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The Impact of Rural Housing Rehabilitation on Rural Landscape (Case Study: Ahmadabad Village of Bahabad County)

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Abstract

Purpose: The main objective of this research is to develop and evaluate measures of rural housing landscape and the effect of strengthening on rural housing landscape of the village of Ahmedabad in Bahabad.
The main objective of this research is to investigate the effect of rural housing rehabilitation on the landscape of Ahmadabad village from Bahbad which is based on the concept of landscape assessment.
Design/methodology/approach: The purpose of this study as a methodology is applied, descriptive and field study. For data collection, documentation and survey method using a questionnaire for residents and technical observers have been used. To analyze the variables and indicators of the study, SPSS software and Chi Square and t tests were used. Also plan to analyze the effects of strengthening rural housing and perspective view and the village of Ahmadabad factor analysis, Bartlett test and the KMO indicator.
Finding: Results indicate that strengthening many effects that may be positive or negative on the six performance indicators, aesthetic, economic, social and physical environmental and village have been studied. The results of the first test showed that some of the criteria related to performance indicators and aesthetic as due to zoning height, the proportion in the building, according to the settled units, compliance with the structure and the executive management and oversight of the village, in the 99% of variables appearance to furniture, flexibility and readability buildings, spatial unity and consistency of building styles, harmony between form, at 95%, which indicates a strengthening effect is significant. The second test results show that all the criteria of physical, economic, social and environmental influence of strengthening the fabric of the village of Ahmadabad to 99% to account for a significant level.
Research limitations/implications: A lack of support from government agencies and the lack of statistical information on the type of tissue construction and existing buildings in the village
Practical implications: According to research findings that show the direct relationship between the resistance and the perspective of the village, in the implementation of strengthening, the choice of materials facade and their implementation should be in a way that in addition to the rules and regulations of comprehensive plans and detailed and the high council urban Planning and architecture of Iran, offered to meet six criteria.
Originality/value: Original innovation is in the provision of rural landscape assessment criteria. These criteria can guide those involved in retrofitting buildings rural housing. The proposed criteria can be used to analyze the beauty of the landscape, the villages designed to be used.
Key Words: Rural housing, resistant plan, view and landscape, perspective, Ahmadabad, Bahabad county.

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1. Introduction

The subject of urban and rural landscape, as the dominant image of a city or a village, which contains the first messages in a citizen s attitude, has been discussed in urban development, especially since the middle of the last century. In beginning of the modern age, landscape has found wide dimensions due to its close correlation with identity and characteristics of rural and urban areas, complexity in its recognition, and emergence of non-conventional managements in rural and urban development. The rehabilitation and reconstruction of rural and urban landscape have been discussed in our community, especially after the Islamic Revolution along with population growth, despite special cultural tendency in Iran s system (Abouie & Jafari Ghavamabadi, 2014).

One of the most important subjects, drawn the attention of architects and urban planners, is the necessity of improving the quality of urban landscape within the framework of visual and aesthetic components. Due to their objective and tangible nature, the visual components of urban spaces can be felt by human senses and provide the conditions for environmental perception, recognition, and evaluation for citizens. Developing and improving the visual and physical qualities of urban and rural spaces play a crucial role in legibility and perceptual attraction of a place through the hierarchy of various plans and considering the real needs and facilities and involvement of effective forces in its realization, in addition to providing welfare for humans (Karimi, Sajad Zadeh & Vahdat, 2014).

Additionally, housing is one of the basic needs, which is planned and fulfilled by villagers themselves. However, emergence of technologies and its outcomes in recent decades have brought about development and changes in construction, architecture type, buildings, and materials required for construction. Young population, demands for modern products and modernism, especially after Islamic Revolution, along with introduction of new types of materials and techniques for construction, have added to complexity of the issue. Regarding architecture, these developments are sometimes affected by urban communities, as they are not culturally consistent with rural environment and social elements. It suggests that we cannot resist new technologies, even in construction, and it is needed to guide construction with an efficient management so that architectural texture and rural landscape are not drastically changed and its nature and originality are protected (Sartipipour, 2008).

Investigation of rural areas reveals the diversity of construction methods used for housing rehabilitation. Nowadays, expansion of communication and easy access to information have been associated with great developments in various types of non-local building materials and modeling from urban architecture and construction methods in rural areas (Zanjani, 2011). Undoubtedly, external factors and elements, such as building materials imported from urban areas and replacement of foreign architectural models along with local and traditional texture, have gradually distorted the rural landscape, which eventually can ruin rural landscape. The villages selected by urban people as a holiday resort are losing their traditional landscape as a result of colorful villas erected in such areas. If economic conditions of rural areas and their communication with urban areas improve, villagers will show a higher tendency to modernize their houses; however, mass media play a vital role in this regard. Although rural households have the right to reconstruct their buildings, there is no appropriate model.

Government planned and centralized interventions play a more important role in this destructive process. In making plans for rural housing landscape, upstream regulations such as rural Guide plans should be taken into account. Rural Guide plans, mainly dealing with roads, sidewalks and providing rural development plans, are one of the factors that can change the rural landscape thoroughly. Today, rural Guide plans are the most important management tool of rural development in Iran. These plans focus mainly on physical aspects of rural areas and a major part of the implemented or executable Guide plans in rural areas of Iran have a physical aspect. While some plans are also developed for other requirements of the villages, they are rarely implemented.

The measures taken for rehabilitation or reconstruction of rural areas after natural disasters, such as earthquakes, play a similar role. Especially in villages where only parts of the buildings were destructed due to natural disasters, and heterogeneous constructions have made the

rural landscape illegible and irregular. For example, adobe texture of Iranian rural areas is replaced by metal and concrete structures, leading to buildings having no similarity to local ones in terms of form, color, and size. On the other hands, as Iran is located on Alpine Himalayas earthquake belt, it is among five countries highly vulnerable to earthquakes. Engineering probabilities and statistics suggest that one severe earthquake happens in Iran every four years in average, resulting in destruction of 97% of rural buildings in earthquake-stricken area.

To avoid damage caused by natural disasters, especially earthquake, housing rehabilitation is regarded as an important approach in rural areas, as physical aspect in rural areas is an inclusive subject, rehabilitation is the first priority which has drawn the attention of all experts in this regard (Motevasseli, 2016). However, in other parts of the world, including the industrialized countries, preserving the rural landscape is the top priority which affects all rural plans, as all plans and operations are obliged to follow the standards and regulations set by such plans (Sartipipour, 2009; Maleki, 2010; Kheyroddin, Kakavand & Omidi, 2014). Although, rehabilitation has had a great impact on rural physical structure, the important point which has been marginalized is rural landscape and its indicators in rehabilitation of rural buildings. Hence, this study was conducted to find indicators effective in rural landscape quality, and the study also seeks to evaluate the impact of rural housing rehabilitation on landscape of Ahmadabad Village in Bahabad County to obtain some applicable principles for designing rural landscape.

In this paper, using field work and library studies, we first reviewed the basic concepts and definitions of landscape and theoretical principles related to landscape. The sample was assessed and evaluated by a set of criteria and indicators extracted through the questionnaires. The paper also aims to answer the following questions:

- Did implementation of housing rehabilitation program affect the aesthetic and functional indicators of landscape in Ahmadabad village?
- Which of the spatial, economic, social, and environmental indicators of landscape in Ahmadabad village has received the greatest impact from housing rehabilitation?

One hypothesis is presumed for each of the research questions. First, based on the landscape concepts, housing rehabilitation did not affect the aesthetic and functional indicators of landscape in Ahmadabad village. Second, it appears that based on the literature, housing rehabilitation program has had the greatest impact on the physical-spatial indicators of rural landscape.

2. Research Theoretical Literature

There are various approaches to urban landscape concepts. These approaches sometimes have reduced the landscape concept to beautification, and sometimes they have considered it equal to any communication and interaction between human, environment, and a factor giving them an identity (Mahmeli, 2011). Various definitions have been proposed for landscape (for example, Long, 2014; Mahmoudi, 2006; Mansouri, 2005; Farjami; 2006; Golkar; 2006). By rural or urban landscape, we mean all natural and artificial elements (buildings, furniture, vegetation, and so on), which can be viewed from urban public areas, such as streets, squares, and public areas. Landscape can be viewed as a topic discussing quality and desirability of cities and villages. As the first manifestation of cities, it reflects the historical, cultural, economic and natural characteristics of a city (Pakzad, 2006).

Landscape reflects what is perceived from the world by our five senses. Despite its simplicity, it has a complex concept, as it indicates five different types of human relation with material and spiritual world, with human and non-human biological environment. Landscape is the integration of environmental symbols with human perception of them (Atashin Bar, 2013). Thus, landscape is a material, solid, physical, and real picture, having no inherent movement, and humans perceive it through their senses (Seifollah, Marrovat, 2014).

The rural landscape consists of a set of elements and values found in natural environment, human-made environment, various manifestations of human activities, social and individual beliefs. Rural areas in general, their geographical space, and their landscape have an environmental identity and special local values thanks to their interaction with human, natural environment, and the geographical location of human settlements. With regard to geographical knowledge and natural geography, some natural elements and

unique geographical characteristics, distinctive climatic aspects, cultural manifestations, and livelihoods are the main elements required for recognizing the rural identity and explaining the characteristics of rural space and landscape (Taghvaie, 2013).

Kevin Lynch argues that perceptual, physical and functional factors are important in urban landscape. Mansouri views the urban landscape as citizens understanding of a city, which are made possible by perceiving its symbols (physical dimensions of cities) and related associations (mental dimensions). He introduces three goals of urban landscape as aesthetic, cultural-identity, and functional (Mansouri, 2008; Karimi Moshaver, 2014). In his research, Mahmoudi (2006) claims that urban landscape is an objective reality, perceived through observation. In other words, it is a description of physical reality of a city. This description has nothing to do with the image created in the mind of a person through experiences of the observer, and its most important characteristics are sustainability, identity, beauty, and integrity. Gorji believes that urban landscape is composed of visual, physical, spatial, and environmental dimensions and characteristics of neighborhoods and urban areas (Abdollahkhan Gorgi, 2006). The goals pursued in explaining urban landscape are aesthetic, functional, and typical. Landscape-based attitudes contribute to quality of favorable distribution of spaces or urban uses and fills the gap created by program-based views (Shafeie, 2001). Given the definitions mentioned above, the components constituting the urban and rural landscape have multiple dimensions. Based on the definitions provided by researchers, dimensions of urban landscape can be classified based on the table below (Table 1).

Table 1. definitions of urban landscape dimensions provided by different researchers
Source: Studies of writers, 2015

Researcher	Urban landscape dimensions
Moshiri and Rahmani, 2014	Functional, readability, aesthetics
Karimi Moshaver, 2014	Natural, social, economic
	Aesthetic, functional, identity
Abdollahkhan Gorji, 2006	Visual, physical, spatial, activity, identity, environmental
Mahmoudi, 2006	Sustainability, identity, aesthetic, unity
Shafeie, 2001	Aesthetic, functional, and identity
	perceptual, physical, functional

Based on above mentioned definitions, the elements of urban and rural landscape have different dimensions. Users views about urban space landscape are the most important factors in the optimal function of landscape in urban public spaces, criteria to assess the priorities, need assessment and site selection for such spaces. As there are different views about issues and priorities in rural and urban levels, and decisions made in this regard need to be convergent and include all priorities; the review of qualitative and quantitative development of landscape criteria of the spaces should be based on views of citizens and users about such spaces. For this purpose, the views of some experts are examined in this regard to identify the indicators and criteria required for evaluating elements of urban and rural landscape. After field observations, study area analysis, and interview with experts, results of the questionnaires were analyzed. The criteria extracted from the questionnaires were classified into six indicators: functional, aesthetic, physical, social and environmental, and economic. While the constituting components are interlinked and inseparable, given this research approach, they are examined and analyzed separately.

-Functional indicator: developing appropriate access with appropriate machinery, possibility of public use, providing security and public participation in planning.

-Aesthetic indicator: Aesthetics in architecture finds meaning in relation with the environment and surroundings. Improving the visual quality of landscape and applying aesthetic principles of landscape (unity, legibility, attraction, simplicity, diversity, emphasis, balance, scale, consistency, sequence and order).

-Physical indicator: In a definition presented by Pakzad, he divided the physical elements of urban landscape into two parts: natural and artificial

elements. He listed the components of urban landscape as urban buildings, floor, urban furniture and facilities, vegetation, water, and so on (Pakzad, 2006).

Karmuna argued that urban landscape is divided into three classes: walls, roofs, and floor. Among the physical elements, the walls of a city play the most pivotal role in defining the landscape. The perceived quality of a classical space in a city is mainly resulted from order in proportionality of dimensions and size of two important elements of space, including walls and floor. Perception of the spaces in different proportions of walls and floor happens in various areas (Carmona, Heath, Oc & Tiesdell, 2004).

-Social indicator: Rural houses are formed based on requirements resulting from human behaviors and social relations (Alalhesabi, 2008a; Hashem Nejad & Molanaei, 2008). The social status of rural inhabitants has been considered as a factor influencing the architecture and rural landscape, which itself is influenced by different factors such as culture, ethnic and religious characteristics, and common old traditions. Culture affects inside, outside, facade and size of buildings. Collective life in a family and the use of spaces, separation of life within family life in building floors and the way of creating neighborhoods are some common influences of social relations on rural housing development (Hashem Nejad & Molanaei, 2008). Taghvaei argues that presence of most of rural people and their socio-economic activities in one location, make the quality of rural landscape strongly different and unique (Taghvaie, 2013). Human communities in any settlement, either based on experimental views or new plans, display some tendencies and interests in dealing with the environment and fulfilling their needs. What human makes is the result of confrontation of individual and social interests with limitations and facilities of the natural environment. Social factors refer to some intellectual, cultural, and customary characteristics of human communities, which are effective in the process of forming and developing rural physical characteristics. Ethnicity and kinship relationships, religion, social status, life style, and level of education are some of the social factors investigated in this study.

-Environmental indicator: protecting the natural environment, harmony with nature, enhancing the biological diversity, cycle of materials and energy, reduced water and soil contamination, noise pollution, and energy conservation.

-Economic indicator: studies show that economic problems and high costs related to implementation of earthquake-resistant methods are the most important factors leading to non-standard construction in Iran, especially in poor families which have difficulty in paying the costs. This leads to non-implementation of standards of architecture and building rehabilitation and its impact is manifested in the performance, height and façade of rural houses (Saghafi, 2004). Rural economic structures are directly correlated with land area, materials, number of floors; besides, job of the residents is one of the effective factors in spatial layout and facade of rural houses. These characteristics can be observed both in different areas under construction, facade, and the differences in zoning the spaces and the hierarchy of access to them (Hashem Nejad & Molanaei, 2008). For example, villagers in Semirom region make their living through agriculture and horticulture as their primary job and animal husbandry as their second job. Accordingly, the houses have a continuous texture and distinctive sidewalks and roads, but in nomadic villages, the scattered texture is common, as it is due to movement of the livestock and keeping the livestock near the house (Moeini, 2008). Taghvaei also stresses on the point that one of the most effective factors in rural landscape is economic factor (Taghvaie, 2013). Given the theoretical foundation and research objectives, the factors effective in landscape quality, were identified. For this purpose, the conceptual model, the basis of the questionnaire, is presented (Figure 1).

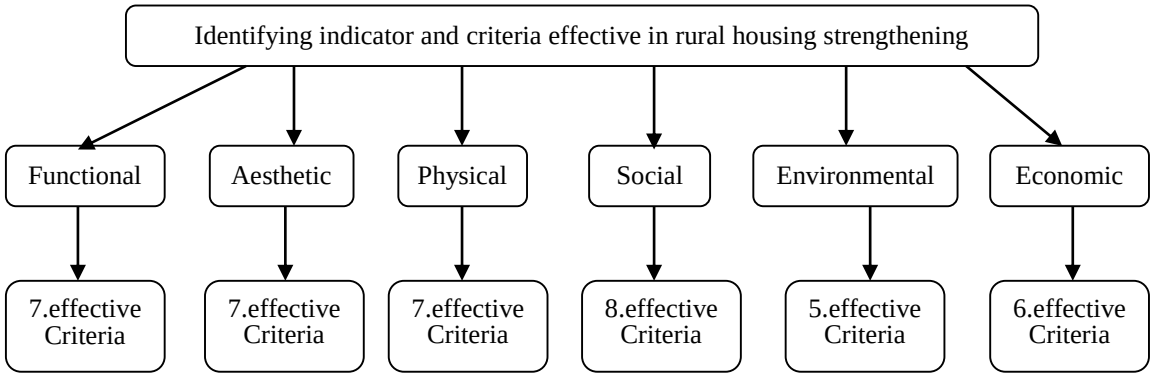

Figure 1. Conceptual model of the research
Source: Research findings, 2015

Over the last decades, many experts have developed a set of criteria to evaluate the quality and plans of urban spaces, but there is no systematic guidelines for rural settlements and spaces (Alalhesabi, 2008b). That is why Iranian villages have experienced the destruction of ancient valuable rural areas, reduced quality of life, and loss of cultural identity of the inhabitants (Akrami & Sameh, 2008). To obtain the indicators of rural landscape quality, this study has reviewed many functional, aesthetic, and environmental views about the quality of urban and rural design. In addition, views on landscape design were reviewed as well.

In a research conducted to identify the optimal criteria and indicators of rural settlement with a different approach to the concept of a good village, the views, ideals, norms, and common demands of local inhabitants were investigated. The questionnaire results were classified into 18 main criteria and showed the distance between the villages and good village in most of the main criteria (Badri, Bayat, Azizi & Hoseini, 2013).

In another study, a descriptive-analytical method was used to quantitatively and qualitatively analyze the criteria of spatial quality from different perspectives, and the result was a hierarchical and classified list of quality criteria in a favorable human settlement. Based on the experts view, many criteria related to rural areas and settlements were true and important, and some were not consistent with rural environment (Yadghar & Pour Rurhani, 2012).

In a study conducted by Taghvaei, he examined the role of rural landscape and environment. Findings suggest the importance of implicit environmental knowledge of people in using the natural world and cultural values in order to resettle in villages and take care of open spaces and landscape of its surrounding environment. The findings also provide the characteristics of rural landscape and views of experts about natural environment and settlement, geographical space of rural areas, economy and livelihood, and cultural landscape (Taghvaie, 2006).

Azizpour evaluated the physical effects of implementing rural Guide plans in Musian village, Abrisham Rural District (Dehestan). Findings of this investigation revealed that Guide plans have enhanced the level of environmental, socio-cultural, and physical indicators, and it showed relative success in terms of housing construction, rural architecture, and quality of roads and sidewalks. However, it failed to reduce the conversion of agricultural land use to non-agricultural one (Azizpour, Khalili, Mohsenzadeh & Hoseini Hasel, 2011).

A research conducted to recognize factors influencing rural housing forms and structure in Fars province, the authors argued that diversity of rural architecture in Fars province owed to each of these factors (Movahhed & Fatahi, 2013).

Zargar (2009) argues that physical dimension of rural areas is affected by various geographical, social, economic, and cultural factors, and none of them acts independently. In fact, they are in interaction with one another. In other words, as rural areas are affected by geographical and cultural factors, these two factors interact with each other as well. It should be noted that village is an integrated phenomenon and its cultural, economic, social, and ecological factors cannot be separated from one another.

In a book entitled xamples of housing models based on the factors affecting rural households, the Housing Foundation (2007) has reported that

factors such as climate, geographical characteristics, land status and livelihood of inhabitants, living practices, ethnicity, and construction methods are involved in spatial structure of rural housing. These factors together with various environmental conditions, access systems, structural and physical characteristics, closed and open spaces, have a role in housing.

Sartipipour (2010) argues that use of environmental facilities and legibility are significant in local architecture. One of the environmental dimensions, considered in rural architecture, is respect to the nature, where the foundation of every building lie. Accordingly, land ripples, climate conditions, local vegetation, natural elements, rivers, land slope have been considered comprehensively and appropriate solutions have been provided.

Moshiri and Rahmani (2014) evaluated the urban furniture and its role in improving the quality of Behshahr landscape. Comparative study of the urban landscapes was performed based on urban furniture indicators through completing 382 questionnaires in Behshahr urban area in the form of tests and entropy and Topsis coefficient. Findings suggest that furniture of Behshahr County does not consistent with climatic conditions, local culture, spatial functions, and citizens needs. Additionally, with regard to impact of furniture indicators in landscape quality of urban areas, they are not in a good condition.

3. Research Methodology

3.1. Geographical Scope of the Research

Ahmadabad is a village in Bahabad County, Yazd province. Bahabad County 200 kilometers away from Yazd, the capital of the province, was promoted from rural district to County in 2009. As few research have been conducted in this area, and given the request of Governor department of central district of Bahabad in this regard, Ahmadabad the biggest village of this County highly affected by urban culture and increased population in recent years, was selected for the case study.

As the objective of the current research was to evaluate the role and impact of rural housing rehabilitation on Ahmadabad rural landscape (Figure 2), and given the involvement of heads of households living in the village and managers and experts of the rural technical system of the area (study population), and the factors related to research subject, two types of questionnaires were developed to make them involved. Cochran formula was used to calculate the sample size. Based on the national census conducted in 2011, 323 households were living in this village, and the sample size was selected from them (Sabz Andish-e Payesh consultant engineers, 2012). Using Cochran formula, sample size was 56; however, 60 heads of households were selected as the final sample to enhance the quality and credibility of the research, assuming d=0.05 in this formula.

After determining the sample size in each village, systematic simple probabilistic sampling was used for distributing the questionnaires among the households to cover all levels of the village. The questionnaires of the second group were completed directly by ten managers and experts of the rural system. SPSS software package was used for analyzing the data and testing the research hypotheses in Chi-square and one sample t-tests.

Figure 2- Rural landscape of Ahmadabad village, Bahabad County
Source: research findings, 2015

3.2. Methodology

Descriptive-analytical method was used in this research. Documentary and library studies were used for investigating the views, theories, and definitions related to the research subject. In addition, field works (questionnaire, observation, interviews and field survey) were used to collect data required and they were analyzed in SPSS software package. Data was collected from October 2014 to March 2015. Then, some tests were performed for data analysis and hypothesis test. In sessions hold among the experts and managers of Ahmadabad village, arrangements were made for field works and completing the questionnaires. Extensive work was conducted for review of the literature. After consulting with experts, two questionnaires were developed. Then, questionnaires were distributed among 5 research experts, rehabilitation specialists, architects to measure the validity of the questionnaires. Taking these points into account, the final version questionnaire was developed. First group completing the questionnaire included the heads of households, and the second group included managers and experts of rural technical systems. Both groups prioritized and scored the research criteria and determined the level of realization of the criteria using 5-point Likert scale.

In order to determine the reliability of questionnaire, Cronbach's alpha method was used in SPSS. In this method, the value of Cronbach's alpha obtained from SPSS needs to be higher than 0.7, so that the reliability of the questionnaire is confirmed. Cronbach's alpha for the first hypothesis questionnaire and second hypothesis questionnaire were 0.872 and 0.804, respectively, which suggests favorable internal consistency of items and reliability of questionnaires as the main tool for assessing the research hypotheses.

4. Research findings

In this study, 40 criteria were provided by reviewing the theoretical literature, results of the questionnaire and consulting with experts in the study area. Based on the experts, these criteria were classified into six indicators, including functional, aesthetic, physical, economic, social and environmental. The findings are summarized in the form of a set of descriptive and inferential analyses and figures. The criteria and indicators were finally evaluated by statistical tests in some matrixes.

4.1. Descriptive statistics

Out of all samples, 30% were in the age group of less than 25 years, 51.6% were in the age group between 25 and 50 years, and 18.4% were in the age group older than 50 years. Qualitative components were used in the questionnaire to evaluate and obtain the views of heads of households. Likert scale was used to assess the views and compare the answers. The answers were classified at five levels of very high, high, medium, low, and very low. Numerical values were assigned to each level. Accordingly, very high level received number 5, high level received number 4, moderate level received number 3, low level received the number 2 and very low level received number 1. Effective criteria were classified into functional, aesthetic, physical, economic, social and environmental indicators based on the research objectives and experts views.

Research findings about functional and aesthetic indicators show that criterion of creating vitality and rural identity with a mean of 3.73 had the highest mean among the criteria based on the views of heads of households, and the criterion of beautification of rural furniture with a mean of 2.60 has had the lowest mean (Figure 3).

Data obtained from the questionnaires filled by heads of households about physical, economic, social and environmental aspects show that the criteria of improving the environmental space of rural areas (including sidewalks pavement, construction of squares, roads, etc.,) with a mean of 3.85 obtained the highest mean based on the views of the heads of households, and the criterion of improving the quality of rural life with a mean of 2.30 has the lowest mean. Other standardized criteria fall between these two values, suggesting that credibility level of the criteria is at favorable level for examining the hypotheses (Figure 4).

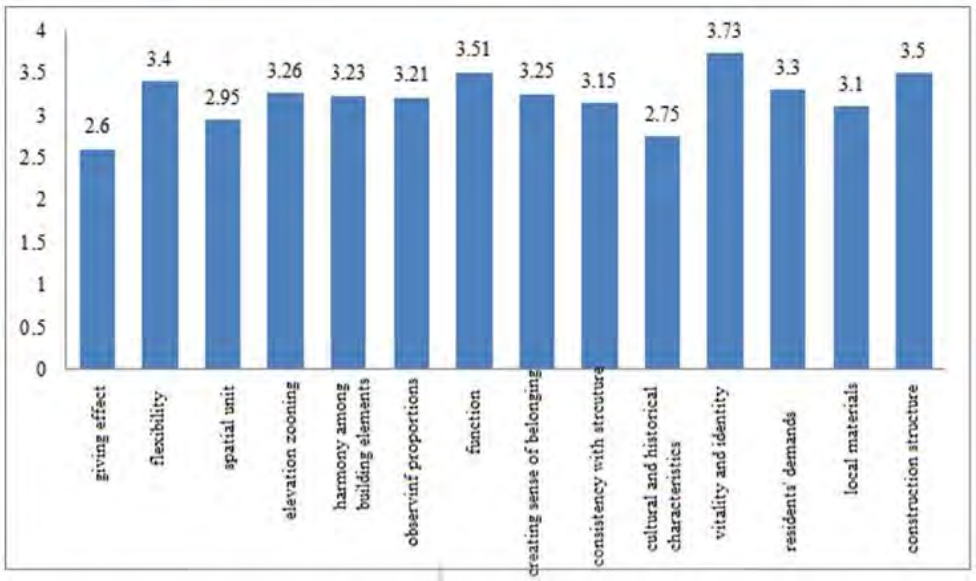

Figure 3. Mean of views of heads of households about the impact of rehabilitation on functional and aesthetic indicators and rural landscape in Ahmadabad village

Source: Research findings, 2015

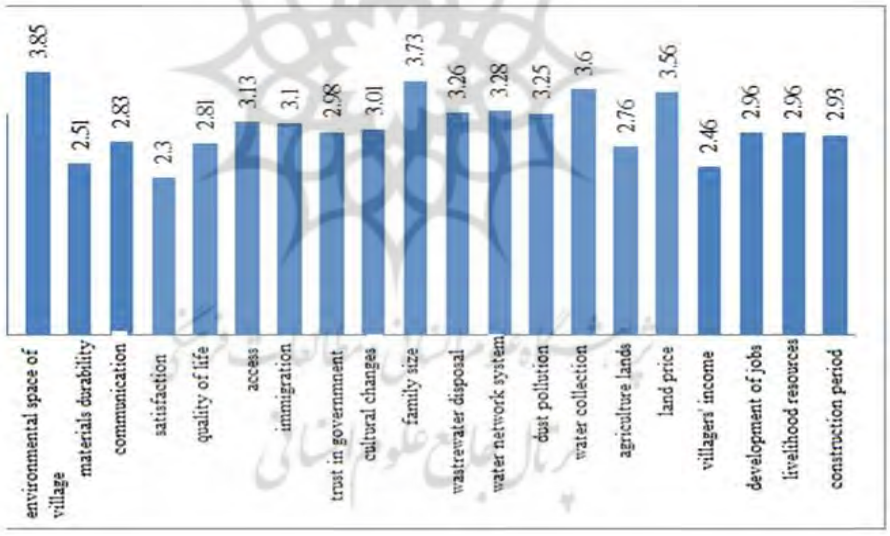

Figure 4. Mean of views of heads of households about the impact of rehabilitation on physical, economic, social and environmental indicators and rural landscape in Ahmadabad village

Source: Research findings, 2015

4.2. Inferential statistics

Testing Hypothesis 1: Implementation of housing rehabilitation did not affect the aesthetic and functional indicators and rural landscape of Ahmadabad village.

For this purpose, functional and aesthetic indicators affected by rural housing rehabilitation were included in the questionnaire in the form of Likert scale, measured by Chi-square test. Findings suggest that some variables were significant at the 99% level and some at the 95% level (Table 2). Table 2 shows a significant relationship among the criteria.

Proportion in buildings- Implementation of rural housing rehabilitation program caused great changes in the proportions of buildings constructed according to this program. The Chi-square test shows a significance level of 99% (0.000**) for this test from the villagers viewpoint, which means this impact is evaluated

inversely, since it has disturbed the numerical relationship among different dimensions of rural buildings. Studies show that implementation of housing rehabilitation program has disturbed the common size used in the architecture of rural buildings, which was based on old experiences, regional culture, and livelihood of villagers, and it has created new proportions in new constructions (Figure 5).

Legibility of form, color, and type of materials- The significance level obtained from chi-square test at the 95% confidence level was 0.031, which is less than 0.05, so rehabilitation has affected the criterion of legibility of form, color and materials up to 95%. Thus, first hypothesis (H0), stating that rehabilitation has no impact on criterion of legibility of form, color, and material was rejected and hypothesis (H1) was confirmed. Table 2 shows the findings of chi-square test. However, given the findings of field works, this effect is not evaluated as positive, because the use of various forms, colors and materials in construction imitated from urban models, has created a new texture for rural areas which is resulted from housing rehabilitation program. Unfortunately, it has merely imitated the urban areas, without having knowledge about characteristics of urban life, as it has resulted in visual disturbance caused by disturbance in the order of colors and forms and their negative impact on the spatial unity of the environment (Figure 6).

Testing hypothesis 2: Implementation of housing rehabilitation program has had no impact on landscape of Ahmadabad village in physical, environmental, economic, and social indicators.

One sample parametric t-test was used to measure the value of physical, economic, social, and environmental indicators affected by rehabilitation in Ahmadabad village. In response to the second test, significance level for all criteria was less than 0.01 based on the Chi-square test. Significant level in all criteria is up to 99% level (Table 3). Therefore, we can say that null hypothesis (H0), which states implementing the housing rehabilitation program has no impact on rural landscape of Ahmadabad village in physical, environmental, economic, and social indicators, was rejected and the H1 hypothesis was confirmed.

Skeletal structure of paths in constructions- Special attention has been paid to skeletal structure and hierarchy of pathways in separation plans so they could be adapted to modern life. However, in the past, paths were developed and expanded spontaneously and without any predetermined plans and consistent with past economic, social, cultural, and technological conditions (Figure 7).

Improving environmental space of rural areas (including sidewalk pavement, construction of squares, streets, and so on)- Data analysis indicates that rural housing rehabilitation program has left a great impact on quality of rural environment, and the change in rural space has brought about changes in rural cultural values and concepts, both in architecture, planning and construction equipment. If we look at old construction in rural areas, we realize that old rural buildings were constructed spontaneously, and no criterion was used for their plans. However, the new buildings based on rehabilitation program, are significantly and environmentally different from old rural buildings, since these spaces have improved the environmental quality of rural areas by creating new paths and adding new furniture and facilities to rural areas.

Enhanced trust of the villagers in government and executive plans conducted by governmental institutions- The Housing Foundation of the Islamic Revolution, as the only government representative, undertakes the responsibility to develop and implement Guide plans in rural areas and provide facilities for rural rehabilitation programs, government can play a crucial role in guiding the constructions and this requires public trust.

With regard to changes at household dimension, increased population and consequently increased construction will have a direct impact on rural landscape in general. Besides, the constructions can be guided desirably and based on the proposed plans by increasing the income level of the villagers through proposed plans.

Table 2. the impact of housing rehabilitation program on functional and aesthetic indicators of rural landscape in Ahmadabad village using Chi-square test

Source: Research findings, 2015

indicators / criteria	Sample size	Chi-square	df	Significance level	Result	
					confirmed	Rejected
Giving effect to rural furniture	60	10.333	4	0.035(*)	❋	
Flexibility and readability of buildings	60	10.833	4	0.029(*)	❋	
Spatial unity and consistency of construction styles	60	11.000	4	0.027(*)	❋	
Paying attention to elevation zoning	60	21.167	4	0.001(**)	❋	
Harmony among form, color, and type of materials	60	10.667	4	0.031(*)	❋	
Proportions in building	60	25.333	4	0.000(**)	❋	
Paying attention to settlement and livelihood function of the units	60	32.833	4	0.000(**)	❋	
Creating collective memory and belonging to village	60	10.333	4	0.035(*)	❋	
Adaptation to structure and power of executive and monitoring management of village	60	24.167	4	0.000(**)	❋	
Paying attention to cultural and historical characteristics of village	60	38.000	4	0.000(**)	❋	
Creating vitality and identity in village	60	22.833	4	0.000(**)	❋	
Adaptation to desired wants of residents	60	14.167	4	0.007(**)	❋	
Using local materials	60	14.667	4	0.005(**)	❋	
Dimensions and scale of constructions	60	21.167	4	0.000(**)	❋	

Figure 5. Disturbance of proportions in constructions implemented based on rehabilitation program

Source: Research findings, 2015

Figure 6. Illegibility of form, color and materials used in construction implemented based on rehabilitation program

Source: Research findings, 2015

Table 3. the impact of housing rehabilitation program on rural landscape of Ahmadabad village in physical, environmental, economic, and social indicators using Chi-square test

Source: Research findings, 2015

Indicators / criteria	Sample size	T value	mean	Significance value	Result	
					confirmed	rejected
Paying attention to indicators of crisis management in housing design models	60	30.107	3.6833	0.000(**)	❋	
Creating and improving the status of communication roads of village (asphalt, lighting, planting tree, and so on)	60	18.725	3.2666	0.000(**)	❋	
Paying attention to skeletal structure of passageways in constructions	60	16.090	3.1000	0.000(**)	❋	
Developing and expanding the scope and area (spatial-geographical) of village	60	16.502	3.9166	0.000(**)	❋	
Expanding non-residential and recreational-sporting spaces in the village, such as construction of parks, and sporting places	60	17.517	3.2500	0.000(**)	❋	
Improving environmental space (including tabulation, construction of squares, creating passageways, and so on)	60	17.252	3.0166	0.000(**)	❋	
Paying attention to structural durability, materials and type of them	60	12.985	3.60000	0.000(**)	❋	
Enhancing the communications and improvement in access of villagers	60	16.202	3.5166	0.000(**)	❋	
Enhancing the villagers and interest in village environment	60	18.199	3.8333	0.000(**)	❋	
Improving villagers quality of life	60	19.507	3.3000	0.000(**)	❋	
Improving the access of villagers to health services, administrative, educational, police, and recreational centers	60	14.542	3.8167	0.000(**)	❋	
Reducing the villagers immigration, especially young people, from the village	60	17.687	3.1333	0.000(**)	❋	
Increasing the villagers trust in government and executive plans of public institutions	60	18.838	3.1000	0.000(**)	❋	
Cultural changes in architecture designs and models	60	14.579	3.9833	0.000(**)	❋	
Changes in household size	60	14.761	3.0166	0.000(**)	❋	
Hygienic disposal of household sewage wastewater	60	16.642	3.3833	0.000(**)	❋	
Improving the status of wastewater network system	60	25.889	3.2667	0.000(**)	❋	
Reducing the contamination caused by dust	60	11.833	3.8833	0.000(**)	❋	
Directing and collecting the surface water in village	60	19.813	3.2667	0.000(**)	❋	
Protecting the agriculture lands and reducing their conversion to non-agriculture land uses	60	27.560	3.8833	0.000(**)	❋	
Increasing the price of lands at the level of rural regions	60	15.236	3.2500	0.000(**)	❋	
Increasing the income of villagers	60	3.994	3.7666	0.000(**)	❋	
development of non-agriculture activities and jobs	60	14.288	3.5666	0.000(**)	❋	
Average price of constructing one-meter residential building	60	16.055	3.7666	0.000(**)	❋	
Increasing the livelihood resources of villagers	60	15.761	3.0166	0.000(**)	❋	
Reducing the period of construction	60	16.661	3.6667	0.000(**)	❋	

Figure 7 - Structure of the paths in constructions implemented based on rehabilitation program
Source: Research findings, 2015

4-2-1- Prioritizing the variables of rural landscape affected by rural housing rehabilitation program

Factor analysis is one of the multivariate statistical methods, establishing a specific relationship among a set of seemingly unrelated variables by a hypothetical model. This method is used especially in subjects with mass data, since analyzing the large numerical tables is not easy in classical statistics. Factor analysis method is used for analyzing such data. The basic assumption in the factor analysis technique is that underlying factors of variables can be used for explaining the complex phenomena and correlations observed among the variables indicate their share in these factors. Factor is a new variable calculated through linear combining of scores of the main observed variables based on the relation 1:

$$F_j = W_{j1}X_1 + W_{j2}X_2 + W_{j3}X_3 + \cdots + W_{j1} = \sum_{1}^{P} W_{ji}X_i \quad (1)$$

Where:
W represents the factor score coefficients and P represents the number of the variables.
The mathematical bases of the factor analysis vary based on the value and type of variance of each variable J (X_J), justified by the factors of the model.
Factor analysis was used in this study to analyze the impact of rural housing rehabilitation program on rural landscape of Ahmadabad village to calculate the value of variance explained by each of the variables in the form of classified factors. Following steps were taken in factor analysis of this research:
1. Forming data matrix: data matrix in this research is a matrix which includes 60 columns and 40 rows. Its columns represent heads of households and its rows represent variables of the study.
2. Calculating correlation matrix: The correlation matrix is used for calculations in next steps and internal relationship among the indicators. If variables are arranged in the positive direction and greater quality indicates a better status, the correlations will be positive. It means that increasing the values of each indicator will result in increased values of other indicators. The correlation between N indicators can be written as N x N matrix. With 71 variables, the matrix form will be 71x71, in which value of its diameter is 1 and the numbers less than its diameter are repetition of the numbers higher than the diameter, since correlation of each indicator with the indicator itself is always 1 and the correlation of indicators 2 and 1 will be always equal to correlation of indicators 1 and 2.
3. Extraction of factors: it involves identifying the number of factors, which can appropriately explain the correlations found between observed variables. In this research, 40 factors were identified and classified into 6 indicators. They explain 85.4% of the variance. It suggests that factor analysis and the studied variables are satisfactory.
4. Rotation of the factors: If any indicator is carried on a factor or loaded values of any variable in the factor are large and positive or close to zero, the interpretation of the factors will be simple. If the loaded values of each indicator, including average values, are on multiple factors, interpretation of the factor will be difficult. To achieve the optimal status, factors are rotated so that a simple structure is obtained. For rotation of the factors, Varimax, quartimax and acumax methods are used.
5- Naming the factors: considering the level of correlation between each indicator, appropriate names can be chosen for each of them. Considering the variety of indicators in each factor in this

research, a certain naming of each factor was overlooked (Figure 8).

Bartlett test and KMO index were used to determine if data related to set of variables analyzed for the impact of rehabilitation are appropriate. The significance of the Bartlett test at a confidence level of 99% and desired value of KMO suggested the correlation and appropriateness of the variables considered for performing the factor analysis (Table 4).

Previous values as a criterion was used to extract and classify the factors, and the factors were taken into account whose eigenvalue was greater than one. Based on the findings, the first factor, namely, physical-infrastructural with eigenvalue of 5.659 alone could explain 23.25% of the total variance, followed by environmental factor with eigenvalue of 4.325, which could explain 21.42% of total variance. Eventually, the aesthetic, social, economic and functional factors with eigenvalues of 4.826, 3.524, 3.451, and 3.123, respectively could explain 20.92, 19.63, 17.63, and 16.50% of total variance. These six factors explained the highest level of the total variance, suggesting the high variance level explained by extracted factors.

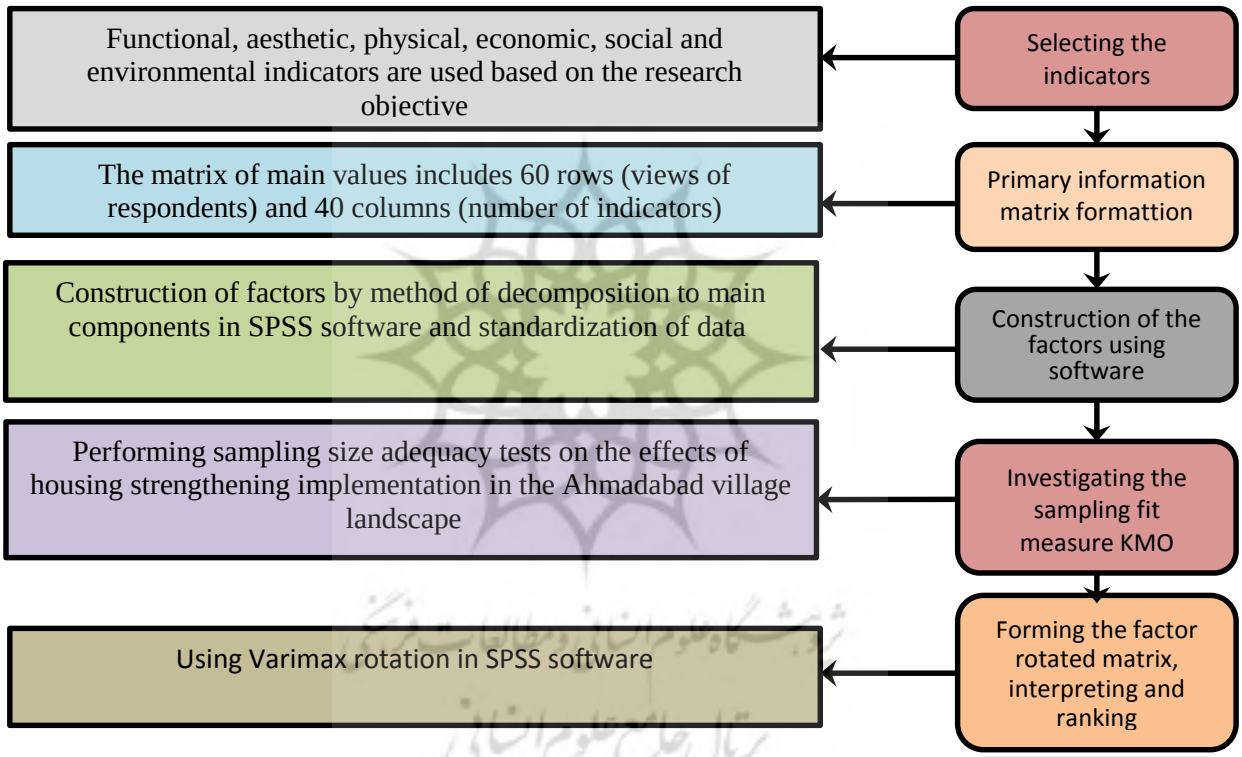

Figure 8. stages of performing the factor analysis for the impact of rural housing rehabilitation program on rural landscape of Ahmadabad Village

Source: research findings, 2015

Table 4. KMO value and Bartlett test and significance level

Analysis case	KMO value	Bartlett value	Significance level (Sig)
impact of rural housing strengthening plan in Ahmadabad Village landscape	0.390	1564.734	0.000

Source: research findings, 2015

4-2-2 Scree graph diagram for determining the number of factors

This diagram is used to determine the optimal number of the components. Considering the trend line of the diagram, it could be stated that except for the first five criteria of landscape, other indicators and almost more than half of the criteria have similar variations and their dispersion is very low and close to the optimal line. Thus, it could be stated that rural housing rehabilitation program has

played a crucial role in rural landscape criteria (Figure 9).

Ranking was performed based on factor analysis, and this analysis is based on the eigenvalues and variance, discussed in the research findings. The criteria related to the effects of rehabilitation have been summarized in Table 5 and based on the factors extracted with the assumption that criteria have a factor load larger than 0.5 after rotation of factors in Varimax method. Table 5 shows that based on factor analysis, the criterion of paying attention to residential and livelihood functions of the units with the factor load of 0.934 ranked first, followed by enhancing the communications and improving the access of villagers with the factor load of 0.912, the legibility between form, color and type of materials with the factor load of 0.905 ranked third, the structural strength of material with the factor load of 0.896 ranked fourth, and the criteria of reduced rural immigration, especially among the young rural population with the factor load of 0.896 ranked fifth.

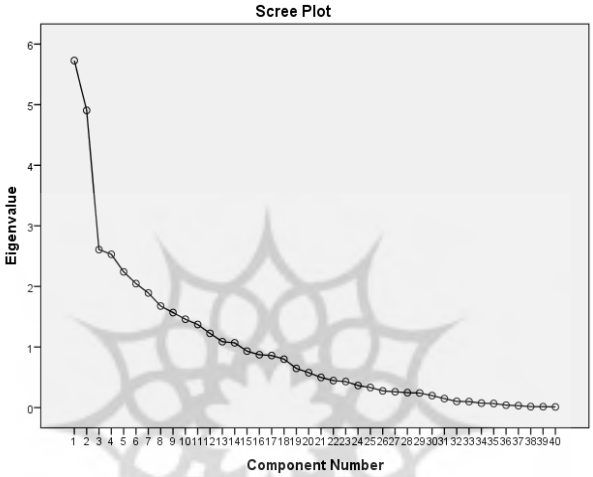

Figure 9. Scree graph diagram for determining the number of factors
Source: Research findings, 2015

Table 5. Criteria related to each of the factors and value of factor loads obtained from rotated matrix
Source: Research findings, 2015

factors	Dependent variable	Factor load	Priority
Functional landscape	Giving effect to rural furniture	0.669	34
	Flexibility and readability of buildings	0.800	14
	Spatial unity and consistency of construction styles	0.894	6
	Paying attention to elevation zoning	0.646	38
	Harmony among form, color, and type of materials	0.905	3
	Proportions in building	0.880	8
	Paying attention to settlement and livelihood function of the units	0.934	1
Aesthetic landscape	Creating collective memory and belonging to village	0.854	10
	Adaptation to structure and power of executive and monitoring management of village	0.749	25
	Paying attention to cultural and historical characteristics of village	0.760	24
	Creating vitality and identity in village	0.732	28
	Adaptation to desired wants of residents	0.748	26
	Using local materials	0.764	23
	Dimensions and scale of constructions	0.722	31
Physical and infrastructural landscape	Paying attention to indicators of crisis management in housing design models	0.846	11
	Creating and improving the status of communication roads of village (asphalt, lighting, planting tree, and so on)	0.827	30
	Paying attention to skeletal structure of passageways in constructions	0.841	12
	Developing and expanding the scope and area (spatial-geographical) of village	0.709	32

Table 5.

factors	Dependent variable	Factor load	Priority
Physical and infrastructural landscape	Expanding non-residential and recreational-sporting spaces in the village, such as construction of parks, and sporting places	0.797	16
	Improving environmental space (including tabulation, construction of squares, creating passageways, and so on)	0.746	27
	Paying attention to structural durability, materials and type of them	0.896	4
Social landscape	Enhancing the communications and improvement in access of villagers	0.912	2
	Enhancing the villagers and interest in village environment	0.867	7
	Improving the access of villagers to health services, administrative, educational, police, and recreational centers	0.766	21
	Reducing the villagers immigration, especially young people from the village	0.650	36
	Reducing the villagers immigration, especially young people from the village	0.895	5
	Increasing the villagers trust in government and executive plans of public institutions	0.787	18
	Cultural changes in architecture designs and models	0.782	19
	Changes in living household size	0.798	15
Environmental landscape	Hygienic disposal of household sewage wastewater	0.706	33
	Improving the status of wastewater network system	0.790	17
	Reducing the contamination caused by dust	0.863	9
	Directing and collecting the surface water in village	0.774	22
	protecting the agriculture lands and reducing their conversion to non-agriculture land uses	0.781	20
Economic landscape	Increasing the price of lands at the level of rural regions	0.658	35
	Increasing the income of villagers	0.595	39
	development of non-agriculture activities and jobs	0.777	21
	Average price of constructing one-meter residential building	0.621	37
	Increasing the livelihood resources of villagers	0.728	29
	Reducing the period of construction	0.840	13

5. Discussion and conclusions

Rural architecture is one of the main subjects discussed in rural development planning, because rural areas, given their typical functions and deep link with the environment and nature, have a physical structure different from urban spaces. This physical structure has found a unique identity in relation with land, human interactions, and its historical, and socio-cultural elements (Amar and Samimi Sharemi, 2009). Cities with a desirable visual environment are able to improve mental image of the society and enhance their civil pride by expanding the aesthetic experience of its citizens. It also increases its competitive ability for attracting creative people and capital investment by improving the image of the city at the international level.

Urban and rural landscape play a crucial and influential role in the perception of spaces. The visual and perceptual factors of the spatial landscape would enhance if the current issues are prioritized based on the views of citizens and users of these spaces. As there are various views on landscape issues and its criteria, the objective of this research is to identify the criteria affecting the rural landscape and the impact of housing rehabilitation programs on rural landscape. The criteria were obtained based on views of the citizens and experts by using a questionnaire. Findings of the questionnaires revealed that the criteria affecting the rural landscape were 40 criteria, which were divided into 6 indicators. In the research conducted by Kheiroddin et al., the identified criteria were classified into six indicators including diversity, social, identity, access, security, and vitality. Additionally, considering the findings and analysis of the hypotheses, we may conclude that:

Hypothesis 1: Implementation of housing rehabilitation has affected the aesthetic and functional indicators and rural landscape of Ahmadabad village.

For this purpose, the functional and aesthetic components affected by rural housing rehabilitation were included in the questionnaire in the form of Likert scale, measured by this test. Findings suggest that some criteria such as paying attention to zoning height, proportions in building, paying attention to

settlement and livelihood function of units, adaptation to structure and power of executive and monitoring management of villages, paying attention to cultural and historical characteristics of rural areas, creating rural vitality and identity, use of local materials, dimensions and scale of constructions are significant at the level of 99%, and the criteria of beautification of rural furniture, the flexibility and legibility of buildings, spatial unity and consistency of building styles, legibility of form, color and type of materials, creating collective memory and belonging to the village showed significant impact at the level of 95%, which show the impact of rehabilitation.

Identity is one of the important dimensions which can play a crucial role in visual memory of people. When in a city, all pedestrian bridges have the same design, they may become a symbol of the city. This was experienced in Paris in design of metro entrances, or even in the simplest urban elements, such as park fences. In light of such capacities, Paris is rich in symbols, introducing it as a city with distinguished identity. While this city has experienced many changes throughout history, symbols have yet maintained their use as identity elements.

Moshiri and Rahmani also argue that functional dimension of landscape is the most important dimension. For example, billboards, pedestrian bridges, trash bins, telephone kiosks, and even fences are designed to satisfy the people by providing them with special services.

Legibility is a concept, proposed by urban designers such as Kevin Lynch. Based on this concept, if design and physical measures are considered in a planned manner in a city, citizens will be able to have more realistic picture of a city in their minds. In a legible city, even citizens who are unfamiliar with the urban spaces can identify the city without confusion and by following simple routing signs.

Hypothesis 2: Implementation of housing rehabilitation program has had a significant impact on rural landscape of Ahmadabad village in physical, environmental, economic, and social indicators.

To confirm or reject the second hypothesis, one sample t-test was used. Results of the test revealed that all physical, economic, social and environmental criteria are affected by rehabilitation of Ahmadabad village up to significant level of 99%. The impacts were evaluated positive in some respects and negative in some other respects.

As stated above, one of the most important goals of implementing rural housing rehabilitation program in various regions is guiding the physical structure of rural areas and providing the facilities required to improve the physical status of rural houses, and eventually their rehabilitation, which was confirmed in this study, as physical-infrastructural landscape indicator was analyzed as the first indicator and showed the highest value of variance. In this regard, findings suggest that the variable of paying attention to structural durability, materials and their type, paying attention to crisis management indicators in housing plans, paying attention to skeletal structure of paths in constructions were recognized as the most important physical impacts in the study area.

Another point is that planning and physical intervention, especially in historical areas, require a high level of expertise, which will be costly, and people living in such areas mainly are not able to pay such costs, but urban management can take major steps in this regard by providing planning services for owners, or defining executive projects for organizing the paths and neighborhood, and receiving a part of the costs from the residents.

Based on the research findings, the second important indicator of the research is the environmental landscape. Khakzand, argue that given crises in fossil fuel supply, the environmental landscape indicator has found a great importance among other goals of the landscape in recent decades with an emphasis on optimal energy consumption. They argue that environmental goals are essential to achieve a desirable urban landscape. Criteria such as materials resistance to humidity, green spaces for creating thermal comfort, and temperature-resistant materials are in the priority.

Ahmadabad village did not have wastewater disposal system before the rehabilitation program was implemented and shallow wells were used for wastewater disposal. Additionally, as the village is located in a flat region, the water of rainfall flowed through the paths, as there was no specified system for surface water drainage. This created very bad health conditions and difficulties in movement of the villagers when it was raining, and even in some cases, overflow of water destroyed some residential buildings. After implementation of the plan, in light of essential changes and improving the rural wastewater system, wastewater and sewage are

disposed more properly and this has improved the health conditions in the village. Thanks to some physical changes in the village, such as building sidewalks, curb, and streets, etc., surface water was drained more quickly and easily. Another significant impact of rural rehabilitation was reduced dust pollution, especially in hot seasons, in roads where agricultural machinery and livestock move. After asphalting these roads, the level of dust pollution, which had caused many respiratory problems for the villagers, decreased significantly.

Protecting the agricultural lands and reduced land use change, was another significant outcome of rehabilitation program, as lands where the rehabilitation program was implemented, were examined by appropriate process with regard to their vegetation, and after cadastral survey, the construction was assigned to applicants, which prevented the land use change of agricultural lands.

Aesthetic indicator was the third indicator affected by rehabilitation. Results suggest that aesthetic indicator considers the tangible dimension of space, which create a pleasant feeling. In the study area, the rehabilitation program brought about great improvements in the structure of social institutions of rural areas and orientations in construction and aesthetic components; however, some of them were evaluated as positive, and some of them as negative.

Findings of the research conducted by Karimi revealed that space proportions was more important than other criteria in the aesthetic indicator. Moshiri and Rahmani argued that functional and aesthetic organization in Behshahr County was essential. They also argue that beauty, legibility, and harmony create visual beauty in urban environment, and in addition to other factors, it provides an appropriate space for urban life. Findings of the research carried out by Khakzand revealed that from people and experts view, the criteria of proportion, cleanness, balance, and order in the objective dimension and attachment to the place, meaningfulness, relaxation, legibility and attractiveness are also considered in aesthetic evaluation. Another point is the difference at level of environmental preferences or perception of the aesthetic dimensions of the environment, in which factors such as training, effectiveness, and fallibility affect the aesthetic judgment (Daneshpour and Fakhari, 2012). In other words, factors such as familiarity, repetition, and training affect the aesthetic perceptions of users, while user may make mistakes with regard to perceptions due to lack of appropriate training, prejudice to environment, and in some cases, low level of preference. Hume believes that training is the only solution for aesthetic judgments (Bohlooli Feskhudi, 2009).

One of the concerns in building facades in Ahmadabad is involvement of non-specialist individuals in this field, who construct various facades without considering aesthetic criteria, which in the long run, creates disturbance and lack of legibility in the rural landscape.

In our ranking, the social landscape of villages affected by rehabilitation, was ranked fourth. In this regard, the level of communications between local people has significantly enhanced thanks to improved communication roads with other neighboring villages. Another significant point concerning the social impacts is that implementation of the plan increased the interest of the villagers in rural environment, and improved the sustainability and reduced the rural-urban immigration, especially among young rural people which is thanks to improved access of villagers to various services such as health, administrative, educational, police and recreational services.

Findings of the research conducted by Duiran and Kheiroddin indicate that the quality of access to spaces and traffic network and paying attention to urban facilities is one of the criteria, playing an important role in landscape quality.

Karimi et al found that the highest landscape priorities are related to vegetation indicator and planting trees in physical cluster, historical monuments and tombs in identity-spatial cluster, and spatial proportions in the physical-aesthetic cluster in Bu Ali Sina Square from the perspective of citizens and experts. Additionally, in Imam Khomeini Square, Hamadan County, the highest priorities were related to indicator of buildings facade in physical cluster, historical and cultural characteristics of location in the identity-spatial cluster, and body symmetry in aesthetic-physical cluster. Based on experts views, the highest urban landscape priorities were related to building facades in physical cluster, historical monuments and tombs in spatial-identity cluster, and symbols in the physical-aesthetic cluster.

In addition to physical, aesthetic, social, and environmental impacts, another part of the impacts of implementing rural rehabilitation program in the study area, emphasized as the fifth priority considering the results of analysis of factor tests is

the economic impacts. In this regard, it seems that implementing the Guide plans compared to other dimensions, especially physical and social dimensions, was less effective at the economic dimension. However, given the organization and improvement of rural housing, one of the important economic effects of the rural Guide plans was related to price of rural housing and lands, which is significant compared to conditions before implementation of the plan. In addition, the rehabilitation program could increase the income level of some groups relatively as it develops some non-agricultural activities and jobs, especially during the implementation of the plan.

Eventually, another impact of the rehabilitation, which ranked sixth and explained a small part of the variance, is related to functional factor. However, as results show, it seems that implementing the plan in the study area has less impacts on functional dimensions, because one of the main reasons was the type and model of the rural housing implemented in the village, as they did not take into account the climatic and socio-cultural conditions of conditions, etc., and it is not in a favorable condition about the effects of indicators provided for the quality of rural landscape.

the region. However, less attention has been paid to Guide plans in rehabilitation program. The coordination between plans and materials used in the façade of the buildings is required so that it can create a sense of unity in various parts of the village. Diversity of materials, while maintaining harmony with other building, also plays a significant role in improving the rural landscape. However, this point is not taken in Ahmadabad buildings, and the owners have constructed their buildings disregarding the surrounding buildings and areas. Diversity of patterns, colors, materials, etc., in the rural landscape has created a special disorder and incongruity.

It could be concluded that rehabilitation of Ahmadabad village is facing some problems about the indicators and criteria including adaptation to climatic conditions, adaptation to urban economy, social and cultural.

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تاثیر مقاوم‌سازی مسکن روستایی در کیفیت سیما و منظر روستا (مطالعهٔ موردی: روستای احمدآباد، شهرستان بهاباد)

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چکیده مبسوط

۱. مقدمه

موضوع نما و سیمای شهر و روستا، چهرهٔ مسلط کالبد شهر و روستا و حاوی اولین پیامها در چشم‌انداز شهروندان، در شهرسازی و به‌ویژه از نیمه قرن گذشته میلادی محل گفتگو بوده است. موضوع به جهت رابطهٔ تنگاتنگ با مقولهٔ هویت و ویژگی شهر و روستا، بازشناسی آن پیچیده و با شروع عصر مدرن و اعمال مدیریتهای غیرعرفی مبتنی بر قانون در توسعهٔ شهری و روستایی، ابعاد گسترده‌ای یافت. در جامعه ما به‌ویژه پس از انقلاب با رشد جمعیت، مقاوم‌سازی و یا بازسازی روستاها، سیما و منظر شهری و روستایی به عنوان بخشی از مناقشه معماری معاصر کشور با وجود گرایش فرهنگی خاص نظام، به یکی از کانون های گفتگو بدل گردید.

بررسی‌های انجام شده در روستاها نشان‌دهنده تنوع ساخت و به‌کارگیری شیوه‌های مختلف در جهت مقاوم‌سازی مسکن است. امروزه گسترش ارتباطات و دسترسی آسان به اطلاعات، دگرگونی‌های دامنه‌داری را در کاربرد انواع مواد و مصالح ساختمانی غیربومی و مدل‌برداری از شیوه‌های ساخت‌وساز و معماری شهری در عرصه‌های روستایی به همراه داشته است. بدون تردید ورود عوامل و عناصر خارجی، از جمله مصالح ساختمانی وارداتی از مناطق شهری و جایگزینی الگوهای معماری بیگانه در کنار بافت بومی و سنتی، به تدریج منظر روستا را مخدوش و در نهایت می‌تواند باعث تخریب آن شود. روستاهایی که از سوی شهرنشین‌ها به عنوان ییلاق انتخاب می‌شوند، با ساخت و ساز ویلاهای رنگارنگ چهره می‌بازند. درصورتی که شرایط اقتصادی روستا و ارتباط روستاییان با شهر تقویت شود، آنچنان که وسایل ارتباط جمعی نقش مهمی در این زمینه دارند، گرایش روستانشین‌ها تبدیل به احسن کردن خانه‌هایشان رواج می‌یابد. البته در اینکه تجدید ساختمان حق هر خانوار روستایی است، تردیدی نیست، ولی اغلب الگوهای مطلوب و مناسبی برای این‌کار وجود ندارد.

این تحقیق سعی دارد در مسیر کلی پژوهش به سوال‌های زیر پاسخ دهد:

- آیا اجرای مقاوم‌سازی مسکن، بر شاخص‌های زیباشناختی و عملکردی منظر در روستای احمدآباد تأثیرگذار بوده است؟
- کدام یک از شاخص‌های کالبدی فضایی، اقتصادی و اجتماعی و زیست‌محیطی منظر روستا از مقاوم‌سازی مسکن بیشترین تأثیر را پذیرفته است؟

۲. مبانی نظری

براساس تعاریف، مؤلفه‌های تشکیل دهنده منظر شهری و روستایی دارای ابعاد گوناگونی‌اند از جمله شاخص عملکردی، زیباشناختی، کالبدی، اقتصادی، اجتماعی و زیست محیطی. دیدگاه‌های استفاده‌کنندگان درباره منظر فضاهای شهری، در زمره مهمترین عوامل اصلی در عملکرد بهینه منظر فضاهای عمومی شهری، معیارهای اولویت‌سنجی، نیازسنجی و مکان‌یابی این فضاهاست. از آنجا که نظرات و آرای مختلفی در سطح شهر و روستا پیرامون مسایل و اولویت‌ها وجود دارد و اتخاذ تصمیمات باید همگرا و در راستای پوشش همه جانبه اولویت‌ها باشد، لذا، بررسی توسعه کیفی و کمی معیارهای منظر (بصری) فضاها باید مبتنی بر نظرات شهروندان و استفاده کنندگان از فضا باشد.

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۳. روش تحقیق

روش تحقیق در این تحقیق توصیفی تحلیلی بوده، که با استفاده از روشهای گرداوری اطلاعات به‌صورت مطالعه اسنادی و کتابخانه‌ای دیدگاه‌ها، نظریات و تعاریف مربوط به موضوع پژوهش بررسی شد. همچنین با استفاده از روش میدانی(پرسش نامه، مشاهده، مصاحبه و برداشت میدانی) داده‌های مورد نیاز جمع‌آوری شده و در نرم افزار SPSS پیاده شد.

داده‌ها در بازۀ زمانی مهرماه ۱۳۹۳ تا اسفند ۱۳۹۳ جمع‌آوری شد. سپس با آزمونها مورد نیاز به تجزیه و تحلیل داده‌ها و آزمون فرضیات پرداخته شد. طی جلساتی که میان متخصصین روستای احمدآباد، خبرگان و مدیران برگزار شد، هماهنگی های لازم به منظور انجام مطالعۀ میدانی و پرسش‌نامه انجام گرفت. در این تحقیق پس از مطالعات وسیع، بررسی پیشینه تحقیقات انجام شده، مشورت با خبرگان، دو پرسش‌نامه تهیه شد و سپس برای سنجش روایی، پرسش‌نامه‌ها میان ۵ نفر از خبرگان تحقیق و متخصصین امر مقاوم‌سازی، معماران و طراحان، توزیع شد و سرانجام، پس لحاظ کردن نکات مورد نظر، نسخه نهایی پرسش‌نامه‌ها به‌دست آمد. مرجع جوابگویی به سوالات پرسش‌نامه(جامعه مطالعاتی) گروه اول سرپرستان خانوار و در گروه دوم مدیران و کارشناسان نظام فنی روستایی بودند. هر دو گروه به اولویّت‌بندی و امتیازدهی معیارها پژوهش پرداخته‌اند و میزان تحقق معیارها را با استفاده از طیف ۵ مقیاسی لیکرت مشخص کرده اند.

۴. یافته های تحقیق

در تحقیق حاضر با مروری بر متون نظری، مشاوره با خبرگان و نیز روستای مطالعاتی و با توجه به نتایج پرسش‌نامه، ۴۰ معیار معرفی شد. با توجه به نظر خبرگان، معیارها در شش شاخص طبقه‌بندی شدند. شش شاخص: عملکردی، زیباشناسی، کالبدی، اقتصادی، اجتماعی و زیست محیطی به عنوان مهمترین شاخص‌های ارزیابی سیما و منظر روستا مشخص شدند. نتایج در قالب مجموعه‌ای از تحلیل‌های توصیفی، استنباطی و تصویری، صورت گرفته است. در نهایت معیارها و شاخص‌ها در قالب ماتریسی توسط آزمونهای آماری ارزیابی گردیده‌اند.

۵. نتیجه گیری

مقاوم‌سازی تاثیرات بسیاری چه به‌صورت مثبت و چه به‌صورت منفی بر شش شاخص عملکردی، زیباشناختی، اقتصادی، اجتماعی و کالبدی و زیست محیطی روستای مورد مطالعه داشته است. همچنین نتایج آزمون اول حاکی از آن است که برخی از معیارهای مربوط به شاخص‌های عملکردی و زیباشناختی همچون توجه به منطقه‌بندی ارتفاعی، تناسبات موجود در بنا، توجه به عملکرد سکونتی و معیشتی واحدها، انطباق با ساختار و توان مدیریت اجرایی و نظارتی روستا، در سطح ۹۹٪ و متغیرهای جلوه‌بخشی به مبلمان روستایی، انعطاف‌پذیری و خوانایی ساختمان‌ها، وحدت فضایی و سازگاری سبک‌های ساختمانی، هماهنگی میان فرم، در سطح ۹۵٪ معناداری را نشان داد که نشان از تاثیر مقاوم‌سازی دارد. نتایج آزمون دوم نیز نشان می‌دهد که کلیه معیارهای منتخب کالبدی، اقتصادی، اجتماعی و زیست محیطی تاثیرپذیر از مقاوم‌سازی در بافت روستای احمدآباد تا ۹۹٪ سطح معناداری را به خود اختصاص داده‌اند.

کلمات کلیدی: مسکن روستایی، مقاوم‌سازی، منظر و سیما، روستای احمد آباد، شهرستان بهاباد.

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