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Growers' opinions about the determinants of Participation in Self-Help Group (SHG) in Gharbia Governorate, Arab Republic of Egypt

Engy K. Faied and Amany S. Elkholy

Agricultural Extension & Rural Development Research Institute (AERDRI), Agricultural Research Center, Cairo, Egypt.

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ABSTRACT

Background: Forming self-help groups (SHGs) can aid impoverished farmers in coping with climate-related shocks and implementing risk management strategies. This research attempts to identify growers' opinions on SHG determinants in Gharbia Governorate, Arab Republic of Egypt. This main objective was achieved by investigating a number of related sub-objectives, including identifying the degree of growers' willingness to form SHG, identifying the significant relationships between socioeconomic variables and the growers' willingness to participate in SHG, finding a set of independent variables that significantly influence the dependent variable. In addition, identifying the respondents' opinions on the significance of SHG participation. Finally, the study aims to determine the respondents' opinions on the obstacles facing forming SHGs in the studied area. **Methodology:** This study was conducted on a random sample of 98 growers in Mahlet Marhoum Village, Tanta District, Al- Garbiyah Governorate, Egypt; data were collected using a pretested questionnaire via a personal interview during August 2022. Data were analyzed using qualitative and quantitative statistical tools: Frequencies, percentages, means, standard deviation, and correlation coefficient. **Results:** The main findings revealed that the majority of respondents had a high and medium degree of willingness to form SHGs, 51% of respondents are in the high rating category of the degree of willingness to form SHGs, and 38.8% are in the medium rating category. A significant positive relationship was also revealed between the independent variables, including the number of education years and attitude towards agricultural extension, and the willingness to participate in SHG at 0.01 and 0.05 levels of significance, respectively. In addition, 90.8% of the respondents have selected reducing production as a primary aspect of the importance of participation in SHG, and 88.8% of the respondents anticipated that the disparity in economic status among farmers would be the most significant barrier to the formation of SHGs. **Conclusions:** According to the results, it can be concluded that the small farmers have a strong willingness to form SHGs due to their awareness of the importance of SHG participation, indicating that it is essential to enhance the role of government and NGOs institutions in forming SHGs.

Keywords: willingness, participation, self-help groups (SHGs), opinions.

1. Introduction

People cooperating to solve common problems is a continual historical phenomenon (Suler 1984). SHGs have emerged as an effective mechanism of empowerment as well as an efficient mode of technology dissemination (Personal and Archive, 2013). Blues is a method of raising one's standard of living (Kunyadini, 2022).

The farmer SHGs are a relatively novel and cost-effective method of encouraging farmers to seek their own solutions to problems with outside assistance. At the same time, sound principles derived from working group methodology were implemented through the use of participatory or active learning styles (Tate, 2015).

Corresponding Author: Engy Khairy Faied, Agricultural Extension & Rural Development Research Institute (AERDRI), Agricultural Research Center, Cairo, Egypt.
E-mail: khairyengy86@gmail.com

SHG is a small, economically homogenous affinity group of 10 to 20 individuals who come together to save small amounts regularly, mutually agree to contribute to a common fund, make collective decision-making, or resolve conflicts through collective leadership and mutual discussion. Since the pioneering efforts of Mohammad Yunus in Bangladesh and the Grameen Bank in 1975, the SHGs are typically established by NGOs as facilitating agencies (Jaya Anitha Abraham, 2011).

SHGs are generally formed by promoter agencies as a mechanism for facilitating the extension of microfinance and have been used to generate income and employment and alleviate poverty, particularly in developing countries. They also contributed to other economic development and growth areas, such as poverty eradication, social transformation, and empowerment (Jaya Anitha Abraham, 2011).

SHGs have the following characteristics: 1) members share common experiences and are supportive of each other; 2) members set goals for individual change; 3) groups are self-monitoring; 4) groups learn problem-solving processes through voluntary and active participation, and 5) groups are small and meet regularly (Lee *et al.*, 2014).

Social empowerment, economic empowerment, and capacity building are achieved through personality development, communication skills, and entrepreneur development programs. The SHG concept emphasizes promoting self-reliance group credit by linking the group with Banks and giving technical support for economic development. The objectives of the project are the development of a strong, cohesive SHG, promotion of saving habits, improved access to various developmental schemes of the government and bank schemes, development of leadership qualities, and improved status of SHG members in society (Selvi, 2021).

Before forming SHGs, members should be informed that they have to draft their own regulations. Additionally, they are guided through the example regulation required to determine the amount of savings that the members will deposit every week, the loan term, the interest rate on loans, the time and location of the weekly meeting, fines on late repayment of loans, and fines on non-attendance (without good reason)((SEED) 2006).

The leader of the farmers' group solicits and encourages members to pool their financial resources for the benefit of the group. It was observed that membership in such groups provides numerous benefits to individual members. Through such groups, individuals are able to fulfill their needs. These needs include access to extension service, direct marketing of produce, price determination, low-cost access to inputs, access to credit, and exchange of ideas/experiences; however, access to credit is the most crucial factor. These groups' aims are determined by their wants and needs. In farmer groups, there are indicators of group performance, such as the frequency of attendance to meetings, regularity of payment of dues, frequency of participation in group activities, and amount of credit accessed (Ofuoku 2013).

Local self-help and financial associations can help poor farmers to cope with climatic shocks and to implement risk management strategies (Demont 2022).

Rural development would benefit from the cooperative association, SHG, and micro-financing (Robert, Frey, and Sisodia 2021).

In Egypt, sample research was conducted to determine the opinions of both poor women and leaders of civil society organizations regarding the potential application of the SHG model and the workgroup obstacles. The most important results were that the research sample (dissection group) had a medium response to this idea (group working dynamic). The results of the organizational meetings revealed that this model could not be implemented without great effort, as well as modifications to state credit policies and laws to encourage the implementation of this concept (Farag and Saleh, 2013).

Research Problem

Recently, small farmers in Egypt suffered from the high cost of agricultural input requirements, the difficulties of marketing agricultural crops, and the low profit from agriculture, necessitating an investigation into the possibility of implementing the SHG approach in Egypt as one of the modern cooperation mechanisms to address the problems facing small farmers and empowering them. This study's main problem was posed as the question, "What are the growers' opinions regarding the determinants of SHG participation in Gharbia Governorate, Egyptian Arab Republic?" The primary question can be answered by answering the following research questions:

1- How willing are growers to form SHG?.
2-What are the significant relationships between socioeconomic variables and the willingness of growers to participate in (SHG)?.
3- What do respondents think about the significance of SHG membership?.
4- What are the respondents' views on the obstacles to the formation of SHGs in the studied areas?

Objectives

This research attempts to identify growers' opinions on the determinants of participation in SHG in Gharbia Governorate, Arab Republic of Egypt. This main objective was achieved by investigating a number of related sub-objectives, including:

First objective: Identifying the degree of growers' willingness to form SHG.
Second objective: Identifying the significant relationships between socioeconomic variables and the growers' willingness to participate in SHG.
Third objective: Identifying the respondents' opinions on the significance of participation in SHG.
Fourth: Identifying the respondents' opinions on the obstacles to the formation of SHGs in the areas under study.

2. Methodology

A. Study design

This study employs the descriptive approach based on the survey method. The data were collected both from primary and secondary sources. Primary data were collected from the farm holdings record, whereas the secondary data were collected using a pretested questionnaire via a personal interview during August 2022. Data were analyzed using qualitative and quantitative statistical tools: frequencies, percentages, means, standard deviation & correlation coefficient. A sample survey was designed and administered on a random sample of 98 growers drawn from populations of 3,943 growers with limited land ownership (Fadden and less than Fadden) registered in (farm holdings record 2). The study was conducted in Mahlet Marhoum Village, Tanta District, which represents the greatest district in Al-Garbiyah Governorate according to the numbers of growers with limited land ownership (Fadden and less than Fadden) in Egypt. A random sample was drawn by using (Cochran 1977) equation:

$$n = \frac{N}{(N-1) \times B^2+1} \quad \ldots\ldots(1)$$

Where: n = Required Sample size, N =Population Size, B2 =0.01

B. Operational definitions

Growers: They are farmers with limited land ownership (Fadden and less than Fadden) or paying rent to the landowner.

Attitude towards agricultural extension: This variable is defined as the sum of the rating responses for nine statements covering five dimensions, namely: 1. Motivating farmers to adopt new technology. 2. Helping farmers acquire needed knowledge. 3. Assisting farmers in increasing their income and revenue. 4. Trusting agricultural extension workers.5. Decreasing pest and disease problems. For each statement, the responses were assigned to (strongly agree, medium agree, disagree), and the scores were assigned as 3, 2, and 1 considering positive and negative statements.

Willingness to form SHG: This variable is defined as the sum of the rating responses for 32 statements covering 7 variables of the state of being prepared to create SHG, namely: 1. Agreement between farmers to contribute to a common fund. 2. Having collective decision-making & leadership. 3. Trusting in other farmers and Sharing common experiences and supporting each other. 4. Problem-solving processes through voluntary and active participation. 5. Farmers' awareness of the advantages of following SHG. 6. Regularity of farmers. Finally, 7. Needing government support to create SHG. For

each statement, the responses were assigned to (strongly agree, medium agree, disagree), and the scores were assigned as 3, 2, and 1 considering positive and negative statements.

Age: This variable was defined as the respondent's age in years.
Education: The number of years that respondents have completed school successfully.
Income EGP: The total monthly per-capita respondent's income in EGP.

Hypothesis

The five hypotheses of the study are concerned with the third objective of this study, where the first four of them are concerned with testing the validity of the statistical hypotheses of the independent study variables on the dependent variable, while the fifth aggregate hypothesis is concerned with testing the combined effect of the independent study variables collectively on the dependent variable. These assumptions are explained as follows:
First: Statistical Hypotheses (1-4):

They all share one statistical saying that "there is no relationship between the independent variables (age, education, income EGP, agricultural experience and attitude towards the agricultural extension) and the dependent variable (The degree of respondents' willingness to form SHG).
Second: The fifth statistical hypothesis:

It indicates that there is no relationship for the independent study variables combined in its effect on the dependent variable of the study
Socio-economic profile of sample

First: socio-economic variables:

Table 1 displays summary statistics for the characteristics of the sample, including socio-economic variables. It presented to describe the variables using the measures of statistical characterization (Range, mean and standard deviation) associated with each variable.

Table 1: Descriptive statistics analysis of the respondents' characteristics

Characteristics of the Respondents	Theoretical range		Actual range		Mean	Std. Deviation
	Minimum	Maximum	Minimum	Maximum		
Age	-	-	36	70	51.57	7.33
Education	-	-	0	18	12.54	4.1
Income EGP	-	-	2400	9000	4721.4	1320
Agricultural experience	-	-	18	50	26.98	8.37
Attitude towards the agricultural extension	9	27	21	27	25.7	1.59

Source: Field survey

Second: The degree of respondents' willingness to form SHG

With regard to the degree of growers' willingness to form SHG, as displayed in Table 2, the theoretical range for this variable is between 32 to 96 degrees, while the actual range ranged from 44 to 96 degrees, with a mean of 73.37 degrees and a standard deviation of 13.22.

Table 2: Descriptive statistics analysis of the respondents' willingness to form SHG

Dimensions of the respondents' willingness to form SHG	Theoretical range		Actual range		Mean	Std. Deviation
	Min.	Max.	Min.	Max.		
1. Agreement between farmers to contribute to a common fund	4	12	5	12	7.4	2.1
2. Having collective decision-making & leadership	5	15	5	15	11.1	2.2
3. Trusting in other farmers and Sharing common experiences and supporting each other	7	21	9	21	16.7	3.5
4. Problem-solving processes through voluntary and active participation	2	6	2	6	4.2	1.4
5. Farmers' awareness of the advantages of following SHG	5	15	5	15	12.5	3
6. Regularity of farmers	2	6	2	6	4.4	1.3
7. Needing government supports to create SHG	7	21	7	21	17	3.7
Willingness to form SHG	32	96	44	96	73.4	13.2

Source: Field survey.

3. Results

3.1. First objective

(a)The degree of respondents' willingness to form SHG according to the responses rating categories:

Table 3 showed the main elements of SHG respondents' willingness. It describes these elements by using response rating categories (low, medium, high) associated with each elements and each range.

Table 3: The measure of respondents' willingness to form SHG according to the response rating categories.

Rating Categories	Low	Medium	High	Total
	32-53	54-74	75-96	
Frequency	10	38	50	98
%	10.2	38.8	51	100

Source: Field survey

(b)The final willingness to form SHG showed that 51% of respondents are in the high rating category. Additionally, 38.8% are in the medium rating category, while 10.2% of the total respondents are in the low rating category. These findings indicate that respondents are willing to form SHGs.

3.2. Second objectives

(A) Correlation analysis between socioeconomic characteristics and willingness toward participation in (SHG):

According to Table 4, the analysis result indicates a significant positive relationship between the independent variables, including the number of education years and attitude towards agricultural extension, as well as the willingness to participate in SHG at 0.01 and 0.05 levels of significance, respectively. This finding implies that the degree of willingness toward participation in SHG will increase if there are increases in independent variables, including the number of education years and attitude towards agricultural extension, which may be due to an increase in collaborative awareness.

At the 0.01 level of significance, there is also a significant but negative relationship between the independent variables age, income EGP and agricultural experience, and the willingness to participate in SHG. This finding demonstrates that the degree of willingness toward participation in SHG will decrease if there are increases in the independent variables: age, income EGP &agricultural experience, which may be due to the abilities of farmers to manage their farms without needing to form SHGs. That means the null hypothesis could not be accepted.

Table 4: Summary of correlation analysis between socioeconomic characteristics and willingness to participate in SHG

Explanatory variables	Pearson Correlation	Sig. (1-tailed)
Age	-0.244**	.008
Number of education years	0.382**	.000
Income EGP	0.328**-	0.00
Agricultural experience	-0.405**	.000
Attitude towards the agricultural extension	0.206*	.021

Notes: **. Correlation is significant at the 0.01 level (1-tailed), *. Correlation is significant at the 0.05 level (1-tailed).
Source: Field survey

(B) To test the combined statistical hypothesis, the Spss program was used for multiple regression analysis, where the model (Table - 5) showed that the study variables combined explain about 32% of the change in the dependent variable, as the significance of the model was proven at the 0.01 probability level, which means accepting the alternative hypothesis with a significant effect of the variables combined on dependent variable.

Table 5: Summary of Regression analysis between socioeconomic characteristics and willingness to participate in SHG

Explanatory variables	Simple Linear Regression	Multiple Linear Regression
Age	0.14-	
Number of education years	**0.358	**0.35
Income EGP	**0.309-	**0.268-
Agricultural experience	0.102-	*0.242-
Attitude towards the agricultural extension	0.086	
Partial Correlation (R)	0.576	0.565
Coefficient of Determination(R2)	0.332	0.32
F	**9.125	**14.708

Notes: **. F is significant at the 0.01 level (1-tailed).
Source: Field survey

3.3. The third objective

Respondents' opinions on the importance of participation in SHG

According to Table 6, the respondents have selected reducing production costs, rationalizing the use of irrigation water and helping farmers to use mechanization in agriculture as the main aspects of the importance of participation in SHG. These findings indicate the need to enhance the role of

government and NGO institutions in forming SHGs due to respondents' awareness of the significance of SHGs.

Table 6: Distribution of the respondents' opinions on the importance of participation in SHG

Farmers' opinions on the importance of forming SHG	Frequency	%
Reducing production costs.	89	90.8
Rationalizing the use of irrigation water.	83	84.7
Helping farmers to use mechanization in agriculture.	77	78.6
Helping farmers to resist agricultural pests.	71	72.4
Helping farmers to market their agricultural products at a high price.	68	69.4
Increasing agricultural production.	61	62.2
Facilitate the application of the contract farming system.	58	59.2
Facilitate the task of agricultural extension.	55	56.1
Helping farmers to apply crop rotation to enhance their soil life	53	54.1

Source: Field survey

3.4. The Fourth objective

Respondents' opinions on the obstacles could face forming SHGs

According to Table 7, respondents anticipated the main obstacles to the formation of SHGs as follow: variation of the economic level among farmers, absence of crop rotation, differences between farmers in their needs for crop sand variation in the size of farm holdings among farmers. These expectations must be considered when the government decides to form successful SHGs.

Table 7: Distribution of the respondents' opinions on the potential obstacles to the formation of SHGs

Respondents' opinions on the obstacles facing forming SHGs	Frequency	%
Variation of the economic level among farmers	87	88.8
Absence of crop rotation	85	86.7
Differences between farmers in their needs for crops	78	79.6
Variation in the size of farm holdings among farmers	71	72.4
Absence of Contract Farming System	70	71.4
Variation of social level among farmers	64	65.3
Differences between farmers in cultural beliefs	59	60.2
Variation in educational level among farmers	48	49

Source: Field survey

4. Conclusions

From the results, it can be concluded that the small farmers are strongly willing to form SHGs because of their awareness of the importance of participation in SHG, indicating that government and NGO institutions must play a more significant role in SHG formation.

5. Recommendations

Based on the previous findings, the following recommendations can be formulated:

1- According to the degree of farmers' willingness to participate in self-help work groups, as it was found that nearly 90% had a high and medium degree, it is necessary to adopt and spread the culture of teamwork and encourage them to form these groups through the initiatives of actual implementation in the Country.
2- Given the high level of farmers' orientation towards agricultural extension, it is necessary to train farmers and guide them to understand and apply self-help work groups through agricultural extension to be implemented with high efficiency and to yield substantial benefits.
3- Paying attention to the adoption of a credit policy by funding agencies such as banks, NGOs, and governmental and non-governmental institutions is an excellent mechanism to attract small groups and deepen social solidarity among them.
4- Create special markets for the products of SHG to encourage them to work and continue.
5- Implementing a unified agricultural policy (the agricultural cycle) to avoid the disparity of crops in the neighboring fields and the difference in landholding size.
6- The activation of the contract farming system motivates farmers to apply SHGs.
7- Enact a law to protect SHGs and legislate farmers' rights and duties.

Abbreviations
SHGs: Self-Help Groups

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Authors` contributions
Dr. E. K. Faied prepared the study to formulate the idea, set goals, wrote the results, and contributed to writing the discussion and conclusions. Dr.A. S. El Kholy contributed to design the questionnaire, collected, analyzed, and interpreted the respondents' data; All authors read and approved the final manuscript.

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Availability of data and materials
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