

**ORIGINAL ARTICLE**

## **The Analysis of Effective Factors on the Skeletal Stability of Rural Housing (Case Study: Villages central district of Karaj)**

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### **ABSTRACT**

Rural development comes from of various factors one of them is optimal housing. sustainable housing have features appropriate Safe , Environment , Health ingredient , Location and access ability has efficiency .The main objective of this research housing social and economic indicate variables assessment in rural areas .The Case study is central district of karaj .Research method is descriptive-analytical. In order to data collect of two methods library-documentation and field methods such as observation and questionnaires have been used. Statistical societies this research rural family's central district of Karaj have 10316 population. Sample mass using Cochran formula 220 people were assigned. In order to credit appointment research variables cronbach Alpha were used amount equal to 0.77obtained. For data analysis statistical software SPSS, statistical tests one-sample T Test, one-way ANOVA was used. In component skeletal stability indicators "amount of heed reinforcement Principles in construction of housing units", "amount of heed condition of geographic area in construction of housing units", amount of reinforcement rural houses in natural disaster ",amount of StatisticsF equal to 16.549,12.465,7.913. The results showed being different stability of skeletal housing between studied villages.

**Key words:** Rural, Rural housing, Skeletal Stability, City of Karaj.

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### **INTRODUCTION**

Housing is smallest and Form of visualization skeletal mutual relationship human and environment and the most private of living space is human [14]. Today's demand for Suitable housing is increasing. Because of housing and environmental conditions is most effective component individual satisfaction from residential regions [13]. Suitable housing indeed sustainable housing having features such as appropriate comfort, space, health factors, location, access capability [9]. Sustainable housing have important role in stability of family economic and social development and enhance safety coefficient of persons especially cultural Promoting mental peace members of family and system whole affect [1]. One of important ways awareness status Sustainable housing, using indicators of housing stability this indicators represent quality and quantity status of rural housing and improve housing planning for a long-term horizon [1]. [10] The conclusion the conclusion has been that Definition and Codification index of rural housing and identifies elements, quantities and spatial quality available differences in context quantitative and qualitative needs housing are identified.

Issyk and Tvlbnts, [6]: In his research as" sustainable housing in islands conditions using Consolidation calcareous Ground" role of building materials In housing stable have noted .and they believe building materials in housing sector have important impact . They choosing appropriate materials and according to needs of each region for housing one of the most important strategies has been in development sustainable Housing. In own research as "quality housing, key achievement to sustainable communities" characteristics of quality housing and housing role in attraction health communities have noted. This research sustainable housing key instrumentation in creation of sustainable communities is considered. Lotfi and others [7] In study as Indicators and essential components in planning policy rural housing in Iran Concluded that recognition and applying Rural Housing Indicators in long-term rural housing changeable and this ordinance lead to provide a good model and developed Rural housing will be in the country.[11]: In study as spatial analysis rural housing in Kohkiloye and boyerahmd province concluded that five factor Facilities ownership , installation and welfare and Structures Strength Crucial role have in development rural housing attention these factors in planning for reach to improve conditions housing looks essential .

So present study in reply following questions considered.

1. How stability level rural housing in village's case study based on indicators dimensions of physical Sustainability?
2. Do the indicators and dimensions of sustainable housing in villages under the study, exist significant difference?

## MATERIAL AND METHODS

### *The area of study*

Central part of Karaj in southern skirt Alborz Mountain with area equal to 175.4 km, the average has been in height 1320 yards the sea level (Gytashnasy institute, 2004). This city of North in Mazandaran, South city of Shahriar and central province, West city of Savojbolagh and Qazvin, East of Tehran and Shemranat limited. City of Karaj inclusive three Section Central, Asara, Eshtehard and seven villages. Central section inclusive three villages Grmdareh, Mohammad Abad, Kamal Abad Eshtehard division 1 district is Plangabad. Asara section three districts of Names Aderan, Asara and Nesa. Central district of Karaj according to 2011 census having 10316 family and 35955 population and 27 rural [12].

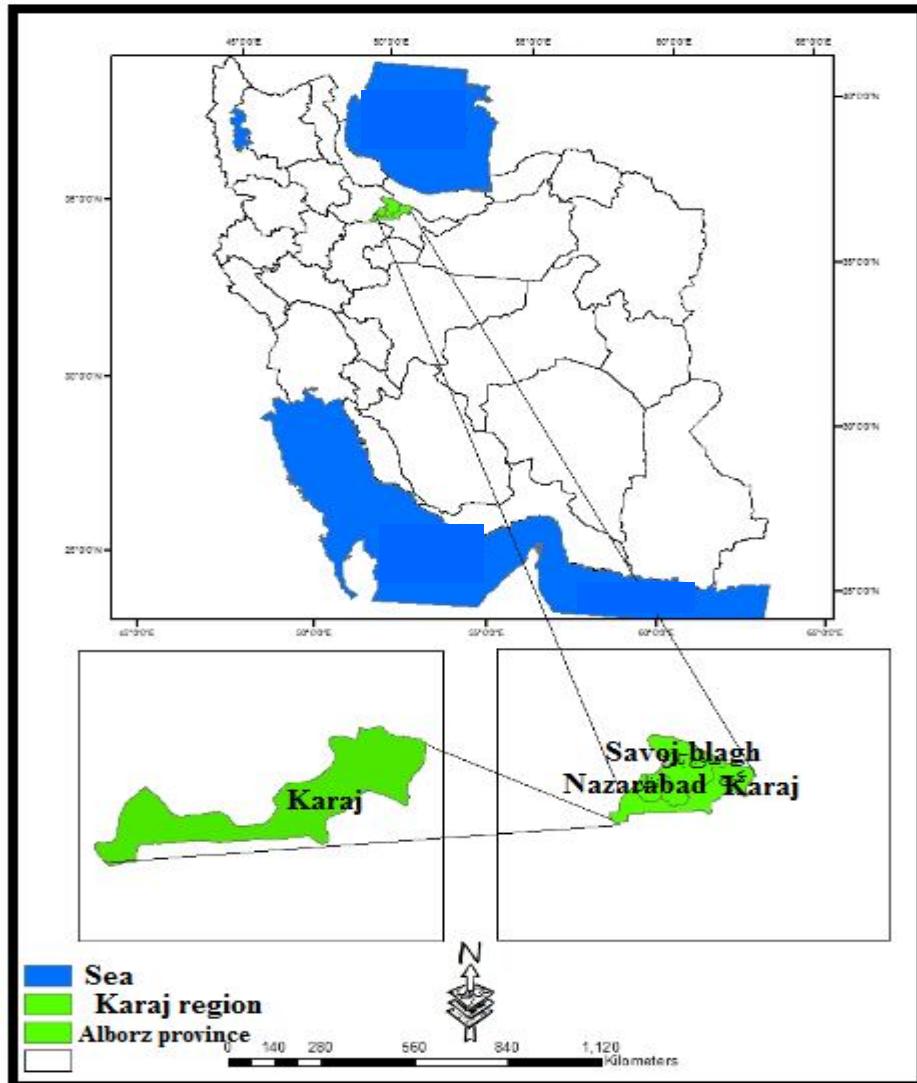


Figure 1: Geographic location Central district city of Karaj in Alborz

### **Research methods**

This research has been applied study methods is descriptive-analytical for to gather data two methods of library and field method direct observation is used . The main tool present study is questionnaire. its content validity has been confirmed for ensure of sustainability Concepts credit and items Number 30 Questionnaire as preliminary study in three villages range of case study distributed and completed .Than for access logical mass of sample society Cochran's formula was used .Attention to statistical society this study whole of rural families Central district of Karaj according to 2011census having 10316 family and

35955 population and 27 rural. Due to time constraints and economic and especially the extent of statistical society Using the corrected order number of questionnaires decreased 220. After determining the sample mass for data collection considering village of Karaj (3 village) as statistical classes, random sampling method is used. Finally, for principles observance and work techniques reliability measure in Codification and questionnaire setting, method of Cronbach's alpha SPSS software was used that earnededdata, reliability of questionnaire more than 0.77 Obtained. Then attention to ratio shareof class each based on distribution of suitable geographic in each village begin information collect and after questionnaires were completed.

#### **Indicators of stable housing used in this study:**

Table 1: indicators used in research

Component	Index
<b>Skeletal Stability</b>	Amont enjoyment housing units from main facilities (water, electricity and bathroom)
	Amont enjoyment housing units from welfare Facilities
	Amont enjoyment housing units from sanitary Facilities
	Amont enjoyment housing units from space
	Amont enjoyment housing units from natural light
	Amount of heed reinforcement Principles in construction of housing units
	Amount of heed condition of geographic area in construction of housing units
	Amount of resistant rural housing against natural disasters
	Amount of materials used in rural housing from brick
	Amount of utilization from double glazing windows

Source: Findings of research, 2013

## **RESULTS**

### ***Descriptive characteristics of respondents***

According to results obtained from collected rural people of case study 32.7 percent respondents are women, and 67.3 respondents are men. And age,most people of statistical society in age group 20-30 year 42.8 percent has been existing.

Literacy status of studied population showed that about 48.2 having diploma above of diploma, 0.77cycle, 16.2 primary, 12.2 bachelor and above5.4percent were illiterate employment status of respondents have self-employed with 0.41. Average family dimension in village's research sample has been equal to 5.1. From viewpoint old of units housing average of 41.2 percent housing are made in years 1981 until 1996.

### ***Analytical findings:***

To answer the first research question, T-test was used .In T-test  $H_0$  assumption significant sustainability equality is 3number (moderate of stability)and assumption  $H_1$  significant inequality with moderate of sustainability in this form should from high values and lower limit used that:

- 1- Whenever limit high and low is positive, observed value is greater.
- 2- Whenever limit high and low is Negative, observed value is minor.

In this study every index separate in each village has been evaluated. Results 1table indicates that indicators "Amont enjoyment housing units from main facilities (water, electricity and bathroom)" , "Amont enjoyment housing units from welfare Facilities" all villages in condition above average have taken place.In index "Amont enjoyment housing units from sanitary Facilities" except Mohammadabad village other villages in condition above average have taken place . and index "Amont enjoyment housing units from space" all villages in middling condition of stability have taken place.index "Amont enjoyment housing units from natural light" all villages in condition above average have taken place. Also index "Amount of heed reinforcement Principles in construction of housing units" garmdare village have poor condition. And other villages of Karaj this index in middling condition of stability have taken place. Index "amount of materials used in rural housing from brick" all villages in condition above average have taken place. And "amount of heed condition of geographic area in construction of housing units "except Mohammadabad village other villages In terms of this indicator in condition lower than average limit of Stability.

Index" amount of resistant rural housing against natural disasters "Mohammadabad and kamalabad villages in midding condition of stability have taken place. Garmdare village in condition lower than average limit of Stability has been located. In this context unsuitable economic situation and admission of immigrants this regions due to lower price of land and housing and followed great extraneous construction from effective factors on instability index" amount of resistant rural housing against natural disasters" has been in area case study. And also index" Amount of utilization from double glazing windows" all villages case study area are in condition lower than midding limit of stability.

Table 2: Amount got for indicators of skeletal stability

indicators of skeletal stability	Minding limit of stability(3)						
	Name of village	T amount	Degrees of freedom(df)	significance level(sig)	Difference of mean	Confidence interval	
						Lowest	Highest
Amont enjoyment housing units from main facilities (water, electricity and bathroom)	mohammadabad	7.964	114	0.000	0.67826	0.5095	0.8470
	kamalabad	8.180	84	0.000	0.72941	.05521	0.9067
	garmdare	7.667	19	0.000	1.15000	0.8360	1.4640
Amont enjoyment housing units from welfare Facilities	mohammadabad	3.007	114	0.003	0.22609	0.0771	.03750
	kamalabad	3.369	84	0.001	0.36471	0.1494	0.5800
	garmdare	3.684	19	0.002	0.50000	0.2159	0.7841
Amont enjoyment housing units from sanitary Facilities	mohammadabad	1.812	114	0.073	0.66087	-0.0616	1.3834
	kamalabad	3.472	84	0.001	0.37647	0.1608	0.5921
	garmdare	6.190	19	0.000	0.95000	0.6288	1.2712
Amont enjoyment housing units from space	mohammadabad	0.980	114	0.329	0.086696	-0.0887	0.2627
	kamalabad	1.458	84	0.149	0.18824	-0.0685	0.4450
	garmdare	0.980	19	0.349	0.25000	0.2948	0.7948
Amont enjoyment housing units from natural light	mohammadabad	5.099	114	0.000	0.51304	0.3137	0.7124
	kamalabad	5.454	84	0.000	0.60000	0.3812	0.8188
	garmdare	8.718	19	0.000	1.20000	0.9119	1.4881
Amount of heed reinforcement Principles in construction of housing units	mohammadabad	0.971	114	0.334	0.08696	-0.904	0.2644
	kamalabad	-1.096	84	0.276	-0.12941	-0.3643	-0.1054
	garmdare	-7.935	19	0.000	-1.30000	-1.6429	-0.9571
Amount of heed condition of geographic area in construction of housing units	mohammadabad	-1.253	114	-0.227	-0.08696	-0.2287	-0.0548
	kamalabad	-4.638	84	0.000	-0.48235	-0.6892	0.2755
	garmdare	-6.164	19	0.000	-1.00000	-1.3395	-0.6605
Amount of resistant rural housing against natural disasters	mohammadabad	-3.145	114	0.002	-0.26087	-0.4295	0.09666
	kamalabad	-6.420	84	0.000	-0.71765	0.9399	-0.4953
	garmdare	-5.604	19	0.000	-0.90000	-1.2361	-0.5639
Amount of materials used in rural housing from brick	mohammadabad	13.396	114	0.000	1.02609	0.8743	1778.1
	kamalabad	10.534	84	0.000	0.92941	0.7540	1049.1
	garmdare	5.339	19	0.000	0.60000	0.6948	0.8359
Amount utilization of double windows from glazing	mohammadabad	-14.674	114	0.000	-1.37391	-1.5594	-1.1884
	kamalabad	-16.676	84	0.000	-1.49412	-1.6722	-1.3161
	garmdare	-13.077	19	0.000	-1.50000	-1.7401	-1.2559

Source: research finding ,2013.

As significance level was calculated for all indicators of skeletal stability except of 2 index (Amount of heed condition of geographic area in construction of housing units , Amount of utilization from double glazing windows) indicate can be inferred that stability level of village case study in midding and above

limit is evaluated.  $H_0$  assumption in this research is not significant differences between indicators and dimensions of sustainable housing in villages and  $H_1$  assumption representative that at least between one of village with other villages significant differences in indicators or there are dimensions of sustainable housing. Also Duncan test to villages classify homogeneous groups are used first for all indicators of skeletal stability in villages of case study ANOVA was used. To determine that villages in which index components of skeletal stability are significantly different the results got the table 2 indicates that villages in indicators "Amount of heed reinforcement Principles in construction of housing units", "Amount of heed condition of geographic area in construction of housing units", "Amount of resistant rural housing against natural disasters", as respects significant level is less than .05 Alpha significant difference was observed. This means that at least one of village's base on principles reinforcement observance condition of Geographical area in making and resistant housing, with others is different. Reason this difference in villages of case study, principles observance of construction in villages of Mohammadabad and kamalabad rather than garmdare village. The rest of parameters all three villages location homogeneous groups in a group located.

Table 3: calculated values use of one-way ANOVA

indicators of skeletal stability	Variance	Sum of squares	Degrees freedom(df)	the Mean of square	Amount of F statistic	significance level(sig)
Amont enjoyment housing units from main facilities (water, lectricity and bathroom)	Between group	3.810	2	1.905		
	Intergroup	160.422	217	0.739	2.577	0.178
	Total	164.232	219			
Amont enjoyment housing units from welfare Facilities	between Group	1.780	2	0.890		
	Intergroup	164.816	217	0.760	1.172	0.312
	Total	166.595	219			
Amont enjoyment housing units from sanitary Facilities	Between group	7.010	2	3.505		
	Intergroup	1836.677	217	8.464	0.414	0.661
	Total	1843.688	219			
Amont enjoyment housing units from space	Between group	.763	2	0.382		
	Intergroup	247.869	217	1.142	0.334	0.716
	Total	248.632	219			
Amont enjoyment housing units from natural light	Between group	8.051	2	4.026		
	Intergroup	226.330	217	1.043	3.860	0.412
	Total	234.382	219			
Amount of heed reinforcement Principles in construction of housing units	Between group	32.779	2	16.390		
	Intergroup	214.907	217	0.99	16.549	0.000
	Total	247.688	219			
Amount of heed condition of geographic area in construction of housing units	Between group	17.732	2	8.866		
	Intergroup	154.354	217	0.711	12.465	0.000
	Total	17.086	219			
Amount of resistant rural housing against natural disasters	Between group	13.798	2	6.899		
	Intergroup	189.197	217	0.872	7.913	0.000
	Total	202.955	219			
Amount of materials used in rural housing from brick	Between group	3.152	2	1.576		
	Intergroup	137.298	217	0.633	2.491	0.521
	Total	140.450	219			
Amount of utilization from double glazing windows	Between group	0.808	2	0.404		
	Intergroup	177.169	217	0.816	0.495	0.610
	Total	177.977	219			

Source: research finding ,2013 .

## CONCLUSIONS

Housing in addition to being have skeletal structure, body with multidimensional performance have different dimensions of local, architecture, skeletal and physical, economic, financial, psychological and medical. The results obtained from index of skeletal stability Through T-test representative that villages index "Amount of heed condition of geographic area in construction of housing units", "Amount of resistant rural housing against natural disasters" "Amount of utilization from double glazing windows" are that in

unsuitable conditions . in this context ,in plans of conductor rural to architecture housing Standard making of housing it should be noted .also finding got from one-way Anova representative being different different stability of skeletal housing between villages of case study . So in planning should be noted that which village in regard to which index in unsuitable condition .for development the same indicators in villages planned .

#### REFERENCES

1. Asayesh, H. (1996),"Measuring the quality of Life", Journal of Housing and Islamic Revolution, Issue 76,Tehran .
2. Assessment Housing Income Groups and Provide Program Housing Security of Low-Income People(Case Study:Lorestan Province )", Abadi Magzine , 14, 1-20 .
3. Alkergypsum- Stabilized Earth : A Case Study from Northern Cyprus", Building and Environment 43, 1428
4. Environmental Quality of Life in an Informal South African Housing Settlement,DoornkopSoweto",Journal of Habitat International,30,175 .
5. Institute of Gita Biology. (2004),Atlas Provinces of Iran, Jldh Tehran Province.
6. Isik, B., Tulgentic , T. (2008),"Sustainable Housing in Island Conditions using Consolidation calcareous Ground.12: 56-89.
7. Lotfi,Heydar .Ahmadi,Ali and Davod Hasanzade farjod (2009), "Indicators and Essential Components in Planning and Rural Housing Policy in Iran ",Quarterly Geographical of Environment Preparation 7, 105-127 .
8. Maliene , V, Mayls , N.( 2009) , " High-quality Housing -A Key Issue in Delivering
9. Rustaei, S., Ahadnejad. Mohsen,,Asgharizamani, A., Zangane. A. (2012), " Review Indicators of Skeletal and Social Housing in Determination Fair Settlement Blocks Using Factor Analysis (Case Study: Kermanshah)", Research in Human Geography, 81, 141-156.
10. Sartipypooh, M. (2005), " Architecture Indicators of Rural Housing in Iran", Fine Art Magazine, Issue 22, 43-52 .
11. Seydae, E., Kiyani S., Soltani.Z. (2010)," Spatial Analysis of Rural Housing Status in Kohgiloye and BoyerAhmad", Journal of Research in Rural, 2, 49-72 .
12. Statistical Center of Iran. (2011), The Census Population and Housing in Alborz .
13. Westaway,M.S.(2006),"A Longitudinal Invesyigation of Satisfaction with Personal and
14. Ziyari, MM., Parhiz F., Mehdi Nejad, H., Ashtari. H. (2010), Sustainable Communities" . Building and Environment 44, 426 p.

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