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RIVISTA DEL DOTTORATO DI RICERCA IN ARCHITETTURA, ARTE E PIANIFICAZIONE DELL'UNIVERSITÀ
DEGLI STUDI DI PALERMO - DIPARTIMENTO DI ARCHITETTURA



AGENDA 2030 Contraddizioni & Goals

INFOLIO

RIVISTA DEL DOTTORATO DI RICERCA IN ARCHITETTURA, ARTI E PIANIFICAZIONE

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In copertina

Agenda 2030

Chiara Palillo

La Rivista

In folio è la rivista scientifica di Architettura, Design, Urbanistica, Storia e Tecnologia che dal 1994 viene pubblicata grazie all'impegno dei dottori e dei dottorandi di ricerca del Dipartimento di Architettura (D'ARCH) dell'Università di Palermo (UNIPA).

La rivista, che si propone come spazio di dialogo e di incontro rivolto soprattutto ai giovani ricercatori, è stata inserita dall'ANVUR all'interno dell'elenco delle riviste scientifiche dell'Area 08 con il codice ISSN 1828-2482. Ogni numero della rivista è organizzato in cinque sezioni di cui la prima è dedicata al tema selezionato dalla redazione della rivista, mentre le altre sezioni sono dedicate all'attività di ricerca in senso più ampio.

Tutti i contributi della sezione tematica sono sottoposti a un processo di *double-blind peer review*.

Per questo numero il tema selezionato è:

"Agenda 2030: Contraddizioni e goals"

L'Agenda 2030 è un piano d'azione adottato dalle Nazioni Unite nel 2015 e rappresenta una sfida a livello globale per porre fine alla povertà, proteggere il pianeta e garantire uno sviluppo sostenibile per tutti entro il 2030. L'Agenda ha stabilito 17 Obiettivi di Sviluppo Sostenibile (SDG) per affrontare sfide globali come la povertà, la fame, la disuguaglianza, il cambiamento climatico e la perdita di biodiversità.

Attraverso i 17 Goals, si punta ad un'evoluzione in modo equilibrato delle tre dimensioni dello sviluppo sostenibile - economica, sociale ed ecologica - nonché a porre fine alla povertà, a combattere l'ineguaglianza, ad affrontare i cambiamenti climatici e a costruire società consapevoli che rispettino i diritti umani. Tale impegno richiede la partecipazione di tutti i soggetti coinvolti, dal settore privato a quello pubblico, dalla popolazione civile agli operatori dell'informazione e della cultura.

L'Agenda 2030 è un esempio di problema complesso che richiede un approccio interdisciplinare. Per raggiungere questi obiettivi, infatti, è necessario che i governi, le organizzazioni, la società civile, le aziende, le comunità scientifiche e tutti gli altri attori coinvolti collaborino per sviluppare soluzioni integrate e sostenibili, anche per superare ostacoli o possibili contraddizioni riscontrate nel tempo. L'Agenda può, infatti, presentare dei limiti a causa della sua attuale visione prettamente antropocentrica, contraddicendosi sugli studi che richiedono invece una visione integrata dell'intero ecosistema. In questo contesto, l'architettura svolge un ruolo cruciale nel raggiungimento di questi obiettivi, in quanto può aiutare a creare città sostenibili e vivibili, promuovere l'uso di energie rinnovabili e contribuire alla conservazione delle risorse naturali.

I paper contenuti in questo numero condividono riflessioni e avviano un dibattito su una nuova visione dei goals presenti in agenda, sui possibili limiti riscontrati, sulle possibili sfide e contraddizioni, partendo da esperienze in contesti locali, azioni progettuali e ruolo della tecnologia e dell'innovazione tecnologica, processi di partecipazione attiva nel raggiungimento degli Obiettivi di Sviluppo Sostenibile.



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DOTTORATO DI RICERCA
IN ARCHITETTURA,
ARTI E PIANIFICAZIONE
DIPARTIMENTO
DI ARCHITETTURA DI PALERMO

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Pardis Mehr Housing Project of Tehran in Iran

Investigating residents' environmental preferences in the field of social housing Case study: Mashhad, Iran

Sezione I - Il tema

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The main idea discusses the growing difficulty in providing housing for various segments of society due to economic challenges. The research aims to investigate social housing indicators based on people's preferences. The study involves documentary analysis, a questionnaire, and the Q-sort method. In the Q-sort method, photos are chosen based on the qualities they convey, and respondents rank them from most to least preferred. In conclusion, six key indicators were identified for social housing: physical form, social-cultural-economic aspects, environment, public spaces, access, and land use.

Keywords: social housing, environmental preferences, Q-Sort method

Introduction

Throughout history, policymakers have addressed the issue of housing in some way due to its importance in cities and have considered providing housing for all sections of society as one of the basic and main topics of their work. The problems of urban settlements exist in third-world countries as well as in developed countries, but they are more tangible in developing countries. In different countries, especially those with a high population, large low-income groups are always suffering from not having a suitable residence. The lack of sufficient resources, weak economic management, lack of overall housing planning, and other inadequacies in the economic infrastructure of these countries on the one hand and the rapid increase of the population, especially the urban population, on the other hand, have made the housing problem in developing countries multidimensional. Providing housing for low-income groups is one of the problems facing governments. Low-income households spend a large part of their annual income on housing, so it is necessary for every government to provide housing in line with the welfare of society. The importance of social housing is due to the provision of suitable housing for the lower deciles and the adjustment of its important challenges due to the limitation of energy resources and the increase in demand (Abarkouhi

et al., 2021). Therefore, for the first time in the 10th century, the United Kingdom entered this arena with the foundation of the social housing project to provide housing for the weaker sections of society, and of course, in some cases, the dissatisfaction and lack of success of the project are caused by various factors. On the other hand, environmental preferences are influenced by the cognitive approach in environmental psychology. General frameworks and criteria have been proposed to analyse the preference of space in people's judgments. In these criteria, the qualities of the desirable environment are emphasised, and in the phenomenological approach in environmental psychology, they give more importance to the real and lived experience of a person and his feelings, interpretations, and expectations of a particular place (Golrokh, 2019).

In Iran, the first settlements of the low-income classes took place spontaneously and unplanned around the big cities, especially Tehran, Mashhad, Isfahan, Tabriz, Shiraz, Ahvaz, etc. In recent decades, these cities have been facing a huge flood of immigration, and for this reason, the price of land and housing has risen sharply. The comprehensive plans, regardless of the residential characteristics and financial capabilities of these people, the high dimensions of the separate pieces of land, and the idealistic physical form proposals for these cities have been provided. For

this reason, the government thought of implementing social housing in these areas to solve this problem, and for the first time in 2007, this project was implemented in Iran in the form of housing. Social housing in Mashhad also includes several projects in different parts of Mashhad and new cities around Mashhad (Binaloud, Golbahar). Each of these projects has had various problems, the most important of which is the dissatisfaction of the people in different dimensions. Some of these dissatisfactions include the inappropriate location of social housing, considering the builders' focus on economic profit and not paying attention to the design and wishes of their residents, among other factors. Paying attention to people's expectations and demands as well as assessing their needs will have a significant impact on the success of these projects, and the purpose of this article is to examine social housing indicators with the environmental preference approach. In general, the results of this research have a significant impact on the success of social housing projects and the provision of suitable shelter for the low-income sections of society. Providing housing is an important concern in Iran, therefore, choosing a case study in one of the cities of Iran is very effective.

Literature Review

Social housing is one of the oldest examples of public housing in England, dating back to the 10th century. It was used to accommodate poor and elderly people. In European countries, social housing was especially noticeable during the period after the Second World War, the main reason for which was the damage caused by the war and the severe pressure of demand on the housing market. In fact, in different countries of the world and specifically in European countries, social housing has taken up a significant part of the total housing inventory of such countries, and from this point of view, it is necessary to investigate the characteristics, conditions, and effects of the construction and operation of these housings. Generally, social housing is a type of housing ownership in which local national governments or non-profit organisations are the owners who provide the desired housing as a lease to the target groups of policymakers. The rental rate in such houses is lower than the average rent rate in the open market. However, in recent decades, due to the increase in maintenance and repair costs of such units, some countries have also moved towards the construction of private housing using collaborative methods with the private sector (Technology Studies Centre of Iran University of Science

and Technology, 2014). In an industry where social housing is important, it provides three characteristics that distinguish social housing from other suppliers:

a) This type of housing is essentially self-interested without consideration. Their owners should be involved in their social housing activities. Therefore, the rent of social housing has usually been lower than the level of rent in the open market.

1. b) The government assigns this type of housing according to its definition of need. Although this does not mean assigning housing to people who have the worst living conditions and the ability to pay rent on behalf of the residents is important, like in the private sector, it is not decisive.

2. c) In the capitalist system, political decision-making and market economic forces have an important impact on all aspects of housing. The rule of supervision over socially rented housing is widespread, and since this method has become the main feature of the government's housing policies, the amount of government supervision has also increased.

Environmental preferences, as a factor used in the data analysis method, are defined as follows: Environmental preferences are composed of two words: preferences, meaning a set of factors that cause the choice of a subject, and environment, meaning space and place. All experts believe that the observer's mental image of the urban space is based on the subjective and legible experiences of the person in the environment. On the other hand, paying attention to the context and its perceptual contexts is one of the key factors in colour belonging and creating a relationship with the environment. In recent decades, the landscape has been considered one of the main components in identifying the identity, life, and sustainability of the environment and as a means of communication between the environment and its users. What has gained special importance in the last few decades is the relationship between the landscape and its users, either biologically or physically, or in terms of perception and behavior. Paying attention to these preferences is effective in choosing the type of intervention. The choice of design intervention has a special effect on preventing conversion to empty space, so user preferences should be considered during the design and construction stages (Naqibi et al., 2021). Environmental preferences are a set of factors that are defined by the preference of an urban space in the eyes of users and refer to their preference in relation to urban spaces. In addition, preferences are related to subjective qualities. Participation in the environment can be considered one of these qualities

that is related to environmental preferences (Lak and Ramezani, 2018).

According to the review of convergent and divergent views of researchers' ideas and examples implemented in the world regarding the issue of social housing and environmental preferences, in this research, we

Theorists in the Field of Social Housing	Dimensions	Explanations
Scanlon et al., 2014	Economical	Administrative procedure instead of the market for assigning social housing The existence of government subsidies and the inclusion of special laws
Pour Mohammadi, 2014	Social Functional Physical Form	Social housing mainly related to social goals Housing production based on the minimum possible Sometimes lower than the standards of the consumption pattern
Ministry of Roads and City Planning, 2014	Social Functional	Not being exclusive to one method in the social housing system and the difference in their weight, type and composition
Bengtsson, 2017	Economical Social	Long-term housing for households with limited resources Providing tools for this housing through testing and experience
Patino et al., 2018	Social Functional Environmental	The unprecedented peak of urbanization is the reason for the increase in the population of social housing housing conditions in social housing units are usually poor and exposed to pollutants and of course have negative effects on health The need to maintain a healthy environment in the city
Theorists in the Field of Environmental preferences	Dimensions	Explanations
Ian Bentley, 1985	Social Functional Physical Form	Strengthening suitable opportunities (visual, etc.) of the man-made environment Improving as much as possible the range of options offered to people Fostering a democratic environment and responsive environments
Jack L. Nasar, 1988	Social Functional Physical Form	The importance of the city landscape as a source of people's satisfaction or a salve for their daily worries Shaping and reshaping the city by means of a visual program A set of criteria and recommendations for the visual form at the scale of the city
S Kaplan and R Kaplan, 1989	Social Physical Form	The model of serenity, complexity, legibility, coherence proposed by Kaplan, people's preferences in the visual environment, the subject of attention of many researchers in the field of environmental psychology and urban design
Simonson, 2008	Social	Creativity and change with the emergence of new information or insights in the preferences of citizens
Betman et al., 2008	Social Functional	The complex structure of human preferences Apply shared experiences and decisions for greater stability
M Hynes and W Hynes, 2018	Social Functional Physical Form	Designing and implementing interdisciplinary and innovative spaces for the popular community Supporting people's participation to create a creative environment

Fig. 1. Concepts of social housing and Environmental preferences from the point of view of theorists

found six main indicators, including environmental, social-cultural-economic, physical form, public space, and accessibility. Finally, by reviewing the do-

cuments and records of the same researchers, 31 discussed criteria were also extracted, which are drawn in image number one in the form of the theoretical framework of this research according to the concepts examined.

Materials and Methods

The choice of information gathering methods has a more direct effect on the results of the research work; information gathering methods and information analysis methods are often complementary to each other and should be selected according to the objectives and hypotheses of the research. If questionnaire surveys are associated with quantitative analysis methods, interview surveys correspond more with content analysis methods, which are often, but not necessarily, qualitative methods. (Raymon Kiwi 1370). Current research is a survey, and its purpose is practical, descriptive, and analytical. The necessary information has been collected by using library methods, documentary information, observation, and a questionnaire. The questions of the questionnaire were designed as closed answers according to the dimensions and indicators of the conceptual model of the research, and to answer these questions, a five-point Likert scale with very low, low, medium, high, and very high degrees was used. Questionnaires were investigated through Cochran's formula and by 100 residents of three projects: Mehrgan town of Mashhad, Maskan-e-Mehr in Shandiz, and Farhangian housing in Torghabeh. The description method is Q-sort. These three projects have been chosen

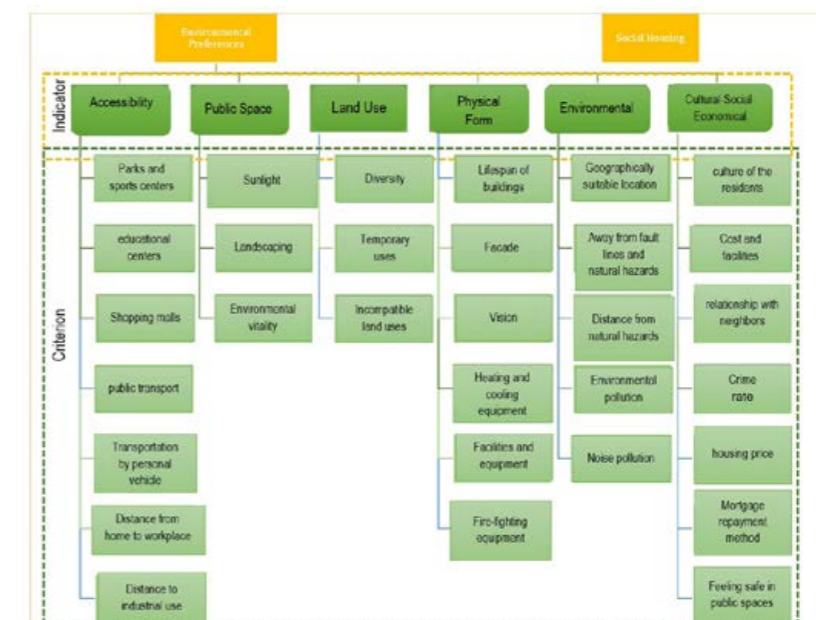


Fig. 2. Social housing indicators based on environmental preferences of the residents

because they are the only ones around Mashhad and because they are less applicable to people's preferences and existing problems. Quantitative data in this research has been evaluated by Excel software. It should be kept in mind that the method of Q-sorting was first used by Stephenson (1953) in psychology, and the development and expansion of this method over time made this method one of the most widely used measurement methods in other sciences. Today, this method is used as one of the most common measurement models in various studies, such as measuring people's opinions, communication, environmental and landscape planning and design, and environmental and educational issues. The method of classification of visual qualities in landscape studies was done for the first time by Zube, Pitt, and Anderson in 1974 by using photographs to evaluate the visual values of the landscape. In order to interpret and evaluate the landscape as well as its perception, the use of photos in the quality classification method became common (Golchin et al., 2012).

Case study

The case study includes three social housings named Mehregan Social Housing, Maskan-e-Mehr of Shandiz, and Maskan-e-Mehr of Torghabeh, which are located around the city of Mashhad. Mashhad is a metropolis in northeastern Iran and the capital of Razavi Khorasan province. With an area of 351 square kilometres, Mashhad is the second-largest city in Iran after Tehran. According to the population and

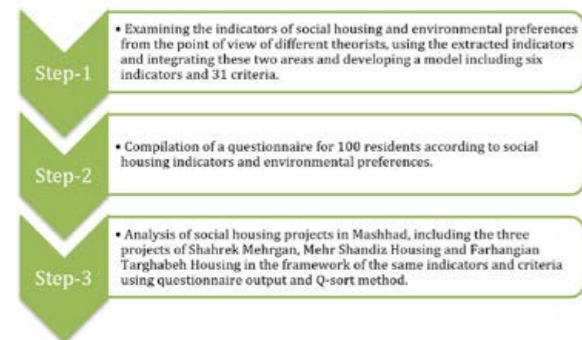


Fig. 3. The stages of conducting the research from a general point of view

housing census of 2015, Mashhad, with a population of 3,001,184, is the second most populous city in Iran after Tehran and the 111th most populous city in the world. Currently, there are various social housing projects in Mashhad and new cities around it. The Maskan-e-Mehr project for the citizens of Mashhad is being implemented in new cities such as Golbahar, Mehrgan, and Binaloud, and a large part of these uni-

ts is owned by Sheshdang. According to the census of 2015, about 36,877 people live in this new city. The number of Maskan-e-Mehr neighbourhoods in this new city is about 30, and a total of 39,836 Maskan-e-Mehr units have been built in Golbahar. Mehregan Social housing complex in Mashhad

In the metropolis of Mashhad, in order to prevent the growth of the city and strengthen the new cities, the Maskan-e-Mehr project was first launched in the new cities of Golbahar and Binaloud, and then, with expert work and the selection of land at a closer distance to Mashhad, a project was also launched on Siman Road and around the villages of Hemmatabad and Qorghhi, and later it was called Mehrgan Town of



Fig. 4. Mashhad location on the map of Iran

Mashhad. This settlement is 10 kilometres north of Mashhad city and with a total area of 185 hectares, it is being implemented in three phases, and the population forecast for the horizon of 1405 for this area is more than 50,000 people.

Maskan-e-Mehr of Shandiz

The construction of the Maskan-e-Mehr project in Shandiz, located in the eastern area and Shagaig neighbourhood of Shandiz city, also started in 2006. This project, covering an area of 216,275, includes 2,300 residential units. Also, Maskan-e-Mehr in Shandiz, with a population of over four thousand people, has taken up a large share of the population of Shandiz.

Maskan-e-Mehr of Torghabeh

The construction of Maskan-e-Mehr and housing cooperatives for youth and cultural workers in Targahba also started with more than 5,000 units in Targahba since 2008. It should be kept in mind that the Mehr Farhangian housing project in Torghabeh has not attracted a significant population after several years.



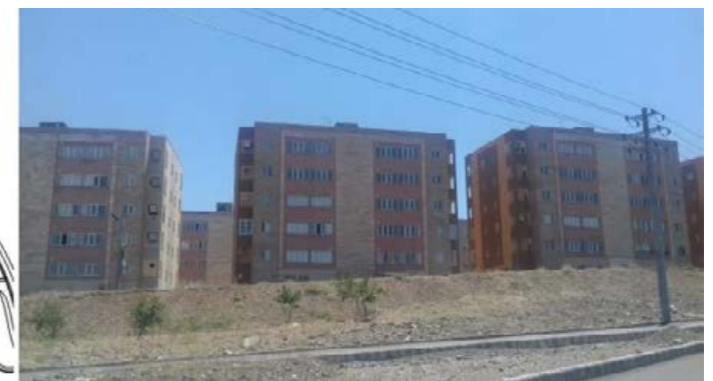
Fig. 5. Mehrgan Maskan-e-Mehr



Fig. 6. Maskan-e-Mehr in Shandiz



Fig. 7. Maskan-e-Mehr Torghabeh



Results

Considering the number of respondents to this research, which includes 100 residents of three projects: Mehrgan town of Mashhad, Maskan-e-Mehr in Shandiz, and Farhangian housing in Torghabeh, the average of both gender groups of women and men is equal. In this research, the age of the respondents is divided into four groups: 24% of people are in the age group of 15 to 29 years, 41% are in the age group of 30 to 44 years, 29% are in the age group of 45 to 60 years, and 6% are more than 60 years old. In the investigation of social housing qualitative indicators by means of a questionnaire, the importance of the indi-

cators from the perspective of the residents of three social housing projects in Mashhad (Mehrgan town of Mashhad) and the suburbs (Maskan-e-Mehr in Shandiz and Farhangian in Torghabeh) was investigated, and the most important indicators from the point of view of the citizens were determined by mentioning the reasons. In the extraction of important indicators from the respondents' point of view, in figure 8, the frequency of indicators that are very important from the point of view of the citizens, these indicators are extracted into 5 general categories: physical form, socio-cultural-economic, environmental, public spaces and accessibility and 17 criteria including: The amount of cost with the type of facilities, access to

educational centers, landscaping, having the energy of the sun, the residential unit being sunny, access to parks and sports centers, easy access to public transportation including buses and subways, a sense of security in public spaces and common areas of the building, public and vital spaces (children's play area, etc.), heating and cooling equipment, the cultural status of the neighbors, the geographical location of the housing in the Likert spectrum, and the criteria of distance from fault lines and natural hazards, how to repay the mortgage, the feeling of security in public spaces, suitable distance from housing to workplace, access to shopping centers, level of crime (theft, etc.), housing price on the Likert spectrum are very high in this classification.

In the collection of photos discussed in this research, which is reflected in Fig. 9, an attempt has been made to investigate the preferences of the users of the spaces of residential complexes. In this collection of photos, photo B is the first priority of the respon-

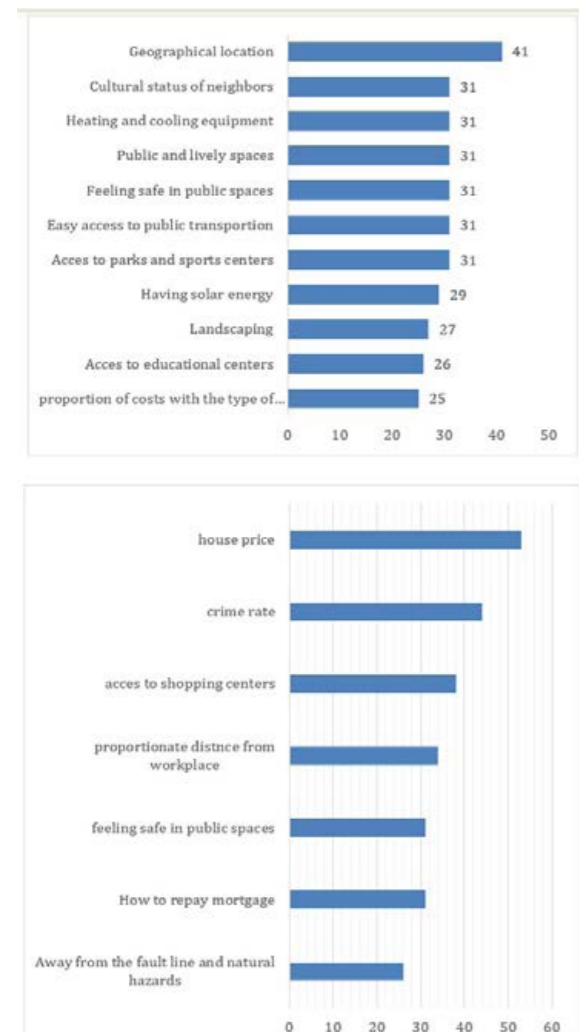


Fig. 8. Frequency of the examined criteria in the questionnaire with high and very high Likert scale

dents. In this regard, the element of water had a direct effect on people's preferences, so the majority of people who chose this photo as their first preference considered water as the reason. Photo D is the second preference of people. The reason for choosing this photo is that there is a playground for children next to the bench for people to sit on. In addition, this element of colour in the facade of the buildings and the colours used in the space were considered important factors for people, and they considered it one of the factors in choosing this photo. The third most preferred photo is photo A, which the majority of respondents placed after photo D. The reason for this was the presence of commonalities in them, but they felt the variety of colours and less attractiveness in photo A. Photo C is ranked as the last photo in people's preferences due to the fact that no element is used to enliven the space and the absence of benches and other items. The results of the questionnaire analysis are presented in the following table as a conclusion.

Discussion and Conclusion

The purpose of this article is to investigate the indicators of social housing with the approach of environmental preferences. The results indicate that there is a significant relationship between the indicators in these two areas. The comparison of the results of the present study with similar studies that evaluate social housing demonstrates that social housing does not have a single meaning or concept in all countries (Sultani, 2015), and the discussion of quality from the residents' point of view is divided into two categories: external and internal, which are measurable external factors and internally, it depends on the beliefs and mental patterns of people, and this factor is different according to each region and culture (Manfard et al., 2016). One of the important things in housing design is paying attention to different scales, from small to large, from single residential units to building blocks and complexes on an urban scale. The quality of housing architecture, appearance and urban landscape, simultaneous attention to private and public areas, behavioural patterns, and positions are important dimensions in design.

The first step in this research began with the examination of social housing and environmental preferences indicators from the perspectives of different theorists, and finally, using the indicators extracted from the review of past research and the integration of these two areas, a model including six indicators and 31 criteria was formulated.

No.	Collection of Pictures in the Questionnaire	Questionnaire Results	
		Analysis	Quality influencing preference
1	<p>Most Preferable</p> <p>Least Preferable</p>	Investigating the index of naturalness and green space in residential complexes	Vegetation, flexibility in space function, diversity in vegetation
2	<p>Most Preferable</p> <p>Least Preferable</p>	Examining social preferences in the field of openness and central spaces	Variety of activities, appropriate climate comfort (shading, etc.), use of green space in the central courtyards between buildings, residents' monitoring of the space
3	<p>Most Preferable</p> <p>Least Preferable</p>	Examining people's preferences regarding complexity and the most important factor that caused people to get involved	Diversity (protrusions or depressions in the facade) and proportions and rhythm of horizontal and vertical elements in the facade of the building
4	<p>Most Preferable</p> <p>Least Preferable</p>	Checking the legibility, route and arrangement for the entry and exit routes of people to a complex	Horizontal development (avoiding vertical densities) and permeability through mixed and scattered green spaces of residential blocks. Variety of form in block design
5	<p>Most Preferable</p> <p>Least Preferable</p>	Investigating the Vitality of residential complex spaces and the elements that enliven the space according to people	The element of water, color, diverse spaces for different age groups, children's play space, equipping public spaces

Fig. 9. Q-sort analysis of the questionnaires

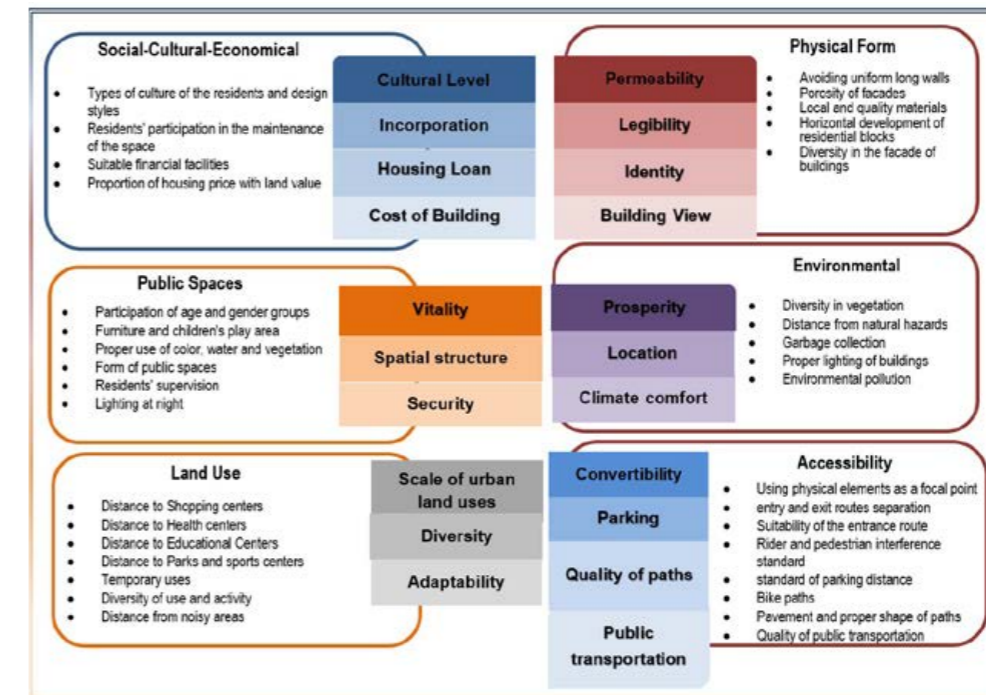


Fig.10. Prioritization of social housing indicators based on environmental preferences of people

- The second step was developed according to the social housing and environmental preferences indicators and the author's conceptual model of the questionnaire and photos of this research, and was answered by 100 residents of these projects.
- The third step was to analyse the social housing projects of Mashhad, including the three projects Mehrigan town of Mashhad, Maskan-e-Mehr in Shandiz, and Farhangian housing in Torghabeh, using the answers to the questionnaire and the Q-sort method in the framework of the same indicators and criteria, and finally, the reasons for citizens' dissatisfaction and their importance to the indicators. On the other hand, the importance and reasons for choosing photos in the questionnaire were based on social housing indicators with the Environmental Preferences approach.

In figure 10, the result of this research is compiled in the form of six main indicators, including physical form, socio-cultural-economic, environmental, public spaces, access, land use, and criteria corresponding to these indicators. In this model, the analysis of all people's preferences for the environment and their residential unit is considered.

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