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Neural Network Analysis to Predict Factors Affecting Conservation Behavior of Rural Operators of Shadegan Wetland

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Extended Abstract

1. INTRODUCTION

Wetlands are unique ecosystems that often appear on the sidelines of aquatic or terrestrial systems. They are among the most productive ecosystems on earth, the loss of which can lead to disastrous effects on the wild life and biodiversity. Scientists believe that the destruction of wetlands results in the extinction of native species and their specific habitat. As the livelihood of most poor people in developing countries depends on agriculture, the key solution to solve the problem is enabling and improving the dynamicity of rural communities. As wetlands host a variety of plant and animal species, they play a crucial role in providing for the rural households, and their conservation is the most vital factor in defying human and natural hazards. The main purpose of this study is to predict the important factors affecting the conservation behavior of rural users of Shadegan Wetland.

2. THEORETICAL FRAMEWORK

Shadegan Wetland in Khuzestan province, covering about 537,731 hectares, is the largest in Iran and one of the 1201 recognized wetlands under Ramsar Convention. It is one of the 18 international wetlands registered on UNESCO's Natural Heritage List. Unfortunately Shadegan Wetland is endangered by overexploitation and natural hazards. Natural factors, such as drought phenomenon, as well as irresponsible nearby human activities, such as changing land use, disposing of agricultural, industrial and domestic waste water into the wetland, building non-professionally designed dams, among others have accelerated its drying and disappearance. As such, the health of people and the rural lifestyle is vulnerable and threatened, and it can result in irrevocable consequences. Certainly, one of the solutions to protect the wetland and the rural operators' sustainable livelihoods is by addressing their conservation behavior. Therefore, combining forces of scientific research with experience and taking culture, education, communication and social sciences, as well as the role of people into consideration is of highest priority. Due to the critical conditions of Shadegan Wetland, personal-professional characteristics are influencing factors which can play an important role in the wetland conservation and protecting its rural operators' sustainable livelihoods.

3. METHODOLOGY

This descriptive study aimed at providing practical implications. SPSS version 20 was employed for the statistical analysis of the data. The research population consisted of all households living in the central and rural district Khnafereh in Shadegan, Khuzestan. They consisted of eight villages with 2319 household operators (N=2319). Random-quota sampling technique was used and by drawing on the table of Krejcie and Morgan (1970), 331 households were selected who eventually returned 124 completed questionnaires (n=124). In terms of conservation behavior, the participants were asked a series of five-point Likert scale questions.

4. DISCUSSION

Issues such as global warming, urban air pollution, water shortages, environment natural habitat destruction, and loss of biodiversity are among the various examples of environmental problems which threaten sustainability. The international Shadegan Wetland located in Khuzestan Province, as the largest wetland in Iran on the coast of Persian Gulf countries, for various reasons related to natural and human factors, affected by drought

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phenomenon is on the verge of extinction. The nearby rural operates behave in two ways: responsibly and irresponsibly. In order to reduce the vulnerability of the livelihood of the rural operators, investigation of their responsible behavior which can result in their conservation behavior is imperative. In the study of human behavior by sociologists, the theory of reasoned action and planned behavior is crucial. The purpose of such models are understanding the predictive variables of behavior in a way that they are recognized correctly. In the present study, neural network analysis was used to test the significance of personal-professional variables influencing conservation behavior among rural operators of Shadegan Wetland.

5. CONCLUSION

The results of the neural network analysis of variables including the distance of the location to the Jahad Department of Agriculture, the distance of the location to the nearest city and experience in agriculture revealed that these variables are the most significant factors in the equation. The findings indicate that the farther the location of the rural operators is to the nearest Jahad Department of Agriculture, the more responsible behavior in terms of the extension and education for improving the conservation behavior to control human and natural hazards among the rural operators is observed. In other words, the farther the location of the rural operators is to the nearest Jahad Department of Agriculture, the more irresponsibility in terms of conservation behavior to control human and natural hazards (response and reaction) by the rural operators is observed.

In the end, effective communication and interaction between state-run organizations and rural operators for the purpose of extension and education of conservation behavior can reduce the vulnerability of Shadegan Wetland caused by natural and human hazard.

Key words: neural network analysis, responsible behavior, irresponsible behavior, natural hazard.

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