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Relationship of Value Orientation and Communication with Acceptance of New Agricultural Practices in Rural Egypt

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ABSTRACT

This study was directed toward understanding of the time lag between scientific discovery and actual use of new developments in agriculture. It contributes not only to the practical implications for action programs in the promotion of rural community development and improvements in agriculture, but also to the theory of technological and social change. Four selected value and communication factors were used as independent variables. A practice adoption score was used as the dependent variable. Three control variables were introduced in the analysis of the relationship between variables. As far as the present study was concerned, endorsed value orientation of venturesomeness was a promoting value for the acceptance of new agricultural practices, while conservatism was a prohibiting value. The impact of radio farm programs was not direct but indirect as related to practice adoption. It appears that agricultural news was read since those who subscribe in farm newspaper and magazines also accept more improved farm practices. Finally, cosmopolite personal source of information seems to be the best predictor of farmers' acceptance of new agricultural practices.

INTRODUCTION

The study of diffusion has helped to understand the time lag between scientific discovery and actual use of new ideas and practices in agriculture. Many specialists have summarized in various ways research findings on factors associated with acceptance of new practices (6,12). These research findings suggest that personal, economical, cultural, and social variables are important factors associated with the adoption behaviour of farmers. However, there seems to be less degree of support for any

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generalizations advanced from available research studies. One of the reasons would be the existence of different and diversified nature of various factors impining upon farmers' acceptance of new agricultural practices in different countries and cultures.

Further research is needed especially in new developing countries such as Egypt to explore more empirical evidences, which may contribute to further testing of many of the generalizations already advanced, based primarily on research studies in Western Cultures.

OBJECTIVES AND METHODOLOGY

The problem

The ideas and beliefs of man and source of information he has to contact set limits on what he can do at a given time and place, and very often on how it may be done. Culture is also a partial determent of what will be perceived, and how. Therefore, farmers with different cultural backgrounds and situations may have different perception with respect to acceptance of new agricultural practices. Cultural isolation in terms of communication exposure or contact with the outside world makes farmers more resistant to change.

Values are related to the farmers' adoption behaviour as either prohibiting or promoting factors. New farm techniques may not be compatible with the ideas, values, and beliefs of the farm operator, hence, will be resisted even though they produce certain benefits. Other farm techniques which are compatible with the culture will be accepted more quickly. Certain values and beliefs were found positively associated with acceptance of new farm techniques, while other values were found negatively related to practice adoption (6,12,15).

Fliegel (3); Hoffer and Stangland (4); Ramsey *et al.* (10) found a positive and significant association between acceptance of new practices and values such as achievement, efficiency, practicality, belief in science, profit-orientation, and progressiveness. On the other hand, security orientation, fear of debt, traditionalism, and conservatism were found negatively associated with acceptance of new farm techniques. Bose (1) reported that his study findings supported the hypotheses that the value orientation of a people has a relation to technological change, and that people with tradition-oriented folk-type values were more resistent to change than people with urban-oriented values. On studying the relationship between family values and the acceptance of improved farm practices, Wilkening (16) concluded that value placed upon owning farm free of debt was negatively associated with practice adoption to a significant degree, and that value placed upon home equipment and conveniences was positively associated with the adoption of all changes in farm technology.

Farm operators obtain different types of information from different types of communication sources. Communication sources refer to mass media, including newspapers, farm magazines, radio, television, and agricultural agencies such as the agricultural extension services and vocational agricultural departments. Exposure to mass communication media such as radio farm program, farm magazines, and extension bullitens has been considered an important factor in the acceptance of new agricultural practices.

Deutschmann (2); Fliegel (3); Para-Sandoval (9); Rogers (13) found that farmers

with a high exposure to mass media tended to accept more new farm techniques than those with a low exposure. However, Lindstrom (5); Maffie (7); Marsh and Coleman (8); Wilkening (16) found that there was no significant correlation between innovativeness and communication media exposure.

Attention has been also directed to the differences between personal versus impersonal communication and between localite versus cosmopolite sources of information. Research findings suggest that impersonal and/or cosmopolite sources of information are more important than personal and/or localite sources for relatively earlier adopters of innovations than for later adopters, and that earlier adopters utilize information sources that are in closer contact with the origin of new ideas than later adopters (12).

Objectives

It has been established that certain values would promote the motivation and action of farm operators in terms of acceptance of new agricultural practices, while other values may be prohibiting factors. It has been also established that farm operators obtain different types of information from different communication sources.

In this study of value orientation and communication as related to acceptance of new agricultural practices among farm operators in rural Egypt, selected values and communication sources were considered. The objectives of this study were to identify dominant value orientation prevailed among farmers in rural Egypt, to determine different sources of communication farmers used to obtain new farm information, and to test the association between endorsed value orientation and used communication sources with acceptance of new agricultural practices.

Scope and method

A random sample of 266 farm operators were selected for interviewing among those farmers who had grown rice in Sylla village of Fayoum province. Eighty-four (32%) were between the ages of 40 and 49, ninety-five (35%) were younger than 40, and eighty-seven (33%) were over 50 years. Forty-four (16%) had seven years or more of education, ninety-six (36%) had six years, and only thirty-four (13%) had between one to five years of education. The remaining ninety-two (35%) had none education at all. Twenty-eight (10%) reported they had a farm more than 10 feddans (one feddan = 4200 m^2). One hundred (38%) reported a farm size between 5 and 9.99 feddans, while eighty-two (31%) had a farm between 2 and 4.99 feddans. Only fifty-six (21%) reported a farm size of less than two feddans.

The measure of practice adoption used for this study was similar in its basic construction for the one that has been used by this researcher in a previous study (11). Farm operators were grouped into two categories according to their practice adoption score. One hundred and twenty-six (47%) had a low level, while one hundred and forty (53%) had a high level of practice adoption. This measure was used as the dependent variable.

The selected dominant values orientation were venturesomeness, efficiency, and conservatism. The selected communication sources were radio, farm newspaper and magazines, and personal information sources. These selected factors were used as independent variables.

The relationship between variables was explored by cross-tabulating the dependent with the independent variables, using contingency tables. Three control variables: age, education, and farm size were introduced in the analysis of the relationship between variables. The Kendall's Tau was used to measure the degree of association. The .05 level of significance was used to judge the reliability of the association (14).

Value orientation

For information about farm operators' value orientation, a brief description of the behaviour of three hypothetical farmers was presented to the respondents. The following value-connoting statements were read and explained to the respondent, who was asked in what ways he was like or dislike this man, or with whom he identified himself from among these three hypothetical farmers.

1. Statement A: Mr. Ahmed
   Mr. Ahmed seldom pays any attention to new developments and progress in farming practices and materials, repeating what he did the pervious year. He used to declare: 'I have been managing my farm in this way for many years back without any fatal failures or mistakes'.
2. Statement B: Mr. Ali
   Mr. Ali, when the growing season comes, tries to check if new and better agricultural chemicals are available. He relies on extension workers and other agency personnel to a great extent in order to get new information and farming materials.
3. Statement C: Mr. Mohamed
   Mr. Mohamed successfully utilizes his farm by growing certain medical herbs and special crops on some of his farm.

These three projectives-type statements are connoting three dominant value orientation: conservative, efficient, and venturesome. In these models, it is the pattern of behaviour and its implications, not the economic connotations of the statement, which is important. No objective tests were made to determine if the farmer did or did not have the value he endorsed.

The 266 farm operators were grouped into three categories according to their endorsed values: (1) conservative group, (2) efficient group, and (3) venturesome group (Table 1).

Communication variables

The three communication variables selected for this study were: radio possession, farm newspaper and magazines subscription, and personal information-seeking sources. The 266 farm operators were grouped into two categories of possessors and non-possessors of radio sets. They also were grouped into two categories of subscribers and non-subscribers of farm newspaper and magazines. According to personal information-seeking sources, the 266 farm operators were grouped into three categories: neighbours and/or friends, successful farm operators, and agency personnel (Table 1).

Table 1 Number and percentage of farm operators according to value orientation and communication variables

Variable		Number (N)	Per cent (%)
Value orientation			
Conservative		104	39
Efficient		126	47
Venturesome		36	14
	Total	266	100
Radio possession			
Non-possessor		88	33
Possessor		178	67
	Total	266	100
Farm newspaper & magazines subscription			
Non-subscriber		229	86
Subscriber		37	14
	Total	266	100
Information-seeking source			
Neighbours and/or friends		90	34
Successful farm operators		106	40
Agency personnel		70	26
	Total	266	100

THE FINDINGS

Hypothesis I. Value orientation of venturesomeness and efficiency is positively associated with practice adoption, and value orientation of conservatism is negatively associated with practice adoption

Analysis of the data in Table 2 indicates the existence of a positive and significant relationship between value orientation and practice adoption. The relationship is a moderate one with a Kendall's Tau of .38. Only 31% of the farm operators who endrose a conservative value orientation have a high level of practice adoption, compared to 69% of those who endorse an efficient value orientation, and 81% of those who endorse a venturesome value orientation. When age, education, and farm size are controlled, only education affects the relationship. For farm operators who are more educated, the relationship is reduced somewhat (Tau = .26), while it is increased (Tau = .46) for those with less education (Table 3).

Hypothesis II. Radio possession is positively associated with practice adoption

Data in Table 2 indicate that there is no significant relationship between practice adoption and radio possession. When age, education, and farm size are controlled, none of these control variables affects the relationship.

Table 2 Percentage distribution of farm operators according to level of practice adoption and selected value orientation and communication variables

Variable	Number (N)	Level of practice adoption Low	High	Per cent (%)	Tau	P
Value orientation	—	—	—	—	.38	.001
Venturesome	36	19	81	100		
Efficient	126	31	69	100		
Conservative	104	69	31	100		
Radio possession	—	—	—	—	.02	N.S.
Possessors	178	44	56	100		
Non-possessors	88	45	55	100		
Farm newspaper & magazine subscription	—	—	—	—	.18	.001
Subscribers	37	22	78	100		
Non-subscribers	229	48	52	100		
Personal information seeking sources	—	—	—	—	.21	.001
Agency personnel	70	31	69	100		
Successful farm operators	106	41	59	100		
Neighbors and/or friends	90	59	41	100		

Table 3 Relationship between selected value orientation and communication variables and level of practice adoption controlling for age, education, and farm size

Value orientation and communication variables	Age (years)			
	39 or less		40 and more	
	Tau	*P*	*Tau*	*P*
Value orientation	.38	.001	.37	.001
Radio possession	−.04	N.S.	.05	N.S.
Newspaper & magazines subscription	.06	N.S.	.25	.001
Information-seeking sources	.31	.001	.14	.01
Value orientation and communication variables	**Education (years)**			
	5 or less		6 and more	
	Tau	*P*	*Tau*	*P*
Value orientation	.46	.001	.26	.001
Radio possession	.05	N.S.	−.05	N.S.
Newspaper & magazines subscription	.15	.01	.14	.01
Information-seeking sources	.11	.05	.29	.001
Value orientation and communication variables	**Farm size (feddans)**			
	4.99 or less		5 and more	
	Tau	*P*	*Tau*	*P*
Value orientation	.40	.001	.33	.001
Radio possession	.01	N.S.	.08	N.S.
Newspaper & magazines subscription	−.04	N.S.	.27	.001
Information-seeking sources	.24	.001	.16	.01

Hypothesis III. Farm newspaper and magazines subscription is positively associated with practice adoption

Data in Table 2 indicate that there is a positive and significant, but low relationship (Tau = .18) between practice adoption and farm newspaper and magazines subscription. When age, education, and farm size are controlled respectively, the relationship increases for older farmers (Tau = .25). The positive and significant disappears for younger farmers. The relationship is slightly decreased for both categories of high and low educated farm operators. The relationship is increased for larger farm operators (tau = .27), while it disappears for the smaller farm operators (Table 3).

Hypothesis IV. The use of cosmopolite source of personal information is positively associated with practice adoption

Analysis of the data in Table 2 indicates that the relationship between practice adoption and personal information-seeking sources is moderately low with a Kendall's Tau of .21. Only 41% of the farm operators who depend primarily on neighbours and/or friends for specific farm information have a high level of practice adoption, compared to 59% of those who depend primarily on successful fellow farm operators, and 69% of those who depend primarily on agency personnel. When age and education are controlled respectively, the relationship increases for younger farm operators (Tau = .31) and those who are more educated (Tau = .29), while it decreases for older farm operators (Tau = .14) and those who are less educated (Tau = .11). Farm size has no effect upon the relationship between practice adoption and information-seeking sources (Table 3).

SUMMARY AND CONCLUSIONS

The present study has revealed that the hypothesis that value orientation of venturesomeness and efficiency is positively associated with practice adoption and value orientation of conservatism is negatively associated with practice adoption is supported (Tau = .38). The relationship remains about the same level when age, education, and farm size are controlled.

The hypothesis that radio possession is positively associated with practice adoption is not supported. None of the three control variables affects the relationship between radio possession and practice adoption.

There is a positive and significant relationship between farm newspaper and magazine subscription and practice adoption (Tau = .18). The relationship does not hold for the younger farm operators and for those with smaller farms.

The use of cosmopolite sources of personal information is positively associated with practice adoption (Tau = .21). This association remains when the control variables are introduced. However, for those farmers who are younger and who are more educated, the relationship is somewhat higher than for those who are older and who are less educated.

The following conclusions are based on the findings of this study:

1. Value orientation of the farmers is associated with practice adoption with highest correlations of all relationships. Acceptance of new agricultural prac-

tices is highest for those farmers who are venturesome, while those who have a conservative orientation are least in practice adoption.

2. Radio possession is not found significantly related to acceptance of new agricultural practices among the farmers in the sample where a majority of them own radio sets. There seems to be no apparent influence of radio possession upon farmers' practice adoption. Apparently possession of radio sets does not necessarily mean that they are used for listening to farm programs. Moreover, it is probable that farmers hear radio broadcasting in the context of leisure time relaxation.
3. In contrast to radio farm programs listening, farm newspaper and magazines subscription is positively related to acceptance of new agricultural practices. This does appear to mean that agricultural news is read since those who subscribe also accept more improved farm practices.
4. Since those farmers who depend primarily upon institutionalized sources of information showed the highest percentage of practice adoption, cosmopolite personal source of information seems to be the best predictor of farmers' acceptance of new farm practices.

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العلاقة بين الاتجاه القيمى والاتصال وبين قبول المستحدثات في الممارسات الزراعية في ريف مصر

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المستخلص

تهدف هـــذه الدراسة إلى التعرف على الفارق الزمنى بين الكشف العلمي للمستحدثات الزراعية وبين استخدام جموع الزراع لها . وقـــد كانت متغيرات الدراسة لهذا البحث هي الاتجاه القيمى ، وتملك أجهـزة الاذاعة المسموعة والاشتراك في الصحف والمجلات الزراعية ، والمصادر الشخصية للمعلومات كمتغيرات تمثـل الاتجاه القيمى والاتصال . كما استخدم مقياس كمي للممارسات الزراعية يمثل متغير قبول هذه الممارسات .

وقد أسفرت نتائج هذا البحث الآتي :

١) يوجد ارتباط بين الاتجاه القيمى للزراع وبين ممارستهم الزراعية . وقد وجد أن هذا الارتباط هو الاعلى بالنسبة لبقية العلاقات المدروسة . كما ظهر أن الزراع الاكثر مغامرة هم الاكثر قبـولا للممارسات الحديثة بينما كان المحافظون منهم أقلهم تبنيا للمستحدثات الزراعيـة .

٢) لا يوجد ارتباط ذو دلالة احصائية بين امتلاك أجهـزة اذاعة مسموعة (راديو) وبين قبول الممارسات المستحدثة .

٣) يوجد ارتباط موجب بين الاشتراك في الصحف والمجلات الزراعية وبين قبول المستحدثات الزراعية .

٤) هناك ارتباط ايجابي بين الاعتماد على المصادر الشخصية الخارجية للمعلومات وبين قبول المستحدثات الزراعية .