

## Investigating the impact of media, disaster experience on natural disaster perceived risk of rural households in earthquake-stricken areas of Sarpol-e Zahab

Shahrzad Mohammadi<sup>1</sup>, Professor Shi Guoqing<sup>2\*</sup>

<sup>1</sup>Shahrzad Mohammadi, National Research Centre for Resettlement, Hohai University, Nanjing 211100, China; sh1234m@yahoo.com

<sup>2</sup>Shi Guoqing, National Research Centre for Resettlement, Hohai University, Nanjing 211100, China

\* Correspondence: Tel.: +86-025-83786503

### Abstract

The purpose of this study is investigating the impact of media, disaster experience on natural disaster perceived risk of rural households in earthquake-stricken areas of Sarpol-e Zahab. The present research in the classification of research based on purpose is of applied research type and in terms of research method, it is descriptive-correlation type which has been done by survey. The statistical population of this study is all rural households in the earthquake-stricken areas of Sarpol-e Zahab, of which 384 people were selected as a research sample by simple random sampling. The data collection tool in this study is a questionnaire and the validity evidence was confirmed through factor analysis and the reliability was confirmed through Cronbach's alpha. The hypotheses presented in this research have been analyzed using correlation and regression analysis through SPSS software. Data analysis showed the use of traditional media channels (newspapers, magazines, radio and television) and the use of modern media channels (mobile phone, Internet) as well as previous experience of natural disasters have a significant effect on the natural disaster perceived risk of rural households in the earthquake-stricken areas of Sarpol-e Zahab. According to the results of the Friedman Prioritization Test, the amount of mobile phone use in the first place, the intensity of reminding people of their previous experience of the Sarpol-e-Zahab earthquake in the second place, the amount of internet use in the third place are important.

**Keywords;** Media, Perceived risk, Crisis management

### 1. Introduction

Natural disasters and the resulting crises are accepted by most societies (Bubunets EV, et. al., 2022; Asfahani A., 2022). Natural disasters such as earthquakes, floods or hurricanes can not be prevented and the crisis can not be ignored, but there are ways to reduce and control natural disasters and crisis management after that, if it is known and applied correctly, it will reduce the effect of the accident and natural disaster and heal the sufferings caused by it sooner (Khojasteh Bagherzadeh, 1399). Understanding how to perceive risk and be aware of stimuli to monitor and perform risk reduction behaviors plays an important role in reducing harms (especially in the face of natural hazards that are rare but have more catastrophic consequences) before these hazards occur (KHUC AT, et. al., 2022; Dorontsev AV, et. al., 2022). The experience of earthquakes in Iran and other countries confirms the fact that this natural disaster, in addition to extensive destruction of buildings and the large number of casualties during and after the earthquake is associated with serious failures of the community and the city in rescuing the injured and the victims. Also, providing relief to the rescued or injured people according to the climatic and geographical conditions of the environment and the physical

characteristics of the city, Disruption of the political, administrative, security, social, cultural, psychological and economic livelihood structure of the population due to loss of life, destruction and damage to buildings and related infrastructure facilities and the subsequent spread of socio-environmental anomalies such as fire, insecurity, disease and economic problems, lack of organization of temporary accommodation of survivors, proper services to them, creating favorable living conditions during the period, It is associated with serious ambiguities and problems in the reconstruction of the city, such as the preparation of the city bed, financial, administrative and regulatory policies for the reconstruction of buildings due to the need to strengthen them and fit the living patterns and livelihoods of society (Mahmoud IM, et. al., 2022; Duraimurugan V, et. al., 2022;). These experiments also confirm that hasty reconstructions without comprehensive studies in the fields of tectonic, social, economic, livelihood, cultural, and possibly with the reconstruction of the city in high-risk areas and the construction of seemingly resilient buildings, in fact, regardless of the characteristics (Blahun S, et. al., 2022). The cultural, bio-living conditions of the society and their uneven and vulnerable development will eventually lead to the creation of conditions for another catastrophe in future earthquakes. These experiments also confirm that hasty reconstructions without comprehensive studies in the fields of tectonic, social, economic, livelihood, cultural, and possibly with the reconstruction of the city in high-risk areas and the construction of seemingly resilient buildings, in fact, regardless of the characteristics. The cultural, bio-living conditions of the society and their uneven and vulnerable development will eventually lead to the creation of conditions for another catastrophe in future earthquakes. The tectonic features of the country have made the earthquake as one of the most destructive and threatening factors of destruction of human life. Historical studies show that large parts or areas of our country have been prone to human and financial damage by this natural disaster. Unfortunately, the Azgaleh-Sarpol-e-Zahab earthquake occurred at 21:48 local time on November 13, 2017. The quake occurred at a depth of 18 km and 32 km of Sarpol and 41 km of Salas. At least eight cities (Qasr Shirin, Azgeleh, Thalababajani, Gilangharb, SarpolZahab, Dalahou, Islamabad Gharb and Javanrood) and 1933 villages were damaged by the Sarpol-e Zahab earthquake. Large earthquakes that have occurred in the country are an indicator of the vulnerability of Iran in urban and rural areas (Moradi et al., 1397).

## 2-Theoretical Foundations

In the face of natural disaster risk, many empirical studies have shown that effective and adequate disaster preparedness plays an important role in preventing casualties and financial damage (Davis et al., 2010). However, studies have shown that residents of vulnerable communities (communities with limited resources and often at risk and the impact of earthquakes and their secondary disasters) are not sufficiently prepared for external disasters (Zhou et al., 2018). In 1987, Slovik first suggested that when applying and evaluating risk assessment, the majority of citizens rely on sensory risk judgments, commonly referred to as risk perception. Three risk assessment factors were extracted from this study:

- The cause of fear of danger is uncontrollability, consequences catastrophic, fatal, and the unfair distribution of risks and benefits;
- The cause of unknown risks is invisibility, new hazards and delays in the occurrence of damage;
- The third factor is that there are a large number of people who are at risk and are affected by the risk (Zhou et al., 2011).

Risk perception is defined as the beliefs, attitudes, judgments and feelings of people as well as the broader cultural and social tendencies to adopt their own risks and benefits (Pidjon et al., 1992). Thus, this report is one of the main trends in the risk literature that recognizes the importance of cultural and social contexts in shaping individual attitudes toward risks and their social monitoring. Since earthquake risk perception and risk reduction behaviors are the result of both individual and social processes, so in this study a combination of person-centered and social psychology approaches has been used. Many studies have pointed to the effect of some influential variables on risk perceptions and behaviors. One of the main reasons for this is the lack of effective communication of information to people who know the risk of disasters is low. Media exposure is one of the most essential ways for residents to obtain disaster information (Basolo et al., 2008). As global disasters increase, it is important to understand the types of media platforms that residents generally use to obtain disaster

information and the number of times they have access to these platforms (Lane et al., 2014). Not only can the media inform and monitor the occurrence of many potential crises by informing and monitoring their role, but they can also help create opportunities from crisis. Researchers believe that the general understanding of society and the aggravating or stabilizing reactions of the masses to the crisis are not exclusively in the hands of the media; But the media is one of the most important factors and social actors in this field. That is why most governments seek to use the media as much as possible to manage the crisis. The role of the media in crisis management is not limited to the time of crisis and includes all stages of the crisis (Terzis, 2005). Lago (2004) believes that the relationship between the media audience continues during the crisis stages, but the function of the media in different stages of crises is different. The intensity of the audience-media relationship during natural disasters is the same as other stages or may be even greater; This includes the role of the media in creating emotional support and social solidarity. The functioning of the media in a crisis is influenced by various factors such as ideological base, degree of independence or dependence on the government, history of the crisis, news values and the type of performance of competitors. These functions can be used to strengthen national solidarity and harmony, attract public assistance and participation in crisis resolution, reduce the crisis with preventive educational, cultural and political functions, justify and accept the crisis or intensify the crisis to achieve political, social and other goals (Rashidi et al., 2014). Studies show that experience determines sensitivity and perception of risk. Repeated exposure to risk and experience reduces or eliminates the sensitivity to the threat. Constant exposure to a hazard makes its presence a habit. This phenomenon is referred to as the normalization of risk and its negative consequences. People who have experienced a threat many times; Compared to those who have not experienced it, they underestimate the dire consequences of that risk (Richardson et al., 1987). It has been stated in various literatures that having direct experience with risks can affect risk reduction behavior (McGee et al., 2009). Various researchers have pointed to the effect of personal experience on risk rating and risk acceptance. Direct experience with a risky situation provides a mechanism by which they deal with risk through behavioral decisions that have less potentially negative consequences (Chou and Lee, 2006). Natural disaster perceived risk is an important factor in understanding the behavioral decisions of residents in high-risk areas. Therefore, research on the factors affecting the perceived natural disaster risk of residents of high-risk areas is an important issue in crisis risk management (Zhou et al., 2020).

#### Development of a research conceptual model

From the analysis of information channels (such as the Internet, television, newspapers, radio, etc.) to the process of formation of disaster risk perception by individuals, it can be seen that disaster risk perception by residents is closely related to the amount of information received (including speed Transmission) and information quality (validity and usefulness of information) (Jung and Moro, 2014). Modern society is an information age society in which traditional media and new media coexist. Due to the characteristics of fast transmission speed and low cost, new media have become increasingly important in the field of disaster risk communication, and especially when people think that the mainstream media can not provide enough information, the use of new media tools plays an important role in transmission and Effectively transmit disaster information. In principle, individuals decide to obtain or rely on information through specific channels to accurately understand the real situation of disasters and reduce uncertainty in the process of transmitting disaster information. According to existing studies, it is generally believed that media exposure can significantly improve residents' perception of disaster risk. Media exposure here includes both traditional media exposure and new media exposure (Zhou et al., 2020). For example, Fleming et al. (2006), Morton and Duck (2001) found that exposure to traditional media, such as newspapers, was positive. It has a positive and significant effect on residents' perception of the risk of disaster. Zhou and Yao (2018) found that exposure to new media has a positive effect on residents' perception of catastrophic risk. Hong et al. (2019) also found that media exposure (including exposure to traditional and new media) ) Has a positive and significant effect on the perceived severity of disasters. Thus, this research proposes the first hypothesis (Figure 1).

Hypothesis 1: The media have a significant impact on the perceived risk of natural disasters.

Many empirical studies show that understanding the risk of disaster for residents will result from experiencing direct or indirect disasters. For people who have experienced a catastrophe, when a catastrophe occurs again, theoretically, they can quickly judge the catastrophic situation based on their previous experience, meaning that people who have experienced a catastrophic experience generally have a more rational understanding of the danger of a catastrophe. They will obtain information on natural disasters through the media and other channels, and will make sensible decisions about disaster prevention and mitigation (Hong et al., 2019). Therefore, in existing studies (Stillman et al., 2015), researchers believe that the experience of disaster is significantly and positively correlated with the perception of disaster risk. However, for those who do not experience disasters, they usually build their perception of disaster risk through disaster information obtained from the outside world and then make decisions about disaster prevention and mitigation. At this point, external information may greatly increase their understanding of the risk of disaster. Thus, some studies have shown that media information has an effect on residents' perception of disaster risk, but such an effect is only significant in a group with little experience of disaster (Seigrit and Gutcher, 2006). In addition, several studies have shown that the correlation between residents' experience of disasters and the perception of disaster risk is not significant. For example, Zhou et al., 2020 However, most studies believe that there is a positive and significant correlation between the two. Accordingly, this research proposes Hypothesis 2 (Figure 1).

Hypothesis 2: The experience of disasters has a significant effect on the perceived risk of natural disasters.

According to the literature, the conceptual model of the present study is as follows.

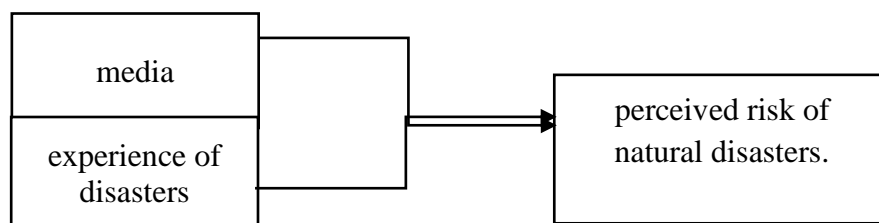


Figure 1. Conceptual model of research

3. Research Method

The present research is applied in terms of purpose and in terms of research method is among the descriptive survey and correlational research. The statistical population of the study is all rural households in the earthquake-stricken areas of Sarpol-e Zahab. The data collection tool in this research is the standard questionnaire of Zhou et al. (2020). For this purpose, the research questionnaire was given to 384 residents of the region and the questionnaire was analyzed by the head of the household after answering.

Perceived risk: Based on research by Zhou et al. (2020), this variable is measured by considering two items. One is the respondents' opinion about the possibility of a large earthquake near their place of residence in the next 10 years and the second is the impact of a future earthquake on rural households.

Media: Based on research by Zhou et al. (2020), this variable is measured by considering two items. One is the use of traditional media channels (newspapers, magazines, radio and television) and the second is the use of modern media channels (mobile, Internet).

According to Zhou et al. (2020), the previous experience of natural disasters was measured by the intensity of the previous experience that people remembered from the Sarpol-e-Zahab earthquake. data analysis

Analysis of the sociological characteristics of the research sample shows that among the respondents to the questionnaire in terms of gender, 64% were male and 36% were female. Also in terms of age,

42% of respondents were between 20 and 35 years old, 49% were between 36 and 50 years old and 9% were over 50 years old. Among the respondents to the questionnaire in terms of education level, 10% had underdiploma, 12% diploma, 48% had a bachelor's degree and 11% had a master's degree or higher.

The table below shows the mean and standard deviation of each of the variables and their measurement items.

Table 1. Descriptive indicators of research variables

standard deviation	mean	Items	variables
0.78715	0.8411	The probability of a major earthquake near the place of residence in the next 10 years	Perceived risk
0.75254	0.8516	The impact of future earthquakes on rural households	
0.82303	0.9036	Newspaper usage rate	media
0.75438	0.8229	Magazine usage rate	
0.75159	0.8047	The rate of use of the radio	
0.78435	0.7812	TV usage rate	
0.78435	0.9349	Mobile phone usage rate	
0.84580	0.8385	Internet usage rate	
0.77823	0.8222	The intensity of recalling the previous experience of people from the Sarpol-e-Zahab earthquake	

Pearson correlation test was used to investigate the significant relationship between variables.

Table 2. Correlation test of research variables

significant	Pearson coefficient	correlation	Items
0.000	0.486		Newspaper usage rate
0.000	0.746		Magazine usage rate
0.000	0.775		The rate of use of the radio
0.000	0.764		TV usage rate
0.000	0.614		Mobile phone usage rate
0.000	0.538		Internet usage rate
0.000	0.755		The intensity of recalling the previous experience of people from the Sarpol-e-Zahab earthquake

According to the results of the correlation table between media dimensions, including the use of traditional media channels (newspapers, magazines, radio and television) and the use of modern media channels (mobile phone, Internet) with the perceived risk of natural disasters, a direct relationship and Significant and there is a direct and significant relationship between the experience of natural disasters and the perceived risk of natural disasters because the significance level of the test (0.000) which is less than  $\alpha$  (0.05).

Multiple regression tests are used simultaneously to investigate the main hypotheses and to examine the significant relationship between each of the considered dimensions of the model.

Table 3. Correlation coefficient and multivariate determination coefficient

D-W	Standard estimation error	Adjusted determination coefficient	determination coefficient	Correlation coefficient
1.860	0.42836	0.700	0.706	0.840

Based on the research data, the problem of multiple correlation coefficient and the determination coefficient of this research according to Table 3 are as follows: The correlation coefficient with the value of 0.840 shows the intensity of the relationship between the independent variables (media and previous experience of natural disasters) and the dependent variable of perceived risk of natural disasters in general. and a coefficient of determination with a value of 0.706 indicates the variability (deviation) in the dependent variable of perceived risk of natural disasters, which can be explained by regression equation. The Watson-Camera statistic also shows the phenomenon of autocorrelation between variables. Considering that the obtained statistic of the regression line equation (1.860) is between 1.5 and 2.5, it indicates the absence of autocorrelation in the regression line equation.

Table 4. Regression analysis

significant	Statistics t	Beta standard coefficient	Model
0.962	-0.047		constant
0.008	2.678	0.087	Newspaper usage rate
0.020	2.338	0.142	Magazine usage rate
0.025	2.252	0.166	The rate of use of the radio
0.004	2.904	0.193	TV usage rate
0.000	3.792	0.163	Mobile phone usage rate
0.036	2.100	0.085	Internet usage rate
0.002	3.122	0.179	The intensity of recalling the previous experience of people from the Sarpol-e-Zahab earthquake

According to the result of regression analysis in Table 4, according to the level of significance calculated at the 95% confidence level, the following results have been obtained:

Newspaper use rate of 8% has a significant relationship with the perceived risk of natural disasters, because the significance level of their test is less than 0.05.

The use of the magazine at the rate of 14.2% has a significant relationship with the perceived risk of natural disasters, because the significance level of their test is less than 0.05.

The rate of radio use of 16.6% has a significant relationship with the perceived risk of natural disasters, because the significance level of their test is less than 0.05.

The use of television at a rate of 19.3% has a significant relationship with the perceived risk of natural disasters, because the significance level of their test is less than 0.05.

The rate of mobile phone use at the rate of 16.3% has a significant relationship with the perceived risk of natural disasters, because the significance level of their test is less than 0.05.

Internet use rate of 8% has a significant relationship with the perceived risk of natural disasters, because the significance level of their test is less than 0.05.

The intensity of recalling the previous experience of people from the Sarpol-e-Zahab earthquake is 17.9% and has a significant relationship with the perceived risk of natural disasters, because the significance level of their test is less than 0.05.

Therefore, the research hypotheses are confirmed and it is concluded that the dimensions of the media and the experience of disasters have a significant effect on the perceived risk of natural disasters of rural households in the earthquake-stricken areas of Sarpol-e Zahab.

In the continuation of the analysis, Friedman test was used to rank the identified factors in the perceived risk of natural disasters in rural households. The results of the Friedman ranking test are as

follows:

Table 5. Friedman ranking test results

significant	d.f	Chi-square	Number of data
0.000	6	32.401	384

According to the results of Table 5, the significance level is lower than the error rate of 0.05. There is a significant difference between the priorities of the variables.

Table 6. Prioritization of factors affecting the perceived risk of natural disasters

Average rating	variables	Priority
4.33	Mobile phone usage rate	1
4.13	The intensity of recalling the previous experience of people from the Sarpol-e-Zahab earthquake	2
4.02	Internet usage rate	3
3.94	Magazine usage rate	4
3.93	Newspaper usage rate	5
3.87	The rate of use of the radio	6
3.79	TV usage rate	7

Due to the fact that the higher the average rank, that variable has a higher priority than other variables. Therefore, according to the results of Table 6, it can be concluded that the rate of mobile phone use with average of 4.33 in the first rank, the intensity of recalling the previous experience of people from the Sarpol-e-Zahab earthquake with average of 4.13 in the second rank, the rate of Internet use with the average 4.02 in the third rank, the rate of magazine use with average of 3.94 in the fourth rank, the rate of newspaper use with average of 3.93 in the fifth rank, the rate of radio use with average of 3.87 in the sixth rank, the rate of television usage With average of 3.79, it is in the seventh place.

## 6- Results

In this study, the role of media and previous experiences of natural disasters on the perceived risk of natural disasters was examined. Based on the results of the mediation model, it can be said that the average dimensions of perceived risk of households are the probability of a large earthquake near their place of residence in the next 10 years 3.8114 and the impact of future earthquake on rural households 3.8516 out of a score (1 means Very low to 5 means very high). Sarpol-e-Zahab rural households seem to feel the danger of earthquakes as one of the most important dangers they face in their lives. Findings show that the use of traditional media channels including newspapers, magazines, radio and television and the use of modern media channels including mobile phones, Internet have a significant impact on the perceived risk natural disaster of rural households in the earthquake-stricken areas of Sarpol-e Zahab. Rural households receive the most information from television. The media can help prepare for crises in a variety of ways, including direct and indirect training to protect audiences, create a culture of prevention, and reduce risk. Also, the media, by transferring the experiences of other countries, show the people the fields of education during the crisis and different conditions. The media can also increase public belief in the country's dangers by identifying potential crises and emerging ones and producing warning messages, and alerting officials to critical situations. The next priority in the pre-crisis phase is the surveillance function. Accordingly, the media can play an important role in preventing and in the next stage of crisis preparedness by closely monitoring the responsible organizations and continuously monitoring their programs. The research findings also show that the experience of disasters have a significant effect on the perceived risk of natural disasters of rural households in the earthquake-stricken areas of Sarpol-e Zahab. In general, people who have experienced a catastrophe, when a catastrophe occurs again, quickly judge the catastrophic situation based on their previous experience and generally have a more logical understanding of the catastrophe risk. They will obtain information on natural disasters through the media and other channels, and they will make sensible decisions about disaster prevention and decrease, and their experiences can be used

to inform others about the perceived risk of natural disasters.

#### Resources

Therese, George, (2005), The role of the media in times of crisis, translated by Abbas Mohammadi Shakiba, Quarterly Journal of Research and Assessment, No. 42 and 43, 203-216.

Rashidi, Ehtesham, Nouri, Mehdi, Nekouei, Mohammad Ali, (2014), Identifying the functions of mass media in natural disaster crisis management based on the network analysis process, Crisis Management, No. 2, 15-24.

Asgarizadeh, Zahra, Rafieian, Mojtaba, Dadashpour, Hashem, (2015), Investigation and analysis of the experimental model of earthquake risk reduction behaviors in Tehran. Geography and Environmental Hazards, No. 3, 39-60.

Moradi, Nader, Mohammadi, Hossein, Goraei, Abolghasem, (2015), Risk analysis and vulnerability assessment of earthquake hazards in Sarpol-e-Zahab area (Case study: Kermanshah province), Third International Conference on New Findings in Architecture and Industry Iran Building, Tehran.

Basolo, V., Steinberg, L. J., Burby, R. J., Levine, J., Cruz, A. M., & Huang, C. (2009). The effects of confidence in government and information on perceived and actual preparedness for disasters. Environment and behavior, 41(3), 338-364.

Cho, J., & Lee, J. (2006). An integrated model of risk and risk-reducing strategies. Journal of business research, 59(1), 112-120.

Davis, C., Keilis-Borok, V., Molchan, G., Shebalin, P., Lahr, P., & Plumb, C. (2010). Earthquake prediction and disaster preparedness: interactive analysis. Natural Hazards Review, 11(4), 173-184.

Fleming, K., Thorson, E., & Zhang, Y. (2006). Going beyond exposure to local news media: An information-processing examination of public perceptions of food safety. Journal of health communication, 11(8), 789-806.

Hong, Y., Kim, J. S., & Xiong, L. (2019). Media exposure and individuals' emergency preparedness behaviors for coping with natural and human-made disasters. Journal of Environmental Psychology, 63, 82-91.

Jung, J. Y., & Moro, M. (2014). Multi-level functionality of social media in the aftermath of the Great East Japan Earthquake. Disasters, 38(s2), s123-s143.

Lin, C. C., Siebeneck, L. K., Lindell, M. K., Prater, C. S., Wu, H. C., & Huang, S. K. (2014). Evacuees' information sources and reentry decision making in the aftermath of Hurricane Ike. Natural Hazards, 70(1), 865-882.

McGee, T. K., McFarlane, B. L., & Varghese, J. (2009). An examination of the influence of hazard experience on wildfire risk perceptions and adoption of mitigation measures. Society and Natural Resources, 22(4), 308-323.

Morton, T. A., & Duck, J. M. (2001). Communication and health beliefs: Mass and interpersonal influences on perceptions of risk to self and others. Communication Research, 28(5), 602-626.

Pidgeon, N., Hood, C., Jones, D., Turner, B., & Gibson, R. (1992). Risk perception. Risk: Analysis, perception and management, 89-134.

Richardson, B., Sorensen, J., & Soderstrom, E. J. (1987). Explaining the social and psychological impacts of a nuclear power plant accident 1. Journal of Applied Social Psychology, 17(1), 16-36.

Siegrist, M., & Gutscher, H. (2006). Flooding risks: A comparison of lay people's perceptions and expert's assessments in Switzerland. Risk analysis, 26(4), 971-979.

Steelman, T. A., McCaffrey, S. M., Velez, A. L. K., & Briefel, J. A. (2015). What information do people use, trust, and find useful during a disaster? Evidence from five large wildfires. Natural Hazards, 76(1), 615-634.

Xu, D., Peng, L., Liu, S., & Wang, X. (2018). Influences of risk perception and sense of place on landslide disaster preparedness in southwestern China. International Journal of Disaster Risk Science, 9(2), 167-180.

Xu, D., Zhuang, L., Deng, X., Qing, C., & Yong, Z. (2020). Media exposure, disaster experience, and risk perception of rural households in earthquake-stricken areas: evidence from rural China.



International journal of environmental research and public health, 17(9), 3246.

Zhu, D., Xie, X., & Gan, Y. (2011). Information source and valence: How information credibility influences earthquake risk perception. *Journal of Environmental Psychology*, 31(2), 129-136.

Zhu, W., & Yao, N. (2018). Public risk perception and intention to take actions on city smog in China. *Human and Ecological Risk Assessment: An International Journal*.

Bubunets EV, Zhigin AV, Esavkin YI, Panov VP, Griksas SA, Salikhov AA, Rakhimzhanova IA. Temperature Factor in the Cultivation of Juvenile Anadromous Sturgeons in Warm-Water Farms. *J Biochem Technol.* 2022;13(1): 45-9

Asfahani A. The Effect of Organizational Citizenship Behavior on Counterproductive Work Behavior: A Moderated Mediation Model. *J Organ Behav Res.* 2022;7(2):143-60.

Khuc At, Do Lh, Ngo Xt. Determinants Influencing the Intention to Cause the Moral Hazard of Vietnam Commercial Banks' Staff. *J Organ Behav Res.* 2022;7(1):125-37.

Dorontsev AV, Vorobyeva NV, Sergeevna E, Kumantsova AM, Sharagin VI, Eremin MV. Functional Changes in the Body of Young Men Who Started Regular Physical Activity. *J Biochem Technol.* 2022;13(1): 65-71

Duraimurugan V, Paramanandham J, Jayakumar S, Krishnappa K, Nivetha N. Ecology of Tree-Holes and Diversity of Insect Larvae in Tree-Hole Water in Mayiladuthurai Taluk. *Entomol Appl Sci Lett.* 2022;9(1): 1-6

Mahmoud IM, Alanazi SA, Alanazi KA, Alshamlane SK, Alanazi SZ, Alanazi MK. Awareness of the General Population about the Effects of Smoking on Health in Saudi Arabia. *Arch Pharm Pract.* 2022;13(3):41-7

Blahun S, Stuchynska N, Lytvynenko N, Khmil I, Serhienko T, Hladyshev V. The Communicative Competence of Future Healthcare Specialists in the Context of Pharmaceutical Market Transformation. *Arch Pharm Pract.* 2022;13(1):74-81