

The Trends of the Farmers of DhiQar Governorate Towards Emulating others in their Adoption of Improved Agricultural Practices in Protected Agriculture and its Relationship to some Personal Factors

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Abstract

This study aims to identify the trends of the farmers of Dhi Qar Governorate towards simulating their fellow farmers who adopt covered agriculture and its relationship to some independent personal factors, which are (age, educational level, agricultural possession, income, leadership role), and the research sample was chosen by 75% of the community Al-Gharaf sub-district, which numbered 60 out of a total of 80 farmers in the sub-district, who had adopted this agriculture, with 44.5% of the total community of Dhi Qar Governorate (Jaber, Al-Ziyadi 2013,25,127-151). The data were collected by means of a questionnaire prepared for this purpose, and the correlation, percentages, arithmetic averages, weighted average, t-test were approved. The results showed a clear increase in the respondents' tendency towards emulating their colleagues in adopting improved agricultural practices. The results also showed a positive correlation at 0.01 level between the trend and each of the income and agricultural holdings level. And there is a negative association relationship at 0.01 level between orientation and each of age and educational level. While the results did not show a significant relationship between the direction and the leadership role that the individual plays in society, the researcher has reached some conclusions and recommendations that can be used by the agricultural extension regarding covered agriculture .

Introduction and Research Problem

Agricultural extension seeks in its work to bring about changes in knowledge and skills and thus to bring about desirable changes in their attitudes, given that the educational extension process aims to change or amend farmers' agreements towards adopting the new scientific techniques in all aspects (Al-Jadiri 1991,22). Also, the concept of a new idea is any thoughts or behavior or something new that differs qualitatively and qualitatively from the ideas, behavior, or things that already exist in the sense that the new idea is something new to the individual and its adoption is one of the manifestations of an unaltered lifestyle.

There are four basic elements related to the issue of spreading and adopting new ideas, and these elements are:

1. Renewal, innovation or new technology
2. Channels of Communication

3 - The social structure of the environment of the system

4 .The period of time necessary for deployment, or what is called the element of time. (Dawood Amin, 2010).

Trends represent a learned reaction that results from an individual's past observations or experiences or exposure to others' trends and trends are internal and may be a large degree complete by the person or may be apparent to others through apparent behavior (Certo, 1997,30). In general, trends have three main components as stated below (Muhammad Jasim 2004,p. 201).

- 1..Knowledge information and beliefs about a certain thing,
2. Emotional positive or negative feelings towards a certain thing
- 3 . A behavioral decision or desire to behave in a certain way towards a certain thing.

The individuals' attitude are the result of the beliefs and values he carries (Al-Ta'i, 2002, 189). In the seventies of the last century, the experiment of greenhouses in al-Khalis was introduced to Iraq by a Bulgarian company with an area of 50 dunums (Al-Abdali 2002,135). And that green houses are considered one of the important elements of plant production, given what countries are facing in terms of an increase in the number of populations with limited agricultural areas, therefore it is necessary to turn to vertical expansion in the agricultural field through plastic houses (ICARDA, 2005,3).

Among the factors that have led to the rapid spread of innovations are:

- 1 .Use of technological means
- 2 .Providing adequate primary needs at the right time
- 3.Using certain quantities of production requirements such as seeds, soil fertilizers and pesticides.

The research results indicated that there are:And the process of spreading these new agricultural ideas or practices from their original sources (researchers) to farmers through agricultural guides. (Agricultural Extension Department 2018).

The period of adoption that the individual needs to move from the stage of hearing the new idea until the complete adoption of it is usually measured in days, months, or years, as individuals differ in the speed of their reception of the new thought and that depends on several factors related to the individual's experience and social values, and the extent of the individual's knowledge about those ideas , And the early adopters realize the new idea faster than others, in addition to that they need less time to move to the adoption stage (Hammoud, 1985,53).

1. A time gap between the emergence of the new practice haw idea and the farmers' full adoption of it.
2. There are groups of farmers who accept new ideas faster than others.

The process of adoption is a mental process during which the individual hears about a new idea for the first time until its final adoption. It is also a series of steps or stages in which the individual takes up from the time he learns about the new practice until he decides to adopt it.

Among the important factors, which the researcher believes in its psychological and social importance, is the simulation of other individuals affected by them, as local individuals are affected by their peers who preceded them in the process of adopting ideas and innovations because of their great role in accelerating their adoption process. Trying to emulate others in the process of adopting new ideas is a kind of informal learning, and it is considered within the core of agricultural extension work, which is an educational process that is not formalized, where the adoption curve shows how a small part of the local community are those who are proactive in adopting the new ideas and being affected by them They are the initiators, while the rest of the community is affected or imitated by them in the adoption process (Mohieddin et al., 2003,153).

The productive development in the agricultural field depends on a scientific methodology to transfer the new technologies to the farmers. This requires a close relationship between agricultural extension and scientific research in order to be able to contribute to the development and increase of agricultural production by transferring these new technologies to guide farmers on how to apply them according to the correct scientific method. The scientific innovation is the production of vegetables in greenhouses.

Scientific research has been active to solve the problem of food security, so the greenhouse has Ensuring production throughout the **emerged as one of the solutions to face two problem:**

1. Production throughout this year especially in the winter season
2. Intensifying production in the area unit to make use of the land (the production component) in the best possible way (Dr. Ghassan Yaqoub and others 2010).

The use greenhouses in the production of vegetable crops is one of the modern technological methods that follow agricultural intensification, and areas of land can be provided for cultivation.

Protected agriculture is characterized by many important features, including:

1. Protecting crops from unfavorable weather conditions.
2. Protection from insect and pathological injuries.
3. Continuity of producing some vegetable crops throughout the year to face the steady increase of the population, through the integration of traditional open agriculture throughout the year, which leads to the provision of the market need for some vegetable crops throughout the year to face the steady increase of the population through the integration between traditional open agriculture and protected agriculture. The extension of the year leads to the provision of the domestic market need for some vegetable crops.

4. To obtain a high-quality product

5.High agricultural and economic returns, as vegetable crops are produced early or in the traditional off-season, and consequently, the open cultivation of this product, which is sold at reasonable prices, will not be competitive to increase marketing opportunities.

6. Increasing the productivity of the area and water unit.

7.Increasing the efficiency of water use for the area unit, as protected agriculture depends on the drip irrigation system, which leads to the provision of large quantities of water that can be used.

8- Reducing the use of pesticides in protected agriculture compared to those grown in open fields due to the integrated control, as well as the use of doors and nets to prevent the entry of insects and others.

9.Preserving the environment by reducing the loss or leaching of water and fertilizers and limiting the use of pesticides.

From all the above, the following questions came to the mind of the researcher two important questions:

1.Is the increasing adoption of protected agriculture due to their influence and imitation of other farmers who preceded them in adopting it ?

2.Is there a correlation between the peasants 'attitudes towards emulating their colleagues and a number of independent variables ?

The protected cultivation also prevents the effect of wind on the plants, which increases the (Fahim, 2018) amount of evaporation.

Purpose of Research

This study aims to:

1. Identify the level trend of the farmers of Dhi Qar governorate towards emulating their other colleagues who adopt protected agriculture.
2. Identify the correlation between the level of the peasants' trend and each of age, educational level, income, farm tenure, leadership role.

Method of Data Collection

The data were collected from the Al-Gharaf side in DhiQar governorate because it represents a large percentage, as it acquired more than a third of the total plastic houses in the governorate, which is approximately 34.5% of the total agricultural houses, where there are 80 owners, 114 plastic houses, and the geographical patch is about 24 dunums or 44.55% (Ziyadi, 2013, p. 25).

The percentage of 75%, i.e., 60 farmers, were taken as a random sample of research, and the data were collected by means of a questionnaire that was prepared for this purpose, and it was

excluded due to the inaccuracy of its answers, as the statistical treatment of 52 forms was excluded.

The simple correlation, arithmetic means, standard deviation, percentages, weighted average, t-test determined the independent factors:

1. **Age**-The farmer's age is an important and necessary factor, as it may be an influence on the dependent variable, and it has been measured by the number of years to the nearest Gregorian year of his birth.
2. **Educational level**-It was measured according to the following levels (illiterate, reads and writes, holds a primary school certificate, holds a middle school diploma, holds an institute certificate, holds a bachelor's degree or above.

For the purpose of measurement, the following weights were given to these levels (1,2,3,4,5,6,7) respectively, so that the educational level ranges between (1-7) degrees.

3. **Income**-It is the amount that the respondent receives from the revenues estimated in Iraqi dinars, on the assumption that the income forms the basis on which the standard of living is based.
4. **Agricultural tenure**-Three standard items were used to measure them, and three response levels were given for each of its paragraphs, as follows:

An exchange owner (3) degrees- an agricultural contract with the Ministry of Agriculture (2) two degrees, - an agricultural contract with a farmer (including) for part of the production or an amount of money (1) one degree.

5. **Leadership role**-Some individuals are distinguished by their desire to lead others and the breadth of their social contacts. Seven questions have been adopted in its measurement, the answer to each of which is yes or no, so a weight of two degrees is given if the answer is yes and one degree if the answer is no.

Accordingly, the numerical values for the leadership role are limited to between (7-14) degree.

It was measured as follows:

- 1 .Are you a member of the municipal council? Yes No.
- 2 .Are you a member of the board of directors of an agricultural association? Yes No
- 3 .Are you a clan elder? Yes No.
- 4- Are you sheikh in the thigh? Yes, no .
- 5 .Are you the Mukhtar of a village? Yes No .
- 6 .Are you consulted in resolving disputes that occur in the region? Yes No.

7 .Are you a descendant of Hashemi? Yes No.

The data were collected through a questionnaire form through a personal interview and the form consisted of two parts, the first part included the independent factors which are age, educational level, income, agricultural tenure, leadership role. The second part of the questionnaire was a tool for measuring the level of trend It consists of 20 expressions, 10 of them are positive and 10 others are negative, and a graduated scale of three levels was used and they are agreed, neutral, disagree.

The following weights were assigned (1,2,3) for positive expressions levels, and weights (1,2,3)for negative expressions levels. The sum of the weighted scores for the trend was 60 degrees for the perfect positive trend and 20 degrees for the full negative direction.

Statistical Methods

Frequencies, percentages and arithmetic mean were used in describing the respondents after distributing them into categories for each of the research variables, and the standard deviation SD was used to estimate the deviation of numerical values from the arithmetic mean, and the simple correlation and t-test were used to identify the relationship between the independent variables and the trend towards simulating adoption Also, the weighted mean was used to know the weight of each statement from the trend scale expressions and it is calculated as follows:

$$\text{Weighted mean} = v1 * 3 + v2 * 2 + v3 * 1 / n.$$

T1: Duplicates of paragraphs agree

T2:paragraphes duplicate neutral

T3: Duplicates of paragraphs do not agree

N: the total number of the research sample.

Results and Discussion

First, with regard to the first goal, which is the trend towards emulating others in adopting protected agriculture, and to identify the correlative l relations between the trend towards imitating others, the results showed that the highest numerical value obtained by the respondents was (56) out of (60) and the lowest numerical value was (25)) With a mean of (54) and a standard deviation of (4.1), the degrees of the trend were divided into three categories (low, medium, high) after adding and subtracting the standard deviation to them.

The division of the respondents according to the categories of the trend towards emulating other farmers who adopted protected agriculture.

<i>Trend levels</i>	No.	%
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Low 50 and low	16	26.7
Average 51-58	19	31.7
High 59 and above	25	41.7
Total	60	100

S.D =4.1

54=X

It was found that (41.7) of the respondents had their attitudes towards simulating their colleagues who adopted the protected agriculture and was within the high trend category, while the low trend category reached (26.7) as in Table (1)

As for the expressions that reflect the trend, they are arranged in descending order according to the weighted mean.

Table 2

Serial No.	No. form	Phrases	The weighted mean
1	5	The increased income motivated me to protected agriculture	2.95
2	13	Being influenced by other farmers who made a good profit is considered a good and profitable thing	2.90
3	15	Being influenced by educated farmers in their work in protected me the risk and loss	2.85
4	9	implementing the new ideas leads to feeling at ease	2.5
5	6	With my experiences that I inherited from my father and my grandparents, I do not need to be convinced to do what others do	2.4
6	1	If I hesitate and feel confused, I follow people who are better than me to try it,	2.3
7	19	Even if my experience is good in the agricultural field, I always look for friends who have tried some improved agricultural practices and I am affected by them.	2.3

8	17	I always consult my friends who have tried new and improved practices and get good results to do the same	2.2
9	10	I always consult my friends who have tried new and improved practices and get good results to do the same	2.1
10	7	I do not favor the work of other farmers who are affected by all the new agricultural practices	2
11	4	Leaders in my community have an impact on others, of which I am	1.98
12	14	It is not necessary to be influenced by the work of others, even if they are in their work better than me	1.95
13	16	Every farmer has his convictions in his work	1.92
14	20	I don't want to be the same to others and be influenced by what they do	1.91
15	12	I am not satisfied when I work like others did, even if I realize that they are good	1.88
16	2	Follow the experiences I have accumulated from my family and do not care what others do, even if they are distinguished	1.85
17	3	The application of the good practices applied by others will give me a good status in the community	1.80
18	11	The most effective thing is to follow the people with high social status and follow them and work as they did	1.75
19	8	I am not less than people with high status and I don't need to follow their mistakes	1.70
20	18	It is not easy to apply as other people did as there are mistakes even though they were successful	1.65

From Table No. (2) it becomes clear to us that the phrases with a positive trend towards emulating other farmers in adopting improved practices in protected agriculture had occupied phrases with sequences in the form (1,5,9,13,15,19), and their weighted averages were higher. Of the statements with the sequence (2,8,12,14,16,18,20), and this gives the impression that the respondents tended to simulate the application of the improved practices of their fellow farmers who had applied these practices before them and proved successful. This is confirmed by the arithmetic mean of the trend towards simulating farmers who adopt protected agriculture, where

the percentage of positive expressions was (63.7%), while negative expressions represented the percentage (18.4%). As for neutral expressions, the percentage was (17.9%).

1-The relationship of trends towards simulating others adopting protected agriculture and age

The results showed that the highest age of the respondents was (68) years and the lowest age was (18) years, with an average of (33.3) years

(And when classifying the respondents into categories, they were as follows, as in Table 3)

Table 3

Seria l No.	Age	No	%	Rate trend	Correlati on coefficient	Determinati on coefficient r2	The compute d value	Level of morale
1	Less 24	13	25	50	0.52-	0.27	4.49	0.01
2	25-30	11	21	48				
3	31-37	10	19	46				
4	38-43	9	17	42				
5	44-49	5	10	39				
6	Above 50	4	8	31				
total		52	10					

X=33.3

S.D=4.8

The results indicate that most of the respondents fall into the first category (24 or less) at a rate of (25%), while the lowest percentage was (8%) within the category (50 or more), and this may be due to the fact that the peasants surveyed are young and have positive trends towards adopting Scientific techniques developed by following their fellow farmers who preceded them in following the methods developed in protected agriculture, and to find out whether there was a correlation relationship between expatriate attitudes and the ages of the respondents, a simple correlation coefficient was used and its value was (-0.52), which indicates the existence of an

inverse relationship between the two workers It is a significant relationship at the level of (0.01) according to the value of t that was (4.49), and to determine the strength of the relationship, the coefficient of determination was used, so its value was (0.27), which indicates that the relationship between the two factors is of the moderate type, Which indicates that the relationship between workers is of a moderate type, and this means that the younger the farmer, the greater his tendency to emulate others in adopting improved practices for protected agriculture, as it indicates that the young peasant looks at simulating others in their application of improved practices young peasant looks at simulating others in their application of improved practices as the correct way and more. It is effective in adopting new ideas, unlike the elderly who are proud of their personalities and potentials.

2 . The relationship of trends towards simulating other farmers who adopt protected agriculture and educational level.

The results showed that the highest numerical value for the educational level was (7) degrees, the lowest value was (2) degrees, the arithmetic mean (3.5) and a standard deviation (1.2). The trends were determined for each class of the educational level and the (numbers of respondents as in Table (4).

Table 4

Serial No.	Education level	No	%	Rate trends	Correlation coefficient	Determination coefficient r2	The computed value	Level of morale
1	Illiterate	8	15.4	12	0.72	0.52	6.81	0.01
2	Read write	12	23	9.3				
3	Primary	9	17.3	8.7				
4	Average	8	5.4	6.2				
5	preparatory	6	11.5	5.9				
6	Institute	5	10	5.6				
7	college	4	8	3.7				

Total		52	100					
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The above table indicates that the percentage of (23%) of the respondents, who are a group (read and write), was the highest category, followed by the (primary) category with a percentage of (17.3%), and the (college) category formed the lowest rates (8%) of the total sample. That the highest rate of trends within the categories of respondents was the (illiterate) category of (12) degrees, followed by the (read and write) category with an average of (9.3) degrees, while the lowest level of attitudes was the (college) category.

To find out whether there is a correlation between the level of the trend towards imitating others and the educational level, it became clear that the value of the correlation was (0.72), which indicates the existence of an inverse relationship between the two factors. Towards simulating others and the educational level and at the level of significance 0.01, and to determine the strength of the correlation, the coefficient of determination was used, r^2 , and its value was (0.52). The learner has positive attitudes through the promoter that he possesses, in addition to the fact that he considers emulating others may be something that is deficient in his personality.

The relationship of trends towards simulating others adopting protected agriculture and income

The average income was (16,700) million dinars, and the lowest income for the respondents was (2,800) million dinars, and the highest income was (32,500) million dinars. And when the respondents were classified into five categories as in Table (5).

Table 5

Distribution of researchers according to income groups and their relationship to the level of trends towards imitating others.

Serial No.	Income categories Million/	No	%	Rate trends	Correlation coefficient r	Determination coefficient r^2	The computed value	Level of morale
1	Less 3	4	7.7	5.6	0.32	0.10	3.02	0.01
2	4 -7	10	19.2	7.4				
3	8 -11	16	30.8	8.3				
4	Average	8	5.4	6.2				

5	More than 16	13	25	10.8				
Total		52	100					

X=16.700

S.D=750.26

The above table indicates (5) that the highest percentage of researchers was in the category (8-10) million dinars, followed by the percentage of researchers in the category (16) million or more, whose percentage was (25%), and the lowest percentage was within the category (3) million or less . The highest rate of trends towards emulating others was (10.8) degrees within the category (16) million or more, and the lowest trend towards simulation was (5.6) degrees within the category (3) millions or less. To find out if there is a correlation between the two simulation variables and income . The simple correlation coefficient was used, and its value was (0.32), and this indicates the existence of a direct correlation relationship between the two factors, which is a significant relationship at the level of (0.01) according to the value of t that was (3.02). This indicates that the relationship between workers is of a weak type. This indicates that the greater the income, the greater the trend towards simulating adoption, which helps the high income to obtain access to agricultural supplies as well as the application of new scientific technologies.

The relationship of the farmers trends towards emulating others in adopting protected agriculture and agricultural tenure:

The results showed that the average agricultural holding was (15.6) dumdum, where the smallest holding was (5) durum, and the largest holding was (37) dumdum.

Table No 6

The distribution of respondents according to the size of agricultural holdings and its relationship to the trend towards simulating adoption.

Serial No.	Income categories Million/	No	%	Rate trends	Correlati on coefficie nt r	Determinati on coefficient r ²	The compute d value	Leve l of mor ale
1	Less 9	7	13.4	5.9	0,52	0..27	4.18	0.01
2	10.13	9	17.3	7.2				

3	14.17	14	26.9	9.4				
4	18.21	10	19.2	10.7				
5	22.25	6	11.5	11.1				
6	26.29	3	5.8	12.3				
7	More than 30	3	5.8	13.4				
Total		52	100					

X=15.6

S.D=5.9

Table No. (6) indicates the highest percentage of the researchers, which is (26.9), was in the category (14-17) dumdums, followed by the category (18-21) dumdums, and the lowest percentage was (5.8) within the two categories (26-29) and (30 or more) dumdums, and the highest rate of trend towards simulating adoption reached (13.4) degrees, which was within the category (30 or more) durum. It indicates the existence of a positive correlation relationship between the two workers and at the level of significance (0.01) according to the calculated value of t, where its value was (4.18). The agricultural area increased, the more it tended to emulate others in adopting protected agriculture.

The relationship of farmers 'trend s towards emulating others in adopting protected agriculture and the leadership role

The study showed that the average leadership role is (8.2) degrees and a standard deviation (0.8) and that the highest numerical value was (9) degrees, and that the lowest value was (7) according to a scale ranging between (7-14) degrees, as in Table (7).

Table No 7

The numbers and percentages of researchers s according to the leadership role categories and their relationship to the trend towards emulating others in adopting protected agriculture.

Serial No.	Income categories Million/	No .	%	Rate trends	Correlati on coefficie nt r	Determinati on coefficient r ²	The compute d value	Leve l of mor ale
1	Less 26	4	7.6	4.3	0.15	0.2	0.83	0.01

2	17-32	5	9.6	5.2				
3	33-38	7	13.5	6.5				
4	39-44	9	17.3	8.6				
5	45-50	13	25	10.2				
6	More than 51	14	27	13.3				
Total		52	100					

X =8.2

8 S. D= 0.

To find out whether there is a correlation relationship between the two variables above, the simple correlation coefficient was used, and its value was (0.15), which indicates the existence of a direct correlation relationship, but it is not significant according to the value of the t whose value is calculated (0.83), while the value of the determination coefficient was (0.02) which indicates The existence of a correlation relationship between the two workers is very weak, and this means that I do not enter the leadership role and the trend towards simulating adoption, as many farmers have a leadership level in their local community, but at the same time they do not have a directional level towards emulating others in their adoption of protected agriculture.

Conclusion

- 1.Young farmers were more likely than the elderly to emulate others in adopting protected agriculture, and this may be due to the fact that the tendencies of the elderly were more established, as well as their adherence to the experiences accumulated by the parents and those who preceded them and with the passage of time that led to that.
- 2.The farmers who had relatively high incomes had a good relationship with the trend towards emulating others with the adoption of protected agriculture.
- 3.The relationship between the trend towards simulating the adoption of protected agriculture and agricultural tenure is strong, as the acquisition certainly leads to an increase in the capital, as the land represents a paid component in the adoption process.
- 4.The relationship between the leadership role and the trend towards emulating others in adopting protected agriculture was expansive, but it was not intangible, and this might be due to the individuals' normalization of their inherited experiences and expertise.

Recommendations

1. Facilitating the spread of protected agriculture in Dhi Qar governorate, as the cities of southern Iraq lag behind the central and northern governorates of Iraq, which have come a long way in this field through the policy of providing farmers and farmers with homes and protected areas and the requirements required by protected agriculture and providing more support from the government and the agricultural extension agency.

2. Increasing extension programs and field days and displaying the successful results in order to popularize this experience through the various agricultural extension programs.

3. Working on training and developing skills for open people and gaining them confidence from their local communities to facilitate the process of adopting such improved practices.

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