

## Organization and Improvement of Urban Neighborhoods based on a Socio-Physical Approach: Case Study of Mahmoodiyeh Neighborhood in Tehran

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### ABSTRACT

Organization of a neighborhood has a close relationship with physical-spatial patterns which can be done for two main purposes of optimization of places and also organization of the applications and activities. In many fields, the improvement and participation of responsible institutions with the residents of a neighborhood can provide an optimal and desirable approach which can be conducted even in short run. Our study area is selected the Mahmoodiyeh neighborhood which is not an exception of the above mentioned situations. The goal of present study is to investigate the present situation of the neighborhood and presenting organization strategies for this area. The methodology of this article is descriptive-analytical considering the subject, goals and research hypotheses which includes library and filed study as well as different software such as SPSS and GIS and SWOT analytical model. The results of the study indicate that lack of hierarchy in pathways network and lack of participation are among the most important factors which should be taken into account in the organization of the study area.

**KEYWORDS:** organization, participation, neighborhood improvement, Mahmoodiyeh

### 1. INTRODUCTION

Today, with the rapid growth of urbanism, urban planning has become a dilemma of new cities more than before. Such problems affect all aspects of urban life and disorganize the logical relations of urban life and reduce significantly its general quality and capacity for residence which lead to their instability [1]. Of course, this fact is not just a threat but also an opportunity for directing urban planning [2]. The rapid development of cities and urbanism is the reason of socio-economic structure at national macro-level [3]. It is crystal clear that the facilities of cities should be adequate for its population, area, the number of institutions and power of economic, social, commercial and cultural life [4]. It should be noted that city is among the most important place of socialization of masses and also the place of emergence of most personal behaviors [5].

City is a system composed of various subsystems [6] which needs an integrated management system. Integrated urban management is a synergic management with the presence of all beneficiaries of city in an institutional, organizational, and legal framework which promotes the level of urban management and stability of city livability [7]. Unfortunately, in the recent years the quality of human environments has been decayed due to inappropriate exploitation of resources and the rambunctious growth limits the natural environment and open spaces of cities day by day. Also, growth of population and lack of resources has made many problems for the human society [8]. Beside the many problems of human kind today, disorder in the balance of nature is now one of the most important issues [9]. With respect to the issues incurred to the residential neighborhoods, environmental organization can be a clear response to the existing problems. But such a response should have comprehensiveness and practical value regarding the extent of the issues. Such comprehensiveness is only realized through consolidated frameworks [10]. Of course as we know, the main characteristics of the modern urban design are its purposefulness and establishing a relationship between city goals and the design of it with a physical-spatial nature [11].

In Iran, the organization plans were considered for the first time in 2<sup>nd</sup> Comprehensive Plan of National Development. For the gal of these plans, it explicates: an integrated view of infrastructure and surface structure services and equipment of higher service points [12]. Neighborhood development is one of the manifest goals of physical-spatial organization. Experience has showed that different complicated challenges are often produced in the social and economic, management and executive fields when a neighborhood development needs all of the developmental measures [13]. In principle, spatial organization has a close relationship with growth patterns and economic development from one hand and physical-spatial models from the other hand. Usually, the physical-spatial organization is done for two main purposes of improvement of buildings and also organization of their use and activities [14].

Urban evolutions have been associated with major changes in the urban textures [15]. The fabrics which contain historical and decaying sites are important for different reasons. One reason is the existence a permanent centrality to give coherence to the city body [16]. It should be noted that evaluation of different urban residential plans and the satisfaction of its residents is among the important dimensions of urban studies [17]. The role of people should be

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considered as important in organization and planning of residential neighborhoods. In fact, the real participation of citizens includes all stages from planning, design, implementation, supervision, and exploitations [18]. The role of local security should be taken into account as well, since it is among the most important goals of organizing and planning and provides a safe environment for the residents [19].

Now it should be stated that since neighborhoods' organization can be useful for development planning of a city. Hence, the development of physical-spatial model of neighborhoods can be done through field and institutional recognition of the economic, social, cultural, and physical-spatial structures of the study area. So that by analysis of structures and functions, practical strategies be provided for the organization of study area and through the implementation of suggested methods the extent of this neighborhood increases.

## 2. Theoretical background

**Organization:** the term organization can be defined as optimal use of available facilities while protecting and maintaining the urban fabric. In urban organization, it is tried to remove inharmonic and problematic items of the texture with least cost and destruction. In organization we address control, growth, and development. First, by identifying issues, problems, and facilities an appropriate plan is presented according to the current needs. Spatial organization for decayed and insufficient textures refers to adornment and arrangement of them to create a suitable viable environment for residence of people, so that these habitats could provide the needs and activities of modern society and no problem occurs in the life and subsistence of people. Organization is a general and comprehensive concept which includes all measures and themes of improvement, renewal, reconstruction, and restoration [20].

**Improvement:** it includes a series of measures aimed at improvement of the physical body which is decayed due to activity done at short term. In fact, improvement is done when a relative spatial decay has occurred. Improvement includes the following measures.

**Recuperation:** recuperation refers to those measures which are done with minimum cost and least intervention to create optimal environmental condition in urban space.

**Preservation:** preservation indicates creating a suitable condition for preservation and constant maintenance of urban space.

**Consolidation:** consolidation refers to a set of measures by which an increase of security and consolidation of space, collection or building. "the main goal of this work is to increase the durability and coherence in the structure" of spatial construction.

**Rehabilitation:** it refers to strengthening, revitalization and even reestablishing the dignity of a historical construction.

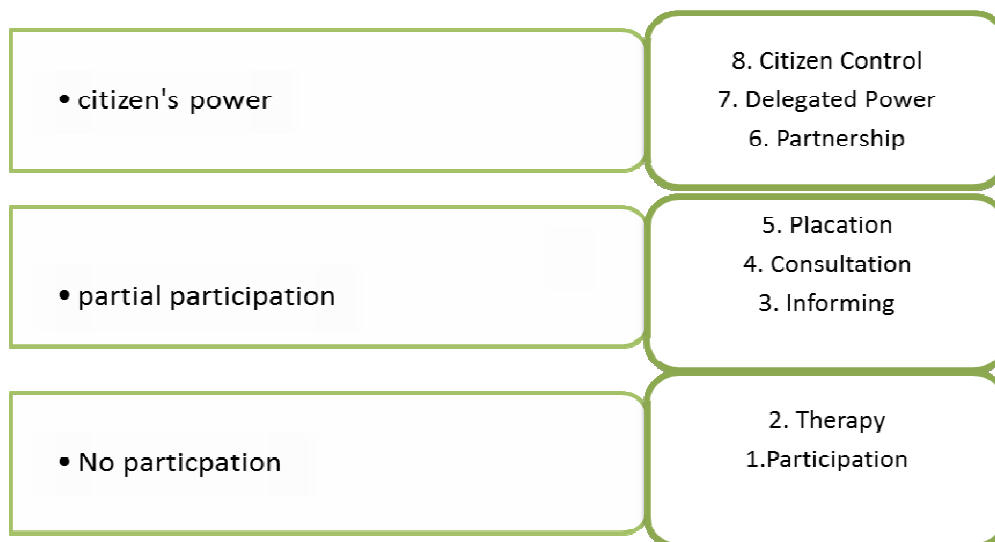
**Improvement:** this term refers to a collection of measures which lead to strengthening the positive aspects and weakening the negative aspects of space, collection, and building [21].

**Participation:** in encyclopedia of urban planning, participation is defined as a tool by which members of a society are enabled to participate in development of policies and plans which are effective on their life.[22]

Different theories are proposed in the field of citizen participation and urban management, some of which are introduced in the following:

### Sherry Arnstein's Citizen Participation Theory

In the late 1960s, the role of citizen's participation was noticed more than ever. Ernestine interpreted citizen's participation as citizen's power and explained it using participation ladder. This ladder consists of the following rungs [23].



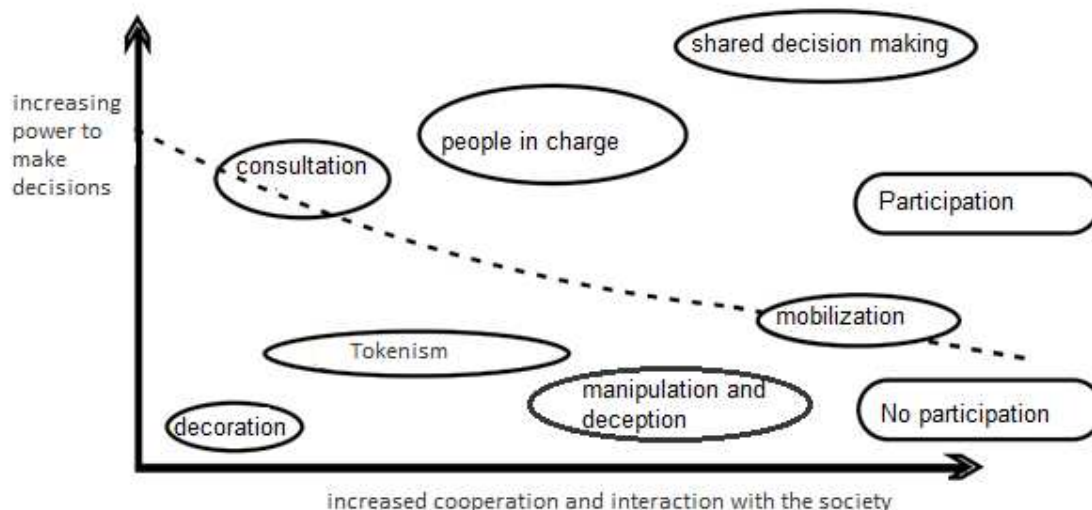
**Table 1.** Arnstein participation ladder (illustrated by authors)

### David Driskell's participation theory

Driskell believes that participation is based on three principles:

- A) Development in the first stage and first of all should be for the benefit of local residents.
- B) The people who live in the study area have the most details about it.
- C) The people who are most affected by the decisions have a bigger share to participate in decision makings.

According to Driskell there are different forms of participation which are categorized in general as "participation" and "no participation". Driskell illustrates types of participation in a two-dimensional diagram based on the amount of freedom in decision making as follows.[24]



**Diagram 1. The two-dimensional model of relationship between power of decision-making and increased collaboration and cooperation with the society. (Source: authors).**

### 3. METHODS AND MATERIALS

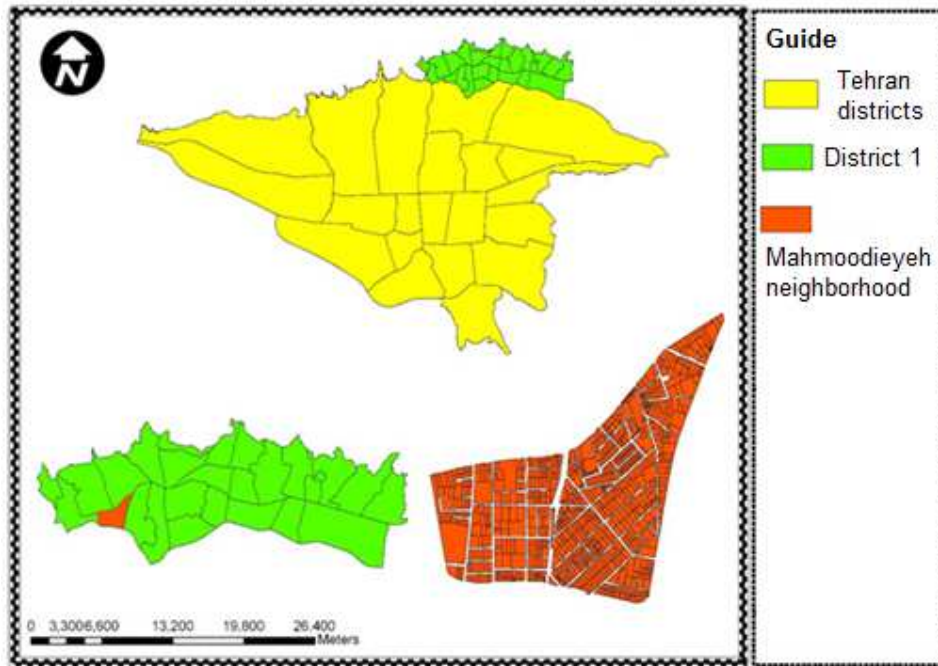
This article is extracted from a research project; with respect to its theme, subject, and objectives it is an applied objective study. The studies are done in a descriptive analytical method which includes study of library documents and integration of data from present situation obtained by field observations. After collecting needed data, they were classified.

The main research method is survey. We used library documents for compilation of theoretical background and review of literature and questionnaire for other stages of research which was developed based on research objectives and distributed among participants to respond. The research variables were analyzed by inferential and descriptive statistics using SPSS and GIS software. SWOT analysis was run for assessment of strategies which can be adopted to solve the problems of Mahmoodiyeh neighborhood.

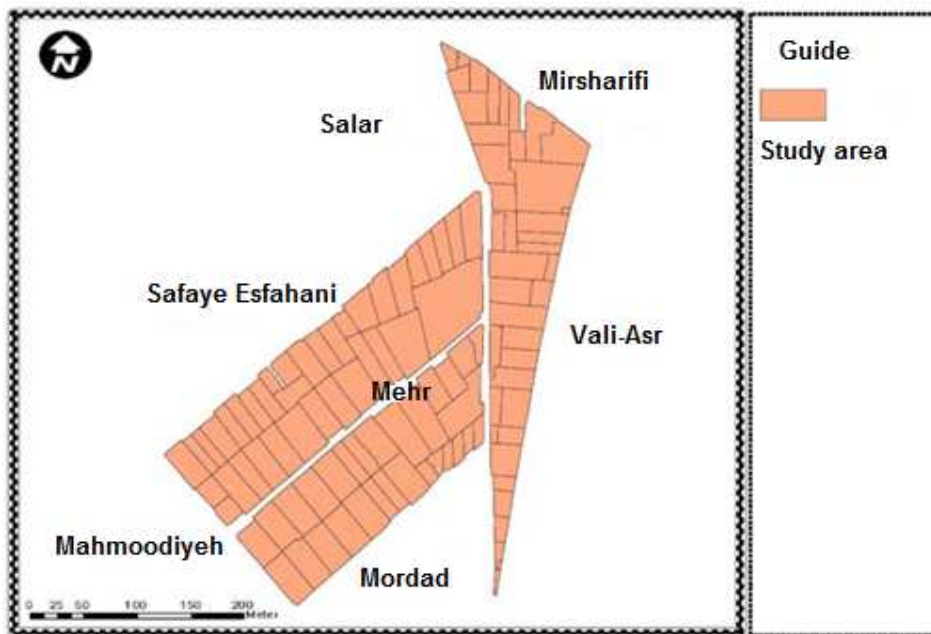
### 4. Introduction of study area

Mahmoodiyeh neighborhood is located at the north of Tehran; it is limited to Zafaraniyeh neighborhood by north, Chamran highway and Park-Vey junction by south, and Vali-Asr St. and Haj-Mahmud Keshtkar lands by east, and Evin neighborhood by west. This neighborhood has a relatively high located at 1600 meters above the sea level. Mahmoodiyeh neighborhood is one of the richest neighborhoods of Tehran and its wide area is one of its peculiar features. It is the second largest neighborhood of Tehran. On the other hand, Mahmoodiyeh neighborhood is located on a fault called the same name, which constitutes one of the most vulnerable districts of Tehran along with Niavaran, Tehran North, and Shemiranat faults. Thus, it has made north of Tehran to one of the most vulnerable parts of Tehran on the event of earth quake.

The studied area within Mahmoodiyeh neighborhood is located in 1<sup>st</sup> district of Tehran. This area is limited to Mahmoodiyeh St. by south, Mirsharifi St. by north, Vali-Asr St. by east, and Safaye Isfahani and Salar St. by west. The geometrical shape of this area is composed of a triangle and two rectangles. And its accessibility to main street (Vali-asr) is good.



Map1: the study area in Tehran (illustrated by authors)

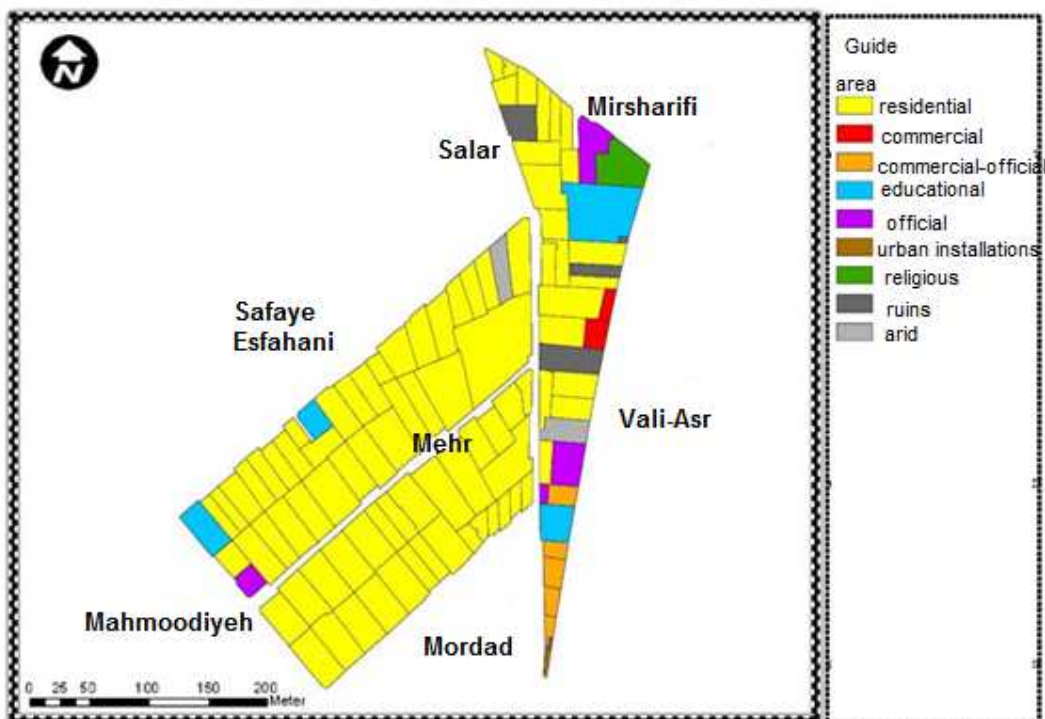


Map 2: the study area in Mahmoodiyeh neighborhood (illustrated by authors)

#### The physical features of study area

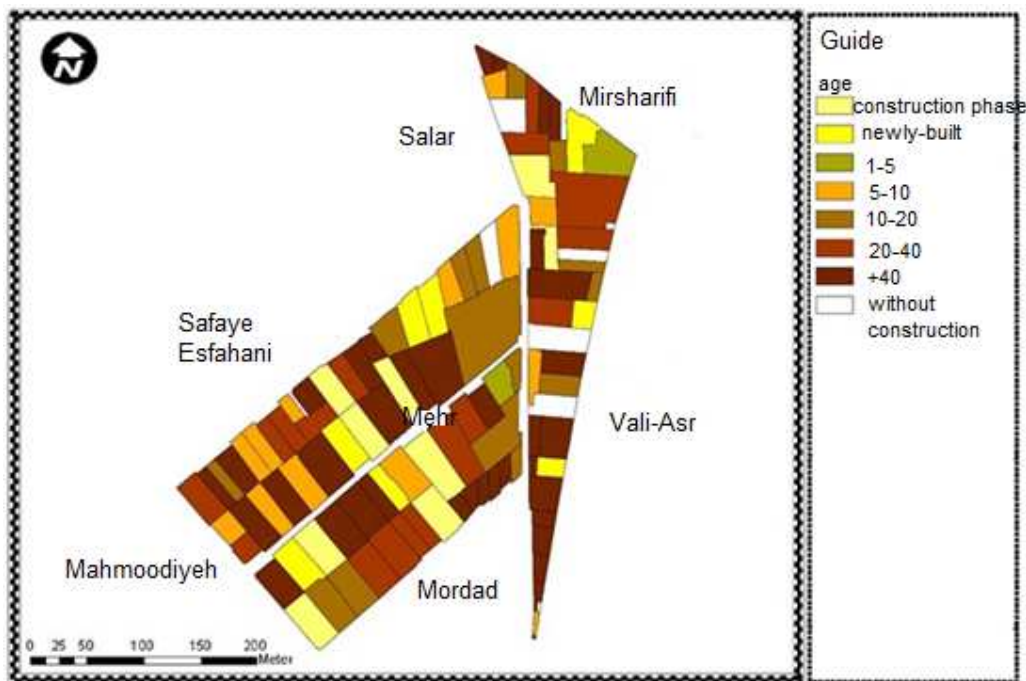
**Uses:** according to institutional and spatial studies, the residential use as 82% and educational use as 6 % reserved the highest level of usage and the urban installation and equipment as 0.1% and religious use as 1.6% constitute the rest of uses of the area.





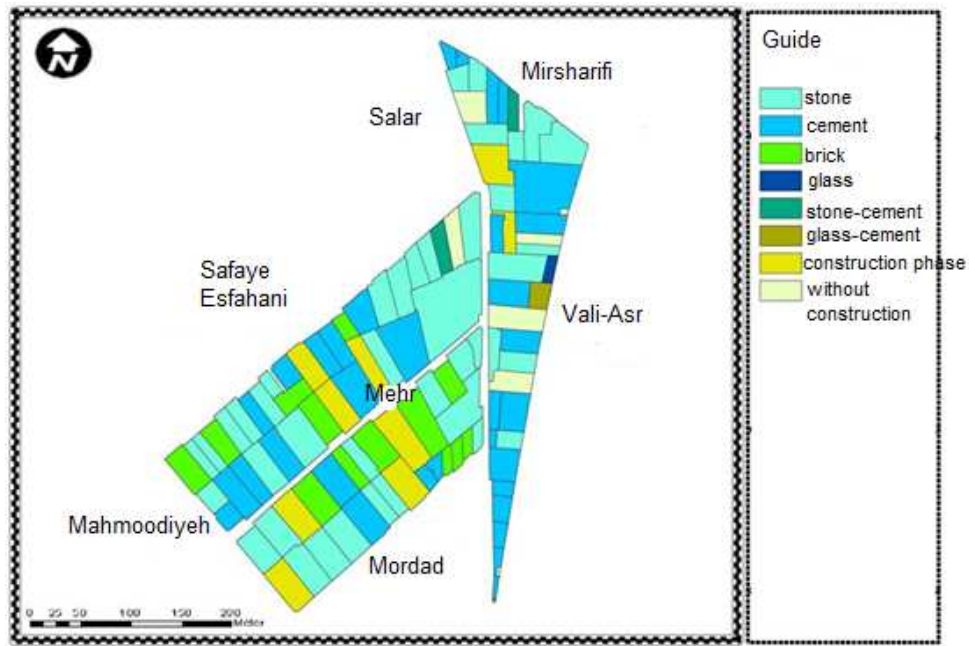
**Map 3: the available land use at the study area (illustrated by authors)**

History: according to institutional and spatial studies, the age of the study can be determined as 12% at construction phase with 9394.90881 square meters area, 7 % newly built with 5682.51626 square meters area, 2% at 1-5 years old with 2014.68768 square meters area, 10% at 5-10 years old with 8202.98095 square meters area, 16% at 10-20 years old with 13088.984square meters area, 19% at 20-40 years old with 15451.83997 square meters area, 29% over 40 years with 23458.12568 square meters area, and 5 % without any construction with 3989.40685 square meters area.



**Map 4: the age of constructions in the study area (illustrated by authors)**

Face: according to researchers' studies, the building faces in the study area were determined as 40% stone, 28 % cement, 11 % bricks, 1.2% stone and cement, 0.6% glass and cement, 11% at the construction phase, 5% without construction.



**Map 5: face of buildings in the study area (illustration by authors)**

Routes: the institutional and spatial study of urban pathways of the neighborhood identifies three types of routes: main, subordinate, and local dead-end alleys.

Vali-Asr road is the only main road which includes the eastern side. Six subordinate ways include Safaye Esfahani, Salar, Mordad, Mehr, Mirsharifi, Mahmoodiyeh, and Golnar dead-end.

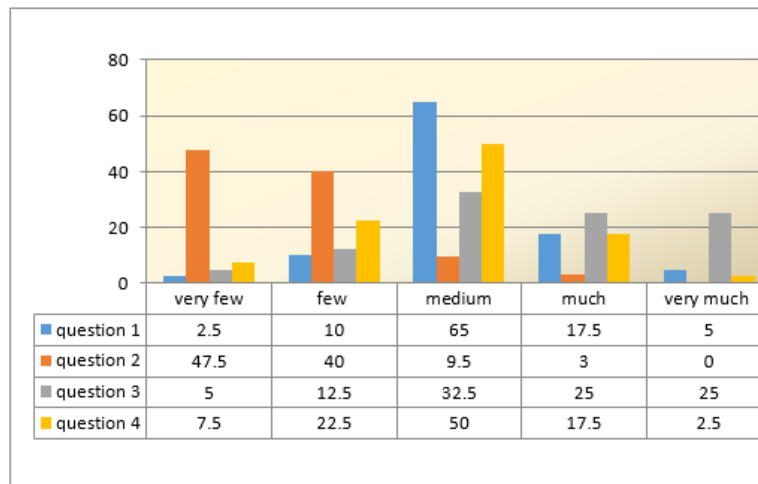
**Table 2.** The available routes in the study area

Percent	Area	Type	Route
42.0241	12800.7257	Vali-Asr	Main
0.55755	169.8312	Golnar	Dead-end
12.5696	3828.7564	Safaye Esfahani	Subordinate
7.49866	2284.1276	Mehr	Subordinate
6.04894	1842.5343	Mordad	Subordinate
5.05336	1539.2772	Mirsharifi	Subordinate
10.8143	3294.972	Mahmoodiyeh	Subordinate
15.4335	4701.1278	Salar	Subordinate
100	30460.47323		

## 5. Hypotheses

It seems that urban participation can be a facilitator of organization of the neighborhood.

It seems that correction of pathways network is a priority in the improvement of neighborhood.



**Diagram 2.** The frequency percentage of population response to research variables (source: authors).

### Public satisfaction

Field studies were conducted and various results were found on satisfaction from organizations. The majority of people are mostly dissatisfied with City Council, Taxi and Bus transportation organizations and Municipality. City Council has the highest dissatisfaction; and on the opposite side, satisfaction from police forces and public installation such as gas, water, and electricity have the highest public satisfaction.

The level of satisfaction from facilities such as sport equipment, recreational and green spaces and park has been low which indicate lack of facilities in the area.

At the end, the level of satisfaction from sanitation, security, and economic power of the neighborhood is suitable; meanwhile satisfaction from facilities and convenience in the area seems to be low.

	Very low	Low	Much	Very much
Municipality	25	57.5	17.5	0
City council	67.5	30	2.5	0
Bus Company	42.5	2.5	25	30
Taxi Company	37.5	15	12.5	35
Police forces	15	30	20	35
Water and sewage Org.	15	17.5	30	37.5
Telecommunication Co.	10	2.5	30	57.5
Gas Company	5	5	25	65
Electricity Company	5	12.5	17.5	65
Family economic power	7.5	32.5	60	0
Residential Units	5	15	65	15
Neighbors	12.5	17.5	55	15
Neighborhood Sanitation	2.5	20	30	47.5
Neighborhood safety	5	12.5	25	57.5
Available facilities	45	37.5	15	2.5
welfare and convenience	25	30	35	10
Health	10	52.5	22.5	15
sevice provision of orgs.	45	40	10	5

**Table 3. Investigating the level of public satisfaction (source: authors)**

### Participation

According to the institutional studies of authors, the public participation in the area has been very low, people were not either ready to participate at all, or the ground for this participation is not provided for them. Approximately the whole domain of participation is inactive and only a very small percentage of religious activity can be observed. It can be said that this lack of collective participation might be the result of lack of mutual relationship and the type of friendship created in the contemporary world.

In total, the cooperation among people of this neighborhood is under average and reflects weak cooperative relationships. Cooperation in the area of improvement is at an intermediate level which might indicate lack of performing participatory activities in the area despite the tendency of people to cooperation. Cooperation is observed at the religious dimension and Basij, although very weak.

In general, cooperation and participation is very weak which might be at the level of development of an idea, or showing indifference, and regarding such activities as municipality's duty.

### Social security

In general, the area has a good security, which is manifest in high levels of public satisfaction. Addiction, disturbance, and community fights are at low levels in the area and safety dominates the neighborhood.

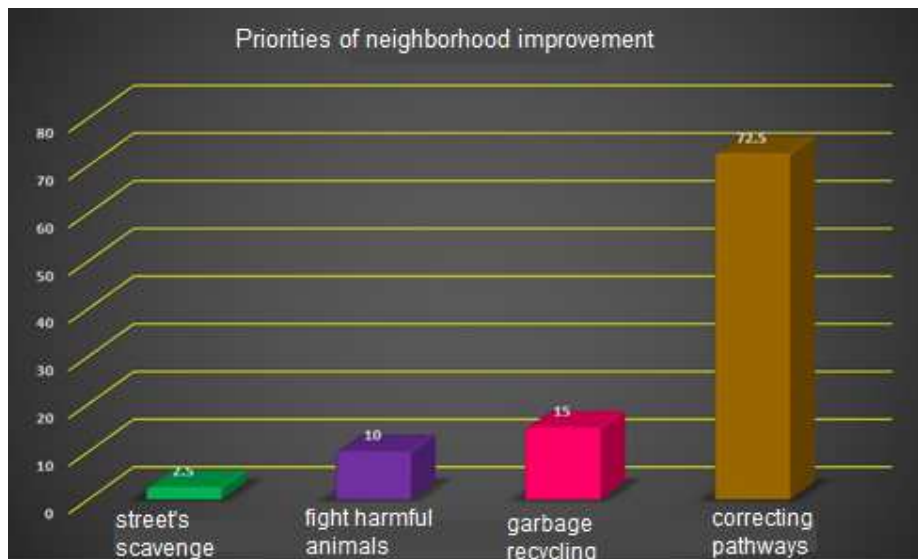
### Reconstruction condition

According to field studies, this area is not located within the decayed fabrics category.

Of course, in the case of reconstruction of the area and buildings the highest share of destruction and reconstruction belongs to people who change their house in return for receiving money; and cooperation, sense of belonging, or resistance to change is rarely observed.

### Improvement of the neighborhood

Regarding the priorities for the improvement of the neighborhood, the highest percent of improvement belongs to correction of pathways network; 72 respondents had objection to this item which shows dissatisfaction of residents from the paths and routes of the neighborhood.



**Diagram 3: the frequency percentage of statistical population responses to the research variables (source: authors).**

### SWOT analysis

#### 1) Internal factors and conditions:

##### 1.1 strong points:

According to the observation of researchers and data analysis, the studied area has a good condition with respect to safety, satisfaction with urban services (gas, water, etc.), available uses at the Vali-Asr St., locational identity, and the suitable environment and climate which are perceived positively as the strong points of the area.

##### Weak points:

With respect to internal weak points there are some points made clear as follows:

- lack of a hierarchical network in the pathways
- specification of 70% of the area to the residential use (more than legal specification) and inconsideration of green space, etc. in the area
- Lack of recreational and sport sites
- lack of open spaces such as parks
- lack or few public trust and participation

These factors had shown their negative effect on the neighborhood and necessary action should be taken by the related organs and authorities for the improvement of them.

#### 2) External factors and conditions

##### 1. Opportunities

Vali-Asr Street's role in improvement of transportation condition and connecting the axes of Chamran and Shahid-Modarres highways, as well as the existence of Alborz high lands in its background as the main perspective of Tehran city are among the positive external conditions which can be considered as opportunities in the plans and proposals of improvement of the neighborhood.

##### 2. Among the external factors which are viewed as threat and factor of dissatisfaction in the study area are the following ones:

- lack of urban sewage system
- the possibility of earth quake and other natural disasters due to the existence of large fault in north of Tehran
- the possibility of destroying gardens and green space of the area due to expansion of construction
- the rapid growth of real estate prices

Hence, for controlling these variables and improvement of the neighborhood using logical and efficient strategies and policies the process of organization of the neighborhood should be performed based on the capacities of the area.



Internal conditions	
<b>weak points</b> <ul style="list-style-type: none"> <li>* lack of hierarchy of pathways network</li> <li>* allocation of most lands to the residential use and inconsideration of the percentage of green spaces</li> <li>* lack of service provision in the neighborhood</li> <li>* lack of open spaces such as park and green environment</li> <li>* lack of trust and public participation</li> </ul>	<b>strong points</b> <ul style="list-style-type: none"> <li>* feeling public security</li> <li>* public satisfaction of urban services</li> <li>* existence of highly interactional uses in Vali-Asr St.</li> <li>* the existence of historical paths (Konjeh-Baghi) as an identification element</li> <li>* the suitable environmental and climatic condition of the area</li> </ul>
External conditions	
<b>threats</b> <ul style="list-style-type: none"> <li>• lack of proper sewage system</li> <li>• the possibility of natural disasters due to the fault in north of Tehran.</li> <li>• the possibility of destruction of gardens because of over construction of buildings</li> <li>• abnormal increase of real estate prices in the neighborhood.</li> </ul>	<b>opportunities</b> <ul style="list-style-type: none"> <li>• the existence of Vali-Asr main St. adjacent to the area for better transportation</li> <li>• connecting the axes of Chamran and Modarres highways with Vali-Asr.</li> <li>• the existence of Alborz mountains as the main perspective of Tehran city.</li> </ul>

Table 4: SWOT analysis (source: authors).

### Conclusion

According to the observation and studies of the authors, spatial and institutional data analysis of the studied area in Mahmoodiyeh neighborhood located in 1<sup>st</sup> district of Tehran has a good level of security and sanitation; and public satisfaction from urban services is high. However, city council had a high level of dissatisfaction among public, which might be because this organ has not provided the ground for participation of public. Hence, dissatisfaction of city council and municipality is clearly observed. The level of cooperation between people and authorities is below average indicating weak interaction and lack of programs and activities for the public participation.

The major percentage of the area is given to residential use where a high density of population and buildings is observed. Meanwhile, there is not enough recreational and green space for leisure time. The highest percentage of the structure of area is bricks and iron which are more than 40 years old.

Regarding the pollution and environmental factors, the area has a good condition. No garbage, harmful animals, and water pollution is seen in the area. The only harmful type of pollution is noise pollution as expressed by people.

The correction of pathways' network is a priority for the improvement of neighborhood because most of objections and dissatisfactions of residents (70%) reported this issue.

### Suggestions and strategies

At the end, regarding the observations and analysis of collected data, some strategies can be suggested for the improvement of the area, as follows:

- Controlling construction in the area and preserving natural obstacles
- Directing the investments on house construction to recreational centers
- Controlling building mass
- Creating suitable sidewalks

- Determining a hierarchy for the existing pathways network
- Equipping the area to sport and recreation centers and facilities
- Emphasizing the operational centers and endorsing them to provide services
- Extending green spaces
- Improvement and renewal and reconstruction of decayed fabric

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