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The study of the impact of social and economic participation of beneficiaries in the restoration and repair of aqueducts of Sarbishe city

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Abstract

By limiting the water resources and frequent droughts, disruption of interaction between humans and their environment, yeoman ownership manner, deep and semi-deep wells drilled in the range of aqueducts, forgetting the many well and good traditions associated with aqueducts, these factors caused the aqueduct role be fade in the villages, and also caused to lack of attention of beneficiaries to participation issue in regenerating restoration and upgrading of the aqueducts. Therefore some contribution should be done in this area. Today, contribution practices in some villages is become a tradition and customs. And usually partnership based on share of water and level of beneficiary ownership of aqueduct water is considered as a measure for assessing participation. In this regard, the present study was conducted to determine the effect of social and economic participation of beneficiaries in the restoration and repair of aqueducts in Sarbishe city. Findings from descriptive analyzes indicate that social and economic participation of beneficiaries in the regeneration and repair of the aqueducts was 7/46%, and 7/32, respectively, which participation has been made in a relatively high level. The analytical findings indicate that there is a significant and negative relationship between social involvement (P = -0/457 **, r = 0/000) and economic participation of beneficiaries (p = -0/413 * *, r = 0/000) with dependent variable of the restoration and repair of aqueducts, that this negative relationship could be due to lack of funds and the necessary facilities and specialists to restore and repair of aqueducts.

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Introduction

One of the most important growth factors and socio - economic development of a society, especially in rural communities, is the active participation and the role of people in work and activities related to their village. Without the cooperation and participation of the people, development would not have concept, because each step that is taken in the way of growth and development should be carried out together with the people (Jahandust Rasool, 2010). Social participation is a collective, knowingly and voluntarily action, that includes the involvement of citizens in public affairs and at different levels of political and administrative decision-making and casting vote up to direct assistance to the satisfaction of social needs and as well as involvement of people in the functioning of the organizations that their life depends upon it (Jabbari, Habib, 2008). Economic Partnership focuses on influencing the style and scanning of production, governing relations on this scanning and production materials to meet the material needs and increased production, which is found in the intervention and involvement of people in the decisions system related to the allocation of economic resources and participation in economic development policy (Ghaffari, G., 2001). Azkia Mostafa Ghaffari, Golamreza., have done a study entitled to examine the relationship between social cohesion and organized social participation of villagers in the rural areas of the city of Kashan, in which examined the relationship between social cohesion and organized social participation of villagers, by examining the relationship between the two studied variables, has been found in the confidence level of 99%, there is a significant correlation to the amount of 41/0 in between them (Azkia Mostafa Ghaffari, Golamreza., 2001). Kohy has conducted a research under the title review of factors influencing villagers' participation in the rural development projects in the Varzaqan city. The results of the study showed that, group factors social, cultural, attitudinal, educational level, age, marital status, type of job and the harvest have been effective in villagers economic participation in the rural development projects and factors such as education and motivation factors, the expression has no effec (Kohy, 2005). Iran has as much historical precedent dating back to the aqueduct and has highest aqueduct in the world, So that currently there is about 50,000 active and arid aqueducts with a length of about 600,000 km in Iran (Khorsandi Aghaee, 2005). Aqueduct this geographical phenomenon, have different functions, so that was very effective in all aspects of sustainable development (economic, social, cultural and environmental, managerial) arid and semi-arid countries (Rahimi Hussain, Moemeni Javad., 2004). Currently, South Khorasan province 6006 aqueducts been registered which 771 of these strands is located in the Sarbishe city. The city has an area of over 8251 square kilometers. That between 32 degrees and 2 minutes north latitude to 32 degrees 56 minutes south latitude and 59 degrees 56 minutes east to 59 degrees 13 minutes west, and 15 percent of South Khorasan province is allocated to it. This city has shared border from the north with Darmian city, in south with the Nehbandan city, in east with Afghanistan and from west with the city of Birjand (South Khorasan Agricultural Organization, 2012). In city Sarbishe some old villages have several hundred or even several thousand years old, that the canals in those villages are represented this issue, but was not paying much attention to this monument to reasons such as drilling of deep wells, costly and difficult rehabilitation and restoration and maintenance of canals and aqueducts and such issues. Successive droughts and available water resources limitation, led to beneficiaries focus more than ever on aqueduct. In the present study we have investigated the impact of social and economic participation of aqueduct beneficiaries on the restoration and repair of aqueduct such as matters relating to public affairs of aqueduct.

Research Methodology

In this paper two common methods i.e documents study (library), and the field study has been used to gather data. The present research studied population is villages with population and have at least one aqueduct. Based on these figures it can be seen that among 270 textile villages and towns with residents in the city, 172 villages have aqueduct water source.

From which village, 108 textile has population equal 20 families and more than (Rural Population Statistics 2011, Governor Sarbishe city). The sample size was calculated using Cochran formula and according to the above definitions, using a cluster sampling method, from four districts of Sarbishe city, according to their households, randomly from each district, three villages were selected.

Descriptive Findings of the Research

Age

Based on a review of previous research found that age will play a role as a moderating variable in the relationship between socioeconomic variables and of beneficiaries restore and repair aqueducts. Hence in the following table the frequency distribution of studied subjects is given according to age.

Table 1: Frequency distribution of studied subjects according to age

Age	Frequency	Frequency	Cumulative frequency
Less than 35 years	24	16.0	16.0
Between 35 to 55 years	60	40.0	56.0
Between 55 to 70 years	34	22.7	78.7
Between 70 to 85 years	30	20.0	98.7
85 years and more	2	1.3	100.0
Total	150	100.0	

Average: 24/54 , SD: 84/16, Maximum: 95 Years, Minimum: 20 years

According to the findings contained in the above table, the maximum frequency of studied subjects belonged to the age group among 35 and 55 years and the mean age of participants was 54 years.

Level of Education

Based on a review of previous research found that education level will play a role as a moderating variable in the relationship between socioeconomic variables and of beneficiaries restore and repair aqueducts. Hence in the following table the frequency distribution of studied subjects is given according to education level

Table 2: Frequency distribution of studied subjects according to education level

Level of education	Frequency	Frequency	Cumulative frequency
Illiterate	50	33.3	33.3
Primary	52	34.7	68.0
Guidance	15	10.0	78.0
High school	21	14.0	92.0
University	12	8.0	100.0
Total	150	100.0	

According to the findings contained in the table above, the highest frequency of studied subjects is in elementary education level and illiterate, demonstrated that studied subjects have low levels of literacy. In this section to assess the level of restoration and repair of aqueducts the subjects were asked, and data collection, the basis of performed work in each aqueduct was considered equal and was not give any score. Then coefficient of variation (CV) was used to rank the elements of the regeneration and repair of aqueducts and ISDM formula for determining the amount of the reclamation and restoration of aqueducts as follows:

CV=STD/Mean*100
A< Mean-SD
Mean-SD< B < Mean
Mean< C < Mean+SD
Mean+SD< D

Table 3: Prioritize indicators related to rehabilitation structures and aqueduct repair

Items	Mean	Std	Cv	R
Placing a concrete circular pipe	195/17	71/02	36/39	1
placing gorget	78/2	34/02	43/5	3
Unloading	267/47	167/160	62/5	5
Channel Construction	783/53	1190/37	151/92	6
Aqueduct Dredging	1/06	0/405	38/20	2
Channel dredging	1/39	0/825	59/35	4

According to the findings contained in the above table can be seen that the last priority coefficient of variation 92/151 is related to index of (construction of irrigation channels) and the first priority coefficient of variation 39/36 is related to index of (replacement of concrete circular pipe).

Table 4: Frequency distribution of studied subjects according to restoration level and aqueduct repair variable

Rehabilitation and restoration level	Frequency	Frequency percent	Cumulative frequency
Weak	-	-	-
Average	110	73.3	73.3
Good	17	11.3	84.7
Top	23	15.3	100.0
Total	150	100.0	

According to the results of the ISDM test can be seen that rehabilitation and restoration aqueduct of 73/3% of studied subjects is at the intermediate level, the rehabilitation and restoration aqueduct of 11/3% of studied subjects is at high level and rehabilitation and restoration aqueduct of 15/3% of studied subjects is at highest level. The scores obtained in the classification based on ISDM formula is as follows. Average scores is 1326/81 and their deviation is 1142/65.

Social participation of studied subjects in the regeneration and repair of aqueducts:

A< 184/160

184/160< B < 1326/8133

1326/81< C < 2469/467

2469/467< D

In this section to assess the level of restoration and repair of aqueducts the subjects were asked, and after data collection, each indicator was scored that minimum score was one and a maximum score was five. Then coefficient of variation (CV) was used to ranking elements of social and economic participation and ISDM formula for determine the level of social participation as follows:

CV=STD/Mean*100
A< Mean-SD
Mean-SD< B < Mean
Mean< C < Mean+SD
Mean+SD< D

Table 5: Prioritize indicators related to social partnership structures

Items	Mean	Std	Cv	R
Partnership in convening of meetings	3/48	1/115	32/04	5
Coordinating partners to work	3/68	1/056	28/69	2
Cooperation in providing the work means	3/49	1/151	32/97	6
Cooperation in collecting primary data	3/52	1/127	32/01	4
Collaborated with pitmans	3/69	1/074	29/10	3
monitor the work of pitmans	3/28	1/182	36/03	9
Report problems to the experts	3/40	1/215	35/73	8
Monitoring and Evaluation expert work	3/36	1/160	34/52	7
Cooperate in the dredging after restoration and repair	3/6	0/976	27/11	1
Inform others of the importance of maintaining the aqueduct	3/42	1/238	36/19	10

According to the findings contained in the above table can be seen that the last priority with coefficient of variation 36/19 is related to index of (Inform others of the importance of maintaining the aqueduct) and the first priority with coefficient of variation 27/11 is related to index of (Cooperate in the dredging of aqueduct after restoration and repair).

Table 6: Frequency distribution of studied subjects according to the level of community participation

Level of community involvement	Frequency	Frequency percent	Cumulative frequency
Low	29	19.3	19.3
Relatively low	34	22.7	42.0
Relatively high	70	46.7	88.7
High	17	11.3	100.0
Total	150	100.0	

The findings, contained in the above table indicate that the 19/3% of people has low social participation in regeneration and repair of aqueducts, 22/7% has relatively high social participation in regeneration and repair of aqueducts and 58% has very high social participation in regeneration and repair of aqueducts.

Economic participation of studied population in the regeneration and repair of aqueducts

Each design and project requires funding and administrative costs to do. Rehabilitation and restoration of the aqueduct is not exempted from this requirement, with corporation of aqueduct beneficiaries in financing and some economic issues can accelerate the process of its implementation in terms of quantity and quality.

Table 7: Prioritize indicators related to structure of people economic participation in the restoration and repair of aqueduct

Items	Mean	Std	Cv	R
Providing craftsman and workers feed	3/58	0/971	27/12	1
Providing appropriate labor	3/24	0/982	30/30	2
Financing of projects	2/63	1/012	38/47	4
Providing some local materials	2/68	1/118	41/71	6
Providing tools for working	3/02	1/169	38/70	5
Providing equipment and materials transportation	3/08	1/140	37/01	3

According to the findings contained in the above table can be seen that the last priority with coefficient of variation 41/71 is related to index of (providing some needed local materials of projects) and the first priority with coefficient of variation 27/12 is related to index of (feed financing of craftsman and workers).

Table 8: Frequency distribution of studied subjects according to the level of economic participation

Level of community involvement	Frequency	Frequency	Cumulative frequency
Low	30	20.0	20.0
Relatively low	43	28.7	48.7
Relatively high	49	32.7	81.3
High	28	18.7	100.0
Total	150	100.0	

The findings, contained in the above table indicate that the 20% of people has low social participation in regeneration and repair of aqueducts, 28/7% has relatively high social participation in regeneration and repair of aqueducts and 51/4% has very high social participation in regeneration and repair of aqueducts.

Determine the relationship between research variables:

Using the Pearson correlation coefficient the relationship between variables studied was determined and the results are given in the table below in detail.

Table 9: Determine the relationship between research variables

Hybrid variable	The first variable	Scale	The second variable	Scale	Correlation		Significant level
					Type	Coefficient	
Agronomic, personal characteristics and...	Age	Relative	rehabilitation and restoration of the aqueduct	Relative	Pearson	0/104	0/206
	History of Agriculture	Relative				0/019	0/814
	Area under cultivation	Relative				0/330**	0/000
	Share of aquaduct water	Relative				-0/124	0/131
Economic Characteristics	agricultural activities income	Relative				0/035	0/668
	Non-agricultural income	Relative				0/002	0/982
	debt to private organizations	Relative				0/122	0/135
	debt to a friend	Relative				-0/165*	0/044
	Cost of Living	Relative				0/047	0/567
	Saving	Relative				0/091	0/266
	Motivation to participate	Relative				-0/135	0/100
	Participation in community activities	Relative				-0/457**	0/000
	Social Cohesion	Relative				-0/166*	0/042
	Social trust	Relative				0/179*	0/029
	Confidence	Relative				-0/290**	0/000
	Consent of Experts	Relative				0/324**	0/000

- The findings showed that there is no significant relationship between the variables of age, professional experience in agriculture, the share of subterranean water, income from agricultural activities, income from non-agricultural activities, debt to private instruments, cost of living, savings rate, and villagers' motivation to participate in activities with regeneration and repair aqueducts variable.
- Research findings indicate that there is a significant and positive relationship between the variables of area under cultivation of the studied population and their satisfaction of experts with aqueduct rehabilitation and restoration variable with 99% confidence. In other words, by increasing the cultivation of the respondents and their satisfaction, the rate of aqueduct's rehabilitation and restoration is also increasing.
- The findings revealed that there is a significant and negative relationship between the variables involved in charitable activities, self-confidence with the variable of aqueduct's rehabilitation and restoration with 99% confidence. In other words, by increasing the level of participation in charitable activities the restoration and repair of aqueducts decreased. Also by increasing the confidence of the study population the regeneration and repair of the aqueduct is reduced.
- The findings reveal that there is a significant and positive relationship between social trust variable with variable of revival and restoration of aqueduct with 95% confidence. In other words, whatever social trust in the villages has increased proportionally the rate of restoration and repair of aqueduct has been increased.

Results of Tests of Mean Comparison

Table 10: Mean comparison of rehabilitation and restoration aqueduct at multiple levels of education and major product

Groups	Variables	Dependent variable	Average	chi-square	Significant level
Level of Education	Illiterate	Rehabilitation and Restoration of Aqueduct	72.20	12.552	.014
	Primary		63.16		
	Guidance		93.87		
	High school		86.69		
	University		100.17		
The major product	Barberry	Rehabilitation and Restoration of Aqueduct	102.19	45.321	.000
	Crocus		103.67		
	Jujube		114.33		
	Wheat		54.77		
	Barley		55.85		

The research findings according to the above table showed that there was no significant difference between the mean variable of rehabilitation and restoration aqueduct variable with different levels average of education level and major product. This means that:

- There was a significant difference with 95% confidence between the mean of variables of restoration and repair of aqueducts and different levels of education level. In other words, understanding the importance of preserving and maintaining aqueduct can be different in people with different levels education, which is the highest average number related to people with academic study.
- There was a significant difference with 99% confidence between the mean of variables of restoration and repair of aqueducts and different levels of education level.

- In other words, people with a variety major products based on some conditions (water share, crop water requirement , crop resistance to drought, etc.) could have functioning differently to the regeneration and repair of aqueduct. People who have been a major product of jujube have the highest average among other products, and have great interest to the restoration and repair of aqueduct to irrigate their crops

Conclusions and Suggestions

Findings from descriptive statistic in the present study showed that the mean age was 54 years, 68% of respondents had low level of education. ISDM test results showed that most people had a moderate level of restoration and repair of aqueduct and 58% of people have a lot of community involvement in restoration of the aqueduct. Also 51/4 % of patients in rehabilitation and restoration projects of aqueducts had great economic participation. Variables of cultivated crops, social confidence and satisfaction of experts had a significant and positive relationship with variable of rehabilitation and restoration of aqueducts. Also variables of the rate of debt to friends and relatives, beneficiaries participating in charitable activities and trust have a significant and negative relationship with variable of rehabilitation and restoration of aqueducts. Based on the mean comparison test between different levels education level and major product with revival and restoration of the aqueducts were significant differences with regard to the above results, the following proposals have been put forward.

- Providing easy and low-cost educational requirements for people in all levels from government leads to encourage villagers to raise their level of education.
- Holding classes and aqueducts training workshops for the operation by the relevant agencies to maximize the regeneration and repair in the villages and deliver it to a higher level.
- Considering the folks project about aqueduct and encourage them to do the proposals by the people themselves.
- The need to inclusion the economic participation of beneficiaries in plans with regard to the people conditions and using local materials and resources available in the area.
- Increased funding and facilities for the rehabilitation and repair of aqueducts and the need to prioritize of their allocation based on the participation of beneficiaries in each village.
- Teaching the experts in terms of technically, public and social to improve the quality and quantity of the aqueducts' reclamation and restoration.
- Increasing regeneration and repair aqueducts in the villages by the government with regard to the type of crops and area under cultivation in the villages.
- Government using high participation develop the villages and implement plans to restore and repair aqueducts by the people and with monitoring experts and applying ideas, experiences, people plans reduce the time and cost of projects and thereby increased and improved above features.

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