

## Trends of Graduate students – College of Agriculture and Forestry – University of Mosul towards the working in agricultural extension

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### Abstract

This research aimed to attitudes of graduates of college of forestry and agriculture –university of mosul towards working in agricultural extension in general, to measure their attitudes in every item and to know the correlation between attitudes of graduates and independent research variables (age, academic qualification gender, work status, current residence desire to work in agricultural extension).

Total number of graduates in research area was (375) graduates of college of forestry and agriculture – university of Mosul from 2017-2024. A random sample representing (40%) of society (150) was chosen from same time period. To collect data, a two parts questionnaire was done, first part: included some relative independent variables (age, academic qualification, gender, work status, current residence, desire to work in agricultural extension). Second part: included scale of graduates' attitudes to work in agricultural extension with (26) items (13) positive and likewise negative. Results showed that attitude of subjects to work in agricultural extension was moderate and decreasing , whereas graduates had positive attitudes towards (I 'd rather not work in agricultural extension, a job in an office is better for me than agriculture and agricultural extension, agricultural extension doesn't suit rural youths). Results showed moral correlation between attitudes of graduates towards working in agricultural extension and the following variables ( age, academic qualification, current residence, desire to work in agricultural extension).

The main result researchers recommend necessity to enhance attitudes of graduates of college of forestry and agriculture to work in agriculture by opening their ideas of importance of working in agricultural sector and its benefits to begin similar studies in other colleges of agriculture in other governorates under the same title , to know the attitudes of graduates in general about working in agriculture. Related sides should focus on graduates of colleges of agricultural engineering by providing them job facilities, urge graduates to pass the torch of working in agricultural sector.

**Keywords:** Trends, Agriculture, extension, working, students

## Introduction

Agricultural extension is one of important pillars of sustainable rural development, its vital mediator between research centers and farmers, the party that provides modern inventions and techniques, provide necessary technical support to enhance agricultural production, and use resources effectively. Witnessing contemporary agricultural challenges (Climate change, retardation of soil, scarcity of water, and weak rural infrastructures) all that intensified importance of agricultural extension as a strategical tool to enhance food security, support social and economic stability of rural societies. All these circumstances lead many countries to adopt institutional reforms, develop extension systems to be more able to meet needs of farmers, more attractive for qualified young staff specially graduates of colleges of agriculture [1]. Agricultural extension occupied basic role in food security and sustainable rural development. It's the link between academic knowledge produced in universities and research centers and real needs of farmers on ground within accelerated ecological and economical challenges within last decade – such as climate change, retardation of water resources, soil salinization, roller coaster of inputs and outputs, agricultural extension took central stage as a strategical center to increase flexibility of agricultural systems, raise efficient use of resources. Thus attitudes of graduates of colleges of forestry and agriculture towards working in agricultural extension isn't a mere case of appointment, rather its directly linked with ability of rural societies to adopt original and sustainable agricultural practices [2,3]. With expansion of role of agricultural extension, becoming complex knowledge and technical systems requires

communication skills, analyse problems, resource management, and coordination

with local societies, need emerged to study attitudes of graduates towards enrolling into agricultural extension. Occupational attitudes is one of factors influencing working in certain place. Such attitude is the result of accumulation of number of educational training skills, social and economical values, personal motives as well as fantasies of graduates about nature of job its future and occupational growth [4].

One of most important transformational factors in agricultural extension is digitalization of techniques, applications of digital agriculture, electronical platforms of advice, remote senses systems and satellite images are used for precise diagnose of problems and give advice based on data. This change doesn't contribute only in raising efficiency of agricultural extensions but also make it more serious for young categories of graduates with digital skills and look for job gathers between technological knowledge and real applications. Researches from 2023-2025 shows that integrating digital ingredients in programs of agricultural extension increases interns' satisfaction, improves acceptance levels within farmers. Empirical evidences showed that successful approach to enhance attitudes of graduates towards agricultural extension requires multi-dimensional interventions, update curriculums, include methodological field training, increase digital skills, create clear occupational routes with work incentives, enhance farmers' acceptance for extension programs by adopting social participation. Moreover, there is a desperate need for longitude studies measuring effect of these interventions on decisions of graduates

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throughout time to enable policy makers to evaluate efficiency of programs and redesign them to correspond to changes [5,6].

Empirical evidence shows that successful approach to alter attitudes of graduates towards extension requires multidimensional interventions like updating curriculums, integrate academic field train, build digital skills, make clear occupational routes with incentives, enhance farmers' acceptance for extension programs via social sharing as well as longitude studies to measure these interventions on decisions of graduates through time to enable policy makers to evaluate efficiency of programs and redesign them in away that suits changes [7].

International reports say that attracting youths to work in agricultural extension is a challenge faced by both developed and developing countries. Many graduates recline to work in agricultural extension due to prejudices of weak incentives, limited promotion chances , hard field labor, fogginess of occupational roles in some agricultural facilities. In return , other studies state that graduates with good practical training or participated in field activities whilst studying or had an idea about extension programs , showed tangible positive attitude to work in this field [8].

On the other hand , report of sustainable agricultural development of international monetary fund (IMF ) showed that focusing on youth in extension services is an important base to raise quality of production, enhance agricultural innovation. Report also state that graduates have cognitive and technical abilities that coincide with digital changes in extension like using GPS, smart climate applications, e-marketing. So it becomes a priority to

study graduate's occupational attitudes to develop appointing policies and build abilities of agricultural facilities [9].

Within modern educational trends, agricultural colleges are demanded to reconsider its academic programs to qualify graduates able to meet the needs of market of extensional work via enhancing communication skills, enlist field training , provide specialized extension programs and rural development. Recent study shows that level of contempt of students on extension programs and training chances is directly connected to kind of their attitudes to work in agricultural extensions [10].

Generally speaking, understanding attitudes of graduates of colleges of forestry and agriculture towards agricultural extension is a major step to know points of strengths and weaknesses in preparing agricultural staffs, to fortify strategies to attract youths into agricultural extension and ensure providing rural societies with qualified persons able to contribute in sustainable agricultural development [11,12]. Students are the hope of every nation and its tool to renovate itself , a mean to develop aspects of its life. So, civilized nations put great efforts to nourish and rase them regardless of time and money. Vitality of any society is measured through what its students own of sound attitudes towards knowledge [12].

### **Research Objectives**

- 1- know attitudes of graduates of college of forestry and agriculture -university of Mosul to work in agricultural extension, generally speaking.
- 2- Measure attitudes of graduates in every research item.
- 3- Know correlation between attitudes of graduates and independent research variables (age, academic qualification,

gender, work status, current residence,

## Methods of Research

### 1- Research society and Sample:

The graduates (375) from college of forestry and agriculture -university of Mosul from 2017-2024 to be society of research. Random sample representing (40%) of total society (150) fall within allocated time.

### 2- Prepare research Tool (Questionnaire):

To collect data, a two parts questionnaire was prepared:

**First;** A number of relative independent variables of subjects (age, academic qualification, gender, work status, current residence, desire to work in agricultural extension).

**Second:** scale of attitudes of graduates of (26) items with (13) positive and likewise negative.

### 3- Measuring Variables:

#### - Measuring of independent variables:

- **Age:** measured in years when collecting data.
- **Academic qualification:** measured through the following: bachelor in agriculture (1 degree ), master (2 degrees ), doctorate (3 degrees )
- **Gender:** measured through: male (coded 1 ) and female (coded 2)
- **Work status:** measured via: 9 employed, unemployed) graded (1, 2) respectively.

desire to work in agricultural extension).

- **Current residence :** measured via : countryside (graded 1 ) and city dweller (graded 2).
- **Desire to work in agricultural extension:** greatly desire ( ), moderate ( ) not very interested ( ).
- **Measuring of dependent variable:**

Attitudes of graduates of college of forestry and agriculture – university of Mosul to work in agricultural extension via triple answering alternatives ( agree , neuter, don't agree ).

Positive alternatives were graded as follows (agree 3 points ) , (neuter 2 points ) and (don't agree 1 point ) and vice versa for negative items.

Reliability and stability:

After obtaining draft of research tool, in both fields and items , it passed a panel of experts in agricultural extension and psychology to ensure its linguistic and academic safety were some items were rewritten.

As for way to divide subjects' attitudes , researchers used range method , the same to divide research's independent variables.

### 4- Collecting data:

After setting final form of questionnaire, all data were collected in May 2025, registered, categorized and analyzed via the following statistical means: percentage, arithmetic means, standard deviation, Pearson conjunction factor, and Spearman - Brown conjunction factor.

**Results and Discussion**

**Firstly: know attitudes of graduates of college of forestry and agriculture -University of**

Results showed that highest score was (78) and least was (30) with an average

**Table (1) Categorizing subjects based on their Attitudes towards working in Agricultural Extension in General**

| Percentage % | Number | Categories      |
|--------------|--------|-----------------|
| 26,67%       | 40     | 30-45 (low)     |
| 53,33%       | 80     | 46-61 (medium ) |
| 20%          | 30     | 62-78 (high )   |
| 100%         | 150    | Total           |

Table (1) shows that highest subjects fell in moderate category (46-61) with (53,33%) while least percentage was in high category (62-78) with (20%). This may be the result of most graduates didn't roll out their sleeves in field

**Mosul towards working in agricultural extensions in general:**

of (54). Subjects were categorized as shown in table (1).

work in agricultural sector. Thus neglect role of agricultural extension in agricultural development. So they have weak attitude towards working in agricultural extension.

**Secondly: Measure attitudes of subjects in every research item:**

Table (2) arranges research items based on arithmetic means of responses of subjects.

**Table (2) Arrange research items in Descending order according to Arithmetic Means of Responses of Subjects.**

| Arithmetic means | item                                                                       | No. |
|------------------|----------------------------------------------------------------------------|-----|
| 2,90             | I prefer to stay away from working in agricultural extension               | 1   |
| 2,85             | Working in an office is better than agriculture and agricultural extension | 2   |
| 2,83             | Working in agricultural extension is not for rural youths                  | 3   |
| 2,80             | Working in agriculture and agricultural extension is out of date           | 4   |
| 2,72             | Working in agricultural extension raise your status                        | 5   |
| 2,70             | I am not embarrassed when I say I work in agricultural extension           | 6   |
| 2,69             | Working in agriculture and agricultural extension is a renovating job      | 7   |
| 2,68             | Working in agriculture provides simple life                                | 8   |
| 2,65             | I work in agriculture and agricultural extension because                   | 9   |

|      |                                                                                                       |    |
|------|-------------------------------------------------------------------------------------------------------|----|
|      | of absence of other options                                                                           |    |
| 2,61 | Agricultural job in countryside takes me away from troubles associated with city                      | 10 |
| 2,51 | Working in agricultural extension makes you used to idleness                                          | 11 |
| 2,50 | Working in agricultural extension doesn't take me away from my main job                               | 12 |
| 2,48 | Working in agricultural extension suits intellectuals                                                 | 13 |
| 2,47 | Working in agriculture and agricultural extension is of no less important than other jobs             | 14 |
| 2,46 | I prefer working in agricultural extension even with small salary                                     | 15 |
| 2,45 | Working in agricultural extension leads to poverty                                                    | 16 |
| 2,30 | I want to move to city to get away from agricultural work and extension                               | 17 |
| 2,23 | Working in agricultural extension connects me with farmers                                            | 18 |
| 2,18 | Working in agriculture and agricultural extension takes all my time                                   | 19 |
| 2,11 | Who works in agricultural extension is a closed-minded person                                         | 20 |
| 2,7  | Working in agricultural extension suits all persons of all ages                                       | 21 |
| 2,5  | Who works in agricultural extension stays a nerd                                                      | 22 |
| 2,3  | Working in agricultural extension doesn't give me a chance to travel to other regions                 | 23 |
| 1,4  | Society sees farmers and agricultural extension people with an eye of respect and appreciation        | 24 |
| 1,3  | Working in agricultural extension familiarize youths with responsibility                              | 25 |
| 1,2  | Working in agriculture and agricultural extension doesn't give me a chance to travel to other regions | 26 |

Table (2) shows that top tree items were ( prefer to getaway from agricultural extension, office job is better than agriculture and agricultural extension, working in agricultural extension isn't for rural youths). meaning that graduates have positive attitude towards working in agricultural extension. as for down three items: (working in agriculture and agricultural

extension doesn't give me a chance to travel to other regions, working in agricultural extension familiarize youths with responsibility, society views farmers and agricultural extension workers with value and respect) Measuring that subjects have negative attitudes in subjects of the items which lead to negative results

considering working in agricultural extension.

**Third: know correlation between attitudes of subjects towards working in agricultural extension and research's independent variables:**

**1- Age:** results showed that oldest (30) years. Subjects were categorized graduate of sample was (36) and as shown in table (3). youngest was (25) with an average of

**Table (3) Categorizing researchers according to Age And its relationship with their Attitude to Work in agricultural Extension**

| Pearson simple conjunction factor | Percentage% | number | Categories (year) |
|-----------------------------------|-------------|--------|-------------------|
| *0,046                            | 33,33%      | 50     | 25-28 (low)       |
|                                   | 46,67%      | 70     | 29-32 (medium)    |
|                                   | 20          | 30     | 33-36 (high)      |
|                                   | 100         | 150    | Total             |

Table (3) shows that moderate category (29-32) scored highest percentage (46,67%) while low category (25-28) scored (33,33%). Results showed positive moral relation between attitudes of graduates to work in agricultural extension and age. Pearson

simple conjunction factor (r) (\*0,046) morally significant at level of (0,05). Meaning that older graduates have more positive attitude towards working in agricultural extension than youngest due to acquired experience and their urge to work in agricultural extension.

**2- Academic qualification:** Subjects were categorized according to their

academic qualifications as shown in table (4):

**Table (4): Categorizing subjects according to their academic qualification and its Relation towards their attitudes to Work i agricultural Extension.**

| Spearman rank conjunction factor | Percentage% | number | Categories                             |
|----------------------------------|-------------|--------|----------------------------------------|
| *0,004                           | 73,33%      | 110    | Bachelor of agriculture Sciences (low) |
|                                  | 16,67%      | 25     | Master in agriculture (medium)         |
|                                  | 10          | 15     | Doctorate in agriculture (high)        |
|                                  | 100         | 53     | Total                                  |

The table (4) shows that subjects with highest percentage was (bachelor of agricultural sciences) scoring (73,33%) while the least was (doctorate ) with

(10%). Results showed no positive morally significant relation between attitudes of graduates towards working in agricultural extension and academic qualification.

**3- Gender:** Subjects were categorized according to gender and its relation with

attitudes towards working in agricultural extension as shown in table (5).

Table (5) Categorizing subjects according to gender and its Relation towards working in agricultural Extension

| Spearman rank conjunction factor | Percentage% | number | Categories (year) |
|----------------------------------|-------------|--------|-------------------|
| *0,007                           | 60%         | 90     | Males             |
|                                  | 40%         | 60     | Females           |
|                                  | 100         | 150    | Total             |

Table (5) shows that highest number of graduates was males (60%). Results showed no morally significant relation was found between attitudes of subjects to work in agricultural extension and gender.

Spearman rank conjunction factor was (0,007) immoral. Meaning that whether males or females graduates , their attitudes towards working in agricultural extension is the same.

**4- Work status:** Subjects were categorized based on their work status as shown in table (6):

Table (6) Categorizing respondents based on work Status and its Relation with attitude towards working in Agricultural Extension.

| Spearman rank conjunction factor | Percentage% | number | Categories |
|----------------------------------|-------------|--------|------------|
| 0,045                            | 53,33%      | 80     | Employed   |
|                                  | 46,67%      | 70     | Unemployed |
|                                  | 100         | 150    | Total      |

Table (6) shows that highest category was (employed ) with (53,33%). Morally significant relation was found between subjects' attitudes towards working in agricultural extension and work status. Spearman rank conjunction factor was (0,045) immoral. Meaning that work status of subjects

doesn't affect their attitude towards working in agricultural extension.

**5- Current residence:** Subjects were categorized according to current residence as shown in table (7).

Table (7) Categorizing subjects Based On Current Residence And Their Attitudes Towards Working In Agricultural Extension

| Spearman rank conjunction factor | Percentage% | number | Categories (year) |
|----------------------------------|-------------|--------|-------------------|
| *0,070                           | 20%         | 30     | Rural dweller     |
|                                  | 80%         | 120    | City dweller      |
|                                  | 100         | 150    | Total             |

Table (7) shows that highest number of subjects was city dwellers with (80%). Results also showed positive morally significant relation between attitudes of graduates to work in agricultural extension

and current residence. Spearman rank conjunction factor was (0,070) moral at level of (0,05) of significance. Meaning that residence of subjects affects greatly on changing his attitude towards working in

agricultural extension, because rural dwellers have limited work options.

**6- Desire to work in agriculture:** Subjects were categorized according to their desire to work in agriculture as shown in table (8).

Table (8) Categorizing subjects according to their desire to work in agriculture and its Relation to their attitudes towards working in agricultural Extension

| Spearman rank conjunction factor | Percentage% | number | Categories      |
|----------------------------------|-------------|--------|-----------------|
| *0,008                           | 33,333%     | 50     | Low desire      |
|                                  | 46,67%      | 70     | Moderate desire |
|                                  | 20          | 30     | High desire     |
|                                  | 100         | 150    | Total           |

Table (8) shows that highest percentage of subjects was the moderate (46,67%) while least was high desire with (20%). Results showed positive morally significant relation between attitudes of subjects to work in agricultural extension and desire to

work in agriculture. Spearman rank conjunction factor was (0,008) moral at level of (0,05). Meaning that desire of subjects to work in agriculture naturally lead to work in agricultural extension.

## CONCLUSIONS

Given the above mentioned results, researchers concluded:

1- Results showed that attitudes of graduates in this sample towards working in agriculture is moderate and decreasing. It is concluded that attitudes of graduates to work in agricultural extension needs boost. Subjects need to boost their attitudes to be positive towards agricultural extension through education and encourage them to work in agricultural sector and agricultural extension.

2- Results showed that subjects have positive attitudes in the following items (I

prefer to getaway from agricultural extension, office job is better than agriculture and agricultural extension, work in agricultural extension doesn't suit rural youths). Meaning that graduates have positive attitudes towards these subjects.

3-Results showed morally significant relation between attitudes of graduates towards working in agricultural extension and the following variables (age, current residence, desire to work in agriculture). Thus it is concluded that these variables play major role in fortifying and adjusting subjects' attitudes towards working in agricultural extension.

## RECOMMENDATIONS

1- Necessity of fortifying attitudes of graduates of colleges of forestry and agriculture – University of Mosul to work in agriculture via opening their eyes on its importance and benefits.

2- Initiate similar studies in other colleges of agriculture about same issue and in other governorates in Iraq , to know better

attitudes of students towards agriculture in general.

3- Necessity to pay attention to graduates of college of agricultural engineering by related parties via providing jobs, facilities and encourage them to continue working in agricultural sector.

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