently, those of lower status are more likely to obtain their information from neighbours, relatives, dealers and other persons with whom they have personal contact. Those of higher status, on the other hand, are more likely to utilize extension agencies and farm magazines as sources of information. "Reasons for this association between status and sources of information utilized", Wilkening²² explained, "probably lie in the relationship of socio-economic status with other factors". Those of higher socio-economic status, for example, have the means as well as the desire for contacts with the formalized sources of information. The informal or indirect type of contact, such as friends and neighbours, was not considered in the present study.

Lionberger, in his attempt to explain the reason for the differential contacts with potential sources of farm and home information,

21 E. A. Wilkening, "Sources of Information for Improved Farm Practices", Rural Sociology, 15: 1950, pp. 19-30.

22 Ibid.

stated:

Diffusion of information from college to farmer via the personal contact route is subject to the limitations of class and clique-imposed associational patterns. Mass communication media, on the other hand, are little influenced by such factors. It is, therefore, possible that part of the isolation experienced by the low income farmers is a function of social distances which restrict free and spontaneous association and which causes the so-called "little farmer" to feel that he has little in common with his "big farmer" neighbors.²³

Wilson,²⁴ in his own study of the effectiveness of the agricultural extension program, pointed out that previous studies showed that owner families were reached by extension more often than tenant families (an advantage of 4 percentage points for the owner group); families on large farms participated more than those on small farms (an advantage of 11 percentage points in favor of those on large farms); and farmers with high school education were reached more often (by 10 percentage points). Job²⁵ reported a difference of 27 contact scores between the high and the low income farmers in favor of the former.

High extension contact had also been reported by many investigators to be associated with (1) the location of the farm (farms on all-weather roads having higher contact scores than those located on roads occasionally damaged by rain or bad weather); (2) length of residence in the same community (established residents being reached more frequently than newcomers); (3) land use class (farmers operating better land use class being reached more often); and (4) social participation (active participants being reached more frequently

23 H.F. Lionberger, Low-income Farmers in Missouri, Their Contacts with Potential Sources of Farm and Home Information, Columbia, Missouri Agricultural Experiment Station Research Bulletin 441, 1949, p. 31.

24 Meredith C. Wilson, op. cit. p. 12

25 Job, op. cit., Table XXX, p. 116.

than inactive participants.)^{26,27,28} Parish²⁹ also reported that beef producers with non-rural background, or those who had spent some time in non-rural occupations, had the highest extension contact score.

V. THE CONCEPT OF SOCIO-ECONOMIC STATUS

There is a high degree of consensus in the definition of "socio-economic status" used by social scientists. Chapin was the first to propose the definition now accepted in his measurement of social status. He defined socio-economic status as follows:

The position that a family occupies with reference to the prevailing average standards, of cultural possessions, effective income, material possessions, and participation in the group activities of the community.³⁰

Thereafter, many other workers have accepted and utilized this definition in various studies.^{31,32,33} Chapin's definition, however

26 Rogers and Capener, op. cit. pp. 14-26

27 Walter L. Slocum, Owen L. Brough and Murray A. Straus, op. cit. pp. 27-28.

28 Lois Scantland, C.A. Svinth and M.J. Taves, A Square Look at Extension Work in Spokane County, Pullman, Washington. Agricultural Experiment Station, Institute of Agricultural Sciences, State College of Washington, Extension Bulletin No. 463, June 1952, pp. 54-59.

29 Ross Parish, "Extension Services and the Grazier on the South-west Slope", Review of Marketing and Agricultural Economics, New South Wales, Division of Marketing and Agricultural Economics, Department of Agriculture, 24: March 1956, pp. 223-235.

30 F. Stuart Chapin, "A Quantitative Scale for Rating the Home and Social Environment of Middle Class Families in an Urban Community: A First Approximation of the Measurement of Socio-Economic Status", The Journal of Educational Psychology, 19: 1928, pp. 99-111.

31 W.H. Sewell, The Construction and Standardization of a Scale for the Measurement of the Socio-Economic Status of Oklahoma Farm Families, Stillwater, Oklahoma Agricultural and Mechanical College Tech. Bull. No. 9, 1940, pp. 14-15.

32 Hazel Ingersoll and L.H. Scott, "A Group Scale for the Measurement of Social, Cultural and Economic Status of Farm Families of the Middle West", Rural Sociology, 9: 1944, pp. 349-363.

33 K.L. Cannon, "The Relationships of Social Acceptance to Socioeconomic Status and Residence among High School Students", Rural Sociology, 22: 1957, pp. 142-148.

suggests that socio-economic status is a complex concept composed of several distinct but interrelated aspects, all of which work together consistently to determine the status level of the family.

A variety of indices has been used by many investigators to measure socio-economic status, but education, income and occupation occurred most frequently and were widely used by most students of this problem.³⁴ Harris and Staab, in their study of the relationship of current net income to the socio-economic status of the southern farm families, remarked:

Sociologists have recognized that income is one of the important factors in determining socio-economic status and that it is also associated with other factors such as material possessions, cultural possessions and community participation, which are included in the definition of socio-economic status.³⁵

Nam and Powers,³⁶ reporting with a similar conception, stated that socio-economic status score was a simple average of occupation, education and family income scores. It is quite obvious that these three items are related. In this study, the education and income levels of the farmers constitute important variables.

Other indices used in previous studies to determine socio-economic status included size of farm, non-farm work experience,

34 Ellen S. Bryant, Socioeconomic Status Indexes for Mississippi Counties, Mississippi State University Agricultural Experiment Station Bulletin 724, April 1966, pp. 1-14.

35 Mary Jordan Harris and Josephine Staab, "The Relationship of Current Net Income to the Socio-economic Status of Southern Farm Families", Rural Sociology, 16: 1951, pp. 353-358.

36 Charles B. Nam and Mary G. Power, "Variations in Socio-economic Structure by Race, Residence, and the Life Cycle", American Sociological Review, 1965, pp. 97-103.

participation in farm organizations, level of living index and age.³⁷ Still other indices included farm land tenure, residential area, religion, ethnic groupings, leadership in organization and opinions on matters as indicators of the socio-economic level.^{38,39,40}

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- 37 E.A. Wilkening and Ralph K. Huitt, "Political Participation Among Farmers as Related to Socio-economic Status and Perception of the Political Process", Rural Sociology, 26: 1961, pp. 395-408.
- 38 Edgar A. Schuler, "Social and Economic Status in a Louisiana Hills Community ", Rural Sociology, 5: 1940, pp. 69-87.
- 39 Ronald Freedman, Pascal K. Whlpton and John W. Smit, "Socio-economic Factors in Religious Differentials in Fertility", American Sociological Review, 26: 1961, pp. 608-614.
- 40 E.A. Wilkening, Joan Tully and Hartley Prasser, "Communication and Acceptance of Recommended Farm Practices Among Dairy Farmers of Northern Victoria", Rural Sociology, 27: 1962, pp. 116-197.

CHAPTER III

CHARACTERISTICS OF THE SAMPLE

The socio-economic characteristics studied were grouped into personal, educational, social and economic characteristics. The factors in each of these categories were analysed by deriving the number and the corresponding percentage frequency distribution,¹ and by measuring the association between pairs of characteristics through the use of correlation analyses (Tables II and III).

I. PERSONAL CHARACTERISTICS

Age

The age distribution of the sample was skewed toward the upper age groups. Only 12 per cent of the respondents were below 35 years of age, while about three-tenths (29 per cent) were over 55. Some 30 per cent of the sample were in the 35 to 44 age group, with another 29 per cent in the 45 to 54 age bracket. Forty-two per cent of the respondents were below 45 years of age and 58 per cent were above that age. The median was in the 45 to 54 age group.

There were statistically significant correlation coefficients obtained between age and a number of socio-economic characteristics including education of the father ($r = -.18$), number of years in agriculture ($r = .40$), job satisfaction ($r = -.18$), desire for further education or training ($r = -.36$) and the number of weeks for which the respondents worked off farm during the year preceding this study ($r = -.23$). The above associations indicate that the

¹ The interview schedule contained in Appendix I gives the frequency distribution for each characteristic.

TABLE II
SIMPLE CORRELATION COEFFICIENTS

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
1. Age	1.00																														
2. Years of school completed	<u>-.12</u>	1.00																													
3. Wife's Education	<u>-.10</u>	<u>.23</u>	1.00																												
4. Adult Education Participation	<u>-.09</u>	<u>.28</u>	<u>.17</u>	1.00																											
5. Number of Children	<u>.07</u>	<u>-.02</u>	<u>.29</u>	<u>.03</u>	1.00																										
6. Father's Education	<u>-.18</u>	<u>.24</u>	<u>.18</u>	<u>.10</u>	<u>.08</u>	1.00																									
7. Length of Residence in the area	<u>.01</u>	<u>-.07</u>	<u>-.12</u>	<u>-.03</u>	<u>-.10</u>	<u>.02</u>	1.00																								
8. Distance travelled for services	<u>-.02</u>	<u>-.10</u>	<u>-.07</u>	<u>-.14</u>	<u>-.03</u>	<u>-.21</u>	<u>-.09</u>	1.00																							
9. Level of Living	<u>.01</u>	<u>.30</u>	<u>.38</u>	<u>.18</u>	<u>.02</u>	<u>.13</u>	<u>.00</u>	<u>-.28</u>	1.00																						
10. Social Participation	<u>-.11</u>	<u>.25</u>	<u>.17</u>	<u>.26</u>	<u>.01</u>	<u>.06</u>	<u>.12</u>	<u>-.10</u>	<u>.30</u>	1.00																					
11. Attitudes to Change	<u>-.06</u>	<u>.00</u>	<u>.07</u>	<u>.00</u>	<u>.18</u>	<u>.10</u>	<u>-.05</u>	<u>-.15</u>	<u>.11</u>	<u>.09</u>	1.00																				
12. Number of years farming	<u>.40</u>	<u>.00</u>	<u>-.12</u>	<u>-.05</u>	<u>-.09</u>	<u>-.06</u>	<u>.04</u>	<u>-.09</u>	<u>.06</u>	<u>.10</u>	<u>-.03</u>	1.00																			
13. Months worked in 1966	<u>-.11</u>	<u>.12</u>	<u>.11</u>	<u>.21</u>	<u>-.02</u>	<u>.10</u>	<u>-.11</u>	<u>.00</u>	<u>.09</u>	<u>.15</u>	<u>.17</u>	<u>.01</u>	1.00																		
14. Degree of involvement in farming	<u>.17</u>	<u>.12</u>	<u>-.08</u>	<u>.02</u>	<u>-.11</u>	<u>.01</u>	<u>.07</u>	<u>-.14</u>	<u>.14</u>	<u>.17</u>	<u>-.14</u>	<u>.54</u>	<u>.03</u>	1.00																	
15. Job Satisfaction	<u>.18</u>	<u>.02</u>	<u>.05</u>	<u>.02</u>	<u>-.06</u>	<u>.01</u>	<u>.06</u>	<u>-.11</u>	<u>.12</u>	<u>.06</u>	<u>-.01</u>	<u>.23</u>	<u>.00</u>	<u>.31</u>	1.00																
16. Net Farm Income	<u>-.09</u>	<u>.24</u>	<u>.18</u>	<u>.04</u>	<u>.17</u>	<u>.01</u>	<u>.02</u>	<u>-.01</u>	<u>.19</u>	<u>.16</u>	<u>.05</u>	<u>-.05</u>	<u>.03</u>	<u>-.17</u>	<u>-.05</u>	1.00															
17. Desire for further education/training	<u>-.36</u>	<u>.19</u>	<u>.08</u>	<u>.04</u>	<u>-.05</u>	<u>.11</u>	<u>.01</u>	<u>.02</u>	<u>.08</u>	<u>.07</u>	<u>.17</u>	<u>-.18</u>	<u>.18</u>	<u>.06</u>	<u>-.16</u>	<u>-.02</u>	1.00														
18. Number of total acres	<u>.01</u>	<u>.29</u>	<u>.12</u>	<u>.02</u>	<u>.06</u>	<u>.02</u>	<u>-.03</u>	<u>.07</u>	<u>.12</u>	<u>.25</u>	<u>.06</u>	<u>.14</u>	<u>.05</u>	<u>.15</u>	<u>.03</u>	<u>.39</u>	<u>-.02</u>	1.00													
19. Number of improved acres	<u>.07</u>	<u>.17</u>	<u>.00</u>	<u>.01</u>	<u>.06</u>	<u>-.04</u>	<u>.10</u>	<u>.00</u>	<u>.13</u>	<u>.18</u>	<u>-.04</u>	<u>.16</u>	<u>.00</u>	<u>.16</u>	<u>.04</u>	<u>.47</u>	<u>-.00</u>	<u>.62</u>	1.00												
20. Approximate Gross Farm Income	<u>-.00</u>	<u>.22</u>	<u>.19</u>	<u>.09</u>	<u>.07</u>	<u>.10</u>	<u>.07</u>	<u>-.13</u>	<u>.28</u>	<u>.31</u>	<u>.07</u>	<u>.21</u>	<u>.13</u>	<u>.32</u>	<u>.15</u>	<u>.49</u>	<u>-.03</u>	<u>.54</u>	<u>.56</u>	1.00											
21. Farm Value	<u>.08</u>	<u>.26</u>	<u>.12</u>	<u>.07</u>	<u>.11</u>	<u>-.00</u>	<u>-.00</u>	<u>-.00</u>	<u>.22</u>	<u>.23</u>	<u>.03</u>	<u>.18</u>	<u>.01</u>	<u>.14</u>	<u>.07</u>	<u>.52</u>	<u>-.07</u>	<u>.81</u>	<u>.77</u>	<u>.65</u>	1.00										
22. Weeks worked off-farm in 1966	<u>-.23</u>	<u>-.11</u>	<u>.06</u>	<u>.03</u>	<u>.10</u>	<u>-.01</u>	<u>-.04</u>	<u>.14</u>	<u>-.11</u>	<u>-.18</u>	<u>.06</u>	<u>-.52</u>	<u>-.05</u>	<u>-.84</u>	<u>-.29</u>	<u>.21</u>	<u>.04</u>	<u>-.20</u>	<u>-.22</u>	<u>-.33</u>	<u>-.20</u>	1.00									
23. Knowledge of D.A.	<u>-.14</u>	<u>.18</u>	<u>.16</u>	<u>.16</u>	<u>-.05</u>	<u>.07</u>	<u>.08</u>	<u>-.18</u>	<u>.17</u>	<u>.13</u>	<u>.01</u>	<u>-.04</u>	<u>.14</u>	<u>.14</u>	<u>.09</u>	<u>.16</u>	<u>.05</u>	<u>.11</u>	<u>.13</u>	<u>.18</u>	<u>.12</u>	<u>-.08</u>	1.00								
24. Visits to D.A.'s Office	<u>-.08</u>	<u>.28</u>	<u>.12</u>	<u>.28</u>	<u>.02</u>	<u>.10</u>	<u>.05</u>	<u>-.13</u>	<u>.11</u>	<u>.24</u>	<u>-.12</u>	<u>.04</u>	<u>-.02</u>	<u>.14</u>	<u>-.00</u>	<u>.17</u>	<u>.01</u>	<u>.24</u>	<u>.29</u>	<u>.17</u>	<u>.28</u>	<u>-.11</u>	<u>.30</u>	1.00							
25. Telephone calls to D.A.	<u>-.00</u>	<u>.20</u>	<u>.12</u>	<u>.18</u>	<u>.07</u>	<u>.29</u>	<u>.08</u>	<u>-.16</u>	<u>.28</u>	<u>.12</u>	<u>.02</u>	<u>-.00</u>	<u>-.00</u>	<u>.11</u>	<u>.01</u>	<u>.23</u>	<u>.01</u>	<u>.26</u>	<u>.27</u>	<u>.37</u>	<u>.33</u>	<u>-.09</u>	<u>.23</u>	<u>.36</u>	1.00						
26. Farm Visits by D.A.	<u>-.08</u>	<u>.06</u>	<u>.06</u>	<u>.20</u>	<u>.11</u>	<u>.02</u>	<u>-.01</u>	<u>-.17</u>	<u>.11</u>	<u>.19</u>	<u>.15</u>	<u>.01</u>	<u>.03</u>	<u>.14</u>	<u>.01</u>	<u>.17</u>	<u>-.02</u>	<u>.10</u>	<u>.04</u>	<u>.28</u>	<u>.19</u>	<u>-.06</u>	<u>.19</u>	<u>.23</u>	<u>.42</u>	1.00					
27. Attendance at Meetings/Field Days	<u>-.08</u>	<u>.19</u>	<u>.11</u>	<u>.12</u>	<u>.09</u>	<u>.05</u>	<u>.05</u>	<u>-.26</u>	<u>.20</u>	<u>.36</u>	<u>.13</u>	<u>.06</u>	<u>.06</u>	<u>.21</u>	<u>.11</u>	<u>.24</u>	<u>-.04</u>	<u>.19</u>	<u>.13</u>	<u>.32</u>	<u>.23</u>	<u>-.17</u>	<u>.25</u>	<u>.34</u>	<u>.25</u>	<u>.39</u>	1.00				
28. Mail from D.A.	<u>.03</u>	<u>.21</u>	<u>.05</u>	<u>.15</u>	<u>.15</u>	<u>.06</u>	<u>.20</u>	<u>-.15</u>	<u>.14</u>	<u>.25</u>	<u>.18</u>	<u>.10</u>	<u>.00</u>	<u>.14</u>	<u>.00</u>	<u>.08</u>	<u>.08</u>	<u>.17</u>	<u>.10</u>	<u>.15</u>	<u>.13</u>	<u>-.12</u>	<u>.31</u>	<u>.23</u>	<u>.15</u>	<u>.16</u>	<u>.28</u>	1.00			
29. Farm Radio/T.V. Programs	<u>.03</u>	<u>.01</u>	<u>.19</u>	<u>.03</u>	<u>-.03</u>	<u>.04</u>	<u>.06</u>	<u>-.09</u>	<u>.07</u>	<u>.03</u>	<u>-.04</u>	<u>.03</u>	<u>.05</u>	<u>.06</u>	<u>.14</u>	<u>-.02</u>	<u>-.01</u>	<u>.06</u>	<u>.05</u>	<u>.08</u>	<u>.05</u>	<u>-.09</u>	<u>.23</u>	<u>.15</u>	<u>.08</u>	<u>.04</u>	<u>.15</u>	<u>.27</u>	1.00		
30. Farm Newspaper Articles	<u>.11</u>	<u>.18</u>	<u>.13</u>	<u>.08</u>	<u>.09</u>	<u>-.03</u>	<u>.10</u>	<u>-.00</u>	<u>.25</u>	<u>.12</u>	<u>.17</u>	<u>.04</u>	<u>.02</u>	<u>.09</u>	<u>.05</u>	<u>.02</u>	<u>.09</u>	<u>.16</u>	<u>.13</u>	<u>.14</u>	<u>.13</u>	<u>-.10</u>	<u>.19</u>	<u>.12</u>	<u>.11</u>	<u>.02</u>	<u>.11</u>	<u>.43</u>	<u>.27</u>	1.00	
31. All Extension Contacts	<u>-.00</u>	<u>.29</u>	<u>.19</u>	<u>.24</u>	<u>.12</u>	<u>.12</u>	<u>.15</u>	<u>-.23</u>	<u>.28</u>	<u>.33</u>	<u>.12</u>	<u>.08</u>	<u>.03</u>	<u>.22</u>	<u>.08</u>	<u>.20</u>	<u>.04</u>	<u>.29</u>	<u>.25</u>	<u>.35</u>	<u>.31</u>	<u>-.19</u>	<u>.43</u>	<u>.59</u>	<u>.52</u>	<u>.45</u>	<u>.60</u>	<u>.70</u>	<u>.53</u>	<u>.56</u>	1.00

NOTE: The underlined coefficients show a high degree of association. A significance test for r was carried out using a null hypothesis of no correlation with a .01 level of significance. The test is based on the assumption that under the null hypothesis of no correlation, the sampling distribution of the correlation coefficient can be approximated closely with a normal curve having the mean zero and the standard deviation $1/\sqrt{n-1}$ where n = the sample size. Therefore, the criterion is to reject the null hypothesis if $r < 2.58/\sqrt{n-1}$ or $> 2.58/\sqrt{n-1}$ (i.e., if the correlation coefficient is less than -.173 or greater than .173, n being 222).

NOTE: The underlined coefficients show a high degree of association. A significance test for r was carried out using a null hypothesis of no correlation with a .01 level of significance. The test is based on the assumption that under the null hypothesis of no correlation, the sampling distribution of the correlation coefficient can be approximated closely with a normal curve having the mean zero and the standard deviation $1/\sqrt{n-1}$ where n = the sample size. Therefore, the criterion is to reject the null hypothesis if $r < -2.58/\sqrt{n-1}$ or $> 2.58/\sqrt{n-1}$ (i.e., if the correlation coefficient is less than $-.173$ or greater than $.173$, n being 222).

TABLE III
SPEARMAN RANK CORRELATION COEFFICIENTS

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
1. Age	1.000																										
2. Years of school completed	-.144	1.000																									
3. Wife's Education	-.144	.279	1.000																								
4. Number of Children	.021	.010	.252	1.000																							
5. Fathers' Education	-.214	.199	.184	.095	1.000																						
6. Length of residence in the area	-.025	-.025	-.088	-.105	.040	1.000																					
7. Distance travelled for services	-.037	-.058	-.098	-.082	-.168	-.051	1.000																				
8. Level of Living	.044	.308	.401	.070	.128	-.011	-.337	1.000																			
9. Social Participation	-.136	.280	.206	.043	.092	.126	-.042	.289	1.000																		
10. Attitudes to Change	-.275	.125	.193	.204	.181	-.052	-.164	.116	.112	1.000																	
11. Number of years farming	.424	-.019	-.127	-.076	-.071	.057	-.095	.067	.074	-.189	1.000																
12. Months worked in 1966	-.151	.071	.016	-.043	.075	-.013	-.118	.056	.060	.073	-.098	1.000															
13. Degree of Involvement in farming	.148	.104	-.042	-.083	.037	.078	-.193	.126	.176	-.194	.556	.023	1.000														
14. Job Satisfaction	.174	.058	.060	-.074	.037	.110	-.202	.171	.038	-.057	.238	-.129	.330	1.000													
15. Net Farm Income	-.170	.158	.190	.231	.014	.069	-.041	.172	.121	.165	-.202	.121	-.227	-.042	1.000												
16. Number of Total Acres	-.036	.017	-.096	.039	-.072	.115	.186	-.190	.243	.056	.145	.125	.171	-.026	.109	1.000											
17. Number of Improved Acres	-.004	.174	-.006	.043	-.004	.199	-.077	.073	.262	-.037	.203	.118	.292	.114	.193	.703	1.000										
18. Approximate Gross Farm Income	-.032	.195	.154	.030	.075	.110	-.186	.297	.365	.083	.313	.150	.454	.171	.099	.420	.573	1.000									
19. Farm Value	-.038	.331	.233	.142	.074	.057	-.136	.351	.383	.115	.243	.116	.321	.185	.313	.430	.597	.708	1.000								
20. Weeks worked off-farm	-.212	-.096	.019	.119	-.028	-.083	.152	-.111	-.175	.177	-.547	-.055	-.826	-.320	.347	-.191	-.315	-.490	-.340	1.000							
21. Visits to D.A.'s Office	-.086	.285	.116	.024	.083	.089	-.147	.093	.208	-.014	.047	.073	.135	.099	.146	.239	.340	.232	.270	-.091	1.000						
22. Telephone Calls to D.A.	-.072	.164	.131	.104	.222	.085	-.185	.300	.153	.110	-.034	.007	.102	.063	.145	.083	.175	.244	.337	-.061	.308	1.000					
23. Farm Visits by D.A.	-.079	.056	.039	.121	.067	-.034	-.152	.106	.215	.229	.046	.078	.151	.035	.215	.166	.124	.261	.297	-.083	.161	.431	1.000				
24. Attendance at Meetings/ Field days	-.139	.206	.133	.109	.097	.061	-.253	.256	.345	.179	.040	.172	.219	.117	.191	.179	.266	.327	.306	-.191	.327	.273	.375	1.000			
25. Mail from D.A.	-.007	.203	.106	.174	.081	.192	-.098	.175	.261	.155	.064	.022	.155	.023	.118	.239	.330	.297	.285	-.123	.245	.123	.159	.311	1.000		
26. Farm Radio/T.V. Programs	-.003	-.019	.121	.050	.033	.056	-.072	.040	.031	.031	-.008	.097	-.018	.085	-.013	.011	.054	.034	.034	-.050	.144	.073	.014	.117	.325	1.000	
27. Farm Newspaper Articles	.131	.203	.125	.093	-.038	.108	-.005	.258	.109	.112	.073	-.055	.067	.023	.060	.105	.179	.173	.206	-.090	.134	.077	.012	.166	.488	.321	1.000

NOTE: The underlined coefficients show a high degree of association. A significance test for R was carried out using the hypothesis that the correlation in the population was not significantly different from zero at .01 level of significance. The test does not assume that the bivariate sampling distribution is normal, and hence it allows the use of obtained correlation coefficients to test the null hypothesis when it is not possible to ascertain the pattern of distribution of the sample with respect to the variables under study. Therefore, the criterion is to reject the null hypothesis if $R < -(1 - \frac{.66^2}{N(N^2-1)})$ or $R > 1 - \frac{.66^2}{N(N^2-1)}$ (i.e., if the correlation coefficient is less than -.171 or greater than .171, d.f. = 220).

older respondents were more involved in agriculture, and they had been working as farmers for more years than had the younger respondents. These data suggest that agriculture in British Columbia is an occupation for older men. The data are consistent with the general trend reported in the literature of rural sociology to the effect that the median age of farmers is rising.² The desire for further education tended to decrease with age and this finding was not unexpected. A possible explanation is that the older respondents have passed the stage in their life cycle when they consider education as necessary to fulfill their roles. They did not consider education a necessity to meet the demands and aspirations of their present period of life. Furthermore, the older household heads were more satisfied with farming as an occupation, and they tended to spend less time at off-farm jobs than did the younger farmers. These data suggest that the higher job satisfaction in later years may be related to the fact that the older farmers have either reconciled themselves to their occupational choices, or have moved into more desirable jobs.

The rank correlation analysis showed consistent results with the simple correlation with regard to the association between age and father's education ($R = -.214$), number of years farming ($R = .424$), job satisfaction ($R = .174$) and number of weeks worked off-farm in 1966 ($R = -.212$). The analysis differed with regard to the association between age and attitudes to change ($R = -.275$) which showed significant correlation only in the rank correlation analysis (Table III) but not

2 Edmund deS. Brunner, The Growth of a Science, New York, Harper and Brothers Publishers, 1957 p. 47.

in the simple. This latter association indicates that the older respondents showed less readiness to change than the younger. The finding is not unexpected since it follows the normal pattern of stabilization of employment with increased age. The comparison of the results of the two analyses is summarized in Appendix IV.

Marital Status

The majority of the respondents were married with 84 per cent in this category. Some 14 per cent were single, 2 per cent were widowed and 2 per cent were divorced or separated. Since most of the respondents were married, marital status was not tested for relationships with other characteristics.

Number of Children

The majority of the respondents had less than four children with 58 per cent of the farmers in this category. More than four children were reported by 23 per cent of the respondents, while 18 per cent reported four children. The median number of children was three. Significant correlations were obtained between the number of children and attitudes to change ($r = .18$) and between the number of children and net farm income ($r = .17$), but the correlation coefficients are very low. Therefore, no reliable conclusions could be drawn from such data.

There was complete agreement in the results of the simple and rank correlation analyses with respect to the association between the number of children and attitudes to change, and between the number of children and net farm income.

Number of People in the Household

The respondents were asked about the total number of people living in the household. Forty-two per cent of the household heads reported three or less people, 18 per cent reported four, while another

42 per cent reported five or more people in the household. The median number of people living in the household was four. This variable was not tested for relationships with other characteristics.

Place of Birth

Over half of the farmers in the sample were born in Canada with 68 per cent in this category. Of these one hundred and seventy-four Canadians, 35.5 per cent were born in British Columbia while the remaining 64.5 per cent migrated to British Columbia from other provinces. Some 10 per cent of the respondents were born in U.S. and another 6 per cent in the United Kingdom. Sixteen per cent of the sample were born in other countries not classified in this study. Place of birth was not tested for relationships with other socio-economic variables.

Length of Residence in the Area

A substantial proportion of the farmers studied had migrated to the area from elsewhere in Canada. Only 16 per cent of the respondents had lived in the area their entire life. Fifty-five per cent of the farmers had lived in the present area for more than twenty years, and another 20 per cent had lived in the area from six to sixteen years. Some 10 per cent had lived in the area from seventeen to twenty years, and only 16 per cent had lived in the area for less than six years. The median number of years lived in the area was in the 17 to 20 year category.

Length of residence in the area showed no relationship with any other socio-economic characteristics studied when the simple correlation analysis was used, but the rank correlation showed that length of residence in the area was significantly correlated with number of improved acres the farmer operated ($R = .199$). These data suggest that the farmers who had lived longer in the area reported larger farms than the newcomers.

II. EDUCATIONAL CHARACTERISTICS

Respondent's Education

The education that an individual receives in his pre-adult years exerts a considerable influence on his social and economic status. The data collected for the years of school completed by respondents showed that the median educational level was eight years. Eighty-six per cent of the farmers had less than high school education, some 9 per cent had graduated from high school, and the remaining 5 per cent had at least one year of university education. Of the nine respondents who had university education, about 60 per cent had one to three years while the remaining 40 per cent had university degree. Nine per cent of the respondents had completed five or less years of school, meaning that they could be classified as functional illiterates.³ The proportion of functional illiterates in this survey was consistent with 8.7 per cent reported by Verner⁴ for rural British Columbia as of 1961.

As one would normally expect, there was a significant correlation ($r = .23$) between the education of the husband and that of the wife. This correlation suggests that marriage partners tended to marry within the same educational level. The household heads reporting a higher level of education also participated more in adult education, thereby, supporting the common belief that the desire to further one's education is a function of the formal educational background.⁵ A significant correlation ($r = .24$) was also obtained between the education of the respondent and that

3 Coolie Verner, "Adult Illiteracy 1921-1961", Journal of Education of the Faculty of Education of the University of British Columbia, Vancouver, 10: 1964, pp. 99-109.

4 Ibid. p. 103.

5 Edmund deS. Brunner, et al. An Overview of Adult Education Research, Chicago, Adult Education Association of the U.S.A., Illinois, 1959, pp. 92-93.

of the father. This correlation implies that the well educated fathers understood the value of education and had the means to educate their children. The respondents with more education had a significantly higher level of living ($r = .30$). A further significant correlation ($r = .25$) was found between the education of the respondent and his social participation, meaning that the respondents with more education had better understanding and appreciation of community activities and were prepared to participate. Other socio-economic factors which showed significant correlation coefficients with years of school completed by the respondents included net farm income ($r = .24$), total size of farm ($r = .29$), size of improved acreage ($r = .17$), approximate gross farm income ($r = .22$) and farm value ($r = .26$). All these are economic factors and their associations with formal education are not unexpected.

The results of the rank correlation analysis agreed with all but two of the findings of the simple correlation, with respect to the associations between years of school completed and the other socio-economic factors. The former analysis showed no significant relationship as did the latter analysis between years of school completed and net farm income, and between the years of school completed and number of total acres.

Wife's Education

The data on the wife's education indicate that the spouses of the farmers in the sample had more education than their husbands. The median educational level of the spouses was from nine to eleven years of school completed. Fifteen per cent of the wives completed high school, 7 per cent had one to three years of university education, but none completed university training. Of the one hundred and sixty wives who had not completed high school, 6.9 per cent had five or less

years of school, and as such, could be classified as functional illiterates,⁶ 16.3 per cent had six to seven years of school, while another 76.8 per cent had eight to eleven years of school completed.

There were statistically significant correlation coefficients obtained between the education of the spouse and a number of socio-economic factors, including the education of the husband ($r = .23$), respondents participation in adult education ($r = .17$), number of children ($r = .29$), father's education ($r = .18$), level of living ($r = .38$), social participation ($r = .17$), net farm income ($r = .18$) and approximate gross farm income ($r = .19$). The association between the education of the spouse and that of the respondent supports a previous conclusion that marriage partners tended to marry within the same educational level. The other associations indicate that the respondent's participation in adult education was associated with high educational achievement of the wife, and also that the education of the wife was a factor influencing the possession of the items listed on the level of living scale. The wife's education was also associated with the respondent's participation in community activities. Contrary to expectation, however, the data revealed a positive correlation between the education of the wife and the number of children in the family. This association suggests that spouses with more education had larger number of children. This unexpected result might be due to incomplete data on wife's education.

The results of further analysis with rank correlation were consistent with those of the simple correlation, with respect to the association between wife's education on the one hand, and years of school completed by the respondent ($R = .279$), number of children ($R = .252$),

6 Coolie Verner, op. cit.

father's education ($R = .184$), level of living ($R = .401$), social participation ($R = .206$) and net farm income ($R = .190$) on the other hand. The result differed with regard to the association between the wife's education and gross farm income. These were correlated in the simple correlation and not in the rank, whereas attitudes to change ($R = .193$) and farm value ($R = .233$) were correlated in the rank correlation but not in the simple. These last two correlations indicate that the respondents whose wives had higher education were more favourably inclined to change, and valued their farms higher than those who married spouses with low education. These associations are not unexpected.

Father's Education

The data describing the educational achievement of the fathers of the respondents indicate that only 5 per cent of the fathers completed high school. Twenty-nine per cent had less than eight years of school, while 18 per cent completed five or less years of school and so could be classified as functional illiterates.⁷ This latter figure is double the number of functional illiterates found among the respondents, indicating that they were better educated than their fathers. Another 22 per cent of the fathers had eight to eleven years of schooling, and only 3 per cent had the high school diploma. Some 2 per cent of the fathers obtained university education. A significant correlation was obtained between the father's education and socio-economic factors such as the age of the respondents ($r = .18$), respondent's education ($r = .24$), education of the spouse ($r = .18$) and distance the respondents travelled to obtain their goods and services ($r = -.21$). The above associations suggest that

⁷ Ibid.

the fathers of the younger respondents received more education than the fathers of the older farmers, and that education was a family trait. Furthermore, the fathers of the respondents who travelled less distance for their goods and services received more education. These data intimate that the respondents from more educated families might have migrated to or near the service centres.

The rank correlation analysis showed that the same characteristics discussed above, except distance travelled for goods and services, correlated with father's education. There was also statistically significant positive correlation between father's education and attitudes to change ($R = .181$). These data suggest that the farmers whose fathers completed more years of school were more apt to change than those whose fathers did not. This finding is not unusual since the fathers with more education are more likely to give their children more education than are fathers with less education, and education is presumed to instill a favourable attitude toward change.⁸

There is some evidence of upward educational mobility among the farm operators since the median educational level of the respondents was eight years of school, while the fathers showed a median educational achievement of six to seven years of school completed. The fact that 44 per cent of the respondents did not know the educational achievement of their fathers makes any inference drawn from these figures inconclusive.

Adult Education

Recent studies have stressed the importance of adult education by showing its relationship to other socio-economic characteristics beyond the relationship accounted for by years of school completed. The data

⁸ Herbert F. Lionberger, Adoption of New Ideas and Practices, Ames, The Iowa State University Press, Iowa, 1960, p. 97.

in this study also support the findings of these previous studies.⁹ In many previous studies adult education activities such as courses in agriculture and meetings conducted by agricultural agents are grouped together. This technique offers a single dimensional approach to the measurement of adult educational activities of the respondents. In this procedure specific adult education programs rate low with respect to their relationship to other socio-economic characteristics. Although the isolation of specific educational activities is not always easy, this study deals with three principal activities in which the respondents participated.

General Adult Education

The public school districts in rural British Columbia operate adult classes for farm operators in a variety of subjects other than agriculture. The majority of the respondents had not participated in such classes as only 12 per cent reported attendance in these activities during the year preceding the survey. Participation in adult educational activities showed significant correlation coefficients with a number of socio-economic factors including years of school completed ($r = .28$), social participation ($r = .26$), level of living ($r = .18$) and number of months spent in agriculture in 1966 ($r = .21$). The above correlations indicate that the respondents who attended general adult education classes derived their motivation for continuous learning from their pre-adult educational experience. Usually, these respondents who participated in adult education are the leaders in their communities, and hence, they were more involved in social activities than those who did not take part in adult education courses. By virtue of their

⁹ Verner and Millerd, op. cit. pp. 13-19 and Edmund deS. Brunner, op. cit. pp. 84-87.

educational experience, they could afford to provide decent standards of living for their families. The positive correlation between participation in adult education and the number of months spent in agriculture is unusual, but this correlation may be due to a feeling of obsolescence on the part of the farmers. They might have recognized the need to update their practices.

Adult Courses in Agriculture

Various agencies, including the British Columbia Department of Agriculture, occasionally offer courses in agricultural subjects to farmers. Attendance at such courses was reported by 10 per cent of the sample. Three per cent of the respondents had taken such courses in high school, and another 7 per cent had these courses either in the vocational or agricultural school and agricultural college, or in a university. Of the fifty-eight reporting participation, thirty (51.7 per cent) had taken a course related to their jobs. This factor was not tested for relationship with the other socio-economic characteristics.

District Agriculturist Meetings and Field Day

Data were collected on the attendance and the frequency of attendance at agricultural meetings and field-days. Most of the respondents (66 per cent) had not attended any meetings. Of the eighty-seven respondents who reported attendance, fifty-nine (67.8 per cent) attended once or twice, twenty (22.9 per cent) attended thrice or four times, and eight (9.3 per cent) attended such meetings five or more times during the year preceding the survey. Statistically significant correlation coefficients were obtained between attendance at agricultural meetings and field days and such factors as years of school completed ($r = .19$),

distance travelled for goods and services ($r = -.26$), level of living ($r = .20$), social participation ($r = .36$), degree of involvement in farming ($r = .21$), net farm income ($r = .24$), total size of farm ($r = .19$), approximate gross farm income ($r = .32$), farm value ($r = .23$) and weeks worked off farm ($r = -.17$). The above correlations suggest that the farmers who attended agricultural meetings conducted by the agricultural agents had more education, lived closer to the service centres where such meetings were likely to be held, and provided higher standards of living for their families than those who did not attend. These household heads were also more active in community activities and earned more from their agricultural produce. They operated larger farms which might have resulted in their higher income. The statistically significant correlations between attendance at agricultural meetings and field days and the other three personal contacts indicate that the respondents reporting more frequent contacts of one type were more likely to have more contacts of the other types.

In addition to the factors discussed above, further analysis with rank correlation showed statistically significant correlation coefficients between attendance at agricultural meetings and field days and such factors as attitudes to change ($R = .179$), number of months worked on the farm in 1966 ($R = .172$) and number of improved acres ($R = .266$). These data indicate that the respondents who attended the meetings and field days were more favourably inclined to change, spent more time on farming, and owned larger size of improved farms than those who did not.

The analyses suggest that specific agricultural program, such as would be covered in agricultural meetings and field days, showed higher correlation coefficients than either educational level alone

or general adult education programs. Specific agricultural program was also correlated with larger number of socio-economic factors. These data imply that the amount of education is not as significant a factor as the specific relevancy with respect to the content.¹⁰

Desire for Further Education or Training

An individual's desire for further education or training is a strong indication of his aspirations and willingness to improve his present standard of living, by participating in educational activities provided by the agricultural extension service. The respondents were asked about their desire for further education or training. The alternative responses were as follows: 'yes', 'no', or 'undecided'. The responses indicated that 46 per cent wanted to further their education or training, another 46 per cent did not want any further education or training, while 7 per cent of the household heads were undecided. Four respondents (1 per cent) did not answer the question.

There were statistically significant correlation coefficients obtained between desire for further education or training and such factors as age ($r = -.36$), years of school completed ($r = .19$), number of years in agriculture ($r = -.18$) and number of months spent in agriculture in 1966 ($r = .18$). The above associations indicate that the younger respondents desired more education or training than did the older farmers, meaning that desire for further education decreases with age. Previous training also appeared to be a factor influencing desire for more education, as the respondents with more years of school completed desired further education. The data also show that the desire for further

¹⁰ This is in agreement with the work of Verner and Millerd, Ibid.

education tended to decrease with years of involvement in agriculture. The farmers who had spent more years in agriculture were the older respondents, and since the desire for more education decreases with age, it is a logical corollary that desire for further education decreases with number of years in agriculture. Contrary to expectation, the respondents who spent more time in farming in the year preceding this study expressed desire for further education. However, this expressed desire for further education might indicate that the respondents felt they were out-of-date in agricultural practices, and might be prepared to up-date their farming techniques by participating in educational activities. On the other hand, the expressed desire for education may represent a wishful thinking.

The specific kinds of training desired by the respondents are shown in Table IV. The kind of further training most frequently noted related to farm mechanization with forty-three respondents expressing a desire for such training. Thirty respondents said that they were willing to take training in agriculture, including such courses as animal and crop husbandry. Other training mentioned, in order of frequency, included welding (twenty-one respondents), recreation (thirteen respondents), carpentry (ten respondents), academic training purposely for certificates (seven respondents), non-credit courses in commerce (seven respondents) and business management (six respondents). One hundred and thirty-nine respondents were undecided regarding their desire to take some further education.

III. SOCIAL CHARACTERISTICS

Three indices of social behaviour, including level of living, social participation and distance travelled for goods and services,

TABLE IV
PERCENTAGE DISTRIBUTION OF RESPONDENTS BY
KIND OF FURTHER TRAINING DESIRED

Kind of Training Desired	Respondents	
	No.	%
Farm mechanization	43	16
Agriculture (animal and crop husbandry)	30	11
Welding	21	7
Recreation	13	5
Carpentry	10	4
Academic Training for certificate	7	3
Non-credit commerce courses	7	3
Business Management	6	2
Undecided	139	50
TOTAL	276*	100

* Twenty respondents gave more than one response

were studied in order to determine the social characteristics of the respondents.

Level of Living

A short form of Sewell's Farm Socio-Economic Status Scale¹¹ was used to assess the level of living of the farmers in the sample. Most of the respondents received total scale scores above seventy, and the median score was in the eighty-one to ninety class. Only two per cent of the respondents scored less than sixty-one, while 39 per cent scored sixty-one to eighty, and 59 per cent of the sample obtained eighty-one and over. The above data indicate that the living conditions of majority of the farm families included in this study appeared to be satisfactory.

Statistically significant correlation coefficients were obtained between level of living and such factors as years of school completed ($r = .30$), wife's education ($r = .38$), participation in adult education ($r = .18$), distance travelled for goods and services ($r = -.28$), social participation ($r = .30$), net farm income ($r = .19$), approximate gross farm income ($r = .28$) and farm value ($r = .22$). The above associations suggest that the educational level of farm families and the participation of respondents in adult educational programs were some of the factors influencing the possession of the items tabulated on the level of living scale. Furthermore, the farmers who obtained high living scale scores were less dependent on external sources for the supply of goods and services, showed more active interest in community programs, and

¹¹ W.H. Sewell. "A Short Form of the Farm Family Socio-Economic Status Scale", Rural Sociology, 8: 1943, 161-170. The socio-economic status is measured by the number of household equipments, type of housing, level of education, and church or Sunday school attendance score obtained by the farm family at the time of the study. The score for different items varies from 2 to 8 (Appendix I, Questions 15-28). The total score ranges from 40 to 92, and the minimum score of 40 indicates the lowest level of living, while the maximum score of 92 reflects the highest level of living.

earned more from farming.

When the data were subjected to rank correlation analysis, all the socio-economic factors which showed correlation in the simple correlation analysis, plus two additional factors, including job satisfaction ($R = .171$) and number of total acres ($R = -.190$), showed significant correlation coefficients with level of living. The associations with these two additional factors indicate that the farmers who reported higher level of living tended to enjoy farming more, but reported fewer number of total acres than those who reported lower level of living. The former association was not unusual, but the latter suggests that the size of total acres is not as relevant a factor as the size of improved acres, although the rank correlation analysis did not show significant correlation between size of improved acres and level of living.

Social Participation

The degree of social participation was measured by using the Chapin Social Participation Scale,¹² which was modified by eliminating church attendance. The range of the scale was from zero to over thirty-five, and the median category, as revealed by the data, was one to five. Almost one half of the respondents (47 per cent) scored zero, and 72 per cent had a score of less than eleven. Only thirty-four respondents (14 per cent) scored above twenty, and another thirty-eight respondents (15 per cent) had scores ranging from eleven to twenty.

Social participation was correlated with such factors as years

¹² F. Stuart Chapin, "Social Participation Scale", Minneapolis, Minnesota, University of Minnesota Press, 1937, reprinted in F. Stuart Chapin, Experimental Designs in Sociological Research (revised edition), New York: Harper and Brothers, 1955, pp. 276-278. The extent of participation is measured by the number of memberships held during the previous year and each membership counts as one point toward the total scale score. Intensity, or degree of involvement is measured by attendance at meetings, financial contribution, committee memberships and the holding of offices. A higher scale score reflects a higher rate of participation.

of school completed ($r = .25$), the education of the spouse ($r = .17$), participation in adult education ($r = .26$), level of living ($r = .30$), total number of acreage farmed ($r = .25$), improved farm acreage ($r = .18$), approximate gross farm income ($r = .31$), farm value ($r = .23$) and number of weeks spent at off-farm jobs ($r = -.18$). These correlations suggest that the house-hold heads who were more active participants in community activities had a higher level of education, participated more in adult education, operated more acreage, earned more from farming, and spent less time in off-farm job than the less active participants. The education of the spouse also influenced the respondents' social attitudes. The respondents who married wives with higher level of education had more favourable attitudes toward social activities.

The results obtained from rank correlation analysis were consistent with those discussed above, but showed, in addition, that social participation was correlated with degree of involvement in farming ($R = .176$). These data indicate that the respondents who were more active in community activities tended to be more involved in agriculture than those who were less active.

Distance Travelled for Goods and Services

In order to obtain a measure of the physical isolation of the farm families in the study areas, respondents were asked how many miles they travelled to purchase or receive selected types of goods and services. The median distance travelled for all the items studied was eleven to fifteen miles. Forty-four per cent of the respondents travelled less than eleven miles, and only four per cent travelled

forty-one miles or more for the items. Twenty-seven per cent of the household heads travelled eleven to twenty miles, and another 15 per cent travelled twenty-one to forty miles. These data revealed that the goods and services studied were within easy access of most of the farmers included in the sample, meaning that most of the respondents did not suffer physical isolation.

There were significant negative correlation coefficients obtained between distance travelled for goods and services and such factors as the educational achievement of the father ($r = -.21$) and level of living ($r = -.28$). These correlations imply that the respondents whose fathers had lower educational achievement travelled longer distance to obtain their goods and services, and also that the respondents who were more dependent on distant sources for their goods and services could not provide most of the items on the level of living scale.

Statistically significant rank correlation coefficients were also obtained between distance travelled for goods and services and such factors as level of living, degree of involvement in farming ($R = -.193$) job satisfaction ($R = -.202$), number of total acres ($R = .186$) and approximate gross farm income ($R = -.186$), but not with father's education. The above associations suggest that the farmers who were more isolated from service centres reported less involvement in farming, enjoyed agriculture less, owned larger number of total acres, and earned less gross income from farming than those who lived closer to the service centres. These findings are not unexpected, because the tendency is for the low socio-economic residents to move into the countryside as the housing lands in the service centres become expensive.

IV. ECONOMIC CHARACTERISTICS

According to previous research, the economic situation of the farmer tends to exert a major influence on his relationship with the formalized sources of agricultural information in his area. In this study, the indices of economic status used included the principal and secondary agricultural products sold by the farmer during the year preceding this survey, size of farm enterprise (either as total acreage farmed or animal units owned), degree of involvement in farming, farm income, farm value, land tenure, farm labor used, number of weeks worked off-farm in 1966 and the changes contemplated in the farming operations.

Size of Enterprise

Two indices were used to establish the size of enterprise. The size of farm in acres was used for those farm operators engaged in the production of tree and vegetable crops, while the number of animal units was used to measure the size of livestock farming.

Size of Farm in Acres

The median total size of farm was in the 320 to 639 acre class. The median size of improved acreage¹³ was in the 100 to 159 acre category. These data indicate that most of the respondents' land was in bush or timber. The total size of farm¹⁴ was significantly correlated with such factors as years of school completed ($r = .29$), social participation ($r = .25$), net farm income ($r = .39$), improved acreage ($r = .62$),

¹³ Improved acreage includes area cleared and put under crops.

¹⁴ Total acreage figures were calculated by multiplying the midpoint of each acreage category by the number of respondents in that category and summing the resultant products.

approximate gross farm income ($r = .54$), farm value ($r = .81$) and number of weeks spent off-farm ($r = -.20$). These correlations indicate that the respondents who possessed larger size of farm tended to have a higher level of education, participated more in community activities, earned more from agriculture, owned more improved acreage and spent less time in off-farm jobs. The size of farm improved also showed statistically significant correlation coefficients with years of school completed ($r = .17$), social participation ($r = .18$), net farm income ($r = .47$), total size of farm ($r = .62$), approximate gross farm income ($r = .56$), farm value ($r = .77$) and number of weeks spent off-farm in 1966 ($r = -.22$).

The results of rank correlation analysis agreed with those of the simple correlation discussed above, with respect to the association between number of total acres and such factors as social participation ($R = .243$), number of improved acres ($R = .703$), gross farm income ($R = .420$), farm value ($R = .430$) and number of weeks spent at off-farm jobs in 1966 ($R = -.191$). But the rank correlation showed no association with years of school completed and net farm income as did the simple correlation. The rank correlation did show significant correlation with distance travelled for goods and services ($R = .186$), level of living ($R = -.190$) and degree of involvement in agriculture ($R = .171$). These latter associations indicate that the farmers who reported larger number of total acres tended to be more isolated from service centres and had lower standard of living than those who reported less. These findings support an earlier conclusion that ownership of large total acres seems not to be a relevant factor as the number of

improved acres. The farmers who reported larger number of total acres were also more involved in agriculture than those who reported less, and this finding is not unexpected. The socio-economic factors which were significantly correlated with number of improved acres were consistent in the two correlation analyses regarding seven factors, including years of school completed ($R = .174$), social participation ($R = .262$), net farm income ($R = .193$), number of total acres ($R = .703$), gross farm income ($R = .573$), farm value ($R = .597$) and number of weeks spent at off-farm jobs in 1966 ($R = -.215$). However, rank correlation showed significant correlations between numbers of improved acres and some other socio-economic factors not reported in the simple correlation. These include length of residence in the area ($R = .199$), number of years in agriculture ($R = .203$) and degree of involvement in farming ($R = .292$). These latter associations suggest that the respondents who reported larger number of improved acres tended to have lived in the area for longer periods, had been farming for more years, and were more involved in farming than those who reported smaller farms.

Animal Units.

Most of the livestock farmers were small scale operators. The median total animal units¹⁵ was in the 20 to 29 category. Only 29 per cent of the 215 livestock farmers owned fifty units of animal and over, while 41 per cent reported less than twenty animal units. Seventeen per cent of the livestock farmers owned thirty to forty-nine

¹⁵ The total animal units for each respondent were determined by multiplying the average number of each type of animal on the farm in 1966 by an animal unit factor. A fully grown horse or beef cow, for example, had an animal unit factor of 1.0, while a calf under one year old was valued at 0.25, and a heifer between one and two years at 0.66. For full detail see Appendix III.

animal units. Since 16 per cent of the sample reported no animal units, this variable was not tested for relationships with other characteristics.

Agricultural Products Sold

In order to determine the type of farm enterprise in which the respondents were engaged, the farmers were asked to name the agricultural product from which they obtained the largest gross revenue in 1966. Secondary products were checked for those who gave more than one response. The majority of the respondents were engaged in beef production since 40 per cent of the respondents reported that they obtained their largest gross revenue from the production of beef cattle. Field crops other than fruits and vegetables were second in rank since 35 per cent of the household heads obtained their largest gross revenue from such products. Dairy produce ranked next with 14 per cent of the respondents reporting their largest gross revenue from the sale of milk and/or cream. Other products mentioned as the principal agricultural products included livestock (excluding beef and dairy), fruits and vegetables (including potatoes), poultry products and woodlot products. Fourteen per cent of the farmers sold beef as their secondary farm product and an equal number of farmers reported field crops (other than fruits and vegetables) as their secondary products. Since it was not possible to put these products on an interval scale, they were not tested for relationships with other variables.

Farm Income and Value

The net¹⁶ and the approximate gross farm incomes¹⁷ were recorded for each respondent. Farm value was measured in terms of what the farmer

16 The net income was the money earned from the sale of farm product after deducting all farm expenses.

17 The approximate gross farm income was the value received from the sale of all farm products. This income does not include the value of produce raised and consumed by the farmers; therefore, any correlations with gross farm income should be interpreted with this limitation in mind.

said he would pay to own and operate his farm as a going concern. The median net farm income claimed by the respondents was in the \$2,000 to \$2,999 group. Fifty-six per cent of the farmers earned less than \$3,000 in the year preceding this study. Another 30 per cent reported a net farm income of \$3,000 to \$5,999, while 10 per cent of the sample earned \$6,000 to \$9,999. Some 4 per cent of the farmers earned \$10,000 and over. The net farm income correlated significantly with such factors as years of school completed ($r = .24$), education of the spouse ($r = .18$), number of children ($r = .17$), level of living ($r = .19$), total size of farm ($r = .39$), improved acreage ($r = .47$), approximate gross farm income ($r = .49$), farm value ($r = .52$) and weeks spent at off-farm jobs ($r = .21$). These correlations indicate that the farm operators who earned more from agriculture tended to have more educational achievement than those who earned less. The significant positive correlation between the education of the wife and net farm income indicates that the farmers whose wives had more education earned more from agriculture. However, the correlation between net farm income and number of children is unexpected except under such conditions that labor was the only limiting factor, and the children were engaged on the farm up to a point where marginal return¹⁸ equals the cost of an additional unit of labor. The respondents who earned more from farming also had higher standards of living, possessed larger acreage of farm (total and improved), obtained more gross income from the sale of farm produce, and valued their farms higher than those who earned less. The above data also

¹⁸ Marginal return is the addition to total income resulting from the use of an additional unit of factor of production, (in this case, labor).

indicate that the farmers who earned more from agriculture spent more time working off-farm. This association is also contrary to expectation unless the respondents spent part of the money earned from non-agricultural jobs to develop their farms.

Further analysis with rank correlation disagreed with the results of simple correlation with respect to the associations between net farm income and three factors, including years of school completed, number of total acres and gross farm income. These factors were not associated with net farm income in the rank correlation analysis. The two analyses, however, showed associations between net farm income and such factors as wife's education ($R = .190$), number of children ($R = .231$), level of living ($R = .172$), number of improved acres ($R = .193$), farm value ($R = .313$) and number of weeks worked off-farm in 1966 ($R = .347$). The rank correlation also showed significant associations between net farm income and two other factors, including number of years farming ($R = -.202$) and degree of involvement in agriculture ($R = -.227$), neither of which factors is correlated in the simple correlation analysis. These last two associations indicate that the respondents who earned more "take-home" dollars from agriculture tended to have spent less years in agriculture and were less involved in agriculture. This interpretation implies that these farmers were engaged in occupations other than farming.

The median gross farm income reported by the farmers was in the \$3,000 to \$3,999 class. Forty-six per cent of the respondents earned less than \$3,000, another 36 per cent earned \$6,000 and over, while forty-nine respondents (20 per cent) reported a gross farm income of \$3,000 to \$5,999. There were statistically significant correlations obtained between gross farm income and such factors as years of school

completed ($r = .22$), wife's education ($r = .19$), level of living ($r = .28$), social participation ($r = .31$), number of years in agriculture ($r = .21$), degree of involvement in farming ($r = .32$), net farm income ($r = .49$), total size of farm ($r = .54$), improved acreage ($r = .56$), farm value ($r = .65$), and weeks worked off-farm in 1966 ($r = -.31$). Number of children was not associated with gross farm income. The above associations indicate, among other things, that the farmers who earned more income from agriculture spent less time at off-farm jobs.

The results of the rank correlation analysis were consistent with those of the simple regarding the associations between gross farm income and such factors as years of school completed ($R = .195$), level of living ($R = .279$), social participation ($R = .365$), number of years farming ($R = .313$), degree of involvement in farming ($R = .454$), number of total acres ($R = .420$), number of improved acres ($R = .573$), farm value ($R = .708$) and number of weeks spent at off-farm jobs in 1966 ($R = -.490$). But the rank correlation did not show associations, as did the simple, between gross farm income and wife's education, and between gross farm income and net farm income. However, the rank correlation, unlike the simple, showed that gross farm income was significantly correlated with two other factors, including distance travelled for goods and services ($R = -.186$) and job satisfaction ($R = .171$). These last two associations suggest that the respondents who earned more gross farm income lived closer to the service centres and expressed more satisfaction in farming than those who earned less.

The majority of respondents valued their farms highly with a little over half (51 per cent) valuing their farms at more than \$39,999. The median value reported for all the farms was in the \$40,000 to \$49,999

range. Only eighteen farmers (7 per cent) valued their farms at less than \$10,000, while 40 per cent valued their farms from \$10,000 to \$39,999. Some 24 per cent of the farmers said they would pay \$40,000 to \$69,999 to own their farms, and another 9 per cent valued their farms at \$70,000 to \$99,999. Sixteen per cent of the respondents valued their farms at \$100,000 and over. The respondents who valued their farms higher tended to have higher levels of education ($r = .26$), higher standards of living ($r = .22$), more favourable attitudes toward community activities ($r = .23$), and had been in agriculture for more years ($r = .18$) than those who valued their farms less. These farmers also earned more from agriculture, operated larger farms, and spent less time at off-farm jobs ($r = -.21$).

Net farm income was studied further by asking the respondents to indicate whether the year 1966 (the year for which data on income was collected) was typical, better or poorer than average. Forty-six per cent said it was better than average, while 33 per cent said it was poorer than average. Ten respondents were not farming previous to 1966, and hence they could not give any opinion, while three respondents declined to give any opinion.

Land Tenure

The majority of the respondents (79 per cent) owned their farms, 9 per cent rented more than half and owned the remainder, while 8 per cent owned more than half and rented the remainder. Only one respondent rented the whole farm and one was a hired manager.

The respondents were asked another question about the method of acquiring their farms. The data revealed that 30 per cent of the respondents bought their farm land as it was at the time of this study,

while some 16 per cent acquired their land privately as unimproved land. About 14 per cent (37 respondents) purchased their land from the Crown. Other methods of acquisition included pre-empted or homestead plots (with 11 per cent of the respondents in this category), purchased as fallow (with another 11 per cent), while 8 per cent inherited their farm land as a going concern. Land tenure was not tested for relationships with other variables.

Farm Labor

The farmers in rural British Columbia generally employed no labor other than members of the farm family unit. One hundred and fifty-eight respondents (62 per cent) reported that they used no hired labor, while about three-tenths (32 per cent) used seasonal workers only. Some 2 per cent hired labor on a one-year basis and another 2 per cent hired labor steadily.

Time Spent at Off-farm Jobs

Almost one half of the respondents had no off-farm employment¹⁹ since 49 per cent were in this group. One fourth (25 per cent) were employed for half of the year or more off the farm. Nineteen per cent of the farmers worked off their farms from four to twenty-five weeks, while fourteen farmers (5 per cent) were employed off their farms for less than four weeks in the year preceding this survey.

Number of weeks spent at off-farm jobs showed statistically significant correlation coefficients with such factors as age ($r = -.23$),

¹⁹ Off-farm employment was the work for which payment was received. Therefore, exchange work between neighbors and friends was not considered off-farm employment.

social participation ($r = -.18$), number of years in agriculture ($r = -.52$), degree of involvement in farming ($r = -.84$), job satisfaction ($r = -.29$), net farm income ($r = .21$), total acreage farmed ($r = -.20$), improved acreage ($r = -.22$), gross farm income ($r = -.33$) and farm value ($r = -.20$). These correlations indicate that the farmers who spent more time at off-farm jobs tended to be younger and less active in community organizations than those who spent less time. These farmers were also newcomers and were less involved in agriculture. They derived less satisfaction from farming but, contrary to expectation, they obtained more net income from farming. Furthermore, these respondents operated less acreage, their gross farm income was less, and they valued their farm less than those who spent less time working off-farm.

Further analysis with rank correlation showed associations which were consistent with those discussed above. One additional factor (attitudes to change) was also correlated with time spent at off-farm jobs ($R = .177$). This last association indicates that the farmers who spent more time at off-farm jobs were more likely to change than those who spent less time. This finding is not unexpected since part-time farmers usually earn more income and are more willing to take risks than full-time farmers.

Degree of Involvement in Farming

In order to assess the extent to which the farmers were involved in agriculture²⁰, the respondents were asked to indicate whether they were farmers only, farmers principally with secondary off-farm jobs, non-farmers principally with farming as a secondary job, or just starting

20 The degree of involvement in farming was spread over a four point scale, with "farmer only" having the highest score of four and "just starting a farm" the lowest score of one.

a farm. Most of the respondents were highly involved in agriculture with almost half (49 per cent) of the sample reporting farming as their only occupation. Thirty-eight per cent of the respondents were non-farmers principally but had farming as a secondary job. Another 12 per cent reported farming as their principal occupation and a non-farm job as secondary. Only three respondents (1 per cent) were just starting a farm at the time of the survey. Degree of involvement in farming showed significant correlations with such factors as number of years in agriculture ($r = .54$), job satisfaction ($r = .31$), approximate gross farm income ($r = .32$) and weeks spent at off-farm jobs ($r = -.84$). These associations suggest that the respondents who were more involved in agriculture had been farming for more years and expressed more satisfaction in agriculture. These farmers also earned more from farming and spent less time working off-farm.

With rank correlation analysis, significant correlation coefficients were obtained between degree of involvement in farming and the socio-economic characteristics discussed in the foregoing paragraph. Seven other factors, including distance travelled for goods and services ($R = -.193$), social participation ($R = .176$), attitudes to change ($R = -.194$), net farm income ($R = -.227$), number of total acres ($R = .171$), number of improved acres ($R = .292$) and farm value ($R = .321$) were correlated with degree of involvement in farming. These correlations suggest that the respondents who were more involved in farming lived closer to the service centres; they were more active in community organizations, less willing to change, earned less net farm income, owned larger farms (both total and improved acres), and valued their farms higher than those who were less involved. The associations between degree of involvement in farming and distance travelled for goods and services, and between degree of involvement in farming and social participation, are unusual and difficult to explain.

Over two-fifths of the farmers (41 per cent) had been farming for more than twenty years, and only 19 per cent had been farming for less than six years. Twelve per cent of the respondents reported that they had been in agriculture for six to ten years, 14 per cent for eleven to fifteen years, and 13 per cent had been farming for sixteen to twenty years. The median number of years in farming was in the sixteen to twenty year category.

There were statistically significant positive correlation coefficients between number of years in agriculture and such factors as age ($r = .40$), degree of involvement in farming ($r = .54$), job satisfaction ($r = .23$), approximate gross farm income ($r = .21$) and farm value ($r = .18$). These associations suggest, among other things, that the older farmers had been in agriculture for more years than the younger ones. The respondents who had been farming for more years were also more involved in farming, and were more favourably inclined toward agriculture than those who entered agriculture more recently. Significant negative correlations were obtained between number of years in agriculture and two factors, including desire for further education or training ($r = -.18$) and number of weeks worked off-farm in 1966 ($r = .52$). These negative correlations might be a function of age since the household heads who had been in agriculture for more years were the older farmers. With respect to time spent at off-farm jobs, since the respondents who had been farming for more years tended to be more involved in agriculture, it is logical to expect these farmers to spend less time at off-farm jobs.

Further analysis using rank correlation showed that the same socio-economic factors discussed in the foregoing paragraph, plus three other factors, including attitudes to change ($R = -.189$), net farm income

($R = -.202$) and number of improved acres ($R = .203$) were significantly correlated with number of years farming. These last three associations indicate that the farmers who had been in agriculture for longer periods tended to have less favourable attitudes toward change, earned less net farm income but reported more number of improved acres than those who have recently come into agriculture. The association between number of years farming and number of improved acres is questionable but difficult to explain. One possible explanation, however, is that the less favourable attitudes toward change may cancel the benefits accruing from large improved acres.

Job Satisfaction

A revised version of Brayfield and Rothe's Index of Job Satisfaction²¹ was administered to all the farmers included in the study. The median score was in the thirty-three to thirty-six point range. Only three respondents had a score of less than twenty-five, and none had less than twenty. More than three-fifths (62 per cent) of the respondents scored thirty-three and over. These data indicate that the majority of the farmers were satisfied with farming as an occupation. There was a statistically significant positive correlation ($r = .18$) between job satisfaction score and age, suggesting that the older respondents tended to be more satisfied with their work than were the younger farmers. This

21 A.H. Brayfield and H.F. Rothe, "An Index of Job Satisfaction", Journal of Applied Psychology, 35: 1951, pp. 307-311. This scale consists of eighteen statements such as "My job is like a hobby to me", and "Each day of work seems like it will never end". The scale was reduced to nine items for this study by eliminating the half-step items. Five responses ranging from "strongly agree" to "strongly disagree" were available for each item, and each response was scored from one to five points. A maximum scale score of 45 points would indicate a highly favourable job attitude, whereas a minimum score of 9 points would be indicative of extreme job dissatisfaction.

result is inconsistent with the findings of previous research in another area of the province.²² A possible explanation is that these older farm operators might have reached the limit of their aspirations in life. Therefore, they felt contented with their present occupation since it was no longer possible for them to move out of agriculture, either for health reasons or from lack of skill training. Furthermore, job satisfaction score was positively correlated with two other factors, i.e., number of years in agriculture ($r = .24$) and degree of involvement in farming ($r = .31$), meaning that the respondents who were more satisfied with farming had been in agriculture for more years and were more involved in farming. These two correlations are functions of age. The household heads who expressed more satisfaction in agriculture ($r = -.29$) spent less time at off-farm jobs, and this finding appears normal.

There were statistically significant correlation coefficients in the rank correlation analysis between job satisfaction and the four factors discussed in the preceding paragraph. Four other factors, including distance travelled for goods and services ($R = -.202$), level of living ($R = .171$), gross farm income ($R = .171$) and farm value ($R = .185$) were correlated with job satisfaction score. These last four associations indicate that the respondents who expressed more satisfaction in agriculture lived closer to service centres, had higher standards of living, earned more gross farm income, and valued their farms more than those who expressed less satisfaction. These findings are not unexpected.

22 Coolie Verner, Gary Dickinson and E. Patrick Alleyne, A Socio-Economic Survey of the East Kootenay Area in British Columbia, Vancouver, Faculty of Education, U.B.C., 42-43 (Jan. 1968); Coolie Verner and Gary Dickinson, A Socio-Economic Survey of The Pemberton Valley, Vancouver, Faculty of Education, U.B.C., 44-45, (April, 1968).

Plans for Change in Farm Operations

The respondents were asked to indicate whether they planned to make any changes in their farm operations within the next five years, and, if so, what changes they planned. One hundred and ninety-six farmers (77 per cent) indicated their intention to make some changes. The changes reported are shown in Table V.

The emphasis was on land clearance and drainage since 35 per cent of the respondents contemplated such changes. The next prominent change reported was increase in farm size as 11 per cent contemplated this change. Ten per cent of the farmers planned to increase their stock. Other changes contemplated include change in the nature of enterprise (2 per cent), change of building and total retirement from farming (3 per cent each), decrease in time spent at off-farm jobs (1 per cent), while 4 per cent of the respondents reported changes which defied classification under any of the categories discussed above. Some fifty-nine respondents (23 per cent) did not respond to this question.

The changes contemplated by the respondents indicate a mixed feeling toward the future of agriculture. A number of changes involved expanding farm operations, a finding which would suggest a basically optimistic attitude. This attitude is further borne out by the fact that the most frequently mentioned change involved improvement in farm operations. Optimisim was also indicated by those who planned to improve their farm building or decrease their off-farm work. These data are inconsistent with an earlier study in another part of the province.²³ However, the large proportion of the respondents (23 per cent) who did

²³ Ibid.

TABLE V
PERCENTAGE DISTRIBUTION OF RESPONDENTS BY FUTURE
CHANGES IN FARM OPERATIONS CONTEMPLATED

Changes Planned	Respondents	
	No.	%
Increase farm size	28	11
Change nature of enterprise	5	2
Clear and drain land	89	35
Change buildings	7	3
Retire from farming	9	3
Increase stock	21	10
Decrease off-farm work	3	1
Others	10	4
No response	59	23
	<hr/>	
TOTAL	256	100

not answer this question makes inconclusive any inference drawn from these data.

The variables which involved dichotomous responses, such as "Yes" or "No", were not included in the Spearman rank correlation analysis because the respondents could not be ranked on the basis of such data.

V. SUMMARY

The farm operators included in this sample are generally similar to those in other rural areas of British Columbia with respect to the socio-economic characteristics studied. The household heads were old and had been in agriculture for a considerable length of time. A substantial number of the respondents were born in Canada, but a majority of the farmers were born outside of British Columbia. Their educational achievement was associated with most of the other socio-economic factors studied, and the level of education achieved depended upon the family into which the farmer was born. The median size of improved acreage was in the 100 to 159 acres group, and the median net farm income was in the \$2,000 to \$2,999 category; but the median value reported for all the farms was in the \$40,000 to \$99,999 range. The standard of living of majority of the farmers was satisfactory and they lived close to the service centres, but they were less active participants in community activities. Most of the respondents were satisfied with agriculture as an occupation and had an optimistic outlook toward the future of agriculture in British Columbia.

CHAPTER IV

FARMERS' CONTACT WITH DISTRICT AGRICULTURISTS

The District Agriculturist is usually one of the main sources of information and education for farm operators. In British Columbia, several means are used to disseminate information about new farm practices to farmers. These methods include visits and telephone calls by farmers to the District Agriculturist's office, farm visits, agricultural meetings, field-days, circular letters, mailed announcements or bulletins, farm radio, television programs and farm newspaper articles. Data were obtained on the type and extent of contacts which each respondent had with the District Agriculturist through these media during the year preceding the survey. The results of the analysis of these data are given in this chapter.

I. KNOWLEDGE OF DISTRICT AGRICULTURIST

The assessment of farmers' knowledge of the District Agriculturist involved asking each respondent to give the name of the District Agriculturist in his area. Some 53 per cent of the respondents could give the name of the District Agriculturists, 44 per cent could not make a guess, while 3 per cent made wrong guesses. Knowledge of the District Agriculturist was significantly correlated with such factors as visits to the District Agriculturist's office ($r = .30$), telephone calls to District Agriculturist ($r = .23$), farm visits, ($r = .19$), attendance at meetings and field days ($r = .25$), reading of circular letters and bulletins ($r = .31$), listening to or viewing farm radio and television programs ($r = .23$), reading of farm newspaper articles ($r = .19$) and

the use of all extension contacts combined ($r = .43$). These correlations suggest that the respondents who knew the District Agriculturist tended to have more extension contacts than those who did not know him.

II. EXTENSION CONTACT SCORE

An extension contact scale established by Rogers and Capener¹ was used to measure the contacts between the farmers and the District Agriculturist. The distribution of the scores is shown in Table VI. Four respondents (1.5 per cent) reported no contact of any kind with the District Agriculturist during the year preceding this study, and only 5.9 per cent of the respondents had all seven types of contact. Some 48.8 per cent of the farmers had one to three types of contact, while the remaining 43.8 per cent had four to six types. On the average, each respondent in the sample had 3.71 types of contact with the District Agriculturist. This average score varied with the contact levels² as follows: low 2.52, medium 4, and high 5.51 contacts (Table VII). The over-all average contact score obtained in this study is greater than 2.53 obtained by Verner and Gubbels³ in another part of the province. This finding suggests that each of the farmers

¹ Rogers and Capener, op. cit., pp. 13-14.

² Three contact levels were established by classifying the farmers who had from 0 to 3 scores as low, 4 scores as medium, and 5 to 7 scores high.

³ Verner and Gubbels, op. cit., p. 21

TABLE VI
PERCENTAGE DISTRIBUTION OF RESPONDENTS
BY EXTENSION CONTACT SCORE

Extension Contact Score	Respondents	
	No.	%
0	4	1.5
1	9	3.5
2	28	10.9
3	88	34.4
4	59	23.1
5	38	14.8
6	15	5.9
7	15	5.9
TOTAL	256	100

$$\text{Average Contact Score} = \frac{\sum (\text{Score} \times \text{Frequency})}{\text{Total No. of Respondents}}$$

$$= 3.71$$

TABLE VII
PERCENTAGE DISTRIBUTION OF
RESPONDENTS BY CONTACT LEVELS

Contact Levels	Respondents		Average Contact Score
	No.	%	
Low	129	50.3	2.52
Medium	59	23.1	4.00
High	68	26.6	5.51
TOTAL	256	100	3.71

in this sample had more types of contact with the District Agriculturist than did the dairy farmers studied by Verner and Gubbels. This finding may be attributed to the fact that the dairy farmers included in the latter study were not representative of the farmers in British Columbia.

The average contact made by the farmers with the District Agriculturist was further analyzed on the basis of personal and impersonal contacts, using the contact scores as shown in Table VI. The use of the impersonal sources of information accounted for 72 per cent of the over-all average contact score, while personal contacts accounted for the remaining 28 per cent (Table VIII). This finding indicates that the respondents used the impersonal sources of information more than they used personal contacts.

III. TYPE AND EXTENT OF CONTACTS

The type and extent of contact which farmers have with the

TABLE VIII

PERCENTAGE DISTRIBUTION OF AVERAGE EXTENSION CONTACT
SCORE BY PERSONAL AND IMPERSONAL CONTACTS

Type of Contact	Average Score	% of Total Average Score
Personal	1.05	28
Impersonal	2.66	72
TOTAL	3.71	100

agricultural change agents have a great influence on the decision farm families make with respect to the day-to-day running of their farms. Personal contacts, such as farm visits by District Agriculturist, while allowing for face-to-face discussion between the agent and the farmers, also have the psychological effect of establishing rapport between the two discussants, and the farmers may develop greater confidence in the agent. Impersonal contacts, on the other hand, are abstract and more effective in reinforcing existing attitudes than in bringing about change.⁴

The respondents were asked about the types and numbers of contact they had with District Agriculturist during the year preceding this survey. The type which had the highest frequency of use was farm newspaper articles, with 93 per cent of the respondents reporting this

⁴ Joseph T. Klapper, "The Social Effects of Mass Communication", in Wilbur Schramm, (ed.), The Science of Human Communication, New York, Basic Books, Inc., Publishers, 1963, pp. 65-76.

contact. Farm radio and television programs ranked second since 91 per cent of the respondents reported watching such programs. Eighty-one per cent of the farmers had contact with the District Agriculturist through circular letters and mailed announcements or bulletins. The next most frequently reported contact was farmers' visits to the District Agriculturist's office, with 35 per cent of the respondents, while another 34 per cent reported attendance at agricultural meetings and field-days. Seventeen per cent of the farmers had telephone calls to the District Agriculturist, and only 16 per cent reported farm visits by District Agriculturist (Table IX).

The above data indicate that the main form of contact between the farmer and his District Agriculturist was impersonal. This finding is in agreement with other research conducted elsewhere in the province.⁵

Personal Contacts

The number of farmers who reported no personal contact with the District Agriculturist in the year preceding the study ranged from 65 to 84 per cent, depending on the type of contact (Table X). Twenty-four per cent of the farmers visited the District Agriculturist's office once or twice, while only 4 per cent made such visits five or more times. Some 7 per cent visited the District Agriculturists office three or four times, and 65 per cent made no such visits. Eighty-three per cent of the household heads reported no telephone calls to the District Agriculturist, 11 per cent made such calls once or twice, 3 per cent called three or four times, and another 3 per cent reported making such calls five or more times in 1966. Only one respondent was visited by the

⁵ Verner and Gubbels, op. cit., pp. 21-23.

TABLE IX

PERCENTAGE DISTRIBUTION OF FARMER-DISTRICT
AGRICULTURIST CONTACT BY TYPE OF CONTACT

Type of Contact	Respondents who used the contact		Respondents who did not use the contact		Total	
	No.	%	No.	%	No.	%
Visits to D.A.'s office	90	35	166	65	256	100
Telephone calls to D.A.	44	17	212	83	256	100
Farm visits with D.A.	42	16	214	84	256	100
Attendance at meet- ings and field days	87	34	169	66	256	100
Mails from D.A.	206	81	50	19	256	100
Farm radio and T.V. programs	233	91	23	9	256	100
Farm newspaper articles	239	93	17	7	256	100
Average	134.4	52.4	121.6	47.6	256	100

Note: $\chi^2 = 731.81$, d.f. = 6, $p < .001$, $c = .86$

TABLE X
PERCENTAGE DISTRIBUTION OF RESPONDENTS BY PERSONAL
CONTACTS WITH DISTRICT AGRICULTURIST

Type of Contact	Respondents								Total	
	Never		Frequency per year							
			1 or 2		3 or 4		5 or more			
	No.	%	No.	%	No.	%	No.	%	No.	%
Visits to D.A.'s office	166	65	62	24	18	7	10	4	256	100
Telephone calls to D.A.	212	83	29	11	7	3	8	3	256	100
Farm visits by D.A.	214	84	36	14	5	2	1	0.39	256	100
Attendance at meetings and field days	169	66	59	23	20	8	8	3	256	100
Average	190.3	74.5	46.5	18	12.5	5	6.8	2.5	256	100

Note: $\chi^2 = 49.18$, d.f.=9, $p < .001$, $c = .40$

District Agriculturist in his farm five or more times. Eighty-four per cent reported no such visit, 14 per cent reported being visited once or twice, and 2 per cent were visited three or four times. The number of respondents who attended agricultural meetings and field-days is reported in Chapter III of this thesis.

The farmers who visited the District Agriculturist's office tended to make more telephone calls to the District Agriculturist's office ($r = .36$), had more farm visits by the District Agriculturist ($r = .23$, $R = .308$), and attended more meetings and field-days ($r = .34$, $R = .327$) as significant positive correlation coefficients were obtained among these contact methods. These associations suggest that the use of personal contacts follows a pattern, and the farmers who have one type of personal contact are more likely to have the others. The Spearman rank correlation analysis did not show association between visits to District Agriculturist's office and farm visits by the agent. The farmers who visited the District Agriculturist in his office also tended to read more mail from the District Agriculturist ($r = .23$, $R = .245$) as these two variables were also positively correlated.

Impersonal Contacts

Impersonal information sources were used more frequently by farmers than were personal contacts. (Table XI). The number of farmers reporting frequent use of the three impersonal sources varied from 81 to 93 per cent. Forty-five per cent reported reading the mail from the District Agriculturist 'often', 26 per cent read such mails 'sometimes', 10 per cent 'rarely did' and 19 per cent reported that they never read mail from the District Agriculturist. Fifty per cent of the respondents watched farm radio and T.V. programs 'often', 35 per cent did 'sometimes', 6 per cent

TABLE XI

PERCENTAGE DISTRIBUTION OF RESPONDENTS BY USE OF
IMPERSONAL CONTACTS WITH DISTRICT AGRICULTURIST

Type of Contact	Frequency								Total No. %	
	Never No.	%	Rarely No.	%	Sometimes No.	%	Often No.	%		
Mails from D.A.	50	19	25	10	76	26	116	45	256	100
Radio and T.V. programs	23	9	15	6	90	35	128	50	256	100
Farm newspaper articles	17	7	14	5	56	22	169	66	256	100
Average	30	11.6	18	7	70.3	27.6	137.6	53.6	256	100

Note: $\chi^2 = 43.83$, d.f.=6, $p < .001$, $c = .38$

'rarely' did, and 9 per cent did not watch such programs at all.

Newspaper articles were the most frequently used of the three impersonal sources of information. Sixty-six per cent of the respondents reported

that they read such articles 'often', 22 per cent did 'sometimes', 5 per cent 'rarely' did, and only 7 per cent reported no use of this

medium. The farmers who read mail from the District Agriculturist tended to listen more to radio and to watch television programs

($r = .27$, $R = .325$) and to read more farm newspaper articles ($r = .43$,

$R = .483$) as significant positive correlation coefficients were obtained

among these three sources of information. Again, the use of the

impersonal sources of information formed a pattern, since personal contacts

did not correlate significantly with any of the impersonal sources, except reading of mail from the District Agriculturist. Thus, the farm operators who used one type of impersonal contact were more likely to use the others, but not to use personal contacts.

IV. SUMMARY

The farmers had an average of 3.71 types of contact with the District Agriculturist including 2.66 impersonal and 1.05 personal contacts. Most of them knew the District Agriculturist, and those who knew him were more likely to have all extension contacts. These respondents were more likely to use impersonal than personal sources when they sought agricultural information. This finding suggests that a need exists in British Columbia, for a more readily available personal source of agricultural information, to facilitate a more lasting change in the attitudes of the farmers toward agricultural practices in particular, and toward rural life in general. The farmers who used one type of personal source of information were more likely to use the others, but not impersonal sources, and vice versa. This finding is in complete disagreement with the usual findings of diffusion studies.⁶

⁶ Ibid., p. 22.

CHAPTER V

FACTORS ASSOCIATED WITH FARMERS' CONTACT WITH THE DISTRICT AGRICULTURIST

The type and number of contacts which farmers have with the District Agriculturist may be related to certain of the socio-economic characteristics discussed in Chapter III. Factors which influence a farmer's decision to seek advice from the District Agriculturist, through any of the contact methods included in this study, may stem from his own background and from the position he occupies in his community. In particular, his educational background, agricultural training and experience, financial position and attitudes towards his job will influence his desires to seek assistance.

This chapter measures the differences in the socio-economic characteristics of the farmers in the different contact levels established in Chapter IV, using the chi-square statistic. The relationships between the socio-economic characteristics of the respondents and each of the contact methods were determined, using correlation analyses. Further analysis, using multiple regression, was done to determine the proportion of the variation in the use of contact methods explained by those socio-economic factors which were significantly related to the method under consideration. This latter analysis makes it possible to eliminate interactions between the independent variables, and also to predict whether a farmer with certain socio-economic characteristics is likely to have a particular type of contact with the District Agriculturist.

I. DIFFERENCES AMONG FARMERS AT THE THREE CONTACT LEVELS

The three contact levels¹ established in Chapter IV were used as the basis of studying the socio-economic characteristics which differentiated the respondents who had low contact with the District Agriculturist from those with high contact. However, only the four socio-economic factors which researchers have shown to be most frequently used as indices of socio-economic status were included in this analysis. (Table XII) These factors, years of school completed, adult education participation, size of enterprise and family income, correlated with one another and with the other socio-economic factors.

Years of School completed

The formal education of the respondent was defined as the number of years of school completed. Of the 129 farmers who had low contact with the District Agriculturist, 78 per cent had completed eight or less years of school, 21 per cent completed high school, and only one respondent had at least one year of university education. This distribution indicates that the majority of the farmers who had low contact with the District Agriculturist had low educational achievement.

1 Bivariate tables of three contact levels, set against some of the socio-economic characteristics that were significantly correlated with the contact methods, were prepared. Since some cells in the original bivariate tables were zero or less than five, it was necessary to combine classes of data. The resulting chi-square values are shown in Table XII, and Appendix II contains the bivariate tables for which significant chi-square values were obtained.

TABLE XII

CHI-SQUARE VALUES FOR DISTRIBUTION BY SOCIO-ECONOMIC CHARACTERISTICS
CHARACTERISTICS AMONG RESPONDENTS IN EXTENSION CONTACT LEVELS

Socio-economic characteristics	Chi-square values	Degree of freedom	p	Contingency coefficient
Years of school completed	<u>14.56</u>	2	< .001	.23
Adult education participation	<u>16.01</u>	2	< .001	.24
Number of improved acres	<u>52.66</u>	6	< .001	.41
Approximate gross farm income	<u>57.75</u>	4	< .001	.43

Note: The underlined values are significant at the .01 level of confidence. A null hypothesis of no significant difference in the socio-economic characteristics of the farmers in the three contact levels was used at .05 level of significance.

Of the fifty-nine respondents classified as having medium contact with the District Agriculturist, 61 per cent had completed eight or less years of school, 34 per cent graduated from high school, while three respondents (5 per cent) had at least one year of university training. A comparison of the distribution of farmers in the low and medium contact levels showed that the proportion in the latter group who did not complete high school decreased, while there was a corresponding increase in the number of farmers with higher educational achievement. Of the sixty-eight farmers who were classified as having high contact with the District Agriculturist, 53 per cent had eight or less years of school, 40 per cent completed high school, and five farmers had at least one year of university education. The tendency for the number of farmers who had higher educational achievement to increase with level of contact was further borne out when the distribution of farmers in the three contact levels was compared.

Adult Education Participation

The influence of active participation in general adult education programs on the level of contact which farmers had with the District Agriculturist was also assessed. Of the 129 farmers who had low contact, 6 per cent had participated in such adult education programs, while 94 per cent reported no participation. Eight per cent of the farmers who had medium contact participated; 92 per cent did not. Of the sixty-eight farmers who reported high contact, 25 per cent had taken adult education courses, while 75 per cent had not. The figures above show that there is an increase in the percentage of participants, with a corresponding decrease in the percentage of non-participants as one moves from low contact level to high contact level.

This distribution indicates that more of the respondents who participated in general adult education courses had more contacts with the District Agriculturist, and vice versa.

Size of Farm

In order to determine the impact of size of farm on the number of contacts which farmers had with the District Agriculturist, the number of improved acres was used since the correlation analyses done in this study suggest that the number of total acres is not as important as the number of acres improved. Of the 129 respondents who reported low contact, almost half (49 per cent) owned 99 acres or less, 19 per cent owned 100 to 159 acres, 18 per cent owned 160 to 639 acres, and 14 per cent reported 640 acres and over. Of the fifty-nine farmers who had medium contact, 37 per cent owned 99 acres or less, 24 per cent owned 100 to 159 acres, another 24 per cent owned 160 to 639 acres, and 15 per cent owned 640 acres and over. Some sixty-eight respondents reported high contact, and 13 per cent of this number owned 99 acres or less, 12 per cent owned 100 to 159 acres, 19 per cent reported 160 to 639 acres, and more than half (56 per cent) owned 640 acres and over. A comparison of the foregoing data also indicates that more of the farmers who operated larger farms had high contact with the District Agriculturist than those who reported smaller units of farm.

Gross farm income

The distribution of the respondents in the three contact levels also differed significantly with respect to their farm income. Of the 129 respondents who had low contact with the District Agriculturist, almost three-fifths (59 per cent) earned \$2,999 or less, 18 per cent earned \$3,000 to \$5,999, 7 per cent earned \$6,000 to \$8,999, and 16 per

cent reported \$9,000 and over. Fifty-nine respondents were classified as having had medium contact, and, of this number, 41 per cent earned \$2,999 or less, 30 per cent earned \$3,000 to \$5,999, 10 per cent earned \$6,000 to \$8,999, while 19 per cent reported \$9,000 and over. Of the sixty-eight respondents who had high contact, 15 per cent earned \$2,999 or less, 12 per cent earned \$3,000 to \$5,999, 6 per cent earned \$6,000 to \$8,999 and 68 per cent earned \$9,000 and over. The foregoing data support the conclusion made in the preceding paragraphs, that the District Agriculturist paid more attention to farmers in the high socio-economic status than to those who were socio-economically disadvantaged.

Personal Contacts

Further analyses were carried out to determine the differences between the respondents who had low and high personal contacts. Table XIII contains the socio-economic factors for which significant chi-square values were obtained.

Adult Education Participation

Of the 224 respondents who reported low personal contact with the District Agriculturist, 9 per cent participated in general adult education programs, while 91 per cent did not. Thirty-two respondents reported high personal contact, and, of this number, 28 per cent participated in general adult education courses, and 72 per cent reported no such participation. High personal contact with the District Agriculturist occurred with more of the adult education participants than non-participants.

Size of Farm

Only the number of improved acres was considered because of the

TABLE XIII

CHI-SQUARE VALUES FOR DISTRIBUTIONS BY SOCIO-ECONOMIC CHARACTERISTICS AMONG RESPONDENTS IN PERSONAL CONTACT LEVELS

Socio-economic characteristics	Chi-square values	Degrees of freedom	p	Contingency coefficient
Years of school completed	4.58	2	N.S.	-
Adult Education participation	<u>9.51</u>	1	< .01	.19
Number of improved acres	<u>13.38</u>	1	< .001	.22
Approximate gross farm income	<u>11.16</u>	1	< .001	.20

Note: The underlined values are significant at the .01 level of confidence. A null hypothesis of no significant difference in the socio-economic characteristics of the farmers in the two personal contact levels was used at .05 level of significance.

N.S. = not significant

reason stated on page 80. Of the 224 respondents who had low personal contact with the District Agriculturist, 41 per cent owned 99 acres or less, 19 per cent owned 100 to 159 acres, 20 per cent owned 160 to 639 acres, and another 20 per cent owned 640 acres and over. Of the thirty-two respondents who had high personal contact, 9 per cent owned 99 acres or less, 16 per cent owned 100 to 159 acres, 12 per cent owned 160 to 639 acres, and 63 per cent reported 640 acres and over. This analysis also reveals that the farmers who had high personal contact were concentrated among owners of larger farms.

Gross farm income

A trend similar to that reported in the preceding paragraph was observed from an examination of the low and high personal contact farmers among the various income groups. Of the 224 respondents who reported low personal contact, 47 per cent earned \$2,999 or less, 21 per cent earned \$3,000 to \$5,999, 8 per cent earned \$6,000 to \$8,999, and 24 per cent earned \$9,000 and over. On the other hand, of the thirty-two respondents who had high personal contact, 16 per cent earned \$2,999 or less, 6 per cent earned \$3,000 to \$5,999, 3 per cent earned \$6,000 to \$8,999, and three-quarters (75 per cent) earned \$9,000 and over.

Impersonal Contacts

Analyses were also carried out to determine the differences in the socio-economic characteristics of the respondents who had low and high impersonal contacts. Table XIV contains the socio-economic factors for which significant chi-square values were obtained.

Adult Education Participation

Of the sixty-four respondents who reported low impersonal extension contact, 5 per cent had taken general adult education courses and 95 per cent had not; whereas of the 192 respondents who had high impersonal contact, 14 per cent had taken such courses and 86 per cent had not. These low and high impersonal contact farmers, among the adult education participants and non-participants, were significantly different only at the .05 level of confidence.

Size of Farm

Of the sixty-four respondents who had low impersonal contact, 52 per cent owned 99 acres or less, 25 per cent owned 100 to 159 acres, 14 per cent owned 160 to 639 acres, and 9 per cent owned 640 acres and

TABLE XIV

CHI-SQUARE VALUES FOR DISTRIBUTIONS BY SOCIO-ECONOMIC
CHARACTERISTICS AMONG RESPONDENTS IN IMPERSONAL CONTACT LEVELS

Socio-economic characteristics	Chi-square values	Degrees of freedom	p	Contingency coefficient
Years of school completed	4.14	2	N.S.	-
Adult education participation	4.07*	1	< .05	.13
Number of improved acres	<u>17.10</u>	3	< .001	.25
Approximate gross farm income	<u>13.38</u>	2	< .01	.22

Note: The underlined values are significant at the .01 level and the value with an asterisk at the .05 level of confidence. A null hypothesis of no significant difference in the socio-economic characteristics of the farmers in the two impersonal contact levels was used at .05 level of significance

N.S. = not significant

over. On the other hand, of the 192 respondents who reported high impersonal contact, 32 per cent owned 99 acres or less, 16 per cent owned 100 to 159 acres, 21 per cent owned 160 to 639 acres, and 31 per cent owned 640 acres and over.

Gross Farm income

Of the sixty-four respondents who reported low impersonal contacts with the District Agriculturist, 61 per cent earned \$2,999 or less, 19 per cent earned \$3,000 to \$5,999, 6 per cent earned \$6,000 to \$8,999, and 14 per cent earned \$9,000 and over. On the other hand, of the 192 respondents who reported high of such contact, 37 per cent earned \$2,999 or less, 19 per cent earned \$3,000 to \$5,999, 8 per cent earned \$6,000 to \$8,999, and 36 per cent earned \$9,000 and over from sales of farm produce.

The preceding analysis indicates that the four socio-economic characteristics examined, including years of school completed, adult education participation, number of improved acres and approximate gross farm income, proved to be important determinants of the number of contacts which the respondents had with the District Agriculturist. But when the contact methods were regrouped into personal and impersonal contacts, years of school completed was not significant. One important result in this analysis is worthy of note: that participation in adult education was significant where years of school completed was not. This finding is consistent with the observation made by Verner and Millerd¹ in their Okanagan Valley study, "that the amount of education is not as significant a factor as the recency of the educational experience and its specific relevancy with respect to the content".

¹ Verner and Millerd, op. cit. pp. 18-19.

II. THE DISTRICT AGRICULTURIST'S CLIENTELE

The original data on the farmers who used the contact methods and those who did not were regrouped, and the chi-square test was conducted on each of the tables. The results are summarized in Table XV, and the bivariate tables for which significant chi-square values were obtained are included in Appendix II. Comments on the socio-economic characteristics which differentiated the farmers who had one type of contact and those who did not are given below.

Knowledge of District Agriculturist

The factors which differentiated the farmers who knew the name of the District Agriculturist from those who did not included participation in adult education, number of improved acres and the approximate gross farm income. Of the 136 respondents who knew the name of the District Agriculturist, 18 per cent participated in adult education and the remaining 82 per cent reported no participation. On the other hand, 5 per cent of the 120 respondents who did not know him participated in such educational activities, and 95 per cent did not. Some 26 per cent of the farmers who knew the name of the District Agriculturist owned 99 acres or less, 16 per cent owned 100 to 159 acres, 22 per cent owned 160 to 639 acres, and 36 per cent operated 640 acres and over. On the other hand, 49 per cent of those who did not know him operated 99 acres or less, 21 per cent owned 100 to 159 acres, 17 per cent owned 160 to 639 acres and 13 per cent reported ownership of 640 acres and over. The data on the gross farm income revealed that 35 per cent of these farmers who knew the District Agriculturist earned \$2,999 or less from agriculture, 19 per cent earned \$3,000 to \$5,999, 4 per cent earned \$6,00 to \$8,999,

TABLE XV

CHI-SQUARE VALUES FOR DISTRIBUTION BY SOCIO-ECONOMIC CHARACTERISTICS
AMONG USERS AND NON-USERS OF EXTENSION CONTACT METHODS

Socio-economic characteristics	Knowledge of D.A.			Extension Contact Methods								
	X ²	p	C	Visits to D.A.'s Office			Telephone calls to D.A.			Farm visits by D.A.		
				X ²	p	C	X ²	p	C	X ²	p	C
Years of school completed	7.03 (d.f = 1)	<.01	.16	10.97 (d.f = 2)	<.01	.20	1.91 (d.f = 2)	N.S.	-	1.96 (d.f = 2)	N.S.	-
Adult Education participation	9.85 (d.f = 1)	<.01	.19	13.93 (d.f = 1)	<.001	.22	8.06 (d.f = 1)	<.01	.17	4.23 (d.f = 1)	<.05	.13
Number of acres improved	24.16 (d.f = 3)	<.001	.29	25.10 (d.f = 3)	<.001	.30	18.11 (d.f = 3)	<.001	.26	7.51 (d.f = 2)	<.05	.17
Approximate Gross Farm income	20.78 (d.f = 3)	<.001	.27	17.44 (d.f = 3)	<.001	.25	24.77 (d.f = 2)	<.001	.29	28.12 (d.f = 2)	<.001	.31

TABLE XV (continued)

Socio-economic characteristics	Extension Contact Methods											
	Meetings and Field days			Mails from D.A.			Radio and T.V. Programs			Newspaper Articles		
	X ²	p	C	X ²	p	C	X ²	p	C	X ²	p	C
Years of school completed	9.25 (d.f = 1)	<.01	.19	3.10 (d.f = 2)	N.S.	-	0.96 (d.f = 2)	N.S.	-	1.68 (d.f = 2)	N.S.	-
Adult education participation	7.48 (d.f = 1)	<.01	.17	3.41 (d.f = 1)	N.S.	-	1.19 (d.f = 1)	N.S.	-	2.26 (d.f = 1)	N.S.	-
Number of improved acres	18.25 (d.f = 3)	<.001	.26	12.95 (d.f = 3)	<.01	.22	13.70 (d.f = 3)	<.01	.22	16.33 (d.f = 1)	<.001	.24
Approximate gross farm income	25.08 (d.f = 3)	<.001	.30	9.71 (d.f = 2)	<.01	.19	3.79 (d.f = 3)	N.S.	-	11.53 (d.f = 1)	<.001	.21

Note: X² = chi-square values, p = probability

C = contingency coefficients, N.S. = Not significant

and 42 per cent earned \$9,000 and over. The corresponding percentages of those who did not know him were 53, 19, 11 and 18 respectively.

These data indicate that the distribution of respondents by knowledge of the District Agriculturist varied in the different socio-economic levels, with more of the respondents in the high socio-economic levels knowing the name of the District Agriculturist while more of those in the low socio-economic levels did not. It may be that the high socio-economic status of some of the respondents is the effect rather than the cause of their knowledge of District Agriculturist.

Further analysis was carried out using the correlation statistic to determine the socio-economic factors that were correlated with knowledge of District Agriculturist. Statistically significant correlation coefficients were obtained between knowledge of District Agriculturist and such factors as years of school completed ($r = .18$), distance travelled for goods and services ($r = -.18$), level of living ($r = .17$) and gross farm income ($r = .18$). These associations suggest that the farmers who knew the name of the District Agriculturist had more education, lived closer to the service centres where the District Agriculturists are likely to be located, earned more from farming, and had a higher level of living than those who did not know him. These data support the results obtained from the chi-square analysis, since the only factor added (level of living) is related to the other three factors.

Visits to District Agriculturist's Office

The socio-economic characteristics which differentiated the respondents who visited the District Agriculturist in his office from those who did not included years of school completed, participation in adult education, number of improved acres and the approximate gross farm income. Ninety respondents reported making such visits, and 56 per cent

of this number had eight or less years of school, 39 per cent had completed high school, and 7 per cent had at least one year of university education. On the other hand, 74 per cent of the 166 who reported no such visits completed eight or less years of school, 24 per cent completed high school, and only five respondents (2 per cent) had at least one year of university education. Some 22 per cent of the farmers who made such visits participated in adult education; 78 per cent did not. Only 6 per cent of those who did not visit the District Agriculturist in his office participated in such educational programs, while 94 per cent took no part. With respect to the number of improved acres farmed, 19 per cent of the farmers who visited the District Agriculturist in his office owned 99 acres or less, another 19 per cent owned 100 to 159 acres, 24 per cent owned 160 to 639 acres, and 40 per cent reported ownership of 640 acres and over. Almost one half (46 per cent) of those who did not make such visits owned 99 acres or less, 18 per cent owned 100 to 159 acres, 17 per cent operated 160 to 639 acres, and 18 per cent had 640 acres and over. The data on the gross farm income also revealed varying distribution in the different income levels between the respondents who visited the District Agriculturist in his office and those who did not. Thirty-two per cent of the former earned \$2,999 or less, 14 per cent earned \$3,000 to \$5,999, 9 per cent earned \$6,000 to \$8,999 and almost one half (47 per cent) reported \$9,000 and over. On the other hand, most (49 per cent) of the latter earned \$2,999 or less, 22 per cent earned \$3,000 to \$5,999, 7 per cent earned \$6,000 to \$8,999, while another 22 per cent reported \$9,000 and over.

The above data suggest that more of the farm operators who consulted the District Agriculturist in his office about agricultural problems were in the higher socio-economic status group, meaning that the

accessibility of the extension agents is dependent upon the social and economic position of the clientele. The disadvantaged clientele did not participate in any face-to-face contacts, probably because he was not motivated to do so, and probably because he felt he was not wanted. Even if the low socio-economic farmers have the desire to make such contacts, they may not have the means.

The data from the correlation analysis showed that visits to the District Agriculturist's office were significantly associated with such factors as years of school completed ($r = .28$), participation in adult education ($r = .28$), social participation ($r = .24$), net farm income ($r = .17$), total size of farm ($r = .24$), size of improved acreage ($r = .29$), gross farm income ($r = .17$) and farm value ($r = .28$). These data indicate that the farmers who visited the District Agriculturist in his office to seek advice on agricultural problems were those who had higher levels of education, participated more in adult education programs, were more active in community activities, operated larger farms, earned more from agriculture, and valued their farms higher than those who did not. The rank correlation analysis did not show any association between visits to District Agriculturist's office and net farm income, but did correlate with other factors discussed above.

Telephone Calls to District Agriculturist

Three factors, including participation in adult education, number of improved acres and the approximate gross farm income differentiated the respondents who made telephone calls to the District Agriculturist from those who did not since these three factors showed significant chi-square values. Of the forty-four respondents who reported making such calls, 21 per cent participated in adult education programs, while 79

per cent did not. On the other hand, the majority (90 per cent) of the 212 farmers who did not make such calls did not participate in adult education, and only 10 per cent showed active interest in such programs. Twenty-three per cent of those who reported such calls owned 99 acres or less, 14 per cent owned 100 to 159 acres, 11 per cent owned 160 to 639 acres, and 52 per cent operated 640 acres and over. Some 40 per cent of those who did not use the telephone farmed 99 acres or less, 19 per cent owned 100 to 159 acres, 21 per cent farmed 160 to 639 acres, and only 20 per cent owned 640 acres and over. The data on the gross farm income revealed a similar distribution, with 16 per cent of the respondents who made telephone calls to the District Agriculturist reporting \$2,999 or less, 14 per cent reporting \$3,000 to \$5,999, 2 per cent reporting \$6,000 to \$8,999 and almost seven-tenths (68 per cent) reporting \$9,000 and over. Forty-nine per cent of those who did not make such calls earned \$2,999 or less, 20 per cent earned \$3,000 to \$5,999, 9 per cent earned \$6,000 to \$8,999, and 23 per cent reported an income of \$9,000 and over. These data support an earlier conclusion that the social and economic statuses of the farmer exert influence on the use of personal extension contact, such as telephone calls to the District Agriculturist. The low status farmers did not make telephone calls to the District Agriculturist, probably because they could not afford to own a telephone or because they felt rejected by the higher status segment of the society to which the District Agriculturist is likely to belong; the farmers in turn, rejected the society.

Statistically significant correlation coefficients were also obtained between telephone calls to the District Agriculturist and such factors as years of school completed ($r = .20$), participation in adult education ($r = .18$), father's education ($r = .29$), level of living

($r = .28$), net farm income ($r = .23$), number of total acres ($r = .26$), number of improved acres ($r = .27$), gross farm income ($r = .37$) and farm value ($r = .33$). These associations indicate that the respondents who had telephone discussion with the District Agriculturist on agricultural matters were more educated, participated more in adult education, provided higher levels of living for their families, owned larger farms, earned more from their farms, and valued their farms higher than those who did not. The father's education also influenced the use of this communication medium, with the respondents whose fathers achieved higher level of education using the medium more.

Further analysis with Spearman rank correlation showed consistent results with the foregoing analysis, except years of school completed, net farm income and number of total acres; but telephone calls to the District Agriculturist also showed association with distance travelled for goods and services ($R = -.185$). This finding suggests that the farmers who discussed farm problems with District Agriculturist on the telephone depended on local services for their needs. Because these farmers lived far from the service centres where the District Agriculturists are likely to be located, they relied to a greater extent on telephone conversation instead of visiting the agent in his office.

Farm Visits by District Agriculturist

The respondents who were visited by the District Agriculturist at their farms differed significantly from those who were not visited in such factors as participation in adult education, number of improved acres, and in the gross farm income they obtained from the sale of farm produce. Of the forty-two respondents who reported such visits, 19 per cent participated in adult education programs and 81 per cent did not. On the other hand, 90 per cent of the 214 farmers who were not visited by the

District Agriculturist reported no participation, while only 10 per cent participated in such educational activities. Some 19 per cent of the farmers who were visited owned 99 acres or less, a like number (19 per cent) owned 100 to 159 acres, 10 per cent owned 160 to 639 acres, and more than half (52 per cent) owned 640 acres and over. The majority of those who were not visited were small-scale farmers as 58 per cent of these farmers owned less than 160 acres, while only 42 per cent reported ownership of 160 acres and over. About 26 per cent of the household heads who reported such visits earned \$5,999 or less, while 74 per cent earned \$6,000 and over. The distribution was reversed with the farmers who had no such visits as 69 per cent earned \$5,999 or less, while 31 per cent were in the \$6,000 and over class.

These data suggest that the District Agriculturist made contact with selected group of farmers, making such contact with more of the farmers in the higher socio-economic status. One way of explaining this is that the District Agriculturist measured his success on the basis of the number of farm operators who accepted his advice without much resistance, and who consequently increased their productivity within a set period; therefore, he selected the higher-status individuals who were already in the process of making progress for his farm visits. In other words, he selected the 'line of least resistance'. Another way of explaining his selective contact is that most of these farm visits are usually requested by the farmer themselves, and, since the low-status farmers did not share the same values with the District Agriculturist who belonged to a different social class, they rejected him and his services.

The correlation analysis showed that the farmers who were visited on their farms by the District Agriculturist tended to be more active in

adult education activities ($r = .20$) and in community programs ($r = .19$). They also earned more from their farms (net farm income, $r = .17$, gross farm income $r = .28$) and valued their farms higher ($r = .19$). These data further support the results of the chi-square analysis. Further analysis showed that in addition to the factors discussed above, attitudes to change ($R = .229$) were also significantly correlated with visits to District Agriculturist's office, indicating that the farmers who made such visits were more likely to accept change.

Attendance at Meetings and Field Days

Four socio-economic factors, including level of education achieved, participation in adult education, number of improved acres and the gross farm income earned from farming accounted for the differences between the respondents who attended agricultural meetings and field days and those who did not. These four factors showed significant chi-square values. Of the eighty-seven respondents who attended such meetings and field days, 55 per cent had eight or less years of school, 39 per cent completed high school, and 6 per cent had at least one year of university education. The distribution of the 169 respondents who reported no attendance at such meetings and field days included 74 per cent with eight or less years of school, 24 per cent with high school completed and 2 per cent with at least one year of university education. This distribution indicates that more of the farmers who attended agricultural meetings and field days had higher education than those who did not. A greater proportion of those who attended such meetings also participated in adult education with 18 per cent reporting participation, compared with 8 per cent of those who did not attend the meetings. With regard to the size of farm operated, 39 per cent of the household heads who reported attendance at agricultural meetings and field

days owned 159 acres or less, whereas 63 per cent of those who did not attend such events reported this size of farm. The distributions of the farmers in the 160 acres and over category were 61 and 37 per cent of those who attended agricultural meetings and those who did not respectively. More of the respondents who attended agricultural meetings and field days belonged to the higher income group as 58 per cent of such farmers earned \$6,000 and over, while only 28 per cent of those who did not attend earned as much from their farms. These data support the conclusions drawn earlier in this study that the face-to-face communication is more influenced by the status of the participants than is the impersonal contact. Low-status farmers might feel shy and inferior about communicating with those in the higher status group on the basis that the discussion might be above their knowledge, or that their opinions might not be heeded.

Attendance at meetings and field days was correlated with a number of socio-economic factors, including years of school completed ($r = .19$), distance travelled for goods and services ($r = -.26$), level of living ($r = .20$), social participation ($r = .36$), degree of involvement in farming ($r = .21$), net farm income ($r = .24$), total size of farm ($r = .19$), gross farm income ($r = .32$), farm value ($r = .23$) and time spent at off-farm jobs in 1966 ($r = -.17$). The above associations indicate that the farm operators who attended such meetings and field days had higher educational achievement, lived closer to the service centres where such meetings were likely to be held, participated more in community activities, operated larger farms, earned more from farming, and, consequently, were able to provide most of the items listed on the level of living scale. They also valued their farms higher and spent less time at off-farm jobs than those who did not attend.

The Spearman rank correlation analysis showed that in addition to the factors discussed above, attitudes to change ($R = .179$), number of months spent on farming in 1966 ($R = .172$) and number of improved acres ($R = .266$) were also significantly correlated with attendance at agricultural meetings and field days. These last three associations suggest that the farmers who showed more active interest in agricultural meetings and field days tended to accept change more readily, spent more time on farming, and owned larger farms than those who did not show interest.

Mail from District Agriculturist

The respondents who read the mails from the District Agriculturist differed significantly from those who did not read the mails in the number of improved acres operated and in the total income earned from the sale of farm produce. Of the 206 respondents who reported reading such mails, one half (50 per cent) owned 159 acres or less, while the remaining 50 per cent reported ownership of 160 acres and over. The distribution of the farmers varied more among those who did not read such mails than it did among those who read the mails, with 78 per cent of the former reporting ownership of 159 acres or less, while only 22 per cent operated 160 acres and more. The distribution of farmers among the income groups followed the same pattern as it did in the size of farm operated. Fifty-eight per cent of those who read the mails from the District Agriculturist reported a gross farm income of \$5,999 or less, and 42 per cent of such farmers reported \$6,000 and over. On the other hand, 78 per cent of those who did not read such mails earned \$5,999 or less, and 22 per cent were in the \$6,000 and over group.

One possible explanation of the above data is that although the mail from the District Agriculturist is an impersonal channel of communication, its use requires some personal commitment on the part of the recipient. The District Agriculturist will not continue to send such mails unless he is sure that the receiver will read and make use of the information communicated.

The data from the correlation analyses provided further insight into the differences between the respondents who read the mails from the District Agriculturist and those who did not. Some additional factors, including years of school completed ($r = .21$), length of residence in the area ($r = .20$), social participation ($r = .25$) and attitudes to change ($r = .18$) correlated with the reading of such mails. These additional associations indicate that the farmers who read such mails had higher levels of education, were old-timers in the area, were more active in social activities, and had more favourable attitudes to change. These results are not unexpected. The higher educational levels of the farmers would enable them to communicate with the District Agriculturist, their longer stay in the area enables them to establish firmer relationships with the agent, and their social activities in the community and personal attitudes to change single them out as the progressive elements with whom the agent would like to work.

When the data were subjected to Spearman rank correlation analysis, all the factors discussed in the preceding paragraph, except attitudes to change, were correlated with reading of mails from District Agriculturist. Six other factors including number of children ($R = .174$), level of living ($R = .175$), number of total acres

($R = .239$), number of improved acres ($R = .330$), gross farm income ($R = .297$) and farm value ($R = .285$) were significantly correlated with reading of mails from District Agriculturist. The last six associations indicate that the farmers who received agricultural information through the mails from District Agriculturist had more children, higher standards of living, larger farms, earned more income from farming, and valued their farms higher than those who did not. The association between reading of mails from the District Agriculturist and number of children suggests that the children of such farmers had interest in farm bulletins, newsletters, etc. an attitude which, in turn, suggests that they were likely to be members of some farm clubs.

Radio and T.V. Programs

None of the socio-economic characteristics tested differentiated the users of radio and television media from the non-users. This finding may be due to the fact that the use of these mass communication media requires no commitment nor special obligation from the farmer since the farmers could use their radio and television sets at will. Furthermore, the use of these media does not involve fact-to-face contact, and, therefore eliminates the socio-economic barriers that may hinder the disadvantaged farmers from using such media.

The correlation analyses did not add much to the results discussed above since only the simple correlation showed that one factor, the education of the spouse, revealed significant association ($r = .19$) with listening to farm radio and viewing the television programs. However, this result points to the fact that since the women are more likely to stay at home, the spouses with higher education know more about radio and television agricultural programs and may influence their husbands to listen and watch such programs.

Farm Newspaper articles

The respondents who read farm newspaper articles differed significantly from those who did not, in the number of improved acres owned, and in the gross farm income earned. Of the 239 respondents who reported reading such articles, 52 per cent operated 159 acres or less, while 48 per cent owned 160 acres and over. As one would expect, the majority of the seventeen farmers who did not read such articles were in the smaller operators' group as 94 per cent of such farmers owned 159 acres or less, while only 6 per cent owned 160 acres and over. Three-fifths (60 per cent) of the farmers who read newspaper articles earned \$5,999 or less, while 40 per cent earned \$6,000 and over. Of those farmers who did not read such articles, 94 per cent earned \$5,999 or less, while only 6 per cent earned \$6,000 and over. Although the reading of farm newspaper articles may not require as much personal commitment on the part of the reader as does the use of other media, it does require some amount of sacrifice, both of time and money, which the disadvantaged farmers may not be able to make; hence, they read fewer articles compared with the higher-status farmers who have both the time and the money.

The data from the correlation analysis indicate that the respondents who read farm newspaper articles were more educated ($r = .18$) and had higher levels of living ($r = .25$) since these two factors were associated with the decision to read such articles. Again, these associations are functions of the ability to read (literacy level) and the ability to make the financial and time sacrifice. Further analysis with rank correlation showed that three other factors, including number of improved acres ($R = .179$), gross farm income ($R = .173$) and farm value ($R = .206$)

were significantly correlated with reading farm newspaper articles. These latter associations support the observation made above with respect to financial sacrifice involved.

III. PREDICTION OF CONTACT BY MULTIPLE REGRESSION METHODS

It is not enough to show that certain socio-economic factors are associated with the use of certain sources of agricultural information; it is also necessary to show to what extent such socio-economic factors account for the differential contacts which farmers at differing socio-economic levels have with the sources of information. This problem was examined by using the multiple regression approach to explain the variation in the use of extension contacts. The results of this analysis are summarized in Table XVI.

The variation in the use of all extension contacts was explained by four socio-economic characteristics, including years of school completed, distance travelled for goods and services, social participation and gross farm income. These factors accounted for 34 per cent of the variation in the use of these sources of agricultural information, leaving 66 per cent unexplained. This finding means that there are other factors, not included in this study, which influenced the decision of a farmer to make contact with the District Agriculturist through any of the channels studied.

Four socio-economic characteristics, including years of school completed, participation in adult education, attitudes to change and size of improved farm were related to visits which farmers at different levels of socio-economic status had with the District Agriculturist during the year preceding this study. However, about one quarter (25 per cent)

TABLE XVI

PERCENTAGE OF VARIATION IN CONTACT EXPLAINED AND THE
SOCIO-ECONOMIC FACTORS ACCOUNTING FOR THE VARIATION

Contact methods	Socio-economic factors accounting for variation	Per cent of variation in contact explained
Visits to D.A.'s office	Years of school completed Adult education participation Attitudes to change Size of improved farm	25.37
Telephone calls to D.A.	Father's education Level of living Gross farm income Farm value	26.89
Farm visits by D.A.	Adult education participation Attitudes to change Gross farm income	13.01
Attendance at meetings and field days	Distance travelled for services Social participation Gross farm income	24.86
Read circular letters and bulletins	Age Years of school completed Length of residence in the area Social participation Attitudes to change	22.98
Farm radio and/or T.V. programs	Nil	Nil
Farm newspaper articles	Age Level of living Attitudes to change	13.15
All extension contacts	Years of school completed Distance travelled for goods and services Social participation Gross farm income	33.92

of the variation was explained by the combined effect of these four variables, leaving about three quarters (75 per cent) of the variation unexplained. This finding implies that there are other factors, not included in this study, which are related to farmers' visits to the District Agriculturist's office.

Different socio-economic factors accounted for the variation in the use of the telephone by farmers to discuss agricultural problems with the District Agriculturist. The four factors accounting for such variation included father's education, level of living, gross farm income and farm value. About one quarter (27 per cent) of such variation was explained by these four variables. This finding implies that some other factors, not included in this study, are responsible for the bulk (73 per cent) of the variation in the use of that medium by farmers to communicate with the District Agriculturist.

With respect to farm visits by District Agriculturist, the regression analysis showed that only 13 per cent of the variation was explained by the combined effect of three factors. These included participation in adult education, attitudes to change and gross farm income, all of which this analysis showed to be related to contacting farmers through farm visits by the District Agriculturist. This result suggests the need for further studies of factors influencing farm visits which may account for the remaining 87 per cent of the variation in the use of such contact.

About one quarter (25 per cent) of the variance in the respondents' attendance at agricultural meetings and field days was accounted for by distance travelled for goods and services, social participation and gross farm income, leaving 75 per cent of the variation

unexplained. This finding intimates the need for further research in this area.

Age, years of school completed, length of residence in the area, social participation and attitudes to change explained 23 per cent of the variation in obtaining agricultural information through the mails from the District Agriculturist. None of the socio-economic factors utilized in this study explained the variation in the use of farm radio and television to obtain information on agricultural problems. It may be necessary to look outside the characteristics of farm operators to explain variations in the use of such media by farmers.

Similarly, age, level of living and attitudes to change explained 13 per cent of the variation in obtaining agricultural information through farm newspaper articles. About 87 per cent of such variation were left unexplained by the remaining nineteen independent variables included in this study. This finding further confirms the need for additional studies of factors which influence farmers' contact with District Agriculturist.

IV. SUMMARY

The results of the chi-square analysis revealed two important facts. First, the data showed that the users and the non-users of personal contacts differed more significantly than those who did and those who did not use the impersonal sources of information. This finding implies that the diffusion of agricultural information through personal contacts is subject to the limitations of social and economic status. Impersonal sources of information, on the other hand, were little influenced by such factors. The implication of this interpretation

is that if the farm operators in British Columbia are to have the formalized, direct and face-to-face contacts with the District Agriculturists, they should be helped to improve their social and economic standards. Second, the data showed that the respondents who had contacts with the District Agriculturists differed significantly from those who did not, with the farmers who had the contacts belonging to the higher socio-economic class, while those who did not have contacts were the socio-economically disadvantaged farmers.

The use of correlation analyses added much to the findings already revealed by the chi-square analysis by revealing the factors that were associated with the use of each of the sources of agricultural information studied. However, any reader of this thesis is faced with the problem of choice between the results of the two correlation analyses discussed in the preceding paragraphs. There is, of course, no doubt about the validity of the findings on which the two analyses concurred, but one has to be circumspect in the areas where they disagreed. However, since the test of normality showed that the sample was not normally distributed (Appendix V), one could say that the Spearman rank correlation analysis was more valid, and hence, its results were more reliable. This statement does not mean that the results of the simple correlation analysis are incorrect; it is only a matter of degree

The results of the regression analysis indicate that very little is known yet about the factors which are related to farmer's contact with the District Agriculturist, since none of the factors included in this study, either singly or combined, explained more than one quarter of the variation in obtaining information from the extension

agent through any of the media studied. Therefore, this finding makes imperative some additional studies to examine characteristics besides those of the farm operators, if extension agents are to make effective use of these media to communicate with the farmers.

CHAPTER VI

SUMMARY AND CONCLUSIONS

SUMMARY

The Agricultural Extension Service, through the extension workers, is one of the principal sources of new agricultural technology. There are a number of sources of information that a farmer can use, and his use of them is influenced by a number of socio-economic characteristics. A thorough knowledge of the characteristics of farm residents, as well as of the relationship of such characteristics to the sources through which farmers obtain agricultural information, is indispensable for program planning. This study examined the types and frequency of contacts which farmers had with the District Agriculturist in selected areas in rural British Columbia, and then related these data to the socio-economic characteristics of the farmers.

Socio-economic Characteristics

Six hundred and forty residents of certain sections of rural British Columbia were interviewed from May to August, 1967. Two hundred and sixty-five (41.4 per cent) of this number were classified as farmers and 375 (58.6 per cent) as non-farmers. Completed interview schedules were available for 256 (96.6 per cent) of the farmers, and all of those schedules were used for this study. In general, the characteristics of the respondents were not unlike those of farm residents in other rural areas of the province.

The median age of the household heads was in the 45 to 54 year category, and the younger farmers tended to belong to the higher socio-economic status group. Four-fifths of the respondents were married and had an average of three children. Sixty-eight per cent of the farmers

were born in Canada, but only 24 per cent were born in British Columbia. A substantial number of farmers had lived in the areas for more than twenty years, and the median number of years lived in the area was in the 17 to 20 year category.

Nine per cent of the respondents were classified as functional illiterates, and the median educational level was eight years. The educational achievement of the spouses was higher, while that of the fathers of the respondents was lower than that of the respondents. The general adult education programs available in rural British Columbia had attracted only a small fraction of the farm population since only 12 per cent reported participation in such programs. Adult courses in agriculture attracted a lower number since only 10 per cent reported participation in such programs. Thirty-four per cent attended meetings and field days organized by the District Agriculturist to discuss agricultural problems. Approximately one-half of the farmers (46 per cent) indicated a desire to receive further education or training, with the most frequently required training being farm mechanization, followed by animal and crop husbandry, welding, recreation, carpentry, academic education and courses in business management.

The living conditions of majority of the respondents appeared to be satisfactory, but the median social participation score was in the one to five point class. The farmers lived within easy access to goods and services, with the median distance travelled for all of the items studied in the eleven to fifteen mile category.

The median total farm size claimed was in the 320 to 639 class, but the median number of improved acres was between 100 and 159 acres. The farmers who raised livestock reported a median of 20 to 29

animal units. Beef cattle was the principal agricultural product sold by the respondents. The median net farm income reported was in the \$2,000 to \$2,999 category, whereas the median gross farm income was \$3,000 to \$3,999. The median farm value was in the \$40,000 to \$49,999 range. The majority of the respondents considered the net farm income reported typical of what they usually obtain. Seventy-nine per cent of the farmers owned all of their farmland. The majority of the respondents used unpaid family labour since 62 per cent reported using no hired labour.

Some 49 per cent of the respondents had no off-farm job, while the remainder were employed off their farms on a part-time basis for varying lengths of time. Over two-fifths (41 per cent) had been farming for more than twenty years, and 19 per cent had been in agriculture for less than six years. The respondents appeared to be satisfied with agriculture as an occupation, but the older farmers tended to be more satisfied with farming than the younger. The majority of the farmers were optimistic about the future of agriculture since most of them planned to expand their farm operations. The most frequently reported change was land clearing and drainage, followed by increase in farm size, increase in livestock, change of enterprise, change of farm building, retirement and decrease in time spent at off-farm jobs.

Contact with District Agriculturist

The farmers generally reported few personal contacts with the District Agriculturist, but they used impersonal contacts to a greater extent. The two types of contact reached different people. Fifty-three

per cent of the respondents knew the name of the District Agriculturist and the average number of contacts, 3.71, during the year preceding this study, included 2.66 impersonal and 1.05 personal contacts. Only 5.9 per cent of the farmers had seven types of contact, while 1.5 per cent had no contact of any kind with the District Agriculturist. Sixty-five per cent of the respondents did not visit the District Agriculturist in his office, and 66 per cent reported no attendance at agricultural meetings and field days. Some 84 per cent of the household heads were never visited by the District Agriculturist, and 83 per cent never called the District Agriculturist on the telephone. Most of the farmers read farm newspaper articles as 93 per cent said they did so. The least frequently used of the impersonal sources of information, mail from the District Agriculturist, was read by 81 per cent of the respondents.

The null hypothesis of no statistically significant difference in the level of contact which farmers of differing socio-economic status had with the District Agriculturist was rejected for the characteristics years of school completed, participation in adult education, number of improved acres and gross farm income. In general, the respondents who had more frequent contacts were characterized by higher education, participation in adult education, larger farms and higher income from agriculture.

The null hypothesis of no statistically significant difference in the kind of contacts with District Agriculturist among farmers of differing socio-economic status was also rejected for six of the seven contact methods. These included visits to District Agriculturist's office, telephone calls, farm visits, agricultural meetings and field days,

mails from District Agriculturist and farm newspaper articles. The farm operators who contacted the District Agriculturist through the four personal contact methods participated more in adult education, owned larger farms and earned more from agriculture than did those who did not. Furthermore, the respondents who visited the District Agriculturist in his office, and those who attended agricultural meetings and field days, had more years of schooling. The farmers who read mail from the District Agriculturist and farm newspaper articles owned larger farms and earned more from agriculture. The respondents who had personal contacts had higher levels of education and participated more in adult education than those who obtained agricultural information from the impersonal sources. The education of the spouse was associated with the use of radio and television as a source of agricultural information.

In general, the more educated farmers and those who participated more in adult education programs were more likely to have all extension contacts. The use of all extension contacts was also significantly related to such factors as wife's education, distance travelled for goods and services, social participation, level of living, degree of involvement in farming, net farm income, total number of acres, number of acres improved, gross farm income, farm value and time spent at off-farm jobs.

The socio-economic characteristics which were related to the use of contact methods explained from 13 to 27 per cent of the variation in the use of these contact methods. Participation in adult education, attitudes to change and gross farm income together accounted for 13 per cent of the variation in farm visits by the District Agriculturist,

while father's education, level of living, gross farm income and farm value together explained 27 per cent of the variation in the use of telephone calls to discuss agricultural problems. Years of school completed, distance travelled for goods and services, social participation and gross farm income together accounted for 34 per cent of the variation in the use of all the extension contacts combined.

Discussion

The results of this study indicate that the impersonal types of contacts with the District Agriculturist reached more farmers than did personal contacts. Verner, Dickinson and Alleyne¹ reported similar findings in another part of the province. The four personal contacts were correlated with each other but not with the three impersonal contacts, except in the case of mail from the District Agriculturist. This finding suggests that the farmers who had one personal contact were more likely to have others and to read mails from the District Agriculturist; but these farmers did not use the other two impersonal contacts. This finding is inconsistent with the findings of a study in another part of the province in which Verner, Millerd and Dickinson² reported that there were high correlations among the respondents' use of the four personal and three impersonal information sources. The finding of this other study implies that the same farmers were being served by the different sources of information.

Level of formal education completed and participation in adult education were highly correlated with personal contacts, but not with

1 Verner, Dickinson, and Alleyne, op. cit. p. 59

2 Verner, Millerd, and Dickinson, op. cit. p. 62

impersonal ones. This correlation suggests that the farmers with more years of schooling and more active participation in adult education had more personal contacts with the District Agriculturist. Rogers and Capener³ reported similar findings in their Ohio study with respect to level of education. The association between level of contact and educational achievement reported in this study is also consistent with the findings of the Washington study by Slocum, Brough and Straus.⁴

Of the thirteen socio-economic factors which showed correlation with the use of extension contacts in this study, two characteristics, i.e. years of schooling and farm income, had been identified by Rogers and Capener⁵ to have similar association, but they did not differentiate 'net farm income' from 'gross farm income' as it was done in this study.

The review of literature failed to find any mention of the extent to which the farmers' characteristics, which were associated with extension contacts, accounted for variation in such contacts. The lack of knowledge with respect to this problem may account for the low proportion of variation in contact explained by the factors included in this study.

CONCLUSIONS

In general, the findings in this study are consistent with those of previous research on the socio-economic characteristics of farm

3 Rogers and Capener, op. cit. p. 37

4 Slocum, Brough and Straus, op. cit. p. 27

5 Rogers and Capener, op. cit. p. 41

respondents, and the types of contact they had with the District Agriculturist. Contacts between farmers and the District Agriculturist in rural British Columbia were widely distributed throughout the farm population, but certain categories of people were more likely than others to be contacted. This finding suggests the need for continuous study of the contact of farm population with the extension workers, in order to evaluate the effectiveness of the Service programs. Studies following a systematic procedure, such as the one reported here, are useful in this respect.

The study of the relationship between the socio-economic characteristics of farmers, and their contacts with the extension workers, can also be a useful tool in improving the type of contact through which farmers receive agricultural information. In rural British Columbia, the farmers who had higher level of education had more personal contacts than those with less education. This finding suggests the need for additional educational programs for the less educated farmers, if they are to take advantage of the services provided through personal contacts by the extension change agents. The present study revealed that none of the socio-economic characteristics studied, singly or combined, accounted for more than 27 per cent of such variation. This finding indicates a need for further studies in this area to examine the characteristics, including those of the extension workers, which may influence a farmer's decision to seek assistance. When such characteristics which explain a high proportion of the variation in extension contacts are known, more effective extension work would be made possible.

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APPENDIX I

The interview schedule with univariate frequency distributions added for basic socio-economic characteristics and frequency of extension contacts.

Respondent's Number _____

C.L.I. Region _____

A.R.D.A./U.B.C./67

SOCIO-ECONOMIC INTERVIEW SCHEDULE

Respondent's Name _____

Address _____

Record of Visits:

	Date	Time	Comments
First	_____	_____	_____
Second	_____	_____	_____
Third	_____	_____	_____
Enumerated by:	_____		
Field Check by:	_____		
Coded by:	_____		
Checked by:	_____		

District Lot Number, Respondent's Location on Lot, and Land Use (Sketch).

	Column	Code	Frequency	
			No.	%
Respondent's Number	1,3.			
	4.			
N.T.S. Map Number	5,9.			
C.L.I. Region	10,11.			
Socio-economic sub-region	12.			
Regional District	13.			
Sex of Respondent				
1. Male	14.	1	0	10
2. Female		2	256	100

START INTERVIEW HERE

1. How many people are living in your home at the present time?	15.	None	0	0
		1	27	10
		2	40	16
		3	38	15
		4	46	18
		5	32	12
		6	30	12
		7	17	7
		8	12	5
		9	9	3
		A	2)
		B	2) 2
		C	1)

2. What is your marital status:

1. Single	16.	1	37	14
2. Married		2	214	84
3. Widowed, divorced, or separated		3	5	2

3. What is your age?

1. 15 - 24	17.	1	5	2
2. 25 - 34		2	26	10
3. 35 - 44		3	78	30
4. 45 - 54		4	73	29
5. 55 - 64		5	50	20
6. 65 and over		6	24	9

4. How many years of schooling did you complete?

1. 5 or less	18.	1	24	9
2. 6 - 7		2	46	18
3. 8		3	103	40
4. 9 - 11		4	50	19
5. 12		5	24	9
6. 13 - 15 (1-3 years university)		6	5	3
7. 16 or more (degree or above)		7	4	2

		Column	Code	Frequency	
				No.	%
4.	(a) Did you have any training after you left school?				
	1. yes	19.	1	76	30
	2. no		2	178	69
	0. no response		0	2	1
	(b) If yes, what were you trained in?	20,22			
<hr/>					
5.	How many years of schooling did your wife complete?				
	1. 5 or less	23.	1	11	4
	2. 6 - 7		2	26	10
	3. 8		3	51	20
	4. 9 - 11		4	72	28
	5. 12		5	39	15
	6. 13 - 15 (1-3 years university)		6	18	7
	7. 16 or more (degree or above)		7	0	0
	0. no response		0	39	15
	(a) Did your wife have any other training after she left school?				
	1. yes	24	1	47	18
	2. no		2	167	65
	0. no response		0	42	17
	(b) If yes, what was she trained in?	25,27.			
<hr/>					
6.	(a) Have you taken any adult education courses in the last three years? (Interviewer explain).				
	1. yes	28.	1	30	12
	2. no		2	226	88
	(b) Was this course related to your job?				
	1. didn't take any course	29.	1	213	83
	2. yes		2	24	9
	3. no		3	7	3
	0. no response		0	12	5
7.	How many children do you have?	30.	0	43	17
			1	24	9
			2	42	17
			3	42	17
			4	45	18
			5	19	7
			6	16	6
			7	11	4
			8	3	1
			9	11	4

	Column	Code	Frequency	
			No.	%
Of those children who have left school,				
a. How many completed grade 12?	31			
b. How many did not complete grade 12?	32			
8. How many of your children have moved to another area?	33			
9. What was your father's occupation? _____	34,36			
10. How many years of school did your father complete?				
1. don't know	37	1	112	44
2. 5 or less		2	46	18
3. 6 - 7		3	27	11
4. 8		4	46	18
5. 9 - 11		5	10	4
6. 12		6	9	3
7. 13 - 15 (1-3 years university)		7	3	1
8. 16 or more (degree or above)		8	3	1
a. Did your father have any other training after he left school?				
1. don't know	38	1	87	34
2. yes		2	45	18
3. no		3	124	48
b. If yes, what was he trained in? _____	39,41			
11. Where were you born?				
1. This area	42	1	40	16
2. British Columbia		2	22	8
3. Canada		3	112	44
4. United States		4	26	10
5. United Kingdom		5	15	6
6. Other (specify) _____		6	41	16
12. How long have you lived in this area?				
1. two years or less	43	1	12	5
2. 3 - 5 years		2	28	11
3. 6 - 10 years		3	19	7
4. 11 - 16 years		4	32	13
5. 17 - 20 years		5	26	10
6. more than 20 years		6	99	39
7. entire lifetime		7	40	16

	Column	Code	Frequency	
			No.	%
13. Where did you live before coming to this area?				
1. Not applicable (lived in area for lifetime)	44	1	41	16
2. British Columbia		2	57	22
3. Canada		3	116	45
4. United States		4	17	7
5. United Kingdom		5	2	1
6. Other (specify) _____		6	23	9

14. Now, I would like to ask you how far you and your family travel, in miles, to receive the following services:

1. food purchases	45,47	_____
2. clothing purchases	48,50	_____
3. medical care	51,53	_____
4. church	54,56	_____
5. elementary school	57,59	_____
6. secondary school	60,62	_____
7. post office	63,65	_____
8. work	66,68	_____

Total Distance + =

Divided by =
69,71

Distance travelled score

1. 0 - 5 miles	72	1	42	16
2. 6 - 10		2	71	28
3. 11 - 15		3	64	25
4. 16 - 20		4	31	12
5. 21 - 25		5	20	8
6. 26 - 30		6	11	4
7. 31 - 35		7	5	2
8. 36 - 40		8	3	1
9. 41 or more		9	9	4

15. - 28 (SEWELL SCALE, SHORT FORM)

The next few items are concerned with some of the things that your family owns

ITEMS

15. Construction of house:

a. brick, stucco, or frame in good condition (5)	73	5
b. unpainted frame or other in poor condition (3)		3

	Column	Code	Frequency	
			No.	%
16. Room-person ratio: Number of rooms _____ divided by number of persons _____ equals _____				
Ratio:				
a. below 1.00 (3)	74	3		
b. 1.00 - 1.99 (5)		5		
c. 2.00 and up (7)		7		
17. Lighting facilities:				
a. electric (8)	75	8		
b. gas, mantle, or pressure (6)		6		
c. oil lamps, other or none (3)		3		
START DATA CARD 2				
Respondent's Number	1,3			
	4	2		
18. Water piped into house:				
a. yes (8)	5	8		
b. no (4)		4		
19. Power washer:				
a. yes (6)	6	6		
b. no (3)		3		
20. Refrigeration:				
a. mechanical (8)	7	8		
b. ice (6)		6		
c. other or none (3)		3		
21. Radio:				
a. yes (6)	8	6		
b. no (3)		3		
22. Telephone:				
a. yes (6)	9	6		
b. no (3)		3		
23. Automobile (includes pickup truck):				
a. yes (6)	10	6		
b. no (2)		2		

	Column	Code	Frequency	
			No.	%
24. Family takes daily or weekly newspaper:				
a. yes (6)	11	6		
b. no (3)		3		
25. Wife's education: grades completed (see question # 5):				
a. 0 to 7 (2)	12	2		
b. 8 (4)		4		
c. 9 - 11 (6)		6		
d. 12 (7)		7		
e. 13 and up (8)		8		
26. Husband's education: grades completed (see question # 4):				
a. 0 to 7 (3)	13	3		
b. 8 (5)		5		
c. 9 - 11 (6)		6		
d. 12 (7)		7		
e. 13 and up (8)		8		
27. Husband attends church or Sunday School at least once a month:				
a. yes (5)	14	5		
b. no (2)		2		
28. Wife attends church or Sunday School at least once a month:				
a. yes (5)	15	5		
b. no (2)		2		
Percentage Score	Total =	16,18		
% Score: 1. Under 20	19	1	0	0
2. 21 - 30		2	0	0
3. 31 - 40		3	0	0
4. 41 - 50		4	0	0
5. 51 - 60		5	6	2
6. 61 - 70		6	27	11
7. 71 - 80		7	72	28
8. 81 - 90		8	115	45
9. Over 90		9	36	14

Column	Code	Frequency
		No. %

29. (CHAPLIN SCALE)

Would you please try to recall the names of all the organizations that you have belonged to in the past year. (Do not include attendance at church)

Name of Organization	2. Attendance	3. Financial contribution	4. Member of Committee	5. Offices held
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
Total (X1)	(X2)	(X3)	(X4)	(X5)

Total Participation
Score = 20, 21

Participation

0	Score	22	1	120	47
1 - 5			2	15	6
6 - 10			3	49	19
11 - 15			4	19	7
16 - 20			5	19	7
21 - 25			6	12	5
26 - 30			7	12	5
31 - 35			8	4	2
Over 35			9	6	2

		Column	Strongly agree	Agree	Undecided	Disagree	Strongly disagree	
30. - 49.	I would like to ask you a few questions regarding how you feel about rural life and this area. Please give your reaction to each statement, using the five responses on the card.							
30.	Rural life is too isolated and too lonesome.	23.	1	2	3	4	5	R
31.	Since city people have educational opportunities within easy reach, I think they have an advantage over rural people	24.	1	2	3	4	5	R
32.	This area is a desirable one in which to live.	25.	5	4	3	2	1	A
33.	I would not mind leaving here in order to make a substantial advance in my occupation.	26.	5	4	3	2	1	C
34.	I do not want any new job which involves more responsibility.	27.	1	2	3	4	5	C
35.	I would not leave this area under any circumstances.	28.	1	2	3	4	5	C
36.	Learning a new routine would be very difficult for me.	29.	1	2	3	4	5	C
37.	The future of this area looks bright.	30.	5	4	3	2	1	A
38.	I would find it very difficult to go to school to learn new skills.	31.	1	2	3	4	5	C
39.	The people here find it very easy to get together on community projects.	32.	5	4	3	2	1	A
40.	There are not enough jobs available here.	33.	1	2	3	4	5	A
41.	I believe the rural environment is healthier than that of the city.	34.	5	4	3	2	1	R
42.	I will need further education to ensure myself adequate employment in the future.	35.	5	4	3	2	1	C
43.	No one seems to care how this area looks.	36.	1	2	3	4	5	R
44.	I believe that people who want new and exciting experiences must leave the rural areas and go to the cities.	37.	1	2	3	4	5	R

	Column	Strongly agree	Agree	Undecided	Disagree	Strongly disagree	
45. I would be willing to give up my spare-time to further my education.	38.	5	4	3	2	1	C
46. This area will never seem like home to me.	39.	1	2	3	4	5	A
47. The country offers more enjoyment of living than does the city.	40.	5	4	3	2	1	R
48. I have no desire to learn a new trade.	41.	1	2	3	4	5	C
49. I think that, on the average, the standard of living of rural people is below that of others in Canada.	42.	1	2	3	4	5	R
Total Rural Score (R)	43,44	<hr/>					
Total Area Score (A)	45,46	<hr/>					
Total Change Score (C)	47,48	<hr/>					
50. What was your principal occupation in 1966? <hr/>	49,51	<hr/>					

		Code	Frequency	
			No.	%
51. Were you self-employed?				
1. yes	52	1		
2. no		2		
52. In what industry did you work?				
1. agriculture	53	1		
2. forestry		2		
3. mining		3		
4. service and transportation		4		
5. secondary agriculture		5		
6. secondary forestry		6		
7. recreation		7		
8. construction		8		
9. other <hr/>		9		
53. How many years had you been working in this occupation?				
1. 2 or less	54	1	21	8
2. 3 - 5		2	29	11
3. 6 - 10		3	31	12
4. 11 - 15		4	35	14
5. 16 - 20		5	34	13
6. 21 - 25		6	18	7
7. 26 and over		7	86	34
0. no response		0	2	2

	Column	Code	Frequency	
			No.	%
54. Is this the same job you are working in now?				
1. yes	55.	1		
2. no		2		
55. <u>If not:</u> (a) What job are you working in now? _____	56,58			
55. (b) Are you self employed?				
1. yes	59.	1		
2. no		2		
(c) What industry are you working in?				
1. agriculture	60.	1		
2. forestry		2		
3. mining		3		
4. service and transportation		4		
5. secondary agriculture		5		
6. secondary forestry		6		
7. recreation		7		
8. construction		8		
9. other		9		
56. Did you have a secondary occupation or source of income in 1966? (For farmers - Principal off-farm job).				
1. yes	61.	1	123	48
2. no		2	128	50
0. no response		0	5	2
If yes, what was your secondary occupation?				
	62,64			
57. Were you self-employed in your secondary occupation?				
1. yes	65	1	101	39
2. no		2	25	10
0. no response		0	139	51
58. In what industry was your secondary occupation?				
1. forestry	66.	1	12	5
2. agriculture		2	91	36
3. mining		3	0	0
4. service and transportation		4	10	4
5. secondary agriculture		5	2	1
6. secondary forestry		6	2	1
7. recreation		7	0	0
8. construction		8	3	1
9. other		9	3	1
0. none		0	133	52

	Column	Code	Frequency	
			No.	%
59. Did you have a third job in 1966? (For farmers - secondary off-farm job).				
1. yes	67.	1	11	4
2. no		2	245	96
60. How many months did you work in 1966? ____	68	1	0	0
		2	1	0
		3	0	0
		4	0	0
		5	0	0
		6	4	2
		7	2	1
		8	7	3
		9	5	2
		A	7	3
		B	3	1
		C	225	88
		0	2	1

(FOR INTERVIEWER USE ONLY)

Respondent may be classified as:

1. farmer only	69.	1	126	49
2. farmer principally with secondary off-farm job		2	31	12
3. non-farmer principally with farming as secondary job		3	96	38
4. non-farm only		4	-	-
5. no job or out of work		5	-	-
6. starting a farm		6	3	1

61. - 69. (BRAYFIELD AND ROTH'S INDEX OF JOB SATISFACTION - REVISED)

I would like to find out how you feel about your job. Please reply to each statement using the five phrases on this card. (Hand respondent card).

		Strongly agree	Agree	Undecided	Disagree	Strongly Disagree
61. My job is like a hobby to me.	70.	5	4	3	2	1
62. It seems that my friends are more interested in their jobs than I am.	71.	1	2	3	4	5
63. I enjoy my work more than my leisure time.	72.	5	4	3	2	1
64. I am often bored with my job.	73.	1	2	3	4	5
65. I feel fairly well satisfied with my job.	74.	5	4	3	2	1

Column

66. I feel that my job is no more interesting than others I could get. 75. 1 2 3 4 5
67. I definitely dislike my work. 76. 1 2 3 4 5
68. Each day of work seems like it will never end. 77. 1 2 3 4 5
69. I find real enjoyment in my work. 78. 5 4 3 2 1

START DATA CARD 3

Respondent's Number 1,3. _____

4. _____ 3 _____

Total Score 5,6. _____

<u>Total Scale Score:</u> 9 - 12	7.	1	0	0
13 - 16		2	0	0
17 - 20		3	0	0
21 - 24		4	3	1
25 - 28		5	25	10
29 - 32		6	64	25
33 - 36		7	134	52
37 - 40		8	22	9
41 and over		9	3	1
no response		0	5	2

70. Have you worked at any job other than the one(s) you are now working at?

1. yes 8. 1 183 71

2. no 2 73 29

71. If yes, what specific jobs have you had for more than six months:

Previous job 9,11 _____

Next Previous job 12,14 _____

Next Previous job 15,17 _____

Next Previous job 18,20 _____

Next Previous job 21,23 _____

			Column	Code	Frequency	
					No.	%
72.	What was your approximate net income from your principal occupation in 1966? (for farmers - net farm income)	Amt.	24,28			
		Code.	29			
73.	What was your approximate net income from your other occupations in 1966?	Amt.	30,34			
		Code.	35			
74.	Did any other family members living at home earn income in 1966? If yes, how much was this income?					
	a. wife	Amt.	36,40			
		Code.	41			
	b. sons or daughters	Amt.	42,46			
		Code.	47			
	c. others	Amt.	48,52			
		Code.	53			

START DATA CARD 4

Respondent's Number		1,3		
		4		4
76.	Did you or members of your family receive income from other sources in 1966? If yes, how much was this income?			
	a. rent, interest, or dividends	Amt.	5,9	
		Code.	10	
	b. unemployment insurance or welfare payments	Amt.	11,15	
		Code.	16	
77.	What would you estimate was the value of produce raised and consumed by yourself last year?			
	quantity	value	Amt.	17,21
	milk		Code	22
	butter			
	eggs			
	meat			
	garden			
	produce			
	Total			

		Column	Code	Frequency	
				No.	%
78.	Have you been unemployed during the past 3 years? (For farmers - Have you sought off-farm work in the last three years and been unable to obtain any?)				
A.	1. yes	23.	1	37	14
	2. no		2	219	86
B.	If yes, for how long?				
	1. less than a month	24.	1	2	1
	2. 1 - 6		2	12	5
	3. 6 - 12		3	15	6
	4. 13 - 18		4	6	2
	5. 18 - 24		5	0	0
	6. 24 - 30		6	0	0
	7. 30 - 36		7	2	1
	0. no response		0	219	85
79.	If you were unemployed, what was the cause or nature of your unemployment?				
	1. seasonal layoffs	25.	1	17	7
	2. health disabilities		2	6	2
	3. no work available		3	8	3
	4. work available but insufficient skill to get work		4	1	1)
	5. family reasons		5	1	1)
	6. seeking new position		6	2	1
	7. other _____		7	3	1
	0. no response		0	218	85
80.	Would you like to take some kind of further education or training?				
	1. yes	26.	1	117	46
	2. no		2	117	46
	3. undecided		3	18	7
	0. no response		0	4	1
	If yes, what kind of training would you be interested in?	27, 29			
81.	Do you own this land, own part and rent part, or rent it entirely?				
	1. own	30.	1	201	79
	2. own more than half and rent the remainder		2	21	8
	3. rent more than half and own the remainder		3	23	9
	4. rent it entirely		4	1)	1
	5. manager		5	1)	
	6. other _____		6	9	3

		Column	Code	Frequency	
				No.	%
82.	How did you acquire this land?				
	1. do not own land	31	1	5	2
	2. from the Crown-purchase		2	37	14
	3. from the Crown-pre-empt or homestead		3	27	11
	4. bought as is		4	78	30
	5. inherited as a going concern		5	20	8
	6. through marriage		6	0	0
	7. private unimproved		7	42	16
	8. inactive improved		8	28	11
	9. other		9	15	6
	0. no response		0	4	2
83.	How many acres of land do you own here?				
	Amt.	32,35			
	Code.	36			
84.	How many acres have not been cleared but are grass meadows or natural pastures?				
	Amt.	37,40			
	Code.	41			
85.	How many acres have been cleared?				
	Amt.	42,45			
	Code.	46			
86.	How many acres are in bush or timber?				
	Amt.	47,50			
	Code.	51			
(FOR AREAS AFFECTED BY FLOODING ONLY)					
87.	Do you expect to be relocated because of flooding from dam storage reservoirs?				
	1. yes	52	1		
	2. no		2		
88.	If so, where do you expect to be moved to?	53,57			

Column	Code	Frequency	
		No.	%

THE FOLLOWING QUESTIONS ARE TO BE ASKED
OF FARMERS ONLY

89. What is your principal agricultural product sold? (that is, the product from which you obtained the largest gross revenue).

A.	1. dairy produce (milk or cream shipper)	58	1	35	14
	2. beef		2	103	40
	3. sheep		3	2	1
	4. other livestock		4	7	3
	5. fruit and vegetables (including potatoes)		5	8	3
	6. other field crops		6	89	35
	7. mixed		7	3	1
	8. woodlot products		8	2	1
	9. eggs or poultry		9	4	2
	0. no response		0	3	1

B. What other agricultural products do you sell?
(If more than one response, check second response in B (2))

(1)	1. dairy produce	59.	1	14	5
	2. beef		2	37	14
	3. sheep		3	2	1
	4. other livestock		4	7	3
	5. fruit and vegetables		5	6	2
	6. field crops		6	35	14
	7. mixed		7	0	0
	8. woodlot products		8	5	2
	9. other _____		9	13	5
	0. none		0	137	54

89. B. (2)

	1. dairy products	60	1	0	0
	2. beef		2	2	1
	3. sheep		3	0	0
	4. other livestock		4	2	1
	5. fruit and vegetables		5	2	1
	6. field crops		6	5	2
	7. mixed		7	0	0
	8. woodlot products		8	2	1
	9. other _____		9	4	2
	0. none		0	239	93

	Column	Code	Frequency
			No. %
90. What was the average number of animals on your farm last year?			
<u>dairy animals</u>	Total Animal Units	61,63.	
cows _____			
heifers _____			
calves _____			
bulls _____			
<u>beef animals</u>	Total Animal Units		
cows _____	1. no animals	64.	1 41 16
heifers _____	2. less than 10		2 52 24
yearlings _____	3. 10 - 19		3 37 17
calves _____	4. 20 - 29		4 24 11
bulls _____	5. 30 - 39		5 22 10
	6. 40 - 49		6 15 7
	7. 50 - 59		7 13 6
	8. 60 - 79		8 14 7
	9. 80 and over		9 34 16
	0. response		0 4 2
horses _____			
sheep _____			
swine _____			
chickens _____			
91. What was your approximate gross farm income in 1966?	Amt.	65,70.	
	Code.	71	
92. Would you consider 1966 a typical year, or was it better or poorer than average with respect to net farm income?			
1. typical	72.	1	118 46
2. better than average		2	40 16
3. poorer than average		3	85 33
4. not farming previous to 1966		4	10 4
0. no response		0	3 1
93. What would you be willing to pay to own and operate this farm as a going concern (every thing included)?	Amt.	73,78.	
	Code.	79	

	Column	Code	Frequency	
			No.	%
94. Do you use hired labour for your farm operation, and, if so, on what basis do you hire labour?				
1. no hired labour used	80.	1	158	62
2. hired labour used only on a seasonal basis for less than one man-month		2	49	19
3. hired labour used only on a seasonal basis for more than one man-month		3	33	13
4. hired labour on a year-round basis		4	5	2
5. some year-round labour, some seasonal		5	6	2
0. no response		0	5	2

START DATA CARD 5

Respondent's Number

1,3

4

4

95. Did you work off your farm last year? If yes, how many weeks did you spend working off farm?

1. no off-farm work	5.	1	126	49
2. less than 4 weeks		2	14	5
3. 4 - 9		3	11	4
4. 10 - 13		4	21	8
5. 13 - 25		5	19	7
6. 26 - 39		6	23	9
7. 40 - 52		7	42	16

96. Do you use unpaid family labour in your farm operation? If yes, how much?

a. 1. yes	6.	1	139	54
2. no		2	115	45
0. no response		0	2	1
b. 1. less than 1 man-day per month	7.	1	5	2
2. 1 - 5		2	30	12
3. 6 - 10		3	25	10
4. 11 - 15		4	32	12
5. more than 15		5	51	20
0. no response		0	113	44

97. Who is your District Agriculturist?

1. right	8.	1	136	53
2. wrong		2	8	3
3. don't know		3	112	44

		Column	Code	Frequency	
				No.	%
98.	Have you visited your District Agriculturist in his office during the past year? If so, how many times?				
	1. None	9.	1	166	65
	2. 1 or 2		2	62	24
	3. 3 or 4		3	18	7
	4. 5 or more		4	10	4
99.	Have you consulted your District Agriculturist about a farm matter over the telephone during the past year? If so, how many times?				
	1. None	10.	1	212	83
	2. 1 or 2		2	29	11
	3. 3 or 4		3	7	3
	4. 5 or more		4	8	3
100.	Did your District Agriculturist visit you during the past year about a farm matter? If so, how many times?				
	1. None	11.	1	214	84
	2. 1 or 2		2	36	14
	3. 3 or 4		3	5	2
	4. 5 or more		4	1	0
101.	Have you attended local meetings or field days sponsored by the District Agriculturist during the past year? If so, how many?				
	1. None	12.	1	169	66
	2. 1 or 2		2	59	23
	3. 3 or 4		3	20	8
	4. 5 or more		4	8	3
102.	Did you read circular letters, mailed announcements or bulletins on an agriculture subject during the past year? If so, how often?				
	1. Never	13.	1	50	19
	2. rarely		2	25	10
	3. sometimes		3	65	26
	4. often		4	116	45
103.	Have you listened to farm radio or television programs during the past year? If so, how often?				
	1. Never	14.	1	23	9
	2. rarely		2	15	6
	3. sometimes		3	90	35
	4. often		4	128	50

		Column	Code	Frequency	
				No.	%
104.	Did you read any farm newspaper articles during the past year? If so, how often?				
	1. Never	15.	1	17	7
	2. rarely		2	14	5
	3. sometimes		3	56	22
	4. often		4	169	66
105.	Have you ever taken any agricultural courses? If so, where?				
	1. no courses	16.	1	196	77
	2. high school		2	9	3
	3. vocational or agriculture school		3	12	4
	4. agricultural college		4	5	2
	5. university		5	2	1
	6. adult education		6	30	12
	0. no response		0	2	1
106.	During the next five years do you have any definite plans to change your farming activities or operations?				
	1. yes	17.	1	196	77
	2. no		2	60	23
107.	What kind of change(s) do you hope to make?				
	1. increase farm size	18.			
	2. change enterprise				
	3. clear and/or drain land	19.			
	4. change buildings				
	5. education	20.			
	6. take an off-farm job				
	7. increase off-farm work				
	8. retire				
	9. increase stock				
	J. sell farm				
	K. decrease stock				
	L. decrease farm size				
	M. rent out farm				
	N. decrease off-farm work				
	P. other _____				
108.	What do you think would improve agriculture in this area? _____	21.			
	_____	22.			
Present land use	(9 cols)	23,31.			
Land capability for agriculture	(10 cols)	32,41.			
Land capability for forestry	(6 cols)	42,47.			

APPENDIX II

Bivariate tables of the socio-economic characteristics
versus contact levels and contact methods for which
significant chi-square values were obtained

TABLE XVII

PERCENTAGE DISTRIBUTION OF YEARS OF
SCHOOL COMPLETED BY CONTACT LEVELS

Extension Contact Levels	Years of school completed		Total No. (%)
	8 yrs or less	9 yrs and over	
	No. (%)	No. (%)	
Low	101 (39.5)	28 (10.9)	129 (50.3)
Medium	36 (14.1)	23 (9.0)	59 (23.1)
High	36 (14.1)	32 (12.5)	68 (26.6)
Total	173 (67.6)	83 (32.4)	256 (100)

TABLE XVIII

PERCENTAGE DISTRIBUTION OF ADULT
EDUCATION PARTICIPATION BY CONTACT LEVELS

Extension Contact levels	Adult Education Participation		Total No. (%)
	"Yes"	"No"	
	No. (%)	No. (%)	
Low	8 (3.1)	121 (47.3)	129 (50.3)
Medium	5 (1.95)	54 (21.1)	59 (23.1)
High	17 (6.6)	51 (19.9)	68 (26.6)
Total	30 (11.7)	226 (88.3)	256 (100)

TABLE XIX

PERCENTAGE DISTRIBUTION OF NUMBER OF IMPROVED
ACRES BY CONTACT LEVELS

Extension Contact Levels	Number of improved acres				Total No. (%)
	99 or less No. (%)	100-159 No. (%)	160-639 No. (%)	640 or over No. (%)	
Low	63 (24.6)	25 (9.8)	23 (9.0)	18 (7.0)	129 (50.3)
Medium	22 (8.6)	14 (5.5)	14 (5.5)	9 (3.5)	59 (23.1)
High	9 (3.5)	8 (3.1)	13 (5.1)	38 (14.8)	68 (26.6)
Total	94 (36.7)	47 (18.4)	50 (19.5)	65 (25.4)	256 (100)

TABLE XX

PERCENTAGE DISTRIBUTION OF GROSS
FARM INCOME BY CONTACT LEVELS

Extension Contact Levels	Gross Farm Income			Total No. (%)
	\$2,999 or less No. (%)	\$3,000- \$5,999 No. (%)	\$6,000 and over No. (%)	
Low	76 (29.7)	23 (9.0)	30 (11.7)	129 (50.3)
Medium	24 (9.4)	18 (7.0)	17 (6.6)	59 (23.3)
High	10 (3.9)	8 (3.1)	50 (19.6)	68 (26.6)
Total	110 (43.0)	49 (19.1)	97 (37.9)	256 (100)

TABLE XXI

PERCENTAGE DISTRIBUTION OF ADULT EDUCATION
PARTICIPATION BY PERSONAL CONTACT LEVELS

Personal Contact Levels	Adult Education Participation		
	"Yes" No. (%)	"No" No. (%)	Total No. (%)
Low	21 (8.2)	203 (79.3)	224 (87.5)
High	9 (3.5)	23 (9.0)	32 (12.5)
Total	30 (11.7)	226 (88.3)	256 (100)

TABLE XXII

PERCENTAGE DISTRIBUTION OF NUMBER OF
IMPROVED ACRES BY PERSONAL CONTACT LEVELS

Personal Contact Levels	Number of Improved Acres		Total No. (%)
	99 or less No. (%)	100 and over No. (%)	
Low	133 (52.0)	91 (35.6)	224 (87.5)
High	8 (3.2)	24 (9.4)	32 (12.5)
Total	141 (55.1)	115 (44.9)	256 (100)

TABLE XXIII

PERCENTAGE DISTRIBUTION OF GROSS FARM
INCOME BY PERSONAL CONTACT LEVELS

Personal Contact Levels	Gross Farm Income		Total No. (%)
	\$2,999 or less No. (%)	\$3,000 and over No. (%)	
Low	105 (41.0)	119 (46.5)	224 (87.5)
High	5 (1.95)	27 (10.6)	32 (12.5)
Total	110 (43.0)	146 (57.0)	256 (100)

TABLE XXIV

PERCENTAGE DISTRIBUTION OF ADULT EDUCATION
PARTICIPATION BY IMPERSONAL CONTACT LEVELS

Impersonal Contact Levels	Adult Education Participation		Total No. (%)
	"Yes" No. (%)	"No" No. (%)	
Low	3 (1.2)	61 (23.8)	64 (25)
High	27 (10.5)	165 (64.5)	192 (75)
Total	30 (11.7)	226 (88.3)	256 (100)

TABLE XXV

PERCENTAGE DISTRIBUTION OF NUMBER OF IMPROVED
ACRES BY IMPERSONAL CONTACT LEVELS

Impersonal Contact Levels	Number of improved acres				Total No. (%)
	99 or less No. (%)	100-159 No. (%)	160-639 No. (%)	640 and over No. (%)	
Low	33 (12.9)	16 (6.3)	9 (3.5)	6 (2.3)	64 (25.0)
High	61 (23.8)	31 (12.1)	41 (16.0)	59 (23.1)	129 (75.0)
Total	94 (36.7)	47 (18.4)	50 (19.5)	65 (25.4)	256 (100)

TABLE XXVI

PERCENTAGE DISTRIBUTION OF GROSS FARM
INCOME BY IMPERSONAL CONTACT LEVELS

Impersonal Contact Levels	Gross farm income			Total No. (%)
	\$2,999 or less No. (%)	\$3,000- \$5,999 No. (%)	\$6,000 and over No. (%)	
Low	39 (15.2)	12 (4.7)	13 (5.2)	64 (25.0)
High	71 (27.7)	37 (14.5)	84 (32.9)	192 (75.0)
	110 (43.0)	49 (19.1)	97 (37.9)	256 (100.0)

TABLE XXVII

PERCENTAGE DISTRIBUTION OF YEARS OF SCHOOL
COMPLETED BY KNOWLEDGE OF DISTRICT AGRICULTURIST

Knowledge of District Agriculturist	Years of School Completed		Total Total No. (%)
	8 years or less No. (%)	9 years and over No. (%)	
"Yes"	82 (32.1)	54 (21.1)	136 (53.1)
"No"	91 (35.5)	29 (11.3)	120 (46.9)
Total	173 (67.6)	83 (32.4)	256 (100.0)

TABLE XXVIII

PERCENTAGE DISTRIBUTION OF ADULT EDUCATION
PARTICIPATION BY KNOWLEDGE OF DISTRICT AGRICULTURIST

Knowledge of District Agriculturist	Adult Education Participation		Total No. (%)
	Participants No. (%)	Non-partici- pants No. (%)	
"Yes"	24 (9.4)	112 (43.8)	136 (53.1)
"No"	6 (2.3)	114 (44.5)	120 (46.9)
Total	30 (11.7)	226 (88.3)	256 (100.0)

TABLE XXIX

PERCENTAGE DISTRIBUTION OF NUMBER OF IMPROVED
ACRES BY KNOWLEDGE OF DISTRICT AGRICULTURIST

Knowledge of District Agriculturist	Number of Improved Acres				Total No. (%)
	99 or less No. (%)	100-159 No. (%)	160-639 No. (%)	640 and over No. (%)	
"Yes"	35 (13.7)	22 (8.6)	30 (11.7)	49 (19.1)	136 (53.1)
"No"	59 (23.1)	25 (9.8)	20 (7.8)	16 (6.3)	120 (46.9)
Total	94 (36.7)	47 (18.4)	50 (19.5)	65 (25.4)	256 (100.0)

TABLE XXX

PERCENTAGE DISTRIBUTION OF GROSS FARM INCOME
BY KNOWLEDGE OF DISTRICT AGRICULTURIST

Knowledge of District Agriculturist	\$2,999 or less No. (%)	\$3,000- \$5,999 No. (%)	\$6,000- \$9,000 No. (%)	\$9,000 and over No. (%)	Total No. (%)
"Yes"	47 (18.4)	26 (10.2)	6 (2.3)	57 (22.3)	136 (53.1)
"No"	63 (24.6)	23 (9.0)	13 (5.1)	21 (8.2)	120 (46.9)
Total	110 (43.0)	49 (19.1)	19 (7.4)	78 (30.5)	256 (100.0)

TABLE XXXI

PERCENTAGE DISTRIBUTION OF YEARS OF SCHOOL COMPLETED
BY VISIT TO DISTRICT AGRICULTURIST'S OFFICE

Visit to District Agriculturist's Office	Years of School Completed			Total No. (%)
	8 years or less No. (%)	9-12 years No. (%)	13 years and over No. (%)	
Visit	49 (19.1)	35 (13.7)	6 (2.3)	90 (35.2)
No visit	122 (47.7)	39 (15.2)	5 (1.95)	166 (64.8)
Total	171 (66.8)	74 (28.9)	11 (4.3)	256 (100)

TABLE XXXII

PERCENTAGE DISTRIBUTION OF ADULT EDUCATION
PARTICIPATION BY VISIT TO DISTRICT AGRICULTURIST'S OFFICE

Visit to District Agricul- turist's Office	Adult Education Participation		Total No. (%)
	Participants No. (%)	Non-partici- pants No. (%)	
Visit	18 (7.0)	72 (28.1)	90 (35.2)
No visit	10 (3.9)	156 (60.9)	166 (64.8)
Total	28 (10.9)	228 (89.1)	256 (100)

TABLE XXXIII

PERCENTAGE DISTRIBUTION OF NUMBER OF IMPROVED
ACRES BY VISIT TO DISTRICT AGRICULTURIST'S OFFICE

Visit to District Agriculturist's Office	Number of Improved Acres				Total No. (%)
	99 or less No. (%)	100-159 No. (%)	160-639 No. (%)	640 and over No. (%)	
Visit	15 (5.9)	17 (6.6)	22 (8.6)	36 (14.1)	90 (35.2)
No visit	77 (30.1)	30 (11.7)	28 (10.9)	31 (12.1)	166 (64.8)
Total	92 (35.9)	47 (18.4)	50 (19.5)	67 (26.2)	256 (100)

TABLE XXXIV

PERCENTAGE DISTRIBUTION OF GROSS FARM INCOME
BY VISIT TO DISTRICT AGRICULTURIST'S OFFICE

Visit to District Agriculturist's Office	Gross Farm Income				Total No. (%)
	\$2,999 or less No. (%)	\$3,000- \$5,999 No. (%)	\$6,000- \$8,999 No. (%)	\$9,000 and over No. (%)	
Visit	27 (10.6)	13 (5.1)	8 (3.1)	42 (16.4)	90 (35.2)
No visit	81 (31.6)	36 (14.1)	11 (4.3)	38 (14.8)	166 (64.8)
Total	108 (42.2)	49 (19.1)	19 (7.4)	80 (31.3)	256 (100)

TABLE XXXV

PERCENTAGE DISTRIBUTION OF ADULT EDUCATION PARTICIPATION
BY TELEPHONE CALLS TO DISTRICT AGRICULTURIST

Telephone calls to District Agriculturist	Adult Education Participation		Total No. (%)
	Partici- pants No. (%)	Non-partici- pants No. (%)	
Callers	9 (3.5)	35 (13.7)	44 (17.2)
Non-callers	21 (8.2)	191 (74.6)	212 (82.8)
Total	30 (11.7)	226 (88.3)	256 (100)

TABLE XXXVI

PERCENTAGE DISTRIBUTION OF NUMBER OF IMPROVED ACRES
BY TELEPHONE CALLS TO DISTRICT AGRICULTURIST

Telephone calls to District Agriculturist	Number of Improved Acres				Total No. (%)
	99 or less No. (%)	100-159 No. (%)	160-639 No. (%)	640 and over No. (%)	
Callers	10 (3.9)	6 (2.3)	5 (1.95)	23 (9.0)	44 (17.2)
Non-callers	84 (32.8)	41 (16.0)	45 (17.6)	42 (16.4)	212 (82.8)
Total	94 (36.7)	47 (18.4)	50 (19.5)	65 (25.4)	256 (100)

TABLE XXXVII

PERCENTAGE DISTRIBUTION OF GROSS FARM INCOME
BY TELEPHONE CALLS TO DISTRICT AGRICULTURIST

Telephone calls to District Agriculturist	Gross Farm Income			Total No. (%)
	\$2,999 or less No. (%)	\$3,000- \$5,999 No. (%)	\$6,000 and over No. (%)	
Callers	7 (2.7)	6 (2.3)	31 (12.1)	44 (17.2)
Non-callers	103 (40.2)	43 (16.8)	66 (25.8)	212 (82.8)
Total	110 (43.0)	49 (19.1)	97 (37.9)	256 (100)

TABLE XXXVIII

PERCENTAGE DISTRIBUTION OF ADULT EDUCATION PARTICIPATION
BY FARM VISITS BY DISTRICT AGRICULTURIST

Farm visits by District Agriculturist	Adult Education Participation		Total No. (%)
	Partici- pants No. (%)	Non-partici- pants No. (%)	
Farmers visited	8 (3.1)	34 (13.3)	42 (16.4)
Farmers not visited	22 (8.6)	192 (75.0)	214 (83.6)
Total	30 (11.7)	226 (88.3)	256 (100)

TABLE XXXIX

PERCENTAGE DISTRIBUTION OF NUMBER OF IMPROVED
ACRES BY FARM VISITS BY DISTRICT AGRICULTURIST

Farm visits by District Agriculturist	Number of improved acres			Total No. (%)
	99 or less No. (%)	100-159 No. (%)	160 and over No. (%)	
Farmers visited	8 (3.1)	8 (3.1)	26 (9.3)	42 (16.4)
Farmers not visited	86 (33.6)	39 (15.2)	89 (34.8)	214 (83.6)
Total	94 (36.7)	47 (18.4)	115 (44.9)	256 (100)

TABLE XL

PERCENTAGE DISTRIBUTION OF GROSS FARM INCOME
BY FARM VISITS BY DISTRICT AGRICULTURIST

Farm visits by District Agriculturist	Gross farm income			Total No. (%)
	\$2,999 or less No. (%)	\$3,000- \$5,999 No. (%)	\$6,000 and over No. (%)	
Farmers visited	6 (2.3)	5 (2.0)	31 (12.1)	42 (16.4)
Farmers not visited	104 (40.6)	44 (17.2)	66 (25.8)	214 (83.6)
Total	110 (43.0)	49 (19.1)	97 (37.9)	256 (100)

TABLE XLI

PERCENTAGE DISTRIBUTION OF YEARS OF SCHOOL COMPLETED
BY ATTENDANCE AT AGRICULTURAL MEETINGS AND FIELD DAYS

Agricultural Meetings and Field Days	Years of school completed		Total No. (%)
	8 years or less No. (%)	9 years and over No. (%)	
Attendants	48 (18.8)	39 (15.3)	87 (34.0)
Non-attendants	125 (48.8)	44 (17.2)	169 (66.0)
Total	173 (67.6)	83 (32.4)	256 (100)

TABLE XLII

PERCENTAGE DISTRIBUTION OF ADULT EDUCATION PARTICIPATION
BY ATTENDANCE AT AGRICULTURAL MEETINGS AND FIELD DAYS

Agricultural Meetings and Field Days	Adult education participation		Total No. (%)
	Partici- pants No. (%)	Non-partici- pants No. (%)	
Attendants	16 (6.3)	71 (27.7)	87 (34.0)
Non-attendants	14 (5.5)	155 (60.6)	169 (66.0)
Total	30 (11.7)	226 (88.3)	256 (100)

TABLE XLIII

PERCENTAGE DISTRIBUTION OF NUMBER OF IMPROVED ACRES
BY ATTENDANCE AT AGRICULTURAL MEETINGS AND FIELD DAYS

Agricultural Meetings and Field Days	Number of improved acres				Total No. (%)
	99 or less No. (%)	100-159 No. (%)	160-639 No. (%)	640 and over No. (%)	
Attendants	19 (7.4)	15 (5.9)	18 (7.0)	35 (13.7)	87 (34.0)
Non-attendants	75 (29.3)	32 (12.5)	32 (12.5)	30 (11.7)	169 (66.0)
Total	94 (36.7)	47 (18.4)	50 (19.5)	65 (25.4)	256 (100)

TABLE XLIV

PERCENTAGE DISTRIBUTION OF GROSS FARM INCOME BY
ATTENDANCE AT AGRICULTURAL MEETINGS AND FIELD DAYS

Agricultural Meetings and Field Days	Gross farm income				Total No. (%)
	\$2,999 or less No. (%)	\$3,000- \$5,999 No. (%)	\$6,000- \$8,999 No. (%)	\$9,000 and over No. (%)	
Attendants	21 (8.2)	16 (6.3)	7 (2.7)	43 (16.8)	87 (34.0)
Non-attendants	89 (34.8)	33 (12.9)	12 (4.7)	35 (13.7)	169 (66.0)
Total	110 (43.0)	49 (19.1)	19 (7.4)	78 (30.5)	256 (100)

TABLE XLV

PERCENTAGE DISTRIBUTION OF NUMBER OF IMPROVED
ACRES BY RESPONDENTS' USE OF MAILS FROM THE DISTRICT
AGRICULTURIST AS A SOURCE OF AGRICULTURAL INFORMATION

Mails from District Agriculturist	Number of improved acres				Total No. (%)
	99 or less No. (%)	100-159 No. (%)	160-639 No. (%)	640 and over No. (%)	
Users	66 (25.8)	36 (14.1)	45 (17.6)	59 (23.1)	206 (80.5)
Non-users	28 (10.9)	11 (4.3)	5 (1.95)	6 (2.3)	50 (19.5)
Total	94 (36.7)	47 (18.4)	50 (19.5)	65 (25.4)	256 (100)

TABLE XLVI

PERCENTAGE DISTRIBUTION OF GROSS FARM INCOME BY RESPONDENTS'
USE OF MAILS FROM THE DISTRICT AGRICULTURIST AS A
SOURCE OF AGRICULTURAL INFORMATION

Mails from District Agriculturist	Gross farm income			Total No. (%)
	\$2,999 or less No. (%)	\$3,000- \$5,999 No. (%)	\$6,000 and over No. (%)	
Users	79 (30.9)	41 (16.0)	86 (33.6)	206 (80.5)
Non-users	31 (12.1)	8 (3.1)	11 (4.3)	50 (19.5)
Total	110 (43.0)	49 (19.1)	97 (37.9)	256 (100)

TABLE XLVII

PERCENTAGE DISTRIBUTION OF NUMBER OF IMPROVED ACRES
BY RESPONDENTS' USE OF FARM NEWSPAPER ARTICLES AS A
SOURCE OF AGRICULTURAL INFORMATION

Farm newspaper articles	Number of improved acres		Total No. (%)
	99 or less No. (%)	100 and over No. (%)	
Readers	80 (31.3)	159 (62.1)	239 (93.4)
Non-readers	14 (5.5)	3 (1.2)	17 (6.6)
Total	94 (36.7)	162 (63.3)	256 (100)

TABLE XLVIII

PERCENTAGE DISTRIBUTION OF GROSS FARM INCOME BY RESPONDENTS'
USE OF FARM NEWSPAPER ARTICLES AS A SOURCE
OF AGRICULTURAL INFORMATION

Farm newspaper articles	Gross farm income		Total No. (%)
	\$2,999 or less No. (%)	\$3,000 and over No. (%)	
Readers	96 (37.5)	143 (55.9)	239 (93.4)
Non-readers	14 (5.5)	3 (1.2)	17 (6.6)
Total	110 (43.0)	146 (57.0)	256 (100)

APPENDIX III

Animal Unit

+
ANIMAL UNIT

<u>One Animal Unit Equals</u>	OR	<u>Animal Unit Factor</u>
1 beef cow, bull or animal 2 years old or over		1 beef cow, bull or animal 2 years or over = 1.0
.75 dairy cows		1 dairy cow = 1.33
1.5 steers or heifers 1-2 years old		1 steer or heifer 1-2 years old = .66
4 calves under 1 year		1 calf under 1 year = .25
1 horse		1 horse 2 years or over = 1.0
2 horses 1-2 years old		1 horse 1-2 years = .5
7 ewes or rams		1 ewe or ram = .14
3 sows or boars		1 sow or boar = .33
5 hogs 200 lbs.		1 hog 200 lbs. = .2
10 feeder or weaner hogs		1 feeder or weaner hog = .1
72 chickens		1 chicken = .014
50 turkeys-breeding stock		1 turkey-breeding stock = .02
80 turkeys - raised		1 turkey - raised = .0125
25 geese		1 goose = .04
72 ducks		1 duck = .014

+
Source: Canada Department of Agriculture, Ottawa, Canada.

APPENDIX IV

Comparison of the results of simple and
Spearman Rho correlation coefficients

TABLE XLIX

COMPARISON OF THE RESULTS OF SIMPLE AND
SPEARMAN RHO CORRELATION COEFFICIENTS

Variables	Significant co- efficients with both S.C. and S.R.C.	Significant co- efficients with S.C.	Significant co- efficients with S.R.C.
Age	Father's education Number of years farming Job satisfaction Weeks worked off-farm 1966	-	Attitudes to change
Years of school completed	Wife's education Father's education Level of living Social participation Number of improved acres Gross farm income Farm value Visits to D.A.'s office Meetings and Field Days Mails from D.A. Newspaper articles	Net farm income Number of total acres Telephone calls to D.A.	-
Wife's education	Years of school completed Number of children Father's education Level of living Social participation Net farm income	Gross farm income Farm Radio/T.V. programs	Attitudes to change Farm value
Number of children	Wife's education Attitudes to change Net farm income	-	Mails from D.A.
Father's education	Age Years of school completed Wife's education Telephone calls to D.A.	Distance travelled for goods and services	Attitudes to change
Length of residence in the area	Mails from D.A.	-	Number of improved acres

Note: S.C. = Simple correlation
S.R.C. = Spearman RHO correlation

TABLE XLIX (continued)

Variables	Significant co-efficients with both S.C. and S.R.C.	Significant co-efficients with S.C.	Significant co-efficients with S.R.C.
Distance travelled for goods and services	Meetings and Field Days	Father's education	Degree of involvement in farming Job satisfaction Number of total acres Gross farm income Telephone calls to D.A.
Level of living	Years of school completed Wife's education Distance travelled for goods and services Social participation Net farm income Gross farm income Farm value Telephone calls to D.A. Meetings and Field Days Newspaper articles	Visits to D.A.'s office	Job satisfaction Number of total acres Mails from D.A.
Social participation	Years of school completed Wife's education Level of living Number of total acres Number of improved acres Gross farm income Farm value Weeks worked off-farm in 1966 Visits to D.A.'s office Farm visits by D.A. Meetings and Field Days Mails from D.A.	-	Degree of involvement in farming
Attitudes to change	Number of children	Months worked in 1966 Mails from D.A.	Age Wife's education Father's education Number of years farming Degree of involvement in farming Weeks worked off-farm in 1966 Farm visits by D.A. Meetings and Field Days.

TABLE XLIX (continued)

Variables	Significant co-efficients with both S.C. and S.R.C.	Significant co-efficients with S.C.	Significant co-efficients with S.R.C.
Number of years farming	Age Degree of involvement in farming Job satisfaction Gross farm income Farm value Weeks worked off-farm in 1966	-	Attitudes to change Net farm income Number of acres improved
Months worked in 1966	-	Attitudes to change	Meetings and Field Days
Degree of involvement in farming	Number of years farming Job satisfaction Gross farm income Weeks worked off-farm in 1966 Meetings and Field Days	-	Distance travelled for goods and services Social participation Attitudes to change Net farm income Number of total acres Number of improved acres Farm value
Job satisfaction	Age Number of years farming Degree of involvement in farming Weeks worked off-farm in 1966	-	Distance travelled for goods and services Level of living Gross farm income Farm value
Net farm income	Wife's education Number of children Number of improved acres Level of living Farm value Weeks worked off-farm in 1966 Meetings and Field Days	Years of school completed Number of total acres Gross farm income Visits to D.A.'s office Telephone calls to D.A. Farm visits by D.A.	Number of years farming Degree of involvement in farming

TABLE XLIX (continued)

Variables	Significant co-efficients with both S.C. and S.R.C.	Significant co-efficients with S.C.	Significant co-efficients with S.R.C.
Number of total acres	Social participation Number of improved acres Gross farm income Farm value Weeks worked off-farm in 1966 Visits to D.A.'s office Meetings and Field days	Years of school completed Net farm income Telephone calls to D.A.	Distance travelled for goods and services Level of living Degree of involvement in farming Mails from D.A.
Number of improved acres	Years of school completed Social participation Number of years farming Degree of involvement in farming Number of total acres Number of improved acres Farm value	Wife's education Net farm income	Distance travelled for goods and services Job satisfaction Mails from D.A. Newspaper articles
Gross farm income	Weeks worked off-farm in 1966 Visits to D.A.'s office Telephone calls to D.A. Farm visits by D.A. Meetings and Field days		
Farm value	Years of school completed Level of living Social participation Number of years farming Net farm income Number of total acres Number of improved acres Gross farm income Weeks worked off-farm in 1966 Visits to D.A.'s office Farm visits by D.A. Meetings and Field days	-	Wife's education Degree of involvement in farming Job satisfaction Visits to D.A.'s office Newspaper articles

TABLE XLIX (continued)

Variables	Significant co-efficients with both S.C. and S.R.C.	Significant co-efficients with S.C.	Significant co-efficients with S.R.C.
Weeks worked off-farm in 1966	Age Social participation Number of years farming Degree of involvement in farming Job satisfaction Net farm income Number of total acres Number of improved acres Gross farm income Farm value Meetings and Field days	-	Attitudes to change
Visits to D.A.'s office	Years of school completed Social participation Number of total acres Number of improved acres Gross farm income Farm value Telephone calls to D.A. Meetings and Field days Mails from D.A.	Net farm income Farm visits by D.A.	-
Telephone calls to D.A.	Father's education Level of living Number of improved acres Gross farm income Farm value Visits to D.A.'s office Farm visits by D.A. Meetings and Field days	Years of school completed Net farm income Number of total acres	Distance travelled for goods and services
Farm visits by D.A.	Social participation Net farm income Gross farm income Farm value Telephone calls to D.A. Meetings and Field days.	Visits to D.A.'s office	Attitudes to change

TABLE XLIX (continued)

Variables	Significant co-efficients with both S.C. and S.R.C.	Significant co-efficients with S.C.	Significant co-efficients with S.R.C.
Meetings and Field days	Years of school completed Distance travelled for goods and services Level of living Social participation Degree of involvement in farming Net farm income Number of total acres Gross farm income Farm value Weeks worked off-farm in 1966 Visits to D.A.'s office Telephone calls to D.A. Farm visits by D.A. Mails from D.A.	-	Attitudes to change Months worked in 1966 Number of improved acres
Mails from D.A.	Years of school completed Length of residence in the area Social participation Visits to D.A.'s office Meetings and Field days Farm Radio/T.V. programs Newspaper articles	Attitudes to change	Number of children Level of living Number of total acres Number of improved acres Gross farm income Farm value
Farm Radio/T.V. programs	Mails from D.A. Newspaper articles	Wife's education	-
Farm News-paper articles	Years of school completed Level of living Mails from D.A. Farm Radio/T.V. programs	-	Number of improved acres Gross farm income Farm value

APPENDIX V

Test of Goodness of Fit for Normal Distribution

Test of Goodness of Fit with data on Age

Step 1

Calculation of mean, (\bar{x}) and standard deviation, (S)

<u>Ranks</u>	<u>Ob. Frequencies</u>	<u>No. of respondents (X)</u>	<u>$\frac{X^2}{(1 \times 3)}$</u>
1	5	5	5
2	26	52	104
3	78	234	702
4	73	292	1168
5	50	250	1250
6	24	<u>144</u>	<u>864</u>
	$\Sigma X =$	977	$\Sigma X^2 = 4093$

$$\bar{X} = \frac{977}{256} = \underline{3.82}$$

$$S = \sqrt{\frac{256 (4093) - (977)^2}{256 (255)}}$$

$$= \underline{1.195}$$

Step 2. Calculation of Expected Frequencies

1	2	3	4	5	6
<u>Ranks</u>	<u>Class Boundaries</u>	<u>Z values</u> +	<u>Normal curve areas</u>	<u>Difference between Z values</u>	<u>Expected Frequency</u> *
	.5	-2.777	.497		
1				.023	5.88
	1.5	-1.941	.474		
2				.110	28.16
	2.5	-1.104	.364		
3				.258	66.04
	3.5	-0.267	.106		
4				.110	28.16
	4.5	0.568	.216		
5				.205	52.48
	5.5	1.405	.421		
6				.066	16.89
	6.5	2.242	.487		

$$+ Z = \frac{\text{Class boundary} - \bar{X}}{S}$$

* Expected Frequency = Difference between Z values x N

Step 3 Comparison of expected frequencies with observed frequencies using chi-square statistic (X^2)

$$X^2 = \sum \frac{(\text{Observed} - \text{Expected})^2}{\text{Expected}}$$

$$= 76.97$$

Note: The null hypothesis that the sample frequency distribution approximated the normal curve distribution was tested at the .01 level of significance. Degree of freedom = (N-3), where N = number of terms in the table (in this case 6) and 3 refers to the fact that the expected frequencies had to satisfy 3 conditions, namely: (1) the sum of the observed frequencies had to be equal to the sum of the expected frequencies, and (2) the mean and (3) standard deviation of the normal curve had to equal the mean and standard deviation of the observed distribution¹

Thus, the degree of freedom in this case is $(6-3) = 3$

$\chi^2 = 76.97$, d.f = 3, $p < .001$

Step 4 Conclusion

The test showed that the expected frequencies were significantly different from the observed frequencies, indicating that the distributions did not follow a normal curve, and hence, the null hypothesis was rejected.

1 John E. Freund and Frank J. Williams, Modern Business Statistics, Englewood Cliffs, N.J. Prentice-Hall, Inc. 1958, pp. 257-260.

Test of Goodness of fit with data on number of years Farming

Step 1

Calculation of mean, (\bar{X}) and standard deviation, (S) .

1	2	3	
<u>Ranks</u>	<u>Ob. frequencies</u>	<u>No. of Respondents (X)</u>	<u>X² (1 x 3)</u>
1	23	23	23
2	29	58	116
3	31	93	279
4	35	140	560
5	34	170	850
6	18	108	648
7	86	602	4214
		<hr/>	<hr/>
	$\Sigma X =$	1194	$\Sigma X^2 =$ 6690

$$\bar{X} = \frac{1194}{256} = 4.664$$

$$S = \sqrt{\frac{256 (6690) - (1194)^2}{256 (255)}}$$

$$= 2.096$$

Step 2 Calculation of Expected Frequencies

1	2	3	4	5	6
<u>Ranks</u>	<u>Class Boundaries</u>	<u>Z values</u>	<u>Normal curve areas</u>	<u>Difference between Z values</u>	<u>Expected frequency</u>
	.5	-1.990	.477		
1				.043	11.01
	1.5	-1.512	.434		
2				.086	22.02
	2.5	-1.033	.348		
3				.139	35.58
	3.5	-0.555	.209		
4				.177	45.31
	4.5	-0.076	.032		
5				.123	31.49
	5.5	0.402	.155		
6				.155	39.68
	6.5	0.880	.310		
7				.103	26.37
	7.5	1.359	.413		

Step 3 Comparison of expected frequencies with observed frequencies
using chi-square statistic (χ^2)

$$\chi^2 = 165.09$$

$$d.f = (N-3) = (7-3) = 4$$

$$\chi^2 = 165.09, d.f = 4, p < .001$$

Note: The null hypothesis that the sample frequency distribution approximated the normal curve distribution was tested at the .01 level of significance.

Step 4 Conclusion

The test showed that the expected frequencies were significantly different from the observed frequencies, indicating that the distributions did not follow a normal curve, and hence, the null hypothesis was rejected.