

Evaluating the Practices of Rural Settlements Reconstruction after the Earthquake Disaster, With an Emphasis on Rural Vitality (Case Study: Dastjerdeh County- Tarom Township)

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EXTENDED ABSTRACT

Introduction

Due to the country's geographical and geological conditions, attention to the management of natural disasters and crises arising from that has been considered by planners as the country development plans since early 1991. Therefore, after disaster activities, especially reconstruction of destroyed settlements is the most important step of disaster management in recovery and recycling of these communities. It is important to choose the appropriate reconstruction policy. Review of available resources on the adoption methods of rebuild rural settlements affected by natural disasters, particularly earthquakes in different countries shows that different approaches such as aggregation and integration, relocation and In-Situ policy have been considered by planners, which are connected to the issues such as the extent of damage and the location of the village. In addition, selecting any reconstruction methods depends on environmental conditions and the vulnerability of the region, the cost of reconstruction, willingness and participation of residents and other numerous factors. The purpose of this study is comparative evaluation of the reconstructing methods of villages which affected by the earthquake disaster in June 1990 Manjil-Roudbar earthquake and its effect on rural vitality indicators (comfort and convenience of residents, environment health, safety and security of residents, access to public infrastructure and services, public participation and sense of aesthetics). Therefore, present study tries to answer these questions: 1. whether adopting different ways in the reconstruction of the villages affected by the earthquake, could make a significant difference in the vitality of settlements villages? 2. Was any significant difference observed in the indices of vitality in studied villages?

Methodology

The study area is Dastjerdeh County- Tarom Township In the north of province Zanzan. The recent studies show that there are several faults in the area; therefore, this area is in the high-risk zone of earthquake disaster. Therefore, this study tries, using comparative method, to evaluate the role of two different ways of post-disaster reconstruction (relocation and In-Situ reconstruction policy) on the indicators of the rural residents' vitality. This study is applied research and its method is descriptive- analytical; and to collect required data, interviews and

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questionnaires were used. The study population is households settled in villages of Dastjerdeh County (Tarm Township- Zanjan province), that total number of families living in the villages, based on population and housing census data (2011), are 2083 cases, and among them, by using a chochran formula, 280 households were selected as sample and the questionnaires randomly distributed in the villages. The validity of the questionnaire was confirmed by a panel of experts; and the reliability of the variables, using the preliminary questionnaire, was calculated by the use of Cronbach's alpha coefficient of 0.937. For data analysis, statistical tests such as One-sample t, two samples t and Kruskal-Wallis tests were used.

Results and Discussion

The results of describing the characteristics of the study sample indicate that most respondents (48 percent) are between 31-40 years old, and 91% are males and over 45% of respondents have high school education, (55) percent of the respondents are employed in agricultural activities. In addition, 90 percent of respondents have civilian housing, and 81% of homes built on one floor and constructed area in 56 percent is 100-150 meters.

In this study, rural vitality indicators such as residents' comfort, environment health, safety and security of residents, access to infrastructure, participation in public affairs and aesthetic sense are discussed. The one-sample t test results show that the average (equal to 3) of all rural vitality indicators reviewed in this research, apart from the comfort of residents, is less than the average Likert scale. So we can say that the post-disaster reconstruction in the villages affected by the Manjil- Roudbar earthquake in 1990 could play a significant change in the index of residents' vitality. The results of the equality of variance (Levene's Test) in indicators of the residents' vitality between the reconstructed villages (relocation and In-Situ policy) show that the most distinguishing features of the indices of safety and security and access and improve public infrastructure are reported with a significance level of 0.000. On the other hand, the differences in the two groups of surveyed villages show that there is a significant difference in the indices of residents' comfort and hygiene conditions (0.001) and aesthetic indices (0.035). Kruskal-Wallis test results show significant differences between indicators of vitality in reconstructed villages. In different indices such as residents' welfare and comfort, settlements safety and security, public infrastructure, local participation and visual aesthetic, mainly villages renovated by using relocation policy, especially the villages of Qalat and Sorkkeh Dizaj rank high (first to third) between the studied villages.

Conclusion

The analysis of study results shows that the post-earthquake reconstruction of the affected villages with financial, technical and regulatory support of government agencies along with local participation could make significant changes in residents' vitality in rural areas. So that, there is a significant difference between the two groups of villages have been reconstructed (relocation and In-Situ policy) there in vitality indicators. In addition, the results of statistical analysis show that villages reconstructed by relocation policy are in better situation in vitality indicators such as resident's welfare and comfort, safety and security of physical structures, access to public infrastructure and services and environmental health.

Finally, according to the survey results see the following suggestions:

- Regarding the role of the dominant economic activity in rural areas in the post-disaster reconstruction, with special emphasis on optimal combination of living and activities spaces.
- Pay attention to the participation of affected people to enhance the acceptance of physical reconstruction plans with the adoption of community-based programs.
- Providing basic infrastructures and utilities in relocated villages to increase their stability.
- Providing financial resources for rural reconstruction and provided it to the step by step monitor in village constructions.

Keywords: Disaster Management, Post-disaster Reconstruction, Vitality, Zanjan province