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Activation of the Mobile Phone Usage in Broadcasting Extension Development Messages in Egypt

Marwa E.A.S. Ahmed Elghorab, Abdel-Hamid Ibrahim Ahmed and Fatma Mostafa Saad

Agricultural Extension and Rural Development Research Institute, Agricultural Research Centre (ARC), Giza Governorate, Egypt.

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ABSTRACT

The research aimed at investigating how to activate mobile phone usage in broadcasting extension development messages in three of Egypt Governorates and Nubaria area, and acceptability by the end-user in agricultural extension system in Egypt, with a sample, amounted to 400 respondents (228 males and 112 females), Data were collected by personal interviews using a pre-tested questionnaire from October 2020 to March 2021. The research adopted the social survey approach by samples and applied a set of statistical tools for data analysis. The result showed that, 75.70% and 66% of male and females respondents existed in medium and high categories of using all mobile phone capabilities in all development fields, also male respondents were ready more than female respondents to participate, share the cost, monthly contribute in mobile phone's extension services, whereas the SMS and video format were preferable to certain categories of the respondent population; and the respondents have accepted the mobile phone usage as an extension method, that is considered great importance to make full use of the mobile phone as an extension method in the governorate's agricultural extension system, to improve the lives of the rural community, especially in crises.

Keywords: Information communication technology, acceptances of usage of Mobile phone, formats of extension development messages.

1. Introduction

In Egypt the agricultural sector contributes about 11.5%, and expected to increase to 20%, to the GDP, 25.3% of job opportunities, increasing the offered employment by over 30% for rural population, and providing raw materials for agro-industries (Zakaria, 2020:7). Such general challenges facing the agricultural sector in Egypt, such as climate change, loss of biodiversity, drought, desertification, increase in food prices and inefficient supply chains, (Konuma, 2012: v), as well as additional challenges, as explained by (Shannon McCrocklin, 2019), of subsistence farmers in Africa according to the FAO report; detailed in food insecure, living in extreme poverty; limited access to education and markets, lacking adequate infrastructure, use of family labor for agricultural activities especially the rural women. Moreover, the decreasing number of extensioniests all over the state due to the suspension of new appointments, plus agricultural extension budget reduction (CAAES, 2018), additionally, the number of extension workers doesn't meet the number of Egyptian villages (CAPMS, 2017).

The ministry's agricultural extension service, expresses the true value of this sector; taking shape in consultations and facilities it provides to encourage investment by reclaiming and cultivating land, and vertical expansion of agricultural production by introducing appropriate technologies; making extension efforts with the aim of achieving real behavioral changes among farmers; adopting good practices, in order to help achieve rural development, hence improve farmer's socio-economic conditions and increasing the national economy.

However, extension services are constantly decreasing, as they are served in suboptimal conditions, poorly equipped with proper tools for knowledge and information access to operate efficiently. Radio and

Corresponding Author: Marwa E.A.S. Ahmed Elghorab, Agricultural Extension and Rural Development Research Institute, Agricultural Research Centre (ARC), Giza Governorate, Egypt.
E-mail:elgorabmarwa@gmail.com

television have been long utilized for development, and then came the computers and the internet (Ahmed, 2010: 3-7).

The Mobile phones access to basic telecommunication services is becoming ever more predominant. In spite of the fact that scarce data suggest developing countries are particularly disadvantaged when it comes to digital skills (ITU, 2018:2-3), mobile phone is recognized as a tool to create and support development in developing countries, to provide a sustainable livelihood to the rural population. According to (Qiang and et al., 2012: 1), 41% of Mobile phone subscribers use their phones to increase their income and professional opportunities. The tremendous development in ICT, especially the mobile phones, plus introduction of the G3, G4 through the Internet connection, increasing its capabilities of audio& video messages, also the number of mobile phone lines has increased through the two previous decades more than 10 times; and the number of mobile phone users that reached 95.25 million users, while the number of internet users through mobile phones reached 38.67 million users in Oct. 2019 (CAPMS, 2020), as well as the percentage of rural mobile phone users that reached 65.49%, 51.75% for males and females, respectively, in 2017, also the percentage of rural families with access to the Internet was estimated at 32% compared to 48.3% in urban areas (CAPMS, 2017: 134), in addition, there were many studies and researches, such as (Qasim and Eljamal, 2011: 80); (Hamdiyah Alhassan and Kwakwa, 2012: 42-45); (Ali and et.al, 2012: 915-920); (Safa El-Deeb, 2015:316); (Abdel Majeed and et.al., 2016: 531- 537); (Abdallah, 2016: 77-154); (Al- Sakran and et al., 2017: 90-92); (Hanna Hawary, 2017:285); (Jaji et.al., 2017: 66) that have confirmed the spread of mobile phones among the rural people.

So this research is consistent with the Egypt's current trend of digital transformation, as well as it is consistent with (the updated strategy of sustainable agricultural development in Egypt 2030 for the Ministry of Agriculture and Land Reclamation (MALR), 2020: 222:239-242, 271), this research falls under the seventh national program, this entitles the promoting and development of ITC, and the nineth national program, this entitles supporting the agricultural researches, transfering technology and aricultural extension.

2. Materials and Method

2.1. Research objectives

2.1.1. Determination of respondents' acceptability degree, of using the mobile phone as an extension method.
2.1.2. Determination the significance relationship between the independent studied variables and the respondents' acceptability degree, of using the mobile phone as an extension method as a dependent variable.

2.2. The operational definition of the acceptability of respondents' mobile phone usage as an extension method

It was referred to as the dependent variable in this research, which was composed of collective variables as follows: respondent's ability to use mobile phone capabilities; respondent's ability to receive development fields knowledge via mobile phones; the suitable mobile phone formats for broadcasting the extension messages in development fields; and the respondent’s aptitude to participate in the proposed telephone service.

2.3. Geographic scope

It was determined by selecting three governorates (Gharbia, fayoum, Sohag) and Nubaria area, to represente lower and Upper Egypt.

2.4. Research sample

Data were collected from purposive sample amounted to 400 (228 male's and 112 female's) respondents, as much as 100 each governorate. The criteria for selecting the respondent's sample as follows: who owned a mobile phone; agreed to attend the interview by face to face interview; and got ready to present and evaluate (his/her) overall acceptability for usage of mobile phone.

2.5. Methodology

Social survey by sample was applied.

2.6. Collecting Data

A questionnaire survey tool was developed and pre-tested governorate. Data were collected from October 2020 to March 2021.

2.7. Research data quantitative processing

Data included 150 items, after completing data collection, the researchers treated some of it quantitatively, as follows:

2.7.1. First section of the respondent's demographic characteristics

2.7.1.1. Age: Measured ed through respondents questioning in interviews.

2.7.1.2. Educational level: Measured ed through respondents questioning in interviews.

2.7.1.3. Occupation: The respondents were divided into two categories according to their occupation; farmer only & other work, beside the agricultural work.

2.7.1.4. Agricultural tenure

Measured through the agricultural tenure registered in the agricultural cooperative calculated in Karat with a raw number. The respondents were divided according into the actual range to three categories.

2.7.1.5. Respondent's family members average educational level

The respondents were divided according to the actual range into three categories.

2.7.1.6. Modernity degree

It was expressed the respondent's acceptance of the agricultural and environmental innovations which it extracted from researches. This variable was measured with a scale of eight testaments; agree, neutral, and disagree. Scale readings were presented to a group of arbitrators for (face validity). To determine the scale reliability Gutman coefficient (split – half) was used (Barakat, 2000: 30), where it reached 0.73, finally the intrinsic validity of the scale was measured through the coefficient of reliability (Elsayed, 1979: 552), where it reached 0.85. Maximum scale reached (24 degrees) and minimum (8 degrees), and the actual range (16 degrees), the three categories are negative attitude (8 to less than 14) degrees, neutral attitude (14 to less than 20) degrees and positive attitude (more than 20 degrees) as seen in table 1.

2.7.1.7. Self-development degree

It referres to the respondent's striving towards self-improving and capabilities related to ICT. This variable was measured with a scale of ten testaments; agree, neutral, and disagree. Scale readings were presented to a group of arbitrators for (face validity). Also to determine the scale reliability Alfa Kronbach's equation was used (Khairy, 1970: 429) where it reached 0.71, finally the intrinsic validity of the scale was measured through the coefficient of reliability, where it was 0.88. Maximum scale reached (30 degrees), minimum (10 degrees), and actual range (20 degrees), the three categories are negative attitude (10 to less than 14) degrees, neutral attitude (17 to less than 24) degrees and positive attitude (more than 24 degrees).

2.7.1.8. The mobile phone type and its features: Estimated through respondents questioning in interviews.

2.7.2. Second section (the dependent variable) the acceptability of respondents' degree of using the mobile phone as an extension method: It included five indicators to assess respondent's using mobile phone acceptance degree as an extension method, they are:

2.7.2.1. Respondent ability to use all mobile phone capabilities

It is sending and receiving calls; sending and receiving SMS; using mobile phone camera; recording; and accessing internet. Then three degree were given for the response of, Always on phrase, two degrees for Sometimes phrase, one degree for rarely phrase, and zero for no response, as stated by (Rasha Shabana, 2016: 75), maximum reached (30 degrees), minimum (zero), and actual average score was (30 degrees), the respondents were divided according to the range into three categories: they are low (0-10) degrees, medium (11-20) degrees, and high ability (21-30) degrees.

2.7.2.2. Respondent preference of receiving knowledge of development fields: Measured by questioning the two research group on desiring to receive the knowledge of development fields or not, one degree for yes, and zero for no.

2.7.2.3. Prior to receiving development fields knowledge on respondent mobile phones: Measured by questioning respondents about previously receiving mobile phone messages, one degree for yes, and zero for no, and the same process for illiterate respondents.

2.7.2.4. Suitable mobile phone formats of broadcasting the extension development messages in development fields from the point of view of the two research groups

Measured by questioning the two research group respondents about the appropriate formats from their point of view for broadcasting the extension messages in relation to six development fields, as follows: crops production (Seven phrases, related to fertilizer dozes, combating pests, post-harvesting practices, and quality standards that must be met in cultivating crops), climate information (Six phrases related to humidity& temperature degrees, suitable cultivation methods& varieties with the geographical area, suitable agricultural recommendations in crisis, the expected weather disease-causing conditions, the necessary preventive measures to be followed), marketing information (18 phrases related to advertising; information marketing, communication methods, marketing facilities& logistics, middlemen and loans & credit), environment (Five phrases related to rationalizing use of chemical fertilizers and pesticides, methods of cleaning canals& drains, and improved practices in controlling harmful pests, for the safe disposal of crop and house residues), animals production (10 phrases related to the best animal breeds, symptoms of diseases prevalent for each type of animal, controlling animal diseases, the most important vaccinations needed, composing balanced fodder for each animal type; care for small and large livestock; diseases common between humans and animals, loans& credit), and rural woman development (tewenty six phrases related to nutrition for all family categories, proper education of children, children vaccinations, preserving food of all kinds, poultry keeping, manufacturing dairy products, and health care).

As stated above, the respondents were given grades 5,4, 3, 2 and 1 for responses: SMS, picture or drawing, video; and a mixture of the previous. The average of each development field was calculated, and then finally, the general average for each format was calculated separately within each field.

2.7.2.5. The respondent's aptitude for participating in mobile phone's extension services messages Measured by questioning the respondents about their readiness to participate in mobile phone extension services, sharing its costs, and about the respondents useful contemplate of the proposed telephone service applied in their village, then readiness response was given one degree.

2.7.2.6. The acceptability of respondents' degree of using the mobile phone as an extension method

This dependent research variable composed of the previous five indicators, in need to become one variable with one measured uint, this standardization process is calculated using the modified standard score (T) Z-score (Souliman, 2001: 89-90) from the following equation:

$$\text{Z-score} = \frac{\text{Value- mean}}{\text{standard deviation}}$$

$$\text{(T) Z-score} = \text{(Z-score)}\times 10+50$$

By combining these scores, the total respondents acceptability of using mobile phone as an extension method is established. The dependent variable, which was between (26.50- 64.00, 35.94-64.46), for males and females respectively, was divided into three categories: respondents with low level of acceptability (from 0.00- to less than 30.00); medium level of acceptability (from 30.00- to less than 70.00); and respondents with a high level of acceptability (from 70 standard degrees or more).

2.8. The research hypothesis

To achieve the second objective of this research was composed this research hypothesis, which referred to "there is a significance relationship between the independent studied variables and the respondents' acceptability degree, of using the mobile phone as an extension method as a dependent variable".

2.9. The statistical analysis: A set of statistical tools are used and applied in presenting and analysing collected data.

3. Results and Discussion

3.1. Respondent characteristics

Results in Table 1 show that most of the respondents, exist in middle age category with percentages 54.50% and 58.00% for males and females respectively, also respondents of 47.60% and 58.90%, males and females respectively, exist in middle education level category, besides, more than half of respondents, existed in farmers category, of percentages 56.94%& 61.61% for males females respectively, in addition to almost two-thirds of respondents, of percentages 64.20%& 88.80% for males and females respectively, existed into small agricultural tenure category (less than 120 Kirats) in addition to that 47.90% of male respondents existing in educational level low average category of respondent' family members, as opposed to half of the females, who existed in such category, with 50.00%, also half of respondents, with 50.00%& 51.80% for males and females, respectively, occupy the neutral attitude category towards modernity degrees, as well as more than two-thirds of the half of respondents, of 69.80% and 67.90% for males and females respectively, occupy the positive attitude category of self-development degrees.

Table 1: Distribution of the group's research according to their characteristics

The group's research Variables	Males			Females		
Age categories	**N.**	**%***	**Rank**	**N.**	**%***	**Rank**
- (18-less than 37) years old	84	29.20	2	43	38.40	2
- (37-less than 56) years old	157	54.50	1	65	58.00	1
- (More than 56) years old	47	16.30	3	4	3.60	3
Total	288	100.00		112	100.00	
	Mean	**Standard deviation**		**Mean**	**Standard deviation**	
	43.27	11.67		39.23	9.66	
Educational level categories	**N.**	**%***	**Rank**	**N.**	**%***	**Rank**
- Low (0-less than 7)	77	26.70	2	24	21.40	2
- Middle (7-less than 14)	137	47.60	1	66	58.90	1
- High (More than 14)	74	25.70	3	22	19.60	3
Total	288	100.00		112	100.00	
	Mean	**Standard deviation**		**Mean**	**Standard deviation**	
	9.94	5.74		9.92	5.22	
Occupation categories	**N.**	**%***	**Rank**	**N.**	**%***	**Rank**
- Farmer only	164	56.94	1	63	61.61	1
- Another work beside in agric. Work	124	43.06	2	49	43.39	2
Total	288	100.00		112	100.00	
Agricultural tenure Categories	**N.**	**%***	**Rank**	**N.**	**%***	**Rank**
-Small agricultural tenure (Less than 120 K.)	185	64.20	1	99	88.40	1
- Middle agricultural tenure (120-240)K.	59	20.50	2	12	10.70	2
-Big agricultural tenure (More than 204K.)	44	15.30	3	1	0.90	3
Total	288	100.00		112	100.00	
	Mean	**Standard deviation**		**Mean**	**Standard deviation**	
	99.44	139.65		6.63	51.22	
Average of the respondent' family members educational level categories	**N.**	**%***	**Rank**	**N.**	**%***	**Rank**
- Low (0-less than 6) ERs.	138	47.90	1	15	13.40	3
- Middle (6-less than 12) ERs.	92	31.90	2	56	50.00	1
- High (More than 12) ERs.	58	20.20	3	41	36.60	2
Total	288	100.00		112	100.00	
	Mean	**Standard deviation**		**Mean**	**Standard deviation**	
	6.01	5.22		9.79	3.54	
Modernity degrees categories	**N.**	**%***	**Rank**	**N.**	**%***	**Rank**
Negative Attitude (8 to less than 14) degrees	12	4.20	3	2	1.80	3
Neutral Attitude (14 to less than 20) degrees	144	50.00	1	58	51.80	1

Positive Attitude (More than 20 degrees)	132	45.80	2	52	46.40	2
Total	288	100.00		112	100.00	
	Mean	**Standard deviation**		**Mean**	**Standard deviation**	
	18.66	3.01		18.95	2.49	
Self-Development degrees categories	**N.**	**%***	**Rank**	**N.**	**%***	**Rank**
Negative Attitude (10 to less than 17) degrees	8	2.80	3	6	5.40	3
Neutral Attitude (17to less than 24) degrees	79	27.40	2	30	26.80	2
Positive Attitude (More than 24 degrees)	201	69.80	1	76	67.90	1
Total	288	100.00		112	100.00	
	Mean	**Standard deviation**		**Mean**	**Standard deviation**	
	24.89	3.43		24.34	3.98	

*The percentage was calculated to the total sumation of each respondents research group, Source: field survey.

Moreover, repondents own smart mobile phone, of males and females, are 59.72% and 48.21%, while the rest own the ordinary types, besides, repondents connected to the internet, are 86.09% and 29.10%, of male and females, while respondents, of percentages 38.37% and 16.90% males and females respectively, owned G3 smart phones.

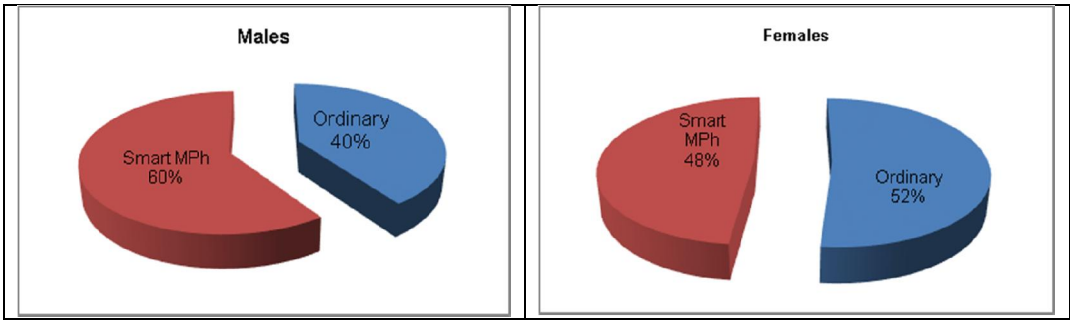

Fig. 1: Distribution of respondents according to the type of their mobile phone and its features

Results reflected the research two groups readiness to adapt themselves for receiving information uploaded on the different extension development messages.

3.2. Dependent variable: Acceptability of respondents' degree of using mobile phone as an extension method

3.2.1. The respondent's ability to use all mobile phone capabilities

Table 2 shows, that 75.70% of male respondents existed in medium and high (11-30) degrees category of using all mobile phone capabilities in receiving extension development messages, while 66% of female respondents existed in such categories, with means reached 19.83 and 16.42 degrees respectively.

Table 2: Respondent distribution according to their use of all Mobile phone. capabilities

The respondent' ability to use all Mobile phone capabilities categories	**Males**			**Females**		
	N.	**%***	**Rank**	**N.**	**%***	**Rank**
Low ability (0-10) degrees	70	24.30	2	38	33.90	2
Medium ability (11-20) degrees	50	17.40	3	35	31.20	3
High ability (21-30) degrees	168	58.30	1	39	34.80	1
Total	288	100.00		112	100.00	
Mean		19.83			16.42	
Standard deviation		9.32			9.05	

*The percentage was calculated to the total sum of each respondents research group, Source: field survey

3.2.2. Respondent preference in receiving development fields knowledge

Almost 81.94% and 79.50% of the research two groups were desired to receive development fields knowledge; arranged in descending order: (all family members working in agriculture for both research groups;

then for male respondents obtaining information about animal production, developing women, good and new varieties especially wheat crop, receiving the information by the easy way; and for security & confidentiality).

3.2.3. Prior receiving the knowledge of development fields on respondents mobile phone

Awareness messages related to animal production (poultry keeping, calves care and fattening, and manufacturing of dairy products), rural women's development, climate, marketing of agricultural products, and agricultural crops production, were received by female respondents of percentage 19.62%, whereas male respondents were of percentage 32.98%.

3.2.4. Suitable mobile phone broadcasting formats of extension development messagess from respondents point of view

Results showed that; video is the suitable format for crops production and animal production fields from males point of view by averages 122.7 and132.7degrees, while from female respondents point of view, SMS is the suitable format by averages reached 36.71 and 52 degrees, whereas the two research groups agreed on that SMS is the suitable format for climate, marketing, and rural women's development fields by averages reached 151.7, 64.7, 137.3, 64.13,98.8,46.8 degrees respectively. The two research groups have agreed on that video is the suitable format for environmental field by averages 140.85& 45.4 degrees successively as seen in table 3.

Table 3: The Suitable formats of broadcasting the extension development messages in development fields from the point of view of two research groups

The six development fields	Formats				Mixed
	SMS	Picture	Video	Voice	
The Males respondents					
Crop production	64.00	25.60	122.70	26.00	48.14
Climate	151.70	26.30	53.70	35.17	21.20
Marketing	137.30	22.90	54.10	49.90	25.60
Environmental	57.80	22.20	140.8	20.40	46.80
Animals production	66.20	25.00	132.7	25.60	38.50
Rural women's development	98.80	30.40	91.50	37.60	29.70
The general average	**95.97**	**25.4**	**99.25**	**32.45**	**34.99**
The female respondents					
Crop production	36.17	9.71	32.86	17.29	15.43
Climate	64.70	9.17	9.67	23.17	5.33
Marketing	64.31	6.25	13.63	22.31	5.63
Environmental	30.2	9.00	45.4	12.4	15.00
Animals production	52.00	9.25	25.75	18.25	6.75
Rural women's development	97.8	30.40	91.50	37.60	29.70
The general average	**57.53**	**12.3**	**36.47**	**21.84**	**12.97**

From the above, SMS and video were the most suitable formats preferred for receiving extension development messages related to the six development fields with the general averages of 95.97, 99.25, 57.53, and 36.47 respectively, this result agreed with (Veena Katankar and Thakare, 2010) and (Sousa and et al., 2016).

3.2.5. Respondent's aptitude for participating in mobile phone's extension services

The results showed that male respondents were ready to participate, share the cost, monthly contribute in mobile phone's extension services against females with percentages 89%,88%, 47%, 33% and 50%, 43% respectively, whereas female respondents regarded proposed mobile phone service as a useful extension contemplate more than males with percentages 95%, 91% respectively.

3.2.6. Acceptability of respondents' mobile phone usage as an extension method

As per the results, almost all respondents, males and females, existed into the medium acceptability level with percentages 99.30 and 100.00%, with an arithmetic mean of 50.00 standard degrees and standard deviation of 6.49 and 6.12 standard degrees respectively, this result could be reflected the degree of respondents readiness of using mobile phone as extension method regarding all development fields, this means that, it is more used and relied upon by the extension agency in rural areas.

3.3. Relationship between the dependent variable and the independent studied variables

To test the significance relationship between the respondent's acceptability degree of usage of mobile phone as an extension method, and independent variables, was set up the null hypothesis " there is no significance relationship between the independent studied variables and the respondents' acceptability degree, of using the mobile phone as an extension method as a dependent variable", by using simple correlation of Pearson Coefficient, the results from Table 4 showing that, there was a negative relationship at the significance levels (0.01, 0.05) between respondent's acceptability degree of using mobile phone as an extension method for males, and their age; educational level; and the average of their family members educational level, which reached -0.176, -0.313 and 0.125 respectively, whereas it was positive relationship at the significance level (0.01) and their agricultural tenure, modernity degrees, and self-development degrees with values were 0.229; 0.194 and 0.521 respectively, whereas a positive relationship at significance level (0.01) between female respondent's acceptability degree and their average of family members educational level; modernityand self-development reaching 0.267, 0.226 and 0.448 respectively, but with no significant relation with rest of interval independent variables at the significance level (0.05).

Table 4: Results of the statistical analysis for the simple correlation Pearson coefficient values between the respondent's acceptability degree of using Mobile phone as an extension method and the interval independent studied variables

Ser	Independent studied variables	The Pearson coefficient values of the male's acceptability degree of using Mobile phone as an extension method (N=288)	The Pearson coefficient values of the female's acceptability degree of using Mobile phone as an extension method (N=112)
1	Age	-0.176**	-0.039
2	Educational level.	-0.313**	-0.002
3	Agricultural tunre	0.229**	0.033
4	Average of the respondent' family members Educational level.	-0.125*	0.267**
5	Modernity degrees	0.194**	0.226*
6	Self-Development degrees	0.521**	0.448**

** was significant at the level (0.01) & * was significant at the level (0.05)

Table 5: The results of the statistical analysis for the Spearman coefficient values between the respondent's acceptability degree of using Mobile phone as an extension method and the ordinal independent studied variables

Ser	Independent studied variables	The Spearman coefficient values of the male's acceptability degree of using Mobile phone as an extension method (N=288)	The Spearman coefficient values of the female's acceptability degree of using Mobile phone as an extension method (N=112)
1	N. of respondent family members owned mobile phone	-0.343**	-0.055
2	Respondent mobile phone connected with the internet	0.552**	0.465**
3	Respondent family members mobile phones concented with the internet	-0.128*	0.151

** was significant at the level (0.01) & * was significant at the level (0.05)

As per the results of significant correlation as mentioned before we could say that

A. There was a negative significant correlation between male respondent age, their educational level, average of family members educational level and male's acceptability degree of using a mobile phone as an extension method, meaning, the younger the male respondents the more accepting mobile phone as an extension method, results also meant, the male respondents with less education with family members also with less education, be more accepting mobile phone as an extension method, on the contrary, result with female respondents was of positive significance correlation between acceptability of mobile phone usage as an extension method, meaning, the more educated the female respondents family members, the more accepting mobile phone as an extension method.

B. There was a positive significant correlation between the modernity, self-development, and acceptability degrees of using mobile phone as an extension method.

C. finally, there was a negative significant correlation between the number of male respondents' family members who owned mobile phones, and who are connected to Internet, and acceptability of using mobile phone as an extension method, the fewer the family members of male respondents, the family members owning mobile phones, the less family members connected to Internet, more accepting mobile phone as an extension method.

4. Research Applied Importance

The ICTs. were changed the ways we do works and live, it also has provided solutions to many problems; saving time and effort in most of the working conditions, besides that ICTs. Applications are advanced and can enhance the effectiveness of the agricultural extension system. The mobile phone is seen as an appropriate extension method for improving the agricultural extension services and to overcome the challenges facing the agricultural extension work at present, as well as enable extension agents and the end-users to access information in case of need and communicate via social media platforms with exchange information and knowledge. In addition, the research concerned with studying the acceptance of information communication technology applications in agricultural extension work is rather meager in Egypt.

5. Conclusion

According to the research results, the theoretical frameworks that are presented in the research review literature, with the government’s trend towards expanding the use of appropriate ICT in all life areas, the quick implementation of this effort, especially in case of crises, the researchers considered it of great importance to make full use of the mobile phone as an extension method in the State's agricultural extension system, to improve the life of the rural community.

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