Stratification and analysis of housing indicators of rural areas of Isfahan province using factor and cluster analyses

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Extended abstract

1-Introduction

Nowadays housing and its related issues are considered as a global issue and planners and policy makers in different countries are trying to solve its problems (Buckley, et al., 2005:237). Among different factors involved in rural settlement structures housing is one of the most important ones (Sartipipor, 2010:125). In Iran, the issue of rural housing, on different aspects, has been affected by urban housing. Despite the efforts made to improve it, and giving priority to it in rural development programs,

housing provision has always been one of the problems of many people, especially low-income families in rural areas.

Non-availability of suitable and standard housing, which is an index of rural development, causes psychological and social damage in rural people's lives, interruption and irregularity in rural housing structures, and ultimately social and economic crises in national level. Therefore, the issue of appropriate planning and policy making for housing and access to a desirable model for rural residents is a major concern of rural planners (Lotfi, 2010:105). One of the important ways of having knowledge of rural condition in the process of rural planning is the use of rural housing indicators (Azizi, 2006:26).

2- Theoretical bases

Rural housing is a coordinated structure consistent with economic, social and cultural structure of rural area that has essential differences with urban housing. In fact, the

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expectations of two urban and rural societies from housing are not the same. In cities, nowadays, houses mostly have the role of dormitory or resort, while in rural areas people expect more from the housing. For a rural person, housing, besides being a resort unit, is also considered as an economic functional unit (Papoliyazdi, 1994:490). Based on the policies enforced and the amount of government intervention in the housing issue, there are two distinct lines of thought among housing scholars and researchers: market economy and planned economy. In view of market economy, housing problems are solved through the market mechanisms and housing needs are provided by private sector (Chadwick, 1987:88, Ziyari, et al., 210:4). In planned economy government has the role of planner, designer and manager (Aghasi, 1996:201, Chadwick, 1987:88, Shucksmith, 2003:213). In Islam's ideological system the importance of housing is as far as that the housing provision is considered as one of

the bases of economic independency, and eradication of poverty in the society.

3– Discussion

To evaluate and analyze the housing indicators in the rural areas of Isfahan province, first data and the related variables are collected and based on them the desired indicators are obtained (Table-1); then, in line with goals of research, we will go through the following steps:

Analysis of housing situation in rural areas of Isfahan province by using housing indicators,

Determining effective factors in improving housing indicators,

And stratification of rural areas based on these indicators.

Applying statistical techniques (factor analysis and cluster analysis), analysis of indicators and prioritization of rural areas of the province are performed.

Table 1: Housing Indicators

indicators	ROW	indicators	ROW
The average of infrastructure lifetime	12	The population of rural areas	1
The share of households that have a minimum electricity	13	The number of households	2
The share of households that have a minimum telephone	14	The family size	4
The share of households that have a minimum water piping	15	The number of residential units,	4
The share of households that have a minimum gas piping	16	The household density in residential units	5
The share of households that have a minimum central heating and cooling system	17	The density of people in residential units	6
The share of households that have a minimum kitchen	18	The housing shortages	7
The share of households that have a minimum bathroom	19	The average of number of rooms in the household	8
The share of residential units from durable materials	20	The average of number of rooms per household member	9
The share of residential units from semi-durable materials	21	The share of owner households to percentage	10
The share of residential units of less durable materials	22	The share of tenant households to percentage	11

4– Conclusion

According to the research objectives, in the first phase, of the 52 variables related to housing, 22 indicators were extracted. Before conducting factor analysis, the suitability of data set for this analysis was evaluated through KOM1 and BTS2 tests. At the end 18 indicators were used in the calculations. Selected indicators reduced to 5 through the factor analysis and the total variance accounted for by these indicators is 86.249%. Among these 5 factors, one named fundamental factor with 26.314% variance alone is the most influential factor in this study. In order to classify homogeneous rural areas, cluster analysis has been used, by which, the rural areas of the province were classified into seven homogeneous groups; based on which, the rural areas of the city of Isfahan have the highest level and Najaf Abad, Tyran-Va-Karvn, Natanz, Kashan, Khansar, Aran-Va-Bydgl, Golpayegan and Semirom Sofla have the lowest level of housing indicators.

5– Suggestions

Considering the importance of housing issue, to achieve the desired situation and eliminate the heterogeneity, it is necessary that lower level areas be given higher priority. Also considering the reality of different climatic conditions in different areas of the province, areas in each homogeneous group have not necessarily the same natural environment; therefore, it is necessary to provide suitable model for each area so that effective and practical planning towards improvement of housing situation be achieved.

Key words: factor analysis, cluster analysis, housing indicators, rural areas of Isfahan province

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1 Kaiser-Meyer-Olkin
2 Bartlett Test

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