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Evaluating the Effective Factors on Environmental Behaviors of Villagers (Case Study: Central Section of Maraqe Township)

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Abstract: The present study is up to explain the effective factors on environmental behaviors of the villagers of the central section of Maraqe Township in Iran. The present study in the manner of kind is applicable and its methodology is survey. The population under study includes the inhabiting population in 51 villages containing inhabitants higher than 25 and in order to select the individuals the random sampling method has been used that based on the Cochrane formula, a number of 300 individuals from family guardians has been chosen as samples that this number of individuals has been dispersed by the method of proportionate allocation amongst 12 subject villages. The data acquired from this study has been processed and analyzed utilizing the SPSS Software and in the formation of simple linear regression statistical examination. The material for the present study is questionnaire that in order to rank the validity of the research material (questionnaire), the visual validity method has been used. Also in order to evaluate the sustainability of the present study, the Kronbach's alpha examination has been utilized that its average for the present study's variables has been concluded as 0.78. The results gathered from the regression examination indicates that amongst the 27 independent variables, 12 variables have a meaningful relation with the dependent variable (environmental behaviors) in the way that amongst the 12 independent variables, the participation in educational and advancement courses has the most effectiveness with the beta coefficient equal to 0.397 and agricultural water supplying has he least effectiveness with the beta coefficient equal to 0.101.

Key words: Environmental behaviors, rural areas, Maraqe township in Iran, indicates, regression

INTRODUCTION

Now a days, environmental threats is placed in the center of most important questions of 21st century's human conscience (Salehi, 2010). Occurrence of environmental crisis has led to propose of this question that whether the environment could survive against man's current behavior? In fact the present challenge is not how to live on earth nut is to accept this circumstance to individuals. In spite of all that human behavior alterations is a complex matter. Because of the fact that each behavior has different motivations and rewards that would lead individuals to perform environmental behaviors (Kim, 2012). In the last few years, with concern to the increased rate of environmental tensions, a massive amount of interest has been devoted to evaluation of components of environmental behaviors. A large number of matters related to the environment nowadays is the direct or indirect result of humans' daily behaviors. Evaluating the process of alterations of villagers' behavior in conjunction with the environment is one of the attended subjects through recent years and acknowledgment and correct understanding of the environment's condition has an important role in order to determine the required alterations in the method of management and proposing management plans (Sotude, 2011). In this manner, according to the importance of environment in villagers' activities, their behavior should be amended in the subject environment and this method is inevitable (Schenk *et al*., 2007). In this manner, conduction of a collection of environmental behaviors as the guideline of human interaction with nature and teaching these behaviors in rural areas is considered as an inevitable necessities especially in rural areas (Ziapoor *et al*., 2012).

That environmental behavior means that an individual should attach himself and feel attached to the environment and in the daily-life should also have an environmental behavior as well (Steg and Vlek, 2009), therefore one of the evading solutions from damaging the environment and prevention of its destruction is to alter the humans' behavior to the point and direction of naturalistic aspects. Environmental behavior is a collection of approaches and actions that a human does in contrast of environment. Most of these behaviors are compared with protective behaviors or protection of environment (Mappin and Johnson, 2005). A large part of environmental behavior is determined through the perspective of villagers of the environment (Hejazi and

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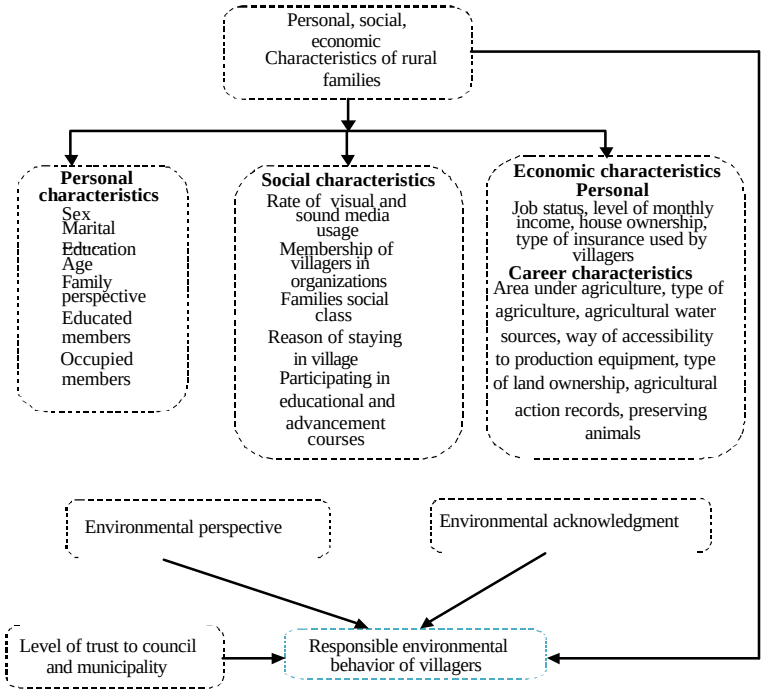

Fig. 1: Conceptual model research

Eshaghi, 2014). Also, the researchers believe that the increase in public acknowledgment could decrease problems and difficulties in environmental problems and lead to responsible behaviors against environment (Geravandi *et al*., 2011).

The results from Kasier *et al*. (1999) research indicates that individuals who have more acknowledgment of environment have also more responsible behaviors against the environment. Also, the results of the research indicated that the individuals who have more acknowledgment about environmental issues have more responsible behaviors against environment (Salehi and Imamgholi, 2012). Salehi (2008) showed that there is no difference amongst environmental behavior of men and women, also elderly people have a more appropriate perspective and behaviors in proportionate to environment. Mulyadi in a research has concluded that the environmental knowledge is considered as one of the important elements in responsible environmental behaviors amongst farmers. Waters have emphasized on land and water ownership in accepting environmental behaviors of farmers. The results of the Kowsari and Zerriffi, indicates the point that two internal (income, family aspects, level of education, family work members, age, cultural and behavioral characteristics of family members, life style and social class of family) and external factors (physical conditions such as climate, energy policies of governments, subsides, fuel accessibility, fuel sources sustainability, rate of fuel consumption, etc.) has a role in determining rural families' fuel consumption.

Mijitaba and Jing (2013) have acknowledged level of income, environment and accessibility to fuel as the main factor of determining rural family fuel consumption in Nigeria, they have concluded that environmental responsibility and environmental knowledge with green buying behavior have a meaningful relation in China (Fig. 1).

Conclusions of Aghili *et al*. (2010) researches indicated that between social capital and environmental responsible behaviors lies a meaningful relation. Also, Babaii (2011), concluded that between variables of sex and marital status with environmental behavior lies a meaningful relation. Mahboubi in a research in line of evaluating the environmental attitude of Iranian villagers have concluded that there lies a meaningful relation between educated members of the family, the rate of public media usage, number of domesticated animals, rate of number of the replicates in educational courses and the rate of their contact with promoters with environmental attitude. Also, Ziapoor *et al*. (2012) in a research figured out that people's environmental behaviors in rural areas in proportionate to urban areas are more responsible. The conclusion by Aghamiri (2013)'s research about the influence of television programs on villagers 'environmental behaviors alteration, Ghodjan village, indicated that watching TV has altered the villagers' environmental behaviors.

The results of Hejazi and Eshaghi (2014)'s study in Iran indicated that acknowledged behavior control variables, mental manners and environmental perspective

and environmental intention has the most effectiveness in order to achieve villagers' responsible behaviors. Research findings by Khajeshahkouii *et al.* (2015), in evaluating the effective factors on environmental acknowledgment of villagers of Jaghargh rural area of Binaloud Township indicated that amongst social, economic and environmental factors with villagers' environmental acknowledgment lied s meaningful relation in the level of 99%. Finally, the research of Almuoti and Shams (2015), in evaluation of the effective factors on prevention behavior from creating household waste of rural families in the Ghazvin township indicated that amongst the age, responsibility, social cooperation, social trust and social esteem with prevention behavior of creating household waste lies a meaningful relation.

MATERIALS AND METHODS

This research in the manner kind is applicable and its methodology is survey. The population under study includes the inhabitant population in 51 villages acquiring higher than 25 families and for selecting the samples the simple random sampling method was used that based on the Cochrane formula, a number of 300 individuals of family guardians has been used as samples that this number of individuals has been dispersed in 12 sample villages by the proportionate allocation method. The data gathered from this study has been analyzed and processed utilizing the SPSS Software and in the formation of simple linear statistical regression examination. The material of this study is questionnaire that in order to validate the study material (questionnaire) the visual validation method has been used. Also for evaluation of the sustainability of the present study, the Kronbach's alpha examination has been used. That its average for the present study's variables has been concluded as 0.78 (Table 1).

Introducing the area under study: The township of Maraqe according to the latest county divisions of Iran, is one of the townships of Eastern Azerbaijan Province that with an extent equal to 2185.65 km^2 has allocated 4.8% of the extent of the province to itself. This township is located in Northern latitude of 37° and 45 min to 13° and 45 min and in eastern longitude is located in 46° and 9 min to 46° and 44 min. The distance of the township's center to the province capital is 135 km. The township of Maraqe has two sections of central and Sarajoo, 2 rural areas, 158 inhabiting villages and 13 deserted villages. Figure 2 and three demonstrates the township of Maraqe and the dispersion of the villages under study.

Table 1: Method of selecting the sample villages for completing the questionnaire based on the number of families

No of samples	Structural status	No of families	Village name	Rural areas	Classifying villages based on no of families	Section	Township
7	Mountainous or hills	56	Goshayesh	Northern Sarajoo	Villages between 25-100 families	Central section	Maraqe
8	Valley	86	Yayshahr	Western Sarajoo			
10	Pastoral	90	Aqkand	Farahnaz			
14	Pastoral	119	Meymoonagh	Northern Sarajoo	Villages between 100-200 families		
15	Mountainous or hills	123	Esfestataj	Western Sarajoo			
19	Valley	166	Ekis	Farahnaz			
25	Pastoral	219	Mardoogh	Northern Sarajoo	Villages between 200-300 families		
32	Mountainous or hills	284	Chouan olya	Western Sarajoo			
26	Mountainous or hills	226	Ghale khalese	Farahnaz			
55	Pastoral	491	Pangche	Northern Sarajoo	Villages higher than 300 families		
45	Pastoral	412	Nava	Western Sarajoo			
44	Mountainous or hills	397	Sarj	Farahnaz			
300							Total

Research findings, 2015

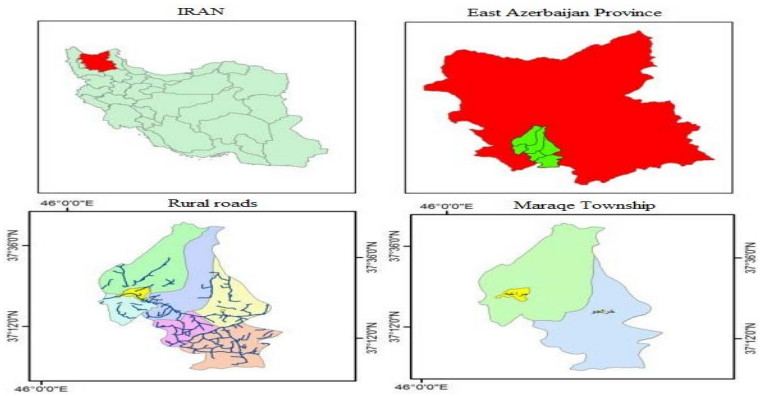

Fig. 2: Location of the villages under study in the central part of the town ship of Maraqe

RESULTS AND DISCUSSION

Descriptive findings: According to the extracted data from the questionnaire, from the total of 300 individuals under study, 77.7% were men and 22.3 were women. In the manner that the replicates in the marital status are 92.7% married and 7.3% single and in the following the most abundance is related to the age group of 41-50 years equal to 29.7% and the least abundance of age is related to the group age of higher than 81 equal to 1.7%. Also, the most abundance of the education level is related to the education below diploma equal to 43% and the least abundance is related to the villagers that has education higher than diploma equal to 3%. The career status of the replicates indicated that 97% of them are occupied and 3% unoccupied (in search of work). The highest abundance of agricultural water used by the villagers related to the river is equal to 33.9% and the least amount of it is related to well equal to 0.4%. The average of the family's agricultural rate under study indicated that 3.22 acres is water agriculture and 1.63 acres is dry farming. Eventually in the manner of income status, the highest abundance was related to the income group of 500-1.500.000 thousand tomans equal to 38.7% and the least abundance was related to the income group of lower than 500 thousand Toman equal to 5%.

Also according to the data collected from replicates under study, the level of villagers' environmental behaviors in the section of efficient usage of natural gas is with the average of 3.07, in the section of efficient usage of electricity is with the average of 2.90 in the section of efficient usage of water is with the average of 2.84 and eventually the section of house waste management is with the average of 1.94. Evaluation of the averages indicated that in the six foretold aspects the replicates have more responsible behaviors in relation to the behaviors related to natural resources protection and environment and the least amount of average in these aspects is the behaviors related to the house waste management (Table 2).

Analytic findings

Simple linear regression analysis: In the present study, before the path analysis examination, the level of interaction between each one of independent variables with the dependent variable (environmental behaviors) is evaluated. Before applying the regression, it is necessary to favor the regression's defaults. The first and the most important regression defaults is the state of the relations between independent and dependent variables being linear (Table 3 and 4).

Table 2: The final status of the replicates dispersion based on environmental behaviors of the villagers

Item/variables	Very high (%)	High (%)	Medium (%)	Low (%)	None (%)	Average
Efficient natural gas usage	0/0	0/0	7/13	7/65	7/20	07/3
Efficient electricity usage	0/0	0/1	7/26	3/53	0/19	90/2
Efficient water usage	0/0	0/0	0/7	3/51	7/41	68/2
Green usage	0/0	0/0	7/5	3/68	0/26	20/3
Natural resources and rural environment preservation	0/0	0/0	3/17	7/80	0/2	84/2
House waste management	3/1	3/11	7/78	7/8	0/0	94/1

Research findings, 2015

Table 3: Simple regression coefficients between dependent and independent variables of the study

Dependent variable	Environmental behaviors			
Independent variable	Coefficient B	Beta coefficient(β)	Level of meaningfulness (Sig.)	Rate t
Sex	788/1	126/0	016/0	554/7
Marital status	943/3	109/0	058/0	901/1
Age	050/0	075/0	194/0	302/1
Education	172/0	118/0	013/0	366/6
Number of occupied members of family	354/0-	046/0-	432/0	783/0-
Number of educated members of family	483/0-	047/0-	418/0	812/0-
Family's perspective	637/0-	076/0-	189/0	316/1-
Usage of visual and audio media	276/0	126/0	029/0	192/2
Participating in advancements courses	960/2	397/0	000/0	338/7
Participation in organizations	064/0-	007/0-	903/0	122/0-
Social class	060/0-	009/0-	882/0	149/0-
Purpose of staying in the village	156/ 0	395/ 0	0.093	2.157
Accessibility to equipment	191/0	157/0	006/0	750/2
Area under agriculture	030/0	120/0	038/0	080/2
Type of agriculture	115/0	115/0	074/0	960/2
Monthly income	091/1	029/0	622/0	494/0
Activity status (career)	770/0-	023/0-	693/0	395/0-
Agricultural activity records	779/1	201/0	002/0	707/2
Owning a garden or farm	869/1-	078/0	183/0	336/1-
Type of agriculture	542/1-	115/0-	074/0	793/1-
House ownership	15/ 4	048/ 0-	357/0	107/1
Agricultural water source	364/2	101/0	036/0	669/3

Table 3: Continue

Dependent variable	Environmental behaviors			
Independent variable	Coefficient B	Beta coefficient(β)	Level of meaningfulness (Sig.)	Rate t
Preserving domestic animals	354/0-	046/0-	422/0	783/0-
Natural trust	067/0	058/0	314/0	008/1
Environmental participation	276/0	143/0	013/0	499/2-
Environmental perspective	390/2	264/0	000/0	300/4
Environmental acknowledgment	556/0	270/0	000/0	832/4
$R = 0.784$, $R^2 = 0.512$, $F = 17.21$, Sig. = 0.005				

Research findings, 2015

Table 4: Independent variables on dependent variable

Dependent variable	Environmental behaviors	
Independent variable	Beta coefficient (β)	Level of meaningfulness (Sig.)
Sex	126/0	016/0*
Marital status	109/0	058/0*
education	118/0	013/0 *
Usage of visual and audio media	126/0	029/0*
Participating in advancement courses	397/0	000/0**
Accessibility to production equipment	157/0	006/0**
Area under agriculture	120/0	038/0*
Agricultural career record	201/0	002/0**
Agricultural water source	101/0	036/0*
Environmental participation	143/0	013/0*
Environmental perspective	264/0	000/0**
Environmental acknowledgment	270/0	000/0**

Study findings, 2015; **meaningfulness (1%); *meaningfulness (5%)

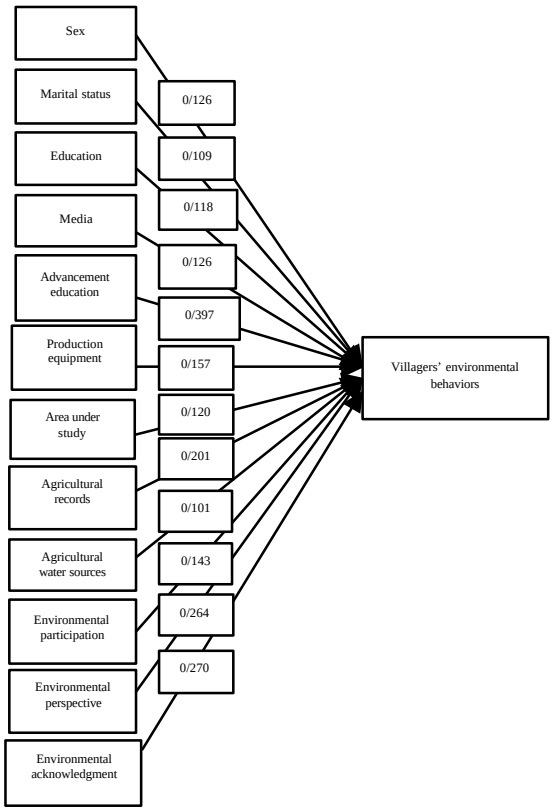

Fig. 3: Analysis of direct effect of independent variables based on Beta coefficients

According to the data collected from Table 3, the amount of R^2 that is the second power of multiple correlation to the power of two or the determination coefficient for the current study is equal to 0.512 in the manner of environmental behaviors and describes the matter that about 51.2% of the variance and the alterations of environmental behaviors of villagers is clarified by the independent variables present in the equation. Based on Table 4, the outcome evaluation of the simple linear regression demonstrates that amongst 27 variables, 12 independent variable that had a meaningful relation with the dependent variable (environmental behaviors), based on the beta coefficient has been classified. Amongst the foretold variables, the variable of participating in educational and advancement courses with the beta coefficient of 0.397 has the most influence and agricultural water source with the beta coefficient equal to 0.101 has the least influence (Fig. 3).

CONCLUSION

One of the personal variables under study in the present research is the gender of the individuals being studied. In this manner the conclusion of the present study is equal to the results gathered by Salehi (2008) that believe that amongst environmental behaviors of men and women are no differences, meaning that men and women have the same perspective and behavior in proportionate to the environment. And also the results by Ziapoor *et al.* (2012) and Babaii (2011) that the environmental behavior of women is more responsibly rather than men and it's not the same, because that the results of the present study indicated that the average of environmental behavior of men is higher than women that indicates the low rate of rural women in cooperation to preserve the environment. Also, the results demonstrated that in house waste management that is more in the duty's realm of the women, the least desired amount was achieved. Therefore, through building up the culture and educating rural women by the local authority (council and municipality) the level of women's cooperation could be improved.

The variable of education has been used in the latter researches including Battel and Scott and Williams,

WeedGern, Kanatari and the results indicated that education is one of the variables that effects the behavior in direct or indirect matter. In the perspective of Kowsari and Zerriffi (2011), education is considered as an internal factors that has a role in determining the fuel consumption behavior of the rural family, meanwhile Imamqoli has concluded to the point of the reverse relation between education and environmental behaviors that the concluded results from the foretold study in the manner of Imam Qoli's study is a meaningful relation but negative and reversed.

Amongst personal factors, the marital status variable was examined. The results of the Salehi (2008)'s study indicated that between marital status and environmental behaviors lies a relation in the manner that married people have more appropriate environmental behaviors rather than single people. Therefore, the results from the current study copes with the Salehi's study. From one side usage of visual and audial media is one of the social variables that in the present study has a positive and meaningful relation with environmental behaviors of the individuals under study in the manner that increased rate of usage of social media would cause an improvement in the environmental behaviors of people under study. Therefore the present study copes with findings from Mahboubi and also Aghamiri (2013) that have conducted the evaluation of the effect of television programs on villagers' environmental behaviors alteration in the village of Qoudjan. Therefore, it is necessary that authorities improve the rate of efficiency of villagers' media through creation of environmental programs especially about rural environment and also the improvement of rural Information Technology Offices (ICT). Also, the advancement courses is considered as one of the effective social variables on environmental behaviors of villagers that based on the findings of the study with the highest Beta coefficient (0.397) is considered as the most effective principle on villagers' environmental behaviors. Therefore, the results of the present study copes with the findings of Mahboubi that indicated a meaningful relation between the rate of replicates' participation in educational courses and their contact with promoters and also the results from Abdollahi that indicated accessibility to educational press and digital content in villages acquiring ICT centers were high and between their environmental perspective, environmental behavior and environmental challenges of villager youngsters inhibiting in villages with ICT centers and is different with other villages. Advancement educational programs helps the villagers to make correct decisions in time of using environmental resources.

Amongst economic variables (area under agriculture, agricultural records, accessibility to production equipment, type of agriculture and agricultural water sources) lies a meaningful relation with villagers' environmental behaviors. The results of the present study copes with the findings by Hossein Nejad and Ghorbani (2011)'s study in variables of area under agriculture and type of agriculture, Golzardi *et al.* (2011) study in the variable of agricultural records, Khajeshahkoui *et al.* (2015) study in the variables of accessibility to production equipment and type of agriculture and weters and colleagues study, land ownership and water.

Based on the Foreign studying background, Kaiser *et al.* (1999) in internal studies, Salehi and Imamgholi (2013) believe that including the important variables for anticipating the human's behavior in proportionate to environment, the state of acknowledgment of the individual about environmental issues is considered important as well. In this manner the results of the present study indicated the presence of the meaningful relation of environmental acknowledgment with environmental behaviors of villagers. With concern to the point that the rural society acquires a low state of education therefore improvement in the state of education, perspective and skill of villagers about natural resources and acknowledgment of people is one of the effects of general programs of preservation of natural resources and the environment could lead to achievement of responsible environmental behaviors.

Based on the findings of the present study amongst the environmental perspective and environmental behavior of the villagers a positive correlation exists and this correlation in the statistical manner is meaningful. He results of the present study copes with the resulted findings by Salehi (2008). Therefore, it is recommended that through approaches and methods such as formation of advancement classes, educational workshops, broadcasting radio and television programs, holding cooperative projects in environmental realms such as waste management, clearing the river's bedside, planting trees, etc., it would provide the appropriate background for a more desirable perspective about preserving the environment amongst villagers.

RECOMMENDATIONS

Amongst the main variables used in the present study, the natural trust was the one variable which does not cope with the results gathered by Aghili *et al.* (2010) and Karimzade (2011) that have proven the relation between trust and governmental authorities and the environmental behavior. Because that the level of

satisfaction of villagers from the activity of the local management (Islamic council and municipality) especially in the environmental duties' realm is at a low state therefore in this manner, education to municipals as the main principle of rural management in Iran could have a remarkable role in environmental preservation management of country's villages.

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