



# The Relationship between Extension Educational and Psychological Factors and Participation of Agricultural Co-operatives' Members (Case of Shirvan Chardavol County, Ilam, Iran)

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## Abstract

The forty-year history of agricultural production co-operatives in Iran shows that this type of exploitation system has faced with many challenges during this period. First, despite the help and support by the government, the co-operative sector has not been able to play a major role in the development of the country, and its share has not exceeded 3% of the development program. The Purpose of this research was to examine the relationship between extension educational, psychological factors and the participation of members of agricultural co-operative in the Ilam Province. A researcher made a questionnaire that was used as the main tool for gathering data. The face and content validity of the questionnaire were confirmed by a group of university professors as well as several experts of the co-operatives. In addition, the reliability of the questionnaire was ensured through calculating a Cronbach's alpha coefficient ( $\alpha = 0.80$ ). The statistical population of the study comprised 751 active members of Shirvan-Chardavol township's agricultural cooperatives, from among whom 260 participants were selected for the study using the stratified proportional random sampling method and with the aid of Morgan table. Data analysis was performed using the SPSS software. The correlation coefficient showed that there was a significant relationship between the extension educational, psychological features and level of participation of members of agricultural co-operative.

### Keywords:

agricultural production co-operative, extension educational, participation, psychological factors

## INTRODUCTION

Agriculture cooperative is a group of farmers who pool their resources together in certain areas of activity to facilitate optimal production through efficient use of these resources. This pooling of resources include joint purchase of farm inputs like seed, farm machinery, aiding members morally and financially during cultivation and seeking marketing channels for farm products to ensure better and fair prices. The purpose of forming cooperatives is to create a secured environment in terms of food security and the improvement of the standard of living among other members of the community agricultural co-operatives play an important role in the development of agriculture in industrialized countries as suppliers of farming requisite, marketers of agricultural commodities and providing services such as storage and transport. In recent past in South Africa agricultural cooperatives were promoted because they served as agents of agricultural marketing boards and the land bank, which provided subsidized loans to commercial white farmers (Derr, 2013; Ortman & King 2007). Therefore, farmers form or participate in agricultural co-operatives to overcome barriers such as poverty, market failure, missing services, decreased income, and reduced transaction costs with traders and contribution to the development of the community. Agricultural co-operatives help in enhancing productivity through access to resources and management skills as members. Pool their resources together, and through access to resources co-operatives can improve their profit and standard of living. Agricultural co-operatives establish viable and strong linkage with extension agencies in the field of agriculture and technology so that they could access sufficient resources buying of seeds, selling of grain or even helps with the marketing efforts. The agricultural co-operatives in South Africa are the organizations that could enhance the development of small scale farmers and other communities (Ortman et al., 2007; Vink 2012).

The principles of the agricultural cooperatives are voluntary and open membership, which simply implies that every member of the co-operative is free to enter or exit the organization. An agri-

cultural cooperative principle also includes democratic member control, member economic participation, autonomy, and independence, provision of education, training, and information. These principles are provided in order to enhance development and sustainability in an agricultural organization which influence the economic development in the country. Agricultural co-operatives are involved in job creation and are also responsible for the training of the employee in order to perform well and achieve the organization's goal (Sheikhi, 2009; Webster et al., 2011). It also appears that many of the agricultural co-operatives are adapting their operations to the rapidly changing economic environment characterized by technological change, industrialization of agriculture and the growing of individualism with the objective to generate greater profits by obtaining inputs and services at the lower cost and by marketing their products at better prices. Many types of agricultural co-operatives were established, including the consumers, producers and workers (Barton, 2000). Agricultural co-operatives play a prominent role both historically and in terms of the volume of trade, and in addition several agricultural cooperatives currently rank among the top 50 of agribusiness firms, and thus participation in agricultural co-operatives could have a large impact on the agricultural sector (Ehsani et al., 2011). Participation has been defined and measured in a variety of ways in the studies of agricultural cooperation ranging from simple counts of membership to measure financial support and involvement in the running of the organization (Mohajerani & Asgari, 2005). Extension agencies ensure that the co-operatives utilize resources efficiently so that production can be improved. Despite the advantages associated with membership of co-operatives, many farmers do not participate in co-operative activities. This becomes a barrier for the success of the co-operative. Poor participation is part of a larger problem for the development of small-scale agricultural cooperatives. This problem becomes more acute as no one will be responsible for overall farm management. Lack of participation in co-operative activities may be caused by members who do

not have much experience in working with the others and sometimes members have not sufficiently developed the acceptance and trust of self and others necessary to work together. This study attempts to examine factors that influence farmers' participation in co-operatives, which will enhance farmers' participation in the cooperative activities. Factors that are responsible for the improvement of participation are important because they develop rural areas by reducing poverty. Pressures from the lack of adequate necessary resources, difficulty and inconsistency of trade conditions, the rising volume of foreign debts and finally the problem of repayments of loans, has caused the governments to seek solutions and to try other methods economic development. This is why the governments are trying to encourage participation of the people in the economic affairs and use co-operatives as a mechanism for accelerating the economic development of the villages. Agricultural production cooperatives are cooperation based exploitation systems in which the farmers produce agricultural crops through collective farming using integrated cultivation method meanwhile maintaining individual ownership. Nowadays the international community and conventions admit the relationship between the public potential and real stakeholders (Pakniat et al., 2007). Many previous experiences of the governments in different regions, especially in rural areas indicate that the non-involvement of the people in the processes of the plans has caused the villagers to never feel they belong to the projects implemented. This has provided for failure of such projects in long-term (Baghaee, 2006). 40-year history of agricultural production co-operatives in the country shows that this type of exploitation system has faced many ups and downs during this period. First, despite the help and support by the government, the co-operative sector has not been able to play a major role in the development of the country and its share has not exceeded 3% of the development program (Arayesh, 2011). Second, the co-operative movement in all successful countries is considered a popular movement, while in Iran the government has been the pioneer of the movement. This can cause people to doubt the noble ideas of taking

part in co-operatives, and imagine it as a state or quasi-governmental organization with particular political desires. In such circumstances the members do not feel they belong to co-operatives and do not make much effort to achieve its goals. (Shaighi & Arfaei, 2009). According to the statistics provided by the end of 2006, there have been about 1,046 active agricultural production co-operatives in the country, covering a total of 4,963 villages with a population of about 278,362 people (Bazrafshan & Hatam, 2010). There are 174 agricultural co-operatives in the city of Shirvan-Chrdavol and Halylan from which 102 co-operatives (751 members) are active, 46 co-operatives are inactive, and 26 co-operatives are in their establishment stage (Ehsani et al., 2011). Many researchers have pointed to the neglect of the co-operative system in the national economy, as the most important harming factor that may eventually bring the system to crash (Alebouyeh et al., 2006). As a matter of fact, many of the production co-operatives in our country lack the features of actual co-operatives, because most of them have been established by the government; in fact they are unreal or semi-co-operatives (Mohajerani & Asgari, 2005). Most of agricultural co-operatives have failed in achieving a sustainable performance due to gradual deterioration of their members' essential role and failure in improving management performance in accordance with the economic changes. Also, according to official reports of the Ministry of Co-operatives in the year 2006, there were some 129 thousand cooperative in the country of which only 92 thousand co-operatives were active and the rest was on the verge of dissolution (Ehsani et al., 2011). To solve such major problems in the country is real and not symbolic participation in public policies and investments to cooperatives and other organizations providing social, political and cultural role of national development objectives assigned to the. In fact, the agricultural sector of Iran in general and Shirvan-Chardavol Township in particular is in need of such associations. The fundamental problem of this research is studying the reasons why the Shirvan-Chardavol farmers have little motivation for participating in agricultural production co-operatives, and why they are more

interested in individual exploiting system. To examine the fundamental problem of this study, the following questions have been raised: Why Shirvan-Chardavol Township farmers have little participation in agricultural cooperatives? What factors can be effective in encouraging them to more constructively participate in such co-operatives?

Ochan and Conigwo (2016) argue that participation is a process that makes member participates in the economic activity and in making decisions. Participation in decision making is the only means to make them realize that they are the owners of the organization.

According to Brown and Korte (1998) members were seen to be highly devoted to decisions in which they have participated actively rather than decision which was forced on them. The more members participate in their cooperatives, the more they will be dedicated to their co-operative and grow it.

Jangim et al. (2014) consider the following factors as the main challenges and risks among the co-operative members, affecting the performance of the co-operatives. Lack of motivation among the staff, top-down planning, lack of funds and delayed allocation time, lack of educational facilities in the extension centers, low-literacy and illiteracy of majority of the farmers, lack of skilled manpower, the farmers' distrust of some experts, non-institutionalization of people's participation, extension staff involvement in administrative works, lack of proper planning in the network use of the popular forces, the lack of updated information of extension staff, lack of refresher courses and lack of extension law in the extension system of the country. Thomas and Fanaye (2012) adopted a regression model to analyze the determinants of the proportion of women in the membership of agricultural co-operatives and logit model to study the determinants of women membership in agricultural co-operatives in Ethiopia. The results from logistic regressions show that the functions undertaken and the way the co-operatives are organized significantly affect the women proportion in co-operative membership. The results from logit regression show that age and household size are likely to influence women's participation

in cooperative. These results gave some insight into how the current study was modeled. A study by Saharkhiz (2009) used a regression model to evaluate the mechanisms of attracting popular participation in the co-operative entities, especially multi-purpose co-operatives, from the perspective of co-operative sector and the relevant organizations executive directors. The results of that study showed that the government supportive policies regarding the co-operative sector (especially in multi-purpose co-operative entity framework) played the most important and influential role in attracting popular participation. Promoting the scientific and technical capabilities of the cooperative managers and increasing the people's awareness of the co-operative sector were the next crucial factors in this regard.

Othman et al. (2012) analyzed the factors that influence cooperative membership and increment in shares in Malaysian Co-operatives using a logit model. The results of that study showed that age, occupation, annual general meeting attendance and membership duration are important predictors in the model. Gender negatively influenced co-operative membership and those people in the older age group are more likely to become co-operative members. These insights are considered useful in the current study.

Seifi Khodashhry (2009) in a study entitled "*participation effects of fishermen members of Guilan province cooperatives in economic performance of the co-operatives*" concluded that there is a significant relationship between the literacy, membership history, amount of shares, knowledge of co-operative principles and regulations, satisfaction from the co-operative, attending the training - extension courses and ultimately economic performance from the one hand and participation level from the other.

Papzan (2005) considers the following factors as the main challenges and risks among the co-operative members, affecting the performance of the co-operatives:

Lack of motivation among the staff, top-down planning, lack of funds and delayed allocation time, lack of educational facilities in the extension centers, low-literacy and illiteracy of majority of the farmers, lack of skilled manpower, the



farmers' distrust of some experts, non-institutionalization of people's participation, extension staff involvement in administrative works, lack of proper planning in the network use of the popular forces, the lack of updated information of extension staff, lack of refresher courses and lack of extension law in the extension system of the country. The research result of (Zare & Razaghi, 2008) showed that co-operative management experience in range management, involving members of co-operatives in decision-making and the education level of managers has had a significant positive effect on the success of the cooperative rangeland management. Steinhoff (2008) studied the use of Internet in consumption co-operatives. Nowadays the Internet plays an important role in members' participation in many countries. For example, the PAL system was established in Japan in 2001 and in 2007, the number of subscribers reached to more than 2.2 million members. In total, about 0.35 of total co-operative members of Japan are also members of the PAL systems (Steinhoff, 2008). The finding research of (Ghorbani, 2011), showed that factors such as the need for a co-operative, age, education level, place of residence of the members in the village were effective on rural participation in the management of co-operatives. The research results of Reddy (2002) showed that rural co-operatives were effective on the economic, social, and environmental and natural resources development. Baratnia (2010) in his research showed that there is a significant relationship between educational level of co-operatives members, social status, motivation for participation, occupational status of members, willingness to participation, the social relations among members and the members access to the mass media with their social participate. Studies conducted by (Arayesh, 2011) showed that the empowerment of members has a positive relationship with their participation in co-operatives.

The general objective of this study was studying the relationship between extension educational and psychological factors with the variety of agricultural co-operatives' members' participation together with the following specific objectives:

1- Prioritizing of extension educational and

psychology factors

2 - Studying the relationship between the extension educational and psychological factors with the variety of agricultural co-operatives' members' participation.

## MATERIALS AND METHODS

This study was of an applied, a survey, and a descriptive-correlation research type. The main tool for gathering data was a questionnaire and the statistical population of the research comprised 751 active members of Shirvan-Chardavol Township's agricultural co-operatives, from among whom 256 participants were selected as samples using the Morgan table, based on the stratified proportional random sampling method. The number of samples was increased to 260 samples to ensure higher validity. The validity of the questionnaire was established by a group of university professors and members of the Research Council of Ilam Province Department of Cooperatives. Also, for the purpose of determining the reliability of the questionnaire, a pilot test was given to a sample group of 25 cooperative members and a Cronbach's alpha coefficient of 0.80 was reported for different parts of the questionnaire having processed the data through SPSS. The variable of participation is measured by eight questions with five-point Likert scales. Also, the variable of extension educational is measured by eight items with five-point Likert scales. Finally, the variable of psychological factors is measured by seven questions with five-point Likert scales. The mean scores was used to prioritize the variables. The spearman correlation coefficient was used to examine relationship between variables.

## RESULTS AND DISCUSSIONS

### Demographical features

The findings showed that the mean age of the individuals under study has been 45 years, while the age class of 41 to 50 years old samples had the highest frequency. About 94% of the members were men and about 6% of them were women, suggesting that women did not have an active role in agricultural co-operatives of the region. In addition, 23.1% of the members were high

Table 1

*Prioritizing of Extension Educational Factors in the Agricultural Co-operatives*

Item	M	SD	Rank
Radio educational program	3.60	1.16	1
Extension Visits	3.60	1.23	2
Distributing of Extension publications and leaflet	3.65	1.27	3
The number of training workshops held in the Cooperative	3.58	1.25	4
Showing of educational films	3.65	1.28	5
Frequency of extension courses	3.56	1.26	6
T.V educational programs	3.52	1.25	7
Frequency of extension agent contact with the cooperative members	3.52	1.27	8

school graduates, 14.9% were above high school graduates, 14.5% were university graduates and higher, 13.3% had some middle school education, 9% were primary school educated, and 8.6% had some high school education. Moreover, 16.5% of the samples were illiterate, indicating that half of the members were illiterate or uneducated; this emphasizes the necessity for considering the required facilities for their literacy by respective organizations. Studies showed that most of the participants' profession was animal husbandry and farming, and fewer were self-employed, employees, and workers. The results showed that the average background years of membership in agricultural co-operatives were about 12 years. The average area of agricultural land obtained in this study was equal to be 6.5 acres, and more than half of the people possessed between one and five hectares of farmland. Studies on the annual income of the members earned from farming occupation have shown that about 37.8% of the total members under study have an annual income of equal to or less than 4,000,001 IRR. In addition, 34.5% of the members under study have an annual income somewhere between 40,000,001 and 80,000,000 IRR from farming occupation. In most cases, that is 67.1%

of the samples under study enjoyed private property ownership and the rest exploited their farmlands through renting, shareholding, endowed lands, nationalized, and collective lands. The study showed that the members' awareness and knowledge level about the benefits of participation in agricultural co-operatives was moderate to high.

#### **Prioritizing of extension educational factors in the agricultural cooperatives**

In the field of prioritizing of extension educational factors in the agricultural co-operatives, eight variables were examined that the first three extension method are listed in Table 1. According to the Table1, radio educational program was located in the first Priority. Extension visits and distributing of extension publications and leaflet were located in the second to third priority.

#### **Prioritizing of psychological factors in the agricultural co-operatives**

In the field of prioritizing of psychological factors in the agricultural co-operatives, seven psychological variables were examined in this study. Coefficients of variation were used to prioritize the variables. The results of priority

Table 2

*Prioritizing of Psychological Factors in the Agricultural Co-operatives*

Item	M	SD	Rank
Customer's satisfaction of the cooperatives	3.62	1.22	1
Co-operative knowledge and belief	3.68	1.25	2
Interesting in the team work	3.66	1.28	3
Suitability of the emotional climate between cooperative members	3.51	1.34	4
The members believe in the principles of cooperation	3.52	1.41	5
Cooperative members Belief to the principles of cooperation	3.50	1.42	6
Existing of the Spirit of cooperation among members	3.44	1.40	7

Table 3  
Relationship between the Research Variables (Spearman Correlation Coefficient)

Variable	r	p-value
Educational–extension features	0.23**	0.000
Psychological features	0.36**	0.000

\*\*p<0.01

is shown in Table 2, it can be argued that customers' satisfaction with the co-operatives are located in the first priority. Co-operative knowledge and belief, interesting in the team work are located in the second to thirty priority.

### Correlation studies

In the present study, the Spearman correlation coefficient was used for assessing the relationship between the research variables in accordance with the employed scales (Table 3). Correlation coefficient results showed that there was significant relationship between the educational–extension, psychological features, and agricultural cooperatives' members' participation from the other.

### CONCLUSION AND RECOMMENDATIONS

Agricultural production co-operatives are co-operation systems in which the farmers produce agricultural crops through collective farming using the integrated cultivation method, while, at the same time, trying to maintain individual ownership. Nowadays, the international community and conventions admit the relationship between the public potential and real stakeholders. In the field of prioritizing of extension educational factors in the agricultural co-operatives, radio educational program was located in the first Priority. Also, in the field of prioritizing of psychological factors in the Agricultural Co-operatives, it can be argued that customers' satisfaction with the cooperatives are located in the first priority. Co-operative knowledge and belief, interesting in the team work, the homogeneity of the co-operative members, the suitability of the emotional climate between cooperative members, co-operative members' having faith in the principles of cooperation, and a spirit of cooperation among the members are located in the second to seventh priority. The correlation coefficient results showed that there

was a significant relationship between the two variables of educational extension factors and the level of participation of agricultural members of agricultural co-operatives. This finding is consistent with the findings of the studies conducted by (Arayesh, 2011); Seifi Khodashhry (2009); Papzan (2005). Studies conducted by Ghorbani (2011); Maghsoudi (2009); Steinhoff (2008) showed that the co-operatives' member psychological features have an impact on their participation in agricultural co-operatives' activities. This finding has also been corroborated by the findings of the present study. According results of this research are offered the following suggestions:

- Due to Remarkable contributions of educational factors in the Attract the participation of co-operatives members, it is suggested that training be conducted educational visits to successful agricultural co-operatives.
- Preparation of educational brochures is the important action that can be increase knowledge and information of co-operatives members.

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### REFERENCES

- Alebouyeh, S., Rezaei Moghadam, K., & Baradaran, M. (2006). Innovation creation in rural cooperatives emphasizing the entrepreneurial behavior characteristics: challenges and opportunities. *Journal of Cooperative and Agriculture*, 23, 25-28.
- Arayesh, B. (2011). Identifying the Factors Affecting the Participation of Agricultural Cooperatives' Members. *American Journal of Agricultural and Biological Sciences*, 6(4), 560-566.
- Baghaee. M. (2006). Methods of attracting the villagers participation in watershed management

- plans (case study: drainage area of Zarcheshmeh Honjan)", MS thesis, College of Agriculture, Tarbiat Modares University, Tehran, Iran.
- Baratnia, S. (2010). A comparative study of the factors influencing the social participation of members of teacher's co-operatives of Komishan Township. Unpublished Dissertation, Allameh tabatabaie University, Tehran, Iran.
- Barton, D. (2000). What is a Co-operative? Arthur Capper Co-operative Center, Kansas State University, USA. *Agrekon*, 46(2), 18-30.
- Bazrafshan, J., & Hatam, S. (2010). Pathology of rural production cooperatives of Iran. Proceedings of Fourth International Congress of the Islamic World Geographers, 4-6 June, 2010, Zahedan, Iran.
- Brown, D., & Korte, C. (1997). *Institutional development of local organisations in the context of farmer-led extension: the agroforestry programme of the Mag'uugmad Foundation* (No. 68). ODI Agricultural Research & Extension Network.
- Derr, J. B. (2013). The Co-operative movement of Brazil and South Africa. *Sustainable Development*, 1, 1-14.
- Ehsani, N., Arayesh, B., & Chaharsoghi, H. (2011). Factors affecting Participation of Agricultural Cooperatives (A Case Study, Chardavol County, Ilam, Iran). *Journal of Cooperative and Agriculture*, 10, 55-74.
- Ghorbani, A. (2011). The survey of members' participation in the management of rural cooperatives of Mazandaran province. Unpublished Dissertation of administration management, Sari branch, Islamic Azad University, Sari, Iran.
- Jangim A., Mirdamadi, S, M., & Jangi, A. (2014). Legal and Stitutional Challenges of user's participation in the Management of Irrigation networks. The first national conference of water resources and agricultural challenges, Drainage and Irrigation Association, februray 6, 2014, Khorasgan Branch, Islamic Azad University, Iran.
- Maghsoudi, T. (2009). Agricultural and Rural Development: concept of cooperation and cooperatives and their differentiation with similar terms. Retrived from: <http://dehati59.blogfa.com/post-49.aspx>.
- Mohajerani, M., & Asgari, J. (2005). *Cooperation Developments in Iran: Past, Present, and Future*. 3<sup>th</sup> edition, Tehran: Sarvestan Publications.
- Ortmann, G. F., & King, R. P. (2007). Agricultural cooperatives I: History, theory and problems. *Agrekon*, 46(1), 18-46.
- Ochan, D., & Conigwo, G. (2016). Assessment of factors affecting member's participation in fishery cooperatives. *Journal of Business Management and Social Sciences*, 5(12), 12-22.
- Othman, A., Kari, F., Jani, R., & Hamdan, R. (2012). Factors influencing Cooperative Mmbership and Share Increment. *World Review of Business Research*, 3(5), 24-35.
- Pakniat, F., Hosseinzadeh Tabrizi, S. A., & Almaspour, F. (2007). People's participations role of East Azerbaijan & Ardabil provinces. The 4 Asian Regional Conference & 10 International Seminar on Participatory Irrigation Management. May 2-5, 2007. Tehran, Iran.
- Papzan, A. (2005). *Introduction to qualitative research method*. 2<sup>th</sup> edition, Kermanshah: Razi University Publishing.
- Reddy, N. (2002). Natural resources management through rural cooperatives: Issues of people participation and monitoring. International Symposium Sustaining Food Security and Managing Natural Resources in Southeast Asia Challenges for the 21<sup>st</sup> century. Chiang Mai, Thailand.
- Saharkhiz, E.(2009). A study of the ways of attracting the people participation in creating cooperatives particularly Multi-purpose cooperatives-from the viewpoint of administrative managers related to cooperative sector. Unpublished Dissertation of sociology, Hamedan Branch, Islamic Azad University, Iran.
- Seifi Khodashahri, H. A. (2009). Member Participation and Business Operation in Gilan Beach Seine Co-operatives. *Journal of Cooperation and Agriculture*, 20(204), 63-91.
- Shaighi, M., & Arfaei, M. (2009). Study of management factors influencing of member participation of agricultural cooperatives in Tehran province. *Journal of Research Agricultural Extension and Education*, 3(2), 49-62.



- Sheikhi, M.(2009). A study of the factors influencing the member participation of agricultural cooperatives in decision making relative to the management of Tehran province agricultural cooperatives. Unpublished Dissertation, Tehran University.
- Steinhoff, D. (2008). The Changing Face of Member Participation. CCI News, 55, 1- 26, Retrieved from: [http://www.co – op.jp/ccij/](http://www.co-op.jp/ccij/).
- Thomas, W. A., & Fanaye T. ( 2012). *Women ‘‘s participation in agricultural cooperatives in Ethiopia*. International Food Policy Research Institute, Addis Abeba, Ethiopia.
- Vink, N. (2012). The long-term economic consequences of agricultural marketing legislation in South Africa. *South African Journal of Economics*, 80(4), 553–566.
- Zare, M. J., & Razaghi, M. S. (2008). Investigation of management factors in the success of the rangeland cooperative in Golestan Province. *Journal of Agricultural Extension and Economic*, 3(1), 1-4.
- Webster, A., Shaw, L., Stewart, D., Walton, J. K., & Brown, A. (2011). The hidden alternative. *The hidden alternative: Co-operative values, past, present and future*, 1-15.

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