



# Role of Social Capital in Citrus Growers' Empowerment in Sari County, Northern Iran

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## Abstract

The study aimed at investigating the role of social capital in citrus growers' empowerment in Sari County. The statistical population comprised 12 800 citrus growers in Sari County. The stratified random sampling was employed in this study in an attempt to recruit 291 individuals as prospective participants. Data collection tool was a questionnaire. In order to establish its content validity, several copies of the questionnaire were distributed among professionals and experts, their opinions on the validity of the questionnaire were polled, and the necessary adjustments were applied based on their insightful comments. Cronbach's alpha was reported as 0.87 for the questionnaire. SPSS (Ver. 16) was used for data analysis. The average social capital level and citrus growers' empowerment were at a high level. The indices of meaning, trust, impact, competence, and self-determination ranked first to fifth among the citrus growers' empowerment in Sari. The awareness, participation, interactions, solidarity, and social trust were prioritized from the first to the fifth among the citrus growers' social capital in Sari. The regression analysis showed that 12.4 percent of the citrus growers' empowerment variance was explained by social capital, and that social capital played an important role accounting for 35.6 percent of citrus growers' empowerment.

**Keywords:**

*Citrus growers, empowerment, social capital, Sari*

## INTRODUCTION

Instinctively, humans engage and interact with others to meet their needs and livelihood concerns such that their relative effects are so distinctive that their removal makes life impossible. In such context, the concept of social capital encompasses concepts such as trust, cooperation, participation, equity, accountability, commitment, and collaboration among group members and the community (Nikumaram & Esfahani, 2009). In the past, the material and physical capital were greatly emphasized, however, nowadays, along with human, economic, and financial capital, another concept referred to as social capital is gaining in importance. The concept pinpoints the ties and communications among members of a network as a valuable source, since such communications can lead to objective fulfillment by creating norms and mutual trust. In other words, social capital facilitates cooperation by providing beds for mutual communications and enhancing the social proximity of people (Salehi Amiri, 2009). Compared with other forms of capital, social capital is intangible and is concealed in the informal relationships between individuals and members (Sadigh Banay, 2008). The empowerment can be improved if social capital is strengthened (Keshavarzi et al., 2011). Social capital impact on empowerment can be increased and strengthened by increasing participation and fostering trust among community members (Nega et al., 2009). The relationship between social capital and empowerment was first reported by the World Bank. The World Bank introduced social capital as one of the pillars of the empowerment process (World Bank, 2001).

Being referred to as a resource, the concept of social capital may be used by individuals, groups, and communities as a means to achieve the desired goals; accordingly, social capital is the social relations heritage which encourages collective action (Ghaiumi et al., 2014). Empowerment means developing people's skills and abilities, preparing them to make their main choices in life. There are two core elements of empowerment: one with a focus on empowerment methods and the other with a focus on hu-

man interaction in their life choices. Considering the second aspect, social capital empowers rural people by increasing their income through members' activities in local groups, controlling the income, and developing the economic and social activities (Aazami et al., 2012). What follows is a brief research review on social capital and empowerment.

Ghashghaeizadeh et al. (2014) concluded that there was a significant positive relationship between social capital and its dimensions with psychological empowerment. The regression analysis results showed that the best predictors of psychological empowerment were social capital.

In study on social capital status among female-headed households, Rostami et al. (2014) concluded that the social capital components for rural women leading the family included social solidarity, social participation, social security, social trust, social and cultural values, and social relations. The social solidarity and participation levels among rural women in charge of their household were at a desirable level, which were important for economic and social empowerment.

Fewer et al. (2013) considered social capital as one of the key factors in young girls' economic empowerment. The researchers viewed social capital as comprising social networks, friends, coaches, and family members.

Kazemi et al. (2013) concluded that the components of social capital are represented by social solidarity, social awareness, social participation, social trust, life satisfaction, and information effectiveness and exchange outside social systems.

Aazami et al. (2012) concluded that there was a positive relationship between social capital and economic empowerment of rural women and that 42 percent of the empowerment variance was explained by social capital components.

In their article titled *The Analysis of the Impact of Social Capital Components on Organizational Entrepreneurship among the Agricultural Jihad Organization Staffs in Dareshahr*, Movaahed Mohammadi et al. (2012) reported that the correlation analysis showed a significant positive relationship between social capital components

and organizational entrepreneurship. Furthermore, the results of multiple regression showed that about 50 percent of the variance in the dependent variable was accounted for by "collective identity", "networks and shared norms", and "social solidarity".

Mirakzade et al. (2012) showed a significant positive relationship existed between all components of social capital and organizational learning. The regression analysis showed that the components of social capital that influenced organizational learning were collective identity, collective solidarity, mutual cooperation, trust, networks and shared norms, voluntary cooperation, and participation. Moreover, the components of empathy, understanding, and mutual respect had no impact on organizational learning. Overall, the components of social capital explained 62.5 percent of the variance of organizational learning among Agriculture Jihad Organization staff.

In a study on social capital among the farmers of Iran, Sadati et al. (2012) prioritized social capital components such as the exchange of information among farmers, a sense of security in the village, the value of working in voluntary communities in the village, the value of helping other farmers, and trusting the group memberships and participation in rural programs from the first to sixth. The results showed that social capital was in a considerably lower priority for the majority of farmers.

Keshavarzi et al. (2011) considered social capital to have three structural, relational and cognitive dimensions, and psychological empowerment to have the components of competency, meaning, impact, self-determination, and trust. The results of this study showed a relationship between social capital and employees' psychological empowerment.

Turabi et al. (2011) showed that respondents' social participation, social solidarity, social awareness, education, and age had an impact on cooperatives performance. Among these variables, social participation and social trust had the greatest impact on cooperative performance.

Nikumaram and Esfahani (2009) studied social capital and the reproduction in human management, and introduced the key components and

indicators of social capital as trust and cooperation, partnerships, justice establishment, responsibility, commitment and accountability, meritocracy, efficiency, and honesty.

Widiarta et al. (2009) in their article titled '*Peasant Empowerment through Social Capital Reinforcement: Road to Sustainable Organic Agriculture Development*' concluded that the farmers' empowerment by strengthening social capital (trust, network and norms establishment) is the best way for the development of sustainable organic agriculture.

Samad (2007) found that the concept of empowerment is associated with social background.

According to him, paying special attention to citrus growers' social capital aspects can play an important role in their empowerment. Specifying levels of social capital and citrus growers' empowerment in Sari and the relationship between social capital and empowerment seem to be an innovation. In addition, the results can be used by official organizations such as agricultural Jihad.

The main objective of this study was to investigate the impact of social capital on the empowerment of citrus growers in Sari County. As part of the overall objective of this study, first the theoretical framework associated with social capital and empowerment was investigated. Next, social capital level among citrus growers and the citrus growers' empowerment in Sari County were investigated. Finally, the relationship between social capital and empowerment among citrus growers in Sari was considered.

### MATERIALS AND METHODS

A combination of quantitative and descriptive-inferential methods was adopted as the research methodology. The population of the study consisted of all citrus growers in Sari County summing up to 12 800 people based on the Agriculture Jihad Organization of Mazandaran Province records. Table 1 shows the number of the citrus growers according to the service centers statistics (Agriculture Jihad Organization of Mazandaran, 2014). The sample size was calculated using the Cochran formula ( $n=291$ ). The stratified random sampling with proportional

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Table 1  
The Number of Citrus Growers in Sari Based on the Service Centers Record and Sample Size

Region	Statistical population	Sample size
Hular	1327	30
Panbezar Koti	4494	102
Semeskandeh	2846	65
Aboksar	4133	94
Total	12800	291

allocation formula for each agricultural service center was used in this study.

In order to establish the questionnaire content validity, several copies of the questionnaire were distributed among professionals and experts, their opinions were polled as to the validity of the questionnaire, and the necessary adjustments were applied. To estimate the reliability coefficient

of the research instrument, a pilot study was conducted, and 30 questionnaires were randomly distributed among citrus growers in Ghaemshahr which were then completed. The Cronbach's alpha was reported as 0.87. SPSS (Ver. 16) was used for data analysis.

In this study, social capital was assessed based on the social trust, social solidarity, social par-

Table 2  
Citrus Growers' Age, Gardening Work Experience, Family Size, and Literacy Level Frequency Distribution in Sari

Variables	Frequency	Valid percent	Cumulative rcent	M <sup>1</sup>	SD <sup>2</sup>	Minimum	Maximum
<b>Age (Year)</b>							
30 and Less than 30	14	5.4	5.4				
31-40	38	14.7	20.1				
41-50	82	31.7	51.8	49.4	10.14	25	74
51-60	91	35.1	86.9				
More than 60	34	13.1	100				
Non-response	32	-					
Total	291	100					
<b>Work experience (Year)</b>							
10 and Less than 10	22	8.6	8.6				
11-20	73	28.5	37.1				
21-30	107	41.8	78.9	25.58	10.38	5	52
31-40	36	14.1	93				
More than 40	18	7	100				
Non-response	35	-					
Total	291	100					
<b>Family size (People)</b>							
2 and Less than 2	13	5	5				
3-4	130	49.3	54.3				
5-6	108	40.8	95.1	4.42	1.26	1	9
More than 6	13	4.9	100				
Non-response	27	-					
Total	291	100					
<b>Literacy level</b>							
Illiterate	48	19	19				
Ability to read and write	38	15.1	34.1				
Junior high school	38	15.1	49.2	3.38	1.62	1	6
High school	45	17.9	67.1				
Diploma	65	25.8	92.9				
Associated degree and higher	18	7.1	100				
Non-response	39	-					
Total	291	100					

1-Mean 2- Standard Deviation

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Table 3  
Ranking of the Citrus Growers' Social Capital Variables

Component	Social capital variables	M <sup>1</sup>	SD <sup>2</sup>	R <sup>3</sup>
Social interactions	Citrus grower's using the mass media	3.89	1.39	1
	Citrus growers' relation with other citrus growers	3.65	1.47	2
	citrus growers' contact agricultural experts and extension agents	3.60	1.52	3
	Citrus growers' relationship with agriculture Jihad organization expert and extension agents	3.55	1.57	4
	Citrus growers' contact with the agriculture service centers	3.52	1.57	5
	The citrus growers' consultation with local leaders and members in connection with citrus and horticulture	3.89	1.39	6
Social solidarity	Listening to citrus growers' advice	4.18	1.17	1
	Others' help to citrus growers in the times of troubles	4.0	1.26	2
	The citrus growers' unanimity in solving the village problems	4.16	1.33	3
	The interest in the continued presence in the village for citrus growing	4.14	1.31	4
	The hatred level among the villagers	1.77	1.11	5
Social participation	The people's referral to the citrus growers on personal and family issues	4.07	1.28	1
	Citrus growers' participation in mosques and religious ceremonies	4.03	1.32	2
	Citrus growers' reference to each other about their problems in citrus gardening	3.90	1.4	3
	Citrus growers' contribution in the development and production programs such as building bridges and river dredging	3.73	1.45	4
		3.71	1.46	5
	Citrus growers' participation in Village Council public meetings	2.09	0.97	6
	Citrus growers' participation in extension- education classes and workshops on citrus farming	4.48	0.94	1
Social trust	Citrus growers' trust in village assistant and members of the village council	4.24	1.09	2
	Citrus growers' trust in agriculture experts and extension agents	4.09	1.27	3
	Citrus growers' trust in the village educated people	3.74	1.46	4
	The citrus growers' trust in giving their working tools to others	3.71	1.57	5
	The citrus growers' accountability to each other	3.68	1.55	6
	The experts' and extension agents' keeping their promise	3.61	1.58	7
	The experts' and extension agents' skills from the citrus growers point of view	3.55	1.57	8
	The villagers' trust in strangers			
	Local people's using experiences of old villagers on citrus gardening	2.72	1.74	9
	The experts' and extension agents' favoritism in their job	2.0	1.26	10
Social awareness	Citrus growers' awareness of the social issues in the community	4.09	1.28	1
	The citrus growers' awareness of the citrus harvesting time	4.08	1.26	2
	Citrus growers' familiarity with citrus pests and diseases	3.70	1.21	3
	Citrus growers' information on the technology of pressurized irrigation systems	3.97	1.32	4
	The citrus growers' information about building the citrus garden	3.84	1.42	5
	Having information on pesticide needed to combat citrus pests and diseases	3.84	1.49	5
	Having the knowledge of integrated pest management technologies	3.77	1.55	6
	Citrus growers' information about the garden products market price and inflation	3.75	1.48	7
	Citrus growers information about modern garden machinery	3.7	1.5	8
	Having information on issues such as political parties and groups	3.67	1.4	9
	Citrus growers' awareness of the precise agriculture technologies (GPS, GIS, etc.)	3.65	1.56	10
Awareness of environmental factors such as compost	3.60	1.47	11	

1-Mean 2- Standard Deviation 3- Rank

Likert scale: None (0), very low (1), low (2), medium (3), much (4), very much (5)

participation, social interactions, and social awareness. In order to explain empowerment, different indexes of self-determination, competence, sig-

nificance, impact, and trust were used. Self-determination means people's feeling of freedom in doing their work. Competence rests on the

fact that people believe they have the required skills and abilities to perform their tasks. Significance holds the idea of valuable works done by empowered people, and impact states that people should be allowed to practically have impact on their environment and that their decision will be accredited. Finally, trust means that people must feel that they are fairly and equally treated. The questionnaire included questions about citrus growers' age, farming experience, family size, cultivation area, education, social capital components (on Likert scale), and empowerment index (on the Likert scale). The Likert scale ranged from 0 to 5 as none (0), very low (1), low (2), medium (3), much (4), very much (5). The independent variable was social capital, while the dependent variable was citrus growers' empowerment index in Sari County.

In this study, social capital and empowerment were categorized according to the interval of standard deviation from the mean (ISDM) (Sadati et al., 2010) as follows:  $A < \text{mean} - \text{SD}$  (Low),  $\text{mean} - \text{SD} < B < \text{mean}$ : (Medium),  $\text{mean} < C < \text{mean} + \text{SD}$ : (Much) and  $\text{mean} + \text{SD} < D$  (Very much). The Spearman correlation coefficient was calculated to show the magnitude of the relationship

between the variables, and the stepwise multiple regression coefficients were computed for the examination of the correlation of the independent variables with the dependant variable.

**RESULTS AND DISCUSSION**

As Table 2 reveals, the citrus growers' average age was 49.4 years and their average work experience and family size were 25.58 years and 4 people, respectively. Considering the citrus growers' literacy level, as Table 2 shows, 25.8 percent had diploma.

Table 3 shows that the component of social interactions, the variables of citrus grower's using the mass media, their relation with other citrus growers and citrus growers' contact with agriculture organization experts, and extension agents ranked the first to the third, respectively. Regarding the social solidarity component, the variables of listening to citrus growers' advice, others' helping citrus growers in times of trouble, and the citrus growers' unanimity in solving the village problems ranked the first to the third, respectively. Concerning the social participation, people's referral to the citrus growers on personal and family issues, citrus growers' participation in mosques and religious ceremonies, and citrus

Table 4  
*The Citrus Growers' Social Capital Level in Sari*

Level	Frequency	Valid percent	Cumulative percent
Low	1	0.3	0.3
Medium	93	32	32.3
Much	192	66	98.3
Very much	5	1.7	100
Total	291	100	

The ranking mean: 3.69    Median: 4    Standard Deviation: 0.51  
Likert scale: None (0), very low (1), low (2), medium (3), much (4), very much (5)

Table 5  
*Ranking of Citrus Growers' Social Capital Components in Sari*

Social capital component	M <sup>1</sup>	SD <sup>2</sup>	R <sup>3</sup>
Social awareness	3.82	0.82	1
Social participation	3.66	0.95	2
Social interactions	3.66	1.16	2
Social solidarity	3.63	0.72	3
Social trust	3.62	0.76	4

1- Mean    2- Standard Deviation    3- Rank  
Likert scale: None (0), very low (1), low (2), medium (3), much (4), very much (5)

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Table 6  
Ranking of the Citrus Growers' Empowerment Variables

Component	Variable	M <sup>1</sup>	SD <sup>2</sup>	R <sup>3</sup>
Self-determination	Citrus growers' aid to others in new agricultural practices	3.95	1.37	1
	The voluntary acceptance of new ideas and techniques	3.94	1.26	2
	Self-study in citrus gardening issues	3.68	1.39	3
	Citrus growers' ability in selling and marketing the products without getting help	3.52	1.61	4
	Using indigenous knowledge	3.48	1.49	5
	Citrus growers' using experienced gardeners' information	3.48	1.56	5
Competence	The rapid adoption of farming techniques	4	1.36	1
	The ability to apply animal manure instead of chemical fertilizers	3.89	1.26	2
	Citrus growers' teamwork to improve the products	3.85	1.37	3
	Willingness to establish selling and marketing unions for the product	3.83	1.43	4
	The citrus growers consultation with the agricultural experts to increase the product	3.79	1.45	5
	The ability to use their skills and potentialities to increase horticultural products	3.76	1.43	6
Meaning	Citrus growers' ability to do their work using modern methods	3.72	1.33	7
	Willingness to gain new information	4.39	1.01	1
	Citrus growers' responsibility toward gardening	4.38	1.08	2
	The importance of citrus gardening for the citrus growers	4.32	1	3
	Consciously following the traditions and customs	4.3	1.09	4
	Having a clear and unambiguous plan for their future	4.27	1.06	5
Impact	Believing in the gardeners' suitable condition	4.18	1.09	6
	Trying to learn the garden products conservation	4	1.38	1
	The effective participation in the village activities	3.98	1.35	2
	Believing in the cooperation between the villagers and the government for agricultural development	3.86	1.43	3
	Achieving the fruitful results in training courses	3.86	1.45	3
	Getting information from the experts in establishing self-assisting rural institutes	3.54	1.47	4
Trust	Accepting the experts' presence in rural areas	4.15	1.25	1
	The citrus growers' consultation with experienced villagers and extension agents	4.1	1.38	2
	Using the experts' opinions on using suitable application of the modern gardening technologies	3.94	1.5	3
	The interest in horticultural activities	3.84	1.46	4
	The positive attitude toward the government	3.83	1.53	5
	Getting the practical and necessary information in fighting the pests and diseases from the gardeners	3.81	1.65	6

growers' reference to each other about their problems in citrus gardening were placed from the first to the third, respectively. In terms of social trust, variables of trust in village assistant and members of the village council, citrus growers' trust in agriculture experts and extension agents, and citrus growers' trust in the village's educated people ranked the first to the third, respectively. Finally, with respect to the social awareness, the citrus growers' awareness of the social issues in the community, their awareness of the citrus harvesting time, and their familiarity with citrus pests and diseases ranked the first to

the third, respectively.

The findings in Table 4 reveal that the citrus growers' average social capital was high which is inconsistent with the results of the study by [Sadati et al. \(2012\)](#). Furthermore, factors like awareness, participation, interactions, solidarity, and social trust were prioritized from the first to the fifth, respectively (Table 5).

Based on the information presented in Table 6, self-determination, empowerment index, citrus growers' aid to others in new agricultural practices, the voluntary adoption of new ideas and techniques, and self-study in citrus gardening

issues ranked the first to the third, respectively. Considering the competence index, the rapid adoption of farming techniques, the ability to apply animal manure instead of chemical fertilizers and citrus growers' teamwork to help improve the quality of products were placed in the first to the third ranks, respectively. Regarding the empowerment meaning index, the variables of willingness to gain new information, citrus growers' responsibility toward gardening, and the importance of citrus gardening for the citrus growers were ranked the first and the third, respectively. Concerning the empowerment impact, trying to learn the garden products conservation, effective participation in village activities, and believing in the cooperation between villagers and the government for agricultural development were ranked the first to the third, respectively. Finally, as regards the empowerment trust, accepting the experts' presence in rural areas, the citrus growers' consultation with experienced villagers and extension agents, and using the experts' opinions on the correct application of modern gardening technologies were placed in the first to the third ranks, respectively.

The results in Table 7 show that the average citrus growers' empowerment in Sari was high which shows high levels of their empowerment.

The indexes of meaning, trust, impact, competence, and self-determination were ranked the first to fifth among the citrus growers' empowerment in Sari (Table 8).

It was hypothesized that there

was no significance relationship between the citrus growers' social capital and empowerment in Sari? To test the research hypothesis, the Spearman correlation coefficient was calculated. The results are given in Table 9 below.

Table 9 reveals a significant relationship between social participation, social trust, and empowerment self-determination which is in line with the results of the study by Spreitzer (1995). Moreover, a significant relationship exists between social interactions, social solidarity, social trust, social awareness, and empowerment competence. Ghaiumi et al. (2014) showed that from among social capital components, trust played an important role in empowerment process. Moreover, there is a significant relationship between social participation and empowerment meaning which is consistent with the results of the study by Spreitzer (1995). As can be seen in Table 10, there is a significant relationship between the social solidarity, social participation, and empowerment impact. A significant correlation was also observed

Table 7  
*The Citrus Growers' Empowerment Level in Sari*

Level	Frequency	Valid percent	Cumulative percent
Medium	44	15.1	15.1
Much	212	72.9	88
Very much	35	12	100
Total	291	100	

The ranking Mean: 3.97    Median: 4    Standard Deviation: 0.52  
Likert scale: zero (0), very low (1), low (2), medium (3), much (4), very much (5)

Table 8  
*Ranking the Citrus Growers' Empowerment Index in Sari*

Index	M <sup>1</sup>	SD <sup>2</sup>	R <sup>3</sup>
Meaning	4.35	0.77	1
Trust	3.98	1.06	2
Impact	3.85	1.07	3
Competence	3.84	1.01	4
Self-determination	3.76	1.04	5

1- Mean    2- Standard Deviation    3- Rank  
Likert scale: zero (0), very low (1), low (2), medium (3), much (4), very much (5)



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Table 9  
The Correlation between the Citrus Growers' Social Capital and Empowerment

Social capital	Empowerment	r <sub>s</sub>	p-value
Social interactions	Self-determination	0.067	0.253
Social solidarity		-0.057	0.335
Social participation		0.331**	0.000
Social trust		0.222**	0.000
Social awareness		0.112	0.057
Social interactions	Competence	0.290**	0.000
Social solidarity		-0.160**	0.006
Social participation		0.013	0.823
Social trust		0.185**	0.002
Social awareness		0.548**	0.000
Social interactions	Meaning	0.056	0.345
Social solidarity		0.097	0.099
Social participation		0.166**	0.005
Social trust		0.036	0.537
Social awareness		0.020	0.730
Social interactions	Impact	0.034	0.559
Social solidarity		0.170**	0.004
Social participation		0.271**	0.000
Social trust		0.011	0.846
Social awareness		0.033-	0.574
Social interactions	Trust	0.360**	0.000
Social solidarity		0.169**	0.004
Social participation		0.005	0.928
Social trust		-0.028	0.640
Social awareness		0.075	0.202
Social capital	Empowerment	0.349**	0.000

\*\*p<0.01 \* p< 0.05

Table 10  
The Citrus Growers' Empowerment Regression by Social Capital in Sari Township

Model	Unstandardized coefficients		Standardized coefficients	t	p-value
	B	Std Error	Beta		
1 (Constant)	2.615	0.211	-	12.395	0.009
Social Capital	0.367	0.057	0.356	6.480	0.002

R = 0.356; R<sup>2</sup>= 0.127; Adjusted R<sup>2</sup> = 0.124; F = 41.99; Sig = 0.000

between social interactions, social solidarity, and empowerment trust, and finally, there was a significant relationship between citrus growers' social capital and empowerment suggesting that the higher social capital, the higher the level of empowerment, which is in agreement with Aazami et al. (2012), Fewer et al. (2013), Ghashghaeizadeh et al. (2014), Keshavarzi et al. (2011), and Widiarta et al.'s (2009) study findings. Aazami et al. (2012) argue that social capital provides empowerment for rural people by increasing income through members' ac-

tivities in local groups, controlling income, and by developing economic and social activities.

The stepwise linear regression was used to determine the role of social capital on citrus growers' empowerment in Sari County. Table 10 shows that 12.4 percent of the citrus growers' empowerment variance is explained by social capital and that social capital correlates with the level of empowerment by 36.5 percent. The regression equation is as follows:

$$Y = 2.615 + 0.367 (\text{Social Capital})$$

## CONCLUSION AND RECOMMENDATIONS

The results showed that the citrus growers' average work experience was 25.58 years, representing a good level of experience in gardening. The citrus growers' average empowerment in Sari was high, showing their high level of empowerment. Considering self-determination as an element of empowerment, it is recommended to pay special attention to social participation and trust. To strengthen the empowerment competence, particular consideration must be practiced on social solidarity, social trust, social interaction, and social awareness, and social participation must be exercised to foster empowerment meaning. Moreover, social solidarity and social participation must be considered to strengthen the empowerment impact. In addition, it has been suggested that the empowerment trust will be strengthened through social interactions, social solidarity, and empowerment trust.

Considering the self-determination as an element of empowerment, variables such as the citrus growers' aid to others in new agricultural practices, the voluntary adoption of new ideas and techniques, and self-study in citrus gardening issues should be more emphasized. As regards competence as yet another element of empowerment, the rapid adoption of farming techniques, the ability to apply animal manure in lieu of chemical fertilizers, and citrus growers' teamwork to improving the products quality should be highlighted. Concerning meaning as an element of empowerment, the variables of willingness to gain new information, citrus growers' responsibility toward gardening, and the importance of citrus gardening for the citrus growers must be taken into consideration. As regards impact as yet another element of empowerment, trying to learn the garden products conservation, the effective participation in the village activities, and believing in the cooperation between villagers and the government for agricultural development should be taken into account. Considering trust as another element of empowerment, accepting the experts' presence in rural areas, the citrus growers' consultation with experienced villagers and extension agents, and using the experts' opinions on correct application of modern gar-

dening technologies must be considered.

The result also showed that the component of social interactions, the variables of citrus grower's using the mass media, their relation with other citrus growers and citrus growers' contact with agricultural experts and extension agents ranked the first to the third, respectively. Regarding the social solidarity component, the variables of listening to citrus growers' advice, others' help to citrus growers in times of trouble, and the citrus growers' unanimity in solving the village problems ranked the first to the third, respectively. Concerning the social participation, people's referral to the citrus growers on personal and family issues, citrus growers' participation in mosques and religious ceremonies, and citrus growers' consultation with to each other about their problems in citrus gardening were placed in the first to the third rank, respectively. In terms of social trust, variables of trust in village assistant and members of the village council, citrus growers' trust in agriculture experts and extension agents, and citrus growers' trust in the village's educated people ranked the first to the third, respectively. Finally, pointing to the social awareness, the citrus growers' awareness of the social issues in the community, the citrus growers' awareness of the citrus harvesting time, and their familiarity with citrus pests and diseases ranked the first to the third, respectively.

Given the results of the present study, then, it is necessary to strengthen citrus growers' use of mass media, their relation with other citrus growers and their contact with agriculture organization expert and extension agents among the components of social interactions.

For the social solidarity, it is recommended to emphasize listening to citrus growers' advice, citrus growers' help in times of troubles, and the citrus growers' unanimity in solving the village problems.

Regarding the citrus growers' social participation, the people's referral to the citrus growers on family and personal matters, their participation in mosques and religious ceremonies, and their consultation with each other about their problems in citrus gardening must be addressed.

It is important for the social trust to consider

citrus growers' trust in village assistants and members of the village council, their trust in agriculture experts and extension agents, and their trust in the village educated people.

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