DOCUMENT RESUME

ED 036 770 AC 006 576

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TITLE A Study of Ontario Farmers' Use of Selected Technical Publications.
PUB DATE Feb 70
NOTE 10p.; Paper presented at the Adult Education Research Conference, Minneapolis, Minnesota, February 27-28, 1970

EDRS PRICE EDRS Price MF-$0.25 HC-$0.60
DESCRIPTORS *Farmers, *Individual Characteristics, *Publications, Research, Rural Extension, *Technical Reports, *Use Studies
IDENTIFIERS Canada, *Ontario

ABSTRACT

This study sought to determine the extent to which selected publications of the Ontario Department of Agriculture and Food were received by farmers in the Province on Ontario, Canada. Investigations were made of relationships between various social and demographic characteristics of respondents, and their receipt of these publications. A questionnaire was mailed to a randomly selected two per cent sample of Ontario farmers. Stratification by counties ensured farmer representation in each of the 54 counties comprising Ontario. A response rate of 46% yielded 894 completed questionnaires. One half of the respondents received none of three publications included in this study. A positive relationship was found between receipt of publications and the following characteristics of respondents: age, formal education, marital status, main source of income, size of farm, working status, commercial status, number of agricultural meetings attended, membership in organizations, childrens' membership in 4-H or Junior Farmer clubs, and district of residence in Ontario. (author/mf)

For Discussion Purposes

A STUDY OF ONTARIO FARMER'S USE OF SELECTED TECHNICAL PUBLICATIONS

by

Ian C. Bell and Donald J. Blackburn

Paper presented at the Adult Education Research Conference at Minneapolis, Minnesota, on Feb. 27th, 1970.

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Introduction

This study was designed to determine (1) the extent of receipt and use of publications of the Ontario Department of Agriculture and Food[1] by Ontario farmers, and (2) the relationships between receipt and use of publications and selected personal and social characteristics of respondents.

Background

Although approximately two million publications are distributed annually by the Ontario Department of Agriculture and Food, answers were not known to questions concerning receipt and effectiveness of these publications. With the existing rapid increase in agricultural technology, it is important that all forms of information dissemination to the farmers in Ontario be examined to ensure their effectiveness in making farmers aware of new ideas and practices.

Technical farming publications can be a useful aid in the education of the farming community. To be successful, however, the authors and distributors need to know what proportion of the rural population receives, reads and uses these publications. Background facts, such as age, education, income and other personal characteristics of both recipients and non-recipients of publications can be useful in assessing their future impact.

Studies on receipt and use of technical publications show varying results. In one survey, only six percent of farmers reported using agricultural bulletins as a source of information.2

A study in Ontario revealed similar results. Farmers ranked agricultural bulletins fifth in importance as sources of information, behind magazines, extension workers, salesmen, and friends or neighbours.3

However, when the effectiveness is viewed in relation to the cost of methods of teaching, agricultural bulletins appear in a somewhat better light. Studies in the United States over a number of years show that bulletins rank fourth behind news and radio stories, circular letters, and office calls respectively when ratio of practices adopted to costs is considered. 4 Similar studies showed that bulletins accounted for 8.5 percent of all practices adopted as the result of Extension influence.5

For publications to be effective as a teaching method to farmers, the latter must know of the existence of these publications, and also read them. A limited amount of Canadian research has focused on this area. In the United States, Sanders6 stated that the number of booklets published and distributed by the United States Department of Agriculture and County Agents rose from 7 million in 1930 to 52 million in 1962.

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1 These publication were: "Field Crop Recommendations for Ontario", Guide to Chemical Weed Control" and "Dairy Husbandry in Ontario".

2 Where Farmers Get Information. Agricultural Communications Report No. 14 University of Illinois, May 1963.

3 Jain, Navin C. The Relation of Information Source Use to the Farm Practice Adoption and Farmers' Characteristics in Waterloo County. M.S. Thesis. University of Guelph. September 1965. p.69.

4 Wilson, Meredith C. and Gallup, Gladys. Extension Teaching Methods, Extension Service Circular No. 495. United States Department of Agriculture, August 1955. p. 17.

5 Ibid. p.56.

6 Sanders, H. C. The Co-operative Extension Service Prentice-Hall Inc., New Jersey. 1966. p.211.

Other studies [1] indicated that 7 out of 8 persons receiving bulletins read them and about 3 out of 5 persons make use of the information which they contain. Farmers who requested bulletins were found to be more likely to use the information than if they received the bulletins in any other way.

A study of selected extension publications in Vermont[2] (U.S.A.) found that more than one third of respondents did not know these publications were available. It was found that 85 percent of respondents "read" at least one publication - "reading" in this case might range from merely skimming the publication to reading it in detail. Other findings of this study were:

1. Only 63 percent of respondents found the information they wanted.
2. Sixty-eight of those who read any publications used some of the information from at least one of them.
3. Eighty-two percent of those who found the information they wanted used this information.

The Vermont study found that high school graduates were more likely to be aware of and receive publications than non-high school graduates. Little difference was found in extent read and use of information made by varying levels of education. An older study reported by Wilson and Gallup indicated that the likelihood of bulletins received being utilized is 40 percent greater if the farmer had attended high school and if farm family members attended school beyond the 8th grade. [3]

Regan [4] in his study of dairy farmers found that four out of five respondents with at least some high school had received publications. Less than half of the respondents with Grade 8 or less had received publications. The same study also revealed a marked trend in receipt of publications as farm size varied. Seventy-four percent of farmers with more than 150 acres received publications as compared to only forty-four percent of farmers with less than 150 acres. Older respondents tended to receive fewer publications than younger respondents.

Hypotheses

The hypotheses tested in this study were:

1. There is no relationship between receipt of selected publications of the Ontario Department of Agriculture & Food and selected personal and social characteristics of respondents.

2. There is no relationship between extent to which a publication was read, and selected personal and social characteristics of respondents.

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1 Wilson, Meredith C. and Gallup, Gladys. op. cit. p.57
2 Report on Selected Extension Publications, The Vermont Publications Study Extension Service Circular 536, U.S.D.A. 1961.
3 Wilson, Meredith C. and Gallup, Gladys, op. cit. p. 57
4 Regan, William K., The Use of Information Sources by Perth County Dairy Farmers. M.Sc. Thesis, University of Guelph, 1968, p.53.

The personal and social characteristics of respondents included:

a) Chronological age
b) Ed ation
c) Marital status
d) Net family income
e) Main source of income
f) Size of farm
g) Working status (full-time or part-time)
h) Commercial status
i) Number of meetings attended during past year
j) Number of organizations belonged to
k) Childrens' membership in 4-H clubs
l) Childrens' membership in Junior Farmers
m) District of Ontario.

Procedures

Population & Sample

The data used in this study were obtained by drawing a two percent random stratified sample from a current list of total commercial and non-commercial farmers in the Province of Ontario. [1]

The sample was stratified on a county basis, with a total of 54 counties in the Province. A systematic random stratified sample was drawn by making a random start drawing a number between one and fifty, and every fiftieth name was then recorded.

This sampling procedure yielded a total of 2068 names. Of this sample, 132 respondents were found to be non-eligible (17 dead, 35 moved, 22 sold or non-farmers, and 58 retired) resulting in a total of 1936 eligible respondents. An overall response rate of slightly more than 46 percent was achieved, yielding 894 usable questionnaires. Refusals accounted for somewhat less than 2 percent, and 52 percent did not respond.

Survey Instrument

For the purposes of pre-testing the questionnaire, a four-page questionnaire (consisting of 40 questions) was mailed to a test sample of 30 farmers in one Ontario County. The questionnaire was then refined and printed in a two-page back-to-back format.

These questionnaires, together with covering letters on University of Guelph stationery and stamped return envelopes, were mailed to the sample in early May 1969. Reminder letters were sent 10 days later and two weeks later a further questionnaire and letter were mailed to each of approximately 1400 farmers, who had not yet responded, in attempt to increase the response rate.

Analysis

Data were coded, punched onto data-process cards, and then frequency distributions and cross-tabulations were performed through the facilities of the Institute of Computer Science at the University of Guelph.

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[1] For the purpose of this study, an agricultural holding of one acre or more, with sales of more than $2500. of products off the farm per year is considered to be a commercial farm.

A chi-square Test was used to determine whether or not a relationship existed between variables. The .05 level of significance was selected for testing the hypotheses. A corrected coefficient of contingency was computed in order to determine the degree of association when a statistically significant relationship existed between variables.

Findings

Receipt and Use of Three Publications

Data in Table 3 show that slightly, more than one half (51 percent) of respondents received none of the publications, while only seven percent received all three publications. Thirty-nine percent had received a copy of "Field Crop Recommendations for Ontario"; 39 percent received "Guide to Chemical Weed Control"; and nine percent received the publication "Dairy Husbandry in Ontario".

One-half of the respondents who received "Field Crop Recommendations for Ontario" indicated that they read most of it, 68 percent said they obtained the information they desired, one-quarter felt the publication was extremely valuable, and 71 percent suggested it was easy to read. Most of "Dairy Husbandry in Ontario" was read by 55 percent of respondents who received the publication, 58 percent found it contained the information they desired, one-quarter (27 percent) indicated it was extremely valuable, and two-thirds suggested it was easy to read. Nearly one-quarter of respondents were unaware of the availability of any of these publications.

One third (33 percent) of respondents indicated the Agricultural Representative (County Agent) as their main source of these publications, while somewhat less than one-quarter (23 percent) of respondents received them solely from commercial companies or by mail from the Ontario Department of Agriculture & Food.

Factors Related to Number of Publications Received

Data in Table 1 show the relationship between the number of publications received and various personal and social characteristics of respondents.

Age There was a relationship, significant at the .005 level, between age and number of publications received. A higher percentage of respondents in the age group 41-50 received one or two bulletins than either older or younger age groups.

Education The relationship between education and number of publications received was significant at the .001 level. The trend toward increasing receipt with education was disturbed only by respondents in the "high school" category, who received less publications than either less or more educated respondents.

Marital Status Married respondents received significantly more publications than non-married respondents. The chi-square value for this relationship was .01. The influence of a wife, or of children, who might bring publications home from school or neighbours, could explain this relationship.

Net Family Income Number of publications received was found to be significantly related to income at the .025 level. As income increased, so did receipt of two publications. However, no trend was noticed in the receipt of one or three bulletins. It is likely that lack of progressiveness, indicated by lower income, would manifest itself in one way by lower receipt of publications.

Main Source of Income There was a significant relationship at the .001 level between main source of income and number of publications received. Respondents whose income was predominantly non-farm were much less likely to receive farm publications than respondents who got their income from crop or crop-livestock combinations. The low proportion of livestock operators receiving one or two publications might be explained by the fact that two of the three publications were applicable to crop enterprises.

Size of Farm A significant relationship was found to exist at the .001 level between size of farm and number of publications received. There was a noticeable trend showing increasing number of respondents receiving publications as farm size increased. This might be explained by the speculation that more progressive farmers are likely to have bigger farms (e.g. by consolidation) or by surmising that smaller farms are more likely to have livestock as the main enterprise - two of the three publications are applicable only to crops.

Working status and Commercial Status The relationships between either of these two variables and number of publications received were significant at the .001 level. Full-time and commercial farmers tended to receive more publications than part-time and non-commercial farmers. This could be due to greater interest on the part of the former on getting new information than non-commercial or part-time operators, who might farm as a hobby or as a retirement occupation.

Number of Meetings Attended and Membership in Organizations As number of meetings attended or number of organizations belonged to increased, so did receipt of publications. These relationships were significant at the .001 level. Farmers who show interest in learning by attending field-days, meetings, etc. and by joining organizations, are more likely to be interested in learning by obtaining technical publications. Attendance at meetings or field-days and membership in organizations is likely to increase exposure of farmers to publications, which might explain the increased receipt by these categories of farmers.

Childrens' Membership in Junior Farmers or 4-H Clubs Relationships were found to exist between childrens' membership in Junior Farmers and 4-H clubs, and number of publications received, at the .001 and .005 levels respectively. More than half of respondents, with no children in these clubs, received no publications, as against slightly over one third whose children were members. Receipt of one, two or three publications was noticeably higher by respondents whose children were members of these clubs.

It might be speculated that children who belong to these clubs would bring these and other publications back from meetings.

District of Ontario There was a significant relationship, at the .001 level, between district of Ontario and number of publications received. The highest proportion of non-recipients was found in Eastern Ontario. Perhaps farmers in these areas are more conservative?

Factors Related to Use of a Publication [1]

Data in Table 2 summarize the relationship between use of a publication and personal and social characteristics of respondents.

No significant relationships were found between variables although some trends were noted in the data.

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[1] The publication used was "Field Crop Recommendations for Ontario".

TABLE 1

PERCENTAGE OF ONTARIO FARMERS WITHIN VARIOUS DEMOGRAPHIC CATEGORIES BY NUMBER OF PUBLICATIONS RECEIVED

Demographic Categories	No. of Publications Received				Total	
	None	One	Two	Three	%	No.
Age: Younger than 40	52%	14	26	8	100%	217
41 - 50	41%	18	35	6	100%	233
51 - 60	55%	15	22	8	100%	245
Older than 60	59%	18	18	5	100%	190
Education: 8 yrs. or less	59%	17	19	5	100%	482
9 - 12 yrs.	42%	17	33	8	100%	281
High school graduates	55%	9	24	12	100%	55
Some college	19%	7	62	12	100%	42
Marital Status: Married	49%	16	27	8	100%	788
Single, Widowed, Separated	68%	12	18	2	100%	96
Net Family Income: Less than $3,000	56%	17	20	7	100%	284
$3,000 - $6,999	48%	14	29	9	100%	294
$7,000 - $14,999	46%	18	33	3	100%	181
$15,000 or more	43%	16	37	4	100%	49
Main Source of Income: Livestock combination	53%	16	23	9	100%	446
Crop combination	39%	18	41	2	100%	139
Livestock & Crop combination	39%	16	33	12	100%	134
Non-farm	73%	9	13	5	100%	79
Non-farm & farm	61%	22	14	3	100%	49
Size of Farm (Acres): 1 - 50	71%	12	15	2	100%	148
51 - 100	64%	18	13	5	100%	223
101 - 150	46%	14	34	6	100%	128
151 - 200	39%	18	34	9	100%	142
201 - 250	44%	18	28	10	100%	37
251 - 300	35%	15	37	13	100%	69
301 - 350	50%	21	25	4	100%	24
351 - 400	29%	8	46	17	100%	24
More than 400	24%	15	50	11	100%	54
Working Status: Full-time	43%	18	30	9	100%	557
Part-time	63%	13	20	4	100%	279
Commercial Status: Commercial	42%	18	32	8	100%	615
Non-commercial	72%	13	32	4	100%	213
Number of Meetings Attended: None	64%	17	15	4	100%	606
One	22%	13	58	7	100%	135
Two or more	22%	16	47	15	100%	93
Membership in Organizations: None	64%	15	18	3	100%	521
One	39%	17	33	11	100%	185
Two or more	19%	18	46	17	100%	139
Children's Membership in Junior Farmers: Members	36%	19	34	11	100%	61
Non-members	51%	17	27	5	100%	666
Children's Membership in 4-H Clubs: Members	36%	19	31	14	100%	144
Non-members	53%	15	26	6	100%	583
District of Ontario: Southern	46%	14	35	5	100%	285
Western	54%	17	23	6	100%	278
Central	49%	20	25	6	100%	137
Eastern	60%	12	16	12	100%	147
Northern	49%	20	20	11	100%	46

TABLE 2

PERCENTAGE OF ONTARIO FARMERS WITHIN VARIOUS DEMOGRAPHIC CATEGORIES BY EXTENT TO WHICH "FIELD CROP RECOMMENDATIONS FOR ONTARIO" WAS READ

Demographic Categories	Amount of Publication Read		Total	
	Most	Some	%	No.
Age: Younger than 40	48%	52	100%	82
41 - 50	49%	51	100%	109
51 - 60	49%	51	100%	85
Older than 60	47%	53	100%	53
Education: 8 yrs. or less	50%	50	100%	140
9 - 12 yrs.	52%	48	100%	130
High School graduates	35%	65	100%	23
Some college	42%	58	100%	31
Method Preference for Learning:				
Regular classes	36%	64	100%	22
Short course or lecture series	43%	57	100%	53
Attend a workshop	40%	60	100%	10
Take a correspondence course	43%	57	100%	14
Consult an Ag. Rep. or Specialist	48%	52	100%	86
Study a book or pamphlets on own	60%	40	100%	40
Read in newspapers or magazines	43%	57	100%	23
Follow a series on T.V.	52%	48	100%	25
Marital Status: Married	48%	52	100%	308
Single, widowed, separated	57%	43	100%	21
Net Family Income: Less than $3,000	48%	52	100%	88
$3,000 - $6,999	53%	47	100%	127
$7,000 - $14,999	41%	59	100%	75
$15,000 or more	46%	54	100%	24
Main Source of Income: Livestock combination	49%	51	100%	171
Crop combination	51%	49	100%	65
Livestock & crop combination	47%	53	100%	66
Non-farm	58%	42	100%	12
Non-farm and farm	45%	55	100%	11
Size of Farm (Acres): 1 - 50	56%	44	100%	25
51 - 100	55%	45	100%	56
101 - 150	43%	57	100%	58
151 - 200	47%	53	100%	66
201 - 250	48%	52	100%	23
251 - 300	53%	47	100%	38
301 - 350	30%	70	100%	10
351 - 400	40%	60	100%	15
More than 400	51%	49	100%	35
Working Status: Full-time	50%	50	100%	248
Part-time	44%	56	100%	77
Commercial Status: Commercial	48%	52	100%	286
Non-commercial	49%	51	100%	37
No. of Meetings Attended: None	52%	48	100%	153
One	45%	55	100%	85
Two or more	48%	52	100%	63
Membership in Organizations: None	54%	46	100%	134
One	47%	53	100%	91
Two or more	42%	58	100%	95
Children's Membership in Junior Farmers: Members	42%	58	100%	33
Non-members	48%	52	100%	254
Children's Membership in 4-H Clubs: Members	47%	53	100%	72
Non-members	47%	53	100%	215
District of Ontario: Southern	46%	54	100%	119
Western	43%	57	100%	97
Central	67%	33	100%	52
Eastern	49%	51	100%	45
Northern	42%	58	100%	19

TABLE 3

FREQUENCY AND PERCENTAGE DISTRIBUTION OF RESPONDENTS BY VARIOUS FACTORS RELATING TO USE AND READERSHIP OF THREE SELECTED PUBLICATIONS

Selected Factors	Publications					
	"Field Crop Recommendations for Ontario"		"Guide to Chemical Weed Control"		"Dairy Husbandry in Ontario"	
	No.	%	No.	%	No.	%
Amount read						
Most	162	49%	143	44%	38	55%
Some	149	45	155	48	26	38
A bit	21	6	28	8	5	7
Total[a]	332	100%	326	100%	69	100%
Was information obtained?						
Yes	224	68%	237	72%	38	58%
Partly	100	30	88	27	27	41
No	5	2	3	1	1	1
Total[a]	329	100%	328	100%	66	100%
Value of publications						
Extremely valuable	83	25%	110	34%	17	27%
Fairly valuable	232	70	203	63	45	70
Of little value	17	5	11	3	2	3
Total[a]	332	100%	324	100%	64	100%
Knowledge of subject before receipt						
Knew most	91	27%	63	19%	14	21%
Knew some	193	58	184	56	40	59
Knew a bit	45	13	65	19	13	19
Knew none	5	2	14	6	1	1
Total[a]	334	100%	326	100%	68	100%
Ease of Reading						
Easy	235	71%	205	64%	45	66%
Moderate	96	29	112	35	22	32
Difficult	1	*	5	1	1	2
Total[a]	332	100%	322	100%	68	100%
Ease of Understanding						
Easy	133	62%	109	52%	26	50%
Moderate	77	36	89	43	23	44
Difficult	6	2	10	5	3	6
Total[a]	216	100%	208	100%	52	100%
Length of publications						
Too long	17	5%	18	6%	5	8%
Just right	289	88	283	87	57	86
Too short	23	7	23	7	4	6
Total[a]	329	100%	324	100%	66	100%
Need of more or less detail						
More	100	31%	108	34%	23	38%
Just right	202	63	192	60	34	54
Less	9	3	9	3	3	4
Don't know	10	3	9	3	3	4
Total[a]	321	100%	318	100%	63	100%

[a]Totals show number of respondents who received publications, and does not include those whose feelings on the above aspects were not obtained.