

Research Paper

Structural Equation Modeling (SEM) of Norms in Rural House Formation in the Cold and Mountainous Province of Ardabil

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ABSTRACT

The purpose of this study is to investigate the role of norms in the formation of rural houses in the cold and mountainous zones of *Ardabil* province. Rural settlements with the height of 1500 to 2150 meters above sea level in the cold and mountainous zones of the province were selected through random cluster sampling. The settlements were located in 176 villages 85 of which had a population of over 200 people. Finally, 27 villages were selected as the study sample, 10 residents in each and totally 270 selected in a targeted manner. The research method was of a causal-correlation type conducted to survey and examine the villagers' view of the norms. The participants answered 50 questions on a questionnaire to express their opinions on housing in their villages. The reliability of the questionnaire was found to be approximately $\alpha = 0.905$. Path analysis and regression analysis were done, and the direct and indirect effects of the variables on the norms of rural house formation were identified. The findings of the study showed that the coherent variables of housing and climate norms, as independent factors, have directly affected the way the houses are formed. Also, economic considerations, scales and proportions, and traditional norms, as intermediary factors, have affected rural housing formation. The study of the effects of these variables on the norms of rural housing formation showed that the proposed model is capable of explaining these norms. The strongest predictor of the rural housing formation norms proved to be economy, scale and proportion, and structural similarity in house construction.

Key words:

Norm, Housing formation, Cold and mountainous, *Ardabil* province, Rural house

Extended Abstract**1. Introduction**

The purpose of this paper is to investigate the role of norms in the formation of rural housing in the cold and mountainous areas of *Ardabil* province. The problem of housing is one of the most important issues that humans have always been struggling with.

Nowadays, every country tries to resolve the problem in a way that suits its own circumstances. This challenge was addressed during the fifteenth National Conference on Housing Development held at Tehran University on December 2nd and 3rd, 2009.

2. Methodology

Using random cluster sampling, rural settlements were selected in 85 out of 176 villages in the cold and mountainous zones of *Ardabil* province.

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tainous areas of the province. The selected villages are located at a height of 1500 to 2150 meters above sea level and have a population of over 200 people each. The research method was a causal-correlation type implemented in a survey to examine the villagers' view of the house construction norms. A sample of 27 villages was made of the initially selected ones. Then, in a targeted manner, 10 residents were chosen in each village, i.e. totally 270 residents. The participants took a 50-item questionnaire which sought their perspectives on house formation in their villages. The reliability of the questionnaire was found to be approximately $\alpha = 0.905$. Path analysis and regression analysis were done to determine the direct and indirect effects of the studied variables on the rural house formation. After the assessment of the validity and reliability, a final questionnaire was prepared, and the data were gathered from the respondents of both genders in the age group of 20 to 65 years. This group was chosen because, firstly, they had sufficient experience in the construction of their native villages and, secondly, they were ready to cooperate with the researcher. The answers were categorized based on the 4-degree Likert scale (i.e. from totally agree to totally disagree). Full agreement and total disagreement were scored 4 and 1 respectively. The process of data collection through the questionnaire was implemented in the morning and evening of ordinary days when weather was ideal for the people to leave their homes. The raw data were analyzed using the SPSS and AMOS 18 software programs. These programs treated the data through descriptive statistics as well as inferential statistics. The statistical indicators were Pearson correlation coefficients, Chi-square, regression coefficient, path analytical indices, and factorial indices proportional to the levels of measuring the research variables. Cronbach's alpha coefficient was also used to show the acceptability of the test validity at the level of 0.905.

3. Results

As the findings of the study suggest, rural house formation in the cold and mountainous areas of *Ardabil* province is directly related to coherent variables, i.e. similarity-related variables, in house construction and climate norms as independent factors. Also, the variables of economic norms, norms of scale and proportions, and traditional norms, as intermediary factors, are indirectly related to the issue. Through analyzing the effects of these variables on rural housing formation, it emerged that the model proposed in this study can explain the norms of rural house construction. The best predictors in this regard are economic norms, scale/ratio norms and construction conformity (i.e. similarity). However, the correlation be-

tween the cultural/ traditional norms and the norm of rural housing formation is not significant.

4. Discussion

Based on the results obtained from the experimental model of normative variables, it can be said that similarity is an effective factor in establishing houses in accordance with the norms of rural housing formation. Thus, as the rate of agreement increases on the formulation of a house, such as roof shape and geometry, and or the view of porches, the norm of compliance increases too. In fact, the increasing resemblance among houses implies that people tend to build their houses in harmony with the other members of their rural community. In the present study, coexistence factors, i.e. tendency for similarity, in house construction and functional norms proved to have a direct effect on the norms of rural housing formation, but the three factors of economic norms, cultural/ traditional norms, and norms of scale and proportion were found as intermediary factors.

5. Conclusion

The theoretical model of the relationships of the norms in rural housing formation shows that economic considerations with the value of 0.405 have the highest impact on those norms. The next effective variables are scale and proportions with the value of 0.307 and similarity with the value of 0.302. The priorities for house formation in the villages of the cold and mountainous areas of *Ardabil* province are, thus, economy, scale, and proportion and similarity. There is also a cultural component with a coefficient of -0.025, which is due to the cultural differences in the villages of the target community. Other components form the next priorities.

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Conflict of Interest

The authors declared no conflicts of interest