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Identify and analysis of indicators and sub-indicators of innovation management in agricultural cooperatives of Iran

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Abstract

The purpose of the research was identifying and analyzing of indicators and sub-indicators of innovation management in agricultural cooperatives of Khuzestan province, Iran. Causal-comparative research has been used to achieve the research objectives. In this study, the Ex-Post Facto or causal-comparative research method was used to compare the current and favorable situation of agricultural production cooperatives in accordance with the indicators of innovation management in Khuzestan province, Iran. Members of agricultural cooperatives with farming branch in Khuzestan province were 3823 people. the sample size was determined by using Krejcie and Morgan table, (n=349). The sampling method was stratified random sampling method. Statistical analysis of the research was performed using SPSS software version 22. To compare the current and favorable situation of innovation management indicators in agricultural cooperatives, Wilcoxon test was used. Based on the results, all indicators of innovation management, ie innovation creation, innovation organization, innovation planning, financing and creation of innovation facilitation infrastructure, attention to innovation application strategies, innovation research and development, innovative human resource development Dissemination of innovation, organizational developments in the direction of innovation, application of innovation and marketing of new products in the current and favorable situation with a 99% probability had significant difference.

Keywords:
Innovation Management, Agricultural Cooperative, Ex-Post Facto, Iran

1. Introduction

Cooperatives are a vital factor in supporting the empowerment of farmers and the basis of group activities, and therefore meeting the common needs and social problems of members is very important and necessary to achieve sustainable development (Fathi et al., 2019). Sustainable and continuous empowerment with the correct knowledge and interpretation of its implementation in any society is the key to the happiness and success of that society (Sutawa, 2012). Fairbairn et al., (2003) argue that the cooperative approach is one of the best mechanisms of public participation in economic and social activities, and employment and sustainable livelihoods for vulnerable and low-income groups in rural areas. Cooperatives is a very suitable solution for empowering villagers. Rural and agricultural production cooperatives also act as an economic and social capital among farmers. Rural and agricultural production cooperatives, as small non-governmental organizations owned by members, have the potential to facilitate socio-economic development in rural areas (Barati et al., 2017). Cooperatives are owned and democratically controlled by their members (i.e., those that use the cooperative's services or buy its goods) and not by outside investors. Members elect their board of directors from their ranks. Major policy decisions are based on the one-member, one-vote principle,

regardless of each member's investment in the cooperative (Rashidipour, 2020). In Iran in 2018, 3857 new cooperatives have been registered for various commercial activities in the country. On average, more than 11 cooperatives are formed and registered in the country daily, and their activity status is being exploited. The total number of members of these cooperatives is 72324 and the number of employees is 61986 with an initial capital of about 889 billion rials (Ebadzadeh et al., 2018). Cooperatives play an important role in improving the quality of work, especially in the agricultural sector. A cooperative can be identified as an independent association of individuals who have voluntarily united to meet their common, economic, social and cultural needs and aspirations through a jointly owned and democratically controlled company (Salehi and Rasouliazar, 2019). In the development stages of any country, poverty reduction, increase in income balance, social welfare, and the reduction of unemployment are the most important factors which should be improved to implement development programs more successfully. Agricultural cooperatives (ACs) can play a significant role in the economic and social development of rural areas (Feisali and Niknami, 2021). They are social, economic, and ethical organizations that can play a very important role in creating employment in rural areas by attracting the participation of members, raising small capital, and providing agricultural extension training, infrastructures, and production factors (Feisali and Niknami, 2021). Therefore, the results of study of Feisali and Niknami (2021), aims to investigate the effect of various functions of ACs on sustainable rural employment. In this regard, 356 samples were selected from the study area in Iran. A survey study was conducted to collect data through field interviews. Modeling based on structural analysis showed that the social, educational, economic and production functions had positive and significant effects so that they were able to predict and explain 66% of changes in sustainable rural employment. Global experience also shows that agricultural cooperatives in rural areas of developing countries can play a vital role in combating poverty, creating employment and advancing rural development goals (Pinto, 2009). Therefore, the agricultural cooperative approach is one of the best mechanisms for the systematic public participation of farmers in economic and social activities, which creates employment and sustainable livelihoods for vulnerable and low-income groups in rural areas (Shabanalifami et al., 2006). Hosseini et al., (2012) stated that small rural enterprises, especially those involved in food processing and packaging, play an important role in creating employment and increasing the value of products. It also claimed that innovation can also lead to better sustainability and performance of cooperatives. Alizadehnia et al., (2022) concluded that agricultural cooperatives have an important role to play in improving the acceptance of Eco- innovations. In order to adapt to the growing changes of the new century, agricultural cooperatives must put knowledge and learning at the forefront of their work and find the necessary strategies to become a learning organization that focuses on the development of learning (Fontanari and Sacchetti, 2019). Kiani et al. (2021) concluded that the basis of the success of agricultural cooperatives in Iran is to create the necessary conditions for them to become a learning organization. Emaziye (2020) revealed that most rural households engaged in livestock and crop production obtained their sources of credit from cooperatives. It was discovered that rural households have constraints in obtaining credits from conventional banks. He recommends that policies should be inclined towards agricultural cooperatives to increase food productivity and food security. Again, that there should be an enabling law to enforce the conventional banks to provide soft loans via rural households' cooperatives for their farming activities. Based on the results of (Li et al., 2021) a primary concern in agricultural production is the safety of agricultural products that agricultural cooperatives can play an important role in this regard. The policy implications based on research findings are recommends as follows: Cooperatives should strengthen their control over the production process, and enhance farmers' awareness of production safety; cooperatives should establish a classified service system, implement appropriate management measures according to different development levels, and improve the relationship between members and organizations; cooperatives should establish and complete the profit distribution mechanism and risk prevention and control mechanism, then effectively promote safe agricultural production through economic incentives and materials support; cooperatives should strengthen farmers' risk awareness of quality-safety, and make members participate in unified production through interest guidance. Numerous studies have been conducted in the field of innovation management (Bloch, 2007; Peterson et al., 2003; Omani, 2015) and each of them has analyzed aspects of innovation management from human, institutional and technological dimensions. Ommani and Salmanzadeh (2014) in their research entitled identification of factors affecting the innovation management in processing and complementary industries for livestock products in rural areas of Khoozestan Province, have considered innovation management indicators as items such as creation of innovation, organizing innovation, innovation planning, financing and creating infrastructures to facilitate innovation, attention to innovation application strategies, research and development in the field of innovation, innovative human

resource development, innovation dissemination, organizational changes in the direction of innovation, application of innovation, and marketing of new products.

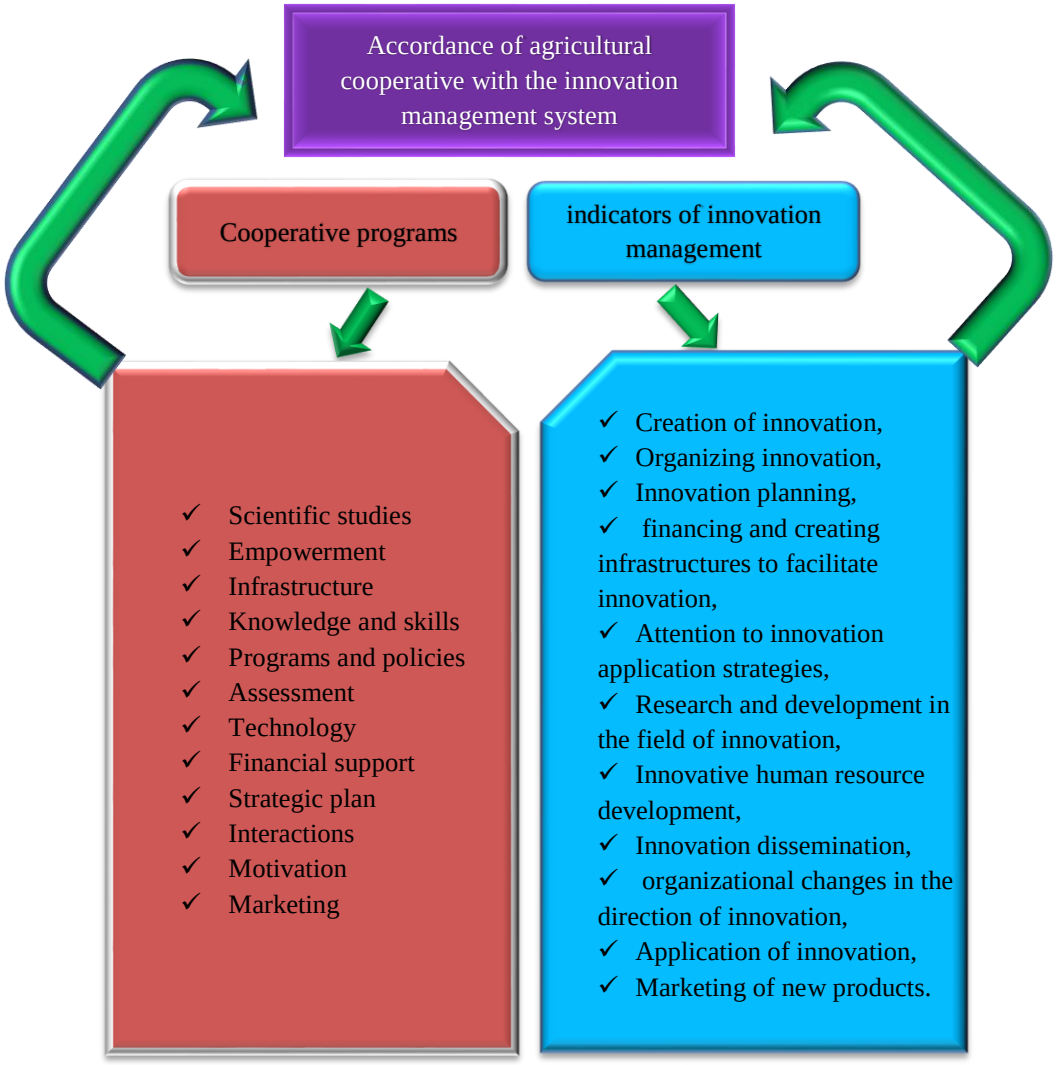

Figure 1. Theoretical framework of the research

Research questions include:

RQ1. Is there a significant difference between the current and favorable situation of agricultural production cooperatives in accordance with the creation of innovation of the agricultural innovation management system of Khuzestan province?

RQ2. Is there a significant difference between the current and favorable situation of agricultural production cooperatives in accordance with the organizing innovation of the agricultural innovation management system of Khuzestan province?

RQ3. Is there a significant difference between the current and favorable situation of agricultural production cooperatives in accordance with the innovation planning of the agricultural innovation management system of Khuzestan province?

RQ4. Is there a significant difference between the current and favorable situation of agricultural production cooperatives in accordance with the financing and creating infrastructures to facilitate innovation of the agricultural innovation management system of Khuzestan province?

RQ5. Is there a significant difference between the current and favorable situation of agricultural production cooperatives in accordance with the attention to innovation application strategies of the agricultural innovation management system of Khuzestan province?

RQ6. Is there a significant difference between the current and favorable situation of agricultural production cooperatives in accordance with the research and development in the field of innovation of the agricultural innovation management system of Khuzestan province?

RQ7. Is there a significant difference between the current and favorable situation of agricultural production cooperatives in accordance with the innovative human resource development of the agricultural innovation management system of Khuzestan province?

RQ8. Is there a significant difference between the current and favorable situation of agricultural production cooperatives in accordance with the innovation dissemination of the agricultural innovation management system of Khuzestan province?

RQ9. Is there a significant difference between the current and favorable situation of agricultural production cooperatives in accordance with the organizational changes in the direction of innovation of the agricultural innovation management system of Khuzestan province?

RQ10. Is there a significant difference between the current and favorable situation of agricultural production cooperatives in accordance with the application of innovation of the agricultural innovation management system of Khuzestan province?

RQ11. Is there a significant difference between the current and favorable situation of agricultural production cooperatives in accordance with the marketing of new products of the agricultural innovation management system of Khuzestan province?

2. Materials and Methods

The purpose of the research was identifying and analyzing of indicators and sub-indicators of innovation management in agricultural cooperatives of Khuzestan province. Causal-comparative research has been used to achieve the research objectives. In this study, the Ex-Post Facto or causal-comparative research method was used to compare the current and favorable situation of agricultural production cooperatives in accordance with the indicators of innovation management in Khuzestan province, Iran. Members of agricultural cooperatives with farming branch in Khuzestan province were 3823 people. Using Krejcie and Morgan table, the sample size of this community was 349 people (Table 1). The sampling method was stratified random sampling method. Statistical analysis of the research was performed using SPSS software version 22.

Table 1. Estimation of the number of samples from the statistical population of members of agricultural cooperatives in Khuzestan province

Strata in province	Selected townships of each stratum	Number of members	Sample
North	Shoushtar and Shoush	479	91
Central	Ahvaz and Ramhormoz	440	84
South	Behbahan and Khoramshahr	911	174
Total		1830	349

In the present study, the panel of expert's method was used to determine the validity. Since the content validity depends on the judgment and opinion of experts in the subject, so in order to determine the validity and make the necessary corrections, at each stage, designed questionnaires were provided to the supervisor, consultant, experts and training specialists, and after summarizing the point of their opinions, the final questionnaires were prepared. Cronbach's alpha coefficient was used to determine the reliability of the questionnaire. For this purpose, after determining the validity of the questionnaire, the sections that had a Likert scale were completed among 30 similar individuals in the statistical population in Shahriar city, and the Cronbach's alpha coefficient was calculated for all cases above 0.7. The research hypotheses are as follows:

H1. There is a significant difference between the current and favorable situation of agricultural production cooperatives in accordance with the creation of innovation of the agricultural innovation management system of Khuzestan province.

H2. There is a significant difference between the current and favorable situation of agricultural production cooperatives in accordance with the organizing innovation of the agricultural innovation management system of Khuzestan province.

H3. There is a significant difference between the current and favorable situation of agricultural production cooperatives in accordance with the innovation planning of the agricultural innovation management system of Khuzestan province.

H4. There is a significant difference between the current and favorable situation of agricultural production cooperatives in accordance with the financing and creating infrastructures to facilitate innovation of the agricultural innovation management system of Khuzestan province.

H5. There is a significant difference between the current and favorable situation of agricultural production cooperatives in accordance with the attention to innovation application strategies of the agricultural innovation management system of Khuzestan province.

H6. There is a significant difference between the current and favorable situation of agricultural production cooperatives in accordance with the research and development in the field of innovation of the agricultural innovation management system of Khuzestan province.

H7. There is a significant difference between the current and favorable situation of agricultural production cooperatives in accordance with the innovative human resource development of the agricultural innovation management system of Khuzestan province.

H8. There is a significant difference between the current and favorable situation of agricultural production cooperatives in accordance with the innovation dissemination of the agricultural innovation management system of Khuzestan province.

H9. There is a significant difference between the current and favorable situation of agricultural production cooperatives in accordance with the organizational changes in the direction of innovation of the agricultural innovation management system of Khuzestan province.

H10. There is a significant difference between the current and favorable situation of agricultural production cooperatives in accordance with the application of innovation of the agricultural innovation management system of Khuzestan province.

H11. There is a significant difference between the current and favorable situation of agricultural production cooperatives in accordance with the marketing of new products of the agricultural innovation management system of Khuzestan province.

3. Results and Discussion

3.1 Identification and analysis of indicators and sub-indicators of innovation management in agricultural cooperatives of Khuzestan province

In order to identify the indicators of innovation management in agricultural cooperatives in Khuzestan province, qualitative methods of content analysis, interviews with experts and the brainstorming methods were used. In the first step, using the method of reviewing references and research records, and content analysis, 25 indicators and 112 sub-indicators were identified, and then by interviewing experts and the brainstorming method, 11 indicators and 35 sub-indicators were extracted from them, which experts with 70% and above they agreed on them. These indicators and sub-indicators and the percentage of experts' agreement as indicators of innovation management in agricultural cooperatives of Khuzestan province are presented in Table (2).

3.2 Assessing the current and favorable situation of agricultural production cooperatives in accordance with the functions of the agricultural innovation management system of Khuzestan province

In order to evaluate the current and favorable situation of agricultural production cooperatives in accordance with the functions of the agricultural innovation management system in Khuzestan province, the identified indicators were provided to a statistical sample selected from members of agricultural production cooperatives in the province. They were asked to examine the current and favorable situation of innovation management indicators in agricultural cooperatives in Khuzestan province in a range of 5 options. After collecting data, mean and standard deviation were used to evaluate and describe them. Based on the results in Tables 3, all indicators and sub-indicators of innovation management, ie creation of innovation, organizing innovation, innovation planning, financing and creating infrastructures to facilitate innovation, attention to innovation application strategies, research and development in the field of innovation, innovative human resource development, innovation dissemination, organizational changes in the direction of innovation, application of innovation, and marketing of new products.

Table 2. Comparison of the current and favorable situation of innovation management indicators in agricultural cooperatives

Innovation Management Indicators	Percentage of agreement
The first indicator: Creation of innovation	
Existence of material and spiritual infrastructures and implications for creating innovation	85
Predictive studies of acceptance of new ideas and methods	95
Attention to empowerment and professional development to create innovation	85
Second indicator: Organizing Innovation	
Pay attention to how, when, where, the extent of application of innovation	85
Existence of programs and policies to support and encourage innovation in the agricultural sector	95
Existence of knowledge and organizing skills	85
Third indicator: Innovation planning	
Analysis and evaluation of previous production methods	80
Using new production methods	90
Analysis and evaluation of previous production technologies	90
Use of new production technologies	75
Develop efficient production plans based on new methods and technologies	75
Fourth indicator: Financing and creating infrastructures to facilitate innovation	
Budget and financial support for research in agricultural cooperatives	70
Facilities, equipment and infrastructure for research and innovation in agricultural cooperatives	70
Financial support for innovative people in agricultural cooperatives	85
Fifth indicator: Attention to innovation application strategies	
Attention to identifying SWOT in turning ideas to innovation	90
Analysis and evaluation of competitive strategies	85
Pay attention to strategies for turning ideas into innovations	75
Sixth indicator: Research and development in the field of innovation	
Paying attention to conducting agricultural research based on the need in cooperatives	90
Paying attention to conducting joint research with research centers	85
Paying attention to conducting joint research with higher education centers	90
Seventh indicator: Innovative human resource development	
Existence of professional development and staff empowerment programs	75
Attract experienced and knowledgeable experts of innovation and creativity	80
Existence of motivational programs for the development of innovative human resources	70
Eighth indicator: Innovation dissemination	
Attention to the visits of cooperative members to research centers and innovative companies	85
Disseminate new research from research centers to cooperatives	90
Cooperatives members' awareness of research and innovation in research centers	75
Ninth indicator: Organizational changes in the direction of innovation	
Attention to innovation indicators in the structure of manpower recruitment	80
Attention to innovation indicators in empowerment programs	70
Attention to innovative criteria in organizational promotion70	70
Tenth indicator: Application of innovation	
Application of new technologies by members	75
The amount of knowledge and motivation to use new technologies by members	80
Eleventh indicator: Marketing of new products	
Knowing new markets	70
Attention to new marketing methods	85
Awareness of pricing policies	90
Analysis and evaluation of consumers and market knowledge	75

For example, regarding the first sub- indicator of the first indicator, ie predictive studies of acceptance of new ideas and methods, in the current situation has mean=2, standard deviation=0.804 and coefficient of variation=0.402, and in the favorable situation, this sub-indicator has mean=4.040, standard deviation=0.680 and the coefficient of variation=0.168, which indicates the difference between what is and what should be.

Table 3. Comparison of the current and favorable situation of innovation management indicators in agricultural cooperatives

Favorable situation			Innovation Management Indicators	Current situation		
CV	SD	Mean		Mean	SD	CV
0.173	0.699	4.026	The first indicator: Creation of innovation	1.946	0.702	0.360
0.168	0.680	4.040	Predictive studies of acceptance of new ideas and methods	2.000	0.804	0.402
0.221	0.874	3.940	Attention to empowerment and professional development to create innovation	1.880	0.782	0.415
0.233	0.958	4.100	Existence of material and spiritual infrastructures and implications for creating innovation	1.960	0.994	0.507
0.180	0.752	4.016	Second indicator: Organizing Innovation	2.010	0.761	0.378
0.227	0.920	4.040	Existence of knowledge and organizing skills	1.980	0.852	0.430
0.257	1.024	3.980	Existence of programs and policies to support and encourage innovation in the agricultural sector	2.090	0.954	0.456
0.181	0.731	4.030	Pay attention to how, when, where, the extent of application of innovation	1.960	0.941	0.480
0.204	0.811	3.958	Third indicator: Innovation planning	2.076	0.673	0.324
0.250	0.981	3.920	Using new production methods	2.240	0.842	0.375
0.270	1.053	3.890	Analysis and evaluation of previous production methods	2.120	0.844	0.398
0.235	0.952	4.040	Use of new production technologies	2.080	0.837	0.4020
0.241	0.964	4.000	Develop efficient production plans based on new methods and technologies	1.960	0.863	0.440
0.238	0.940	3.640	Analysis and evaluation of previous production technologies	1.980	0.898	0.453
0.212	0.878	4.123	Fourth indicator: financing and creating infrastructures to facilitate innovation	1.866	0.737	0.394
0.258	1.024	3.960	Facilities, equipment and infrastructure for research and innovation in agricultural cooperatives	1.810	0.800	0.441
0.229	0.964	4.200	Financial support for innovative people in agricultural cooperatives	1.840	0.872	0.473
0.216	0.913	4.210	Budget and financial support for research in agricultural cooperatives	1.950	0.957	0.490
0.198	0.806	4.066	Fifth indicator: Attention to innovation application strategies	1.910	0.691	0.361
0.235	0.942	4.000	Pay attention to strategies for turning ideas into innovations	1.760	0.740	0.420
0.214	0.891	4.115	Analysis and evaluation of competitive strategies	1.870	0.812	0.434
0.248	1.008	4.050	Pay attention to identifying SWOT in turning ideas to innovation	2.100	1.058	0.503
0.227	0.896	3.946	Sixth indicator: Research and Development in the field of innovation	1.913	0.789	0.412
0.260	1.021	3.920	Paying attention to conducting joint research with research centers	1.890	0.897	0.474
0.274	1.066	3.880	Paying attention to conducting joint research with higher education centers	1.910	0.954	0.499
0.248	1.004	4.040	Paying attention to conducting agricultural research based on the need in cooperatives	1.940	1.032	0.531
0.226	0.894	3.950	Seventh indicator: Innovative human resource development	2.070	0.770	0.371
0.286	1.112	3.880	Existence of professional development and staff empowerment programs	2.050	0.845	0.412
0.234	0.970	4.130	Attract experienced and knowledgeable experts of innovation and creativity	2.050	0.936	0.456
0.258	0.992	3.840	Existence of motivational programs for the development of innovative human resources	2.110	1.033	0.489
0.242	0.957	3.946	Eighth indicator: Innovation dissemination	1.923	0.814	0.423
0.252	1.004	3.980	Paying attention to the visits of cooperative members to research centers and innovative companies	1.950	0.925	0.474
0.265	1.048	3.950	Disseminate new research from research centers to cooperatives	1.910	0.975	0.510
0.281	1.101	3.910	Cooperatives members' awareness of research and innovation in research centers	1.910	1.005	0.526
0.212	0.858	4.033	Ninth indicator: Organizational changes in the direction of innovation	1.993	0.782	0.392
0.225	0.922	4.090	Attention to innovation indicators in empowerment programs	1.960	0.839	0.428
0.246	0.984	4.000	Attention to innovation indicators in the structure of manpower recruitment	1.860	0.921	0.495
0.244	0.979	4.010	Attention to innovative criteria in organizational promotion	1.980	0.994	0.502
0.231	0.946	4.090	Tenth indicator: Application of innovation	2.055	0.840	0.408
0.250	1.014	4.040	Application of new technologies by members	2.040	0.931	0.456
0.235	0.974	4.140	The amount of knowledge and motivation to use new technologies by members	2.070	0.956	0.461
0.188	0.826	4.375	Eleventh indicator: Marketing of new products	2.060	0.742	0.360
0.222	0.969	4.360	Attention to new marketing methods	2.050	0.845	0.412
0.227	0.988	4.350	Awareness of pricing policies	2.060	0.951	0.461
0.222	0.969	4.360	Analysis and evaluation of consumers and market knowledge	2.030	0.947	0.466
0.193	0.855	4.360	Knowing new markets	2.100	1.010	0.480

Also, regarding the second sub- indicator of the first indicator, ie existence of material and spiritual infrastructures and implications for creating innovation, in the current situation has mean=1.960, standard deviation=0.994 and coefficient of variation=0.507, and in the favorable situation, this sub-indicator has mean=4.100, standard deviation=0.958 and the coefficient of variation=0.233, which indicates the difference between what is and what should be. Also, regarding the third sub-indicator of the first indicator, ie attention to empowerment and professional development to create innovation, in the current situation has mean=1.880, standard deviation=0.782 and coefficient of variation=0.415, and in the favorable situation, this sub-indicator has mean=3.940 standard deviation=0.874 and the coefficient of variation=0.221, which indicates the difference between what is and what should be.

3.3 Comparison of the current and favorable situation of innovation management indicators in agricultural cooperatives

In order to compare the current and favorable situation of innovation management indicators in agricultural cooperatives in Khuzestan province, Wilcoxon test was used. Based on the results of Table 4, all indicators of innovation management, ie innovation creation, innovation organization, innovation planning, financing and creation of innovation facilitation infrastructure, attention to innovation application strategies, innovation research and development, innovative human resource development dissemination of innovation, organizational developments in the direction of innovation, application of innovation and marketing of new products in the current and desired situation with a 99% probability of a significant difference. The results obtained are in line with research Peterson et

al., (2003); Bloch (2007); Sheikhsovini (2011); Rahimi and Ebrahimi, (2011); Sadat Mousavi and Farajullah Hosseini (2013); Abedi and Hosseinzadeh (2013); Ommani and Salmanzadeh (2014); Omani, (2015); and confirm this research.

Table 4. Comparison of the current and favorable situation of innovation management indicators in agricultural cooperatives

Innovation Management Indicators	Wilcoxon Statistics	Z	Sig
The first indicator: Creation of innovation	**133.5**	**8.036**	**0.000**
Existence of material and spiritual infrastructures and implications for creating innovation			
Predictive studies of acceptance of new ideas and methods			
Attention to empowerment and professional development to create innovation			
Second indicator: Organizing Innovation	**117.5**	**8.088**	**0.000**
Pay attention to how, when, where, the extent of application of innovation			
Existence of programs and policies to support and encourage innovation in the agricultural sector			
Existence of knowledge and organizing skills			
Third indicator: Innovation planning	**181.5**	**7.902**	**0.000**
Analysis and evaluation of previous production methods			
Using new production methods			
Analysis and evaluation of previous production technologies			
Use of new production technologies			
Develop efficient production plans based on new methods and technologies			
Fourth indicator: financing and creating infrastructures to facilitate innovation	**81.5**	**8.127**	**0.000**
Budget and financial support for research in agricultural cooperatives			
Facilities, equipment and infrastructure for research and innovation in agricultural cooperatives			
Financial support for innovative people in agricultural cooperatives			
Fifth indicator: Attention to innovation application strategies	**131.5**	**8.139**	**0.000**
Pay attention to identifying weaknesses, strengths, threats and opportunities in turning ideas into innovation			
Analysis and evaluation of competitive strategies			
Pay attention to strategies for turning ideas into innovations			
Sixth indicator: Research and Development in the field of innovation	**83.5**	**8.013**	**0.000**
Paying attention to conducting agricultural research based on the need in cooperatives			
Paying attention to conducting joint research with research centers			
Paying attention to conducting joint research with higher education centers			
Seventh indicator: Innovative human resource development	**286**	**7.532**	**0.000**
Existence of professional development and staff empowerment programs			
Attract experienced and knowledgeable experts of innovation and creativity			
Existence of motivational programs for the development of innovative human resources			
Eighth indicator: Innovation dissemination	**149**	**7.819**	**0.000**
Paying attention to the visits of cooperative members to research centers and innovative companies			
Disseminate new research from research centers to cooperatives			
Cooperatives members' awareness of research and innovation in research centers			
Ninth indicator: Organizational changes in the direction of innovation	**144.5**	**8.201**	**0.000**
Attention to innovation indicators in the structure of manpower recruitment			
Attention to innovation indicators in empowerment programs			
Attention to innovative criteria in organizational promotion			
Tenth indicator: Application of innovation	**222**	**7.834**	**0.000**
Application of new technologies by members			
The amount of knowledge and motivation to use new technologies by members			
Eleventh indicator: Marketing of new products	**155**	**8.115**	**0.000**
Knowing new markets			
Attention to new marketing methods			
Awareness of pricing policies			
Analysis and evaluation of consumers and market knowledge			

4. Conclusion and Recommendation

The results of research on the current and favorable situation of agricultural production cooperatives in accordance with the functions of the agricultural innovation management system in Khuzestan province, showed that in all identified indicators, the current situation is unfavorable and far from the desired situation. The results of the Wilcoxon test for evaluating the difference between the current situation and the desired situation indicate a significant difference with 99% confidence.

Based on the results, the following recommendations are provided at the level of agricultural cooperatives in the province:

- Necessary attention to empowering members to develop creativity and create innovation through appropriate training and extension courses.
- Creating the necessary knowledge and skills in the field of how to use innovation and new technologies at the farm level.
- Necessary attention of the company's pillars to research and development in the field of innovation and creativity in affairs.
- Optimal use of local elites and leaders in disseminating innovation.
-Necessary needs assessment and cognitive improvement in the field of new marketing methods and new products in the market.
- Utilizing young and creative forces in rural areas to innovate and create innovation.
- Design and implementation of appropriate educational and extension programs in the field of creation, development, dissemination and application of innovation.
- Holding training and extension courses in the field of creation and application of innovation.
- Providing the necessary facilities and equipment to develop creativity and create innovation in agricultural cooperatives.
- Establishment of technology development incubator centers in rural areas in order to create and apply innovation.
- Planning and implementation of motivational, supportive and incentive programs in the field of creation, development, dissemination and application of innovation.
- Necessary financial support for the implementation of educational and motivational programs in the field of creation, development, dissemination and application of innovation.
- Elimination of intermediaries between producers and consumers.

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