

# Evaluating Environmental Design Factors Affecting Security; Case Study: Center of Sang Siah Neighborhood in Shiraz City

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## ABSTRACT

Security is one of the most up-to-date topics in urban planning and architecture particularly on a neighborhood scale because its environmental factors are not deniable. Hence, this study aims to identify all environmental design factors affecting security promotion in the neighborhood's center through a comprehensive conceptual model. This study also evaluates the effect of these factors on the center of Sang Siah Neighborhood. In the literature review step, all environmental design dimensions and factors of security in the neighborhood have been identified and designed within a conceptual model using a modified Delphi technique. This model was then evaluated in the center of Sang Siah neighborhood (the symbol of the social-cultural identity of the historic fabric of Shiraz). This step has been done using the case study and survey method using questionnaires distributed among 98 persons in the neighborhood. The sampling method is "random cluster." In the activity-service dimension, research findings indicate that people and experts look for the occurrence of cultural activities in behavior settings with two different expressions. The significant difference in this subject is the participation index, which interests people. In the social dimension, people think that trust and solidarity between them in using natural surveillance indicators and a sense of belonging that are of interest to them and experts can improve security in the neighborhood. In the meaning dimension, a shared view exists and both groups of people and experts introduce the vitality index as the most effective factor in improving security. In terms of physical dimensions, experts use aesthetic factors to achieve their safety goals while people have a functional approach to it.

**Keywords:** Environmental Design Factors, Center of Neighborhood, Historic Fabric, Security, Sang Siah.

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## 1. INTRODUCTION

The need for security is an underlying and critical need so the prosperity and health of a society are interconnected with the security and sense of security. Security shortage leads to less use of public space territory, so the creation of successful urban spaces becomes problematic (Salimi et al. 2016). Sense of security is one of the key issues for people, especially in the scale of neighborhoods (Kimber 2009, 5). When a balance exists between social controls and intimacy with acquaintances and strangers, security and people's presence will increase (Siebel and Wehrheim 2003).

Security is mainly in crisis in worn-out fabrics of Iran because all strengths of these fabrics, such as neighborhood cohesion have disappeared causing insecure and destroyed areas due to abandoned worn-out fabrics and physical expansion of the city making the identity of cities problematic in some cases (Rahnama and Hoseinian 2015). Since it seems necessary to address the security issue due to the current situation of Sang Siah's fabric (as one of the oldest neighborhoods in Shiraz City that may be suitable for crime commitment), thus neighborhood was chosen as the case study.

The novel aspect of this study can be seen in its new research approach within a structured system through mixed qualitative (Delphi), quantitative (survey), and case study methods. This study illustrated a model of environmental factors affecting security and could test that model, which was confirmed by Delphi experts in the Sang Siah Neighborhood in Shiraz. On the other hand, the case-study method was used in this trend, so it can be stated that despite the results cannot be generalized to other neighborhoods but this model can be generalized to the theory (regarding the research novelty in using a structured research approach). However, the model must be retested in several other neighborhoods. Another innovative aspect of the study is a comparison between the comments of experts and people living in the neighborhood about effective environmental factors. The comments can be found individually in the studies while a comparison between these two groups in Sang Siah Neighborhood can indicate new results that have been proposed in this innovative study. The main questions are as follows: "Which one of the environmental design factors affects the sense of security in the process of organizing the center of Sang Siah Neighborhood?" and how the factors are

prioritized in improving the security of residents living in Sang Siah Neighborhood.

## 2. BACKGROUND

Many theorists have addressed the effect of environment on the security and many theories have been proposed about this case. Some scholars that have expressed their ideas, in this case, include Robert Park, Simmel, Jane Jacobs, Angel, Alice Coleman, Tylor and Hall, Sorkin, Eck and Tisdell, Valentine, Dias, and Zukin. In this case, an urban ecology school was introduced for urban assessment by Robert Park in 1916s (Ketabchi and Bahrpeyma 201). The first study on the effect of the urban environment on security was done in the book "The Death and Life of Great American Cities" by Jane Jacobs in 1961. This book identifies the physical factors that can disturb the security of cities and neighborhoods and then concludes that a relationship exists between these factors and unconscious and complicated social networks among people so that this intermediate relationship can create peace in the urban space, which is then kept by the police (Gharai et al., 2010, 19). One of the popular theories, in this case, appeared based on Jacobs' ideas and Oscar Newman's defensible spaces in CPTED (Crime Prevention through Environmental Design) that were introduced by Jeffery.

This theory believes in environmental effects in addition to other factors on crime prevention, and was popular in the 21st century and now is in the middle of this wave. Cozens (2016) conducted a review study on the first and second generations of this theory and conceptualized it based on a comprehensive technique promoting it to a continuous dynamic model (Cozens, Paul, and Love 2015).

Alice Coleman recommends environmental strategies to increase residents' surveillance and prevent criminals from escaping. Tylor and Hall believe that the perfect environmental design of space help to control residents and prevent annoying people to enter the space. Sorkin introduces the separation of social classes as a strategy that provides security. Eck and Tisdell introduce all-around options, such as physical barriers and police surveillance in addition to people presence as effective factors providing security (Salimi et al. 2016). Figure 11 depicts the historic trend of these theories.

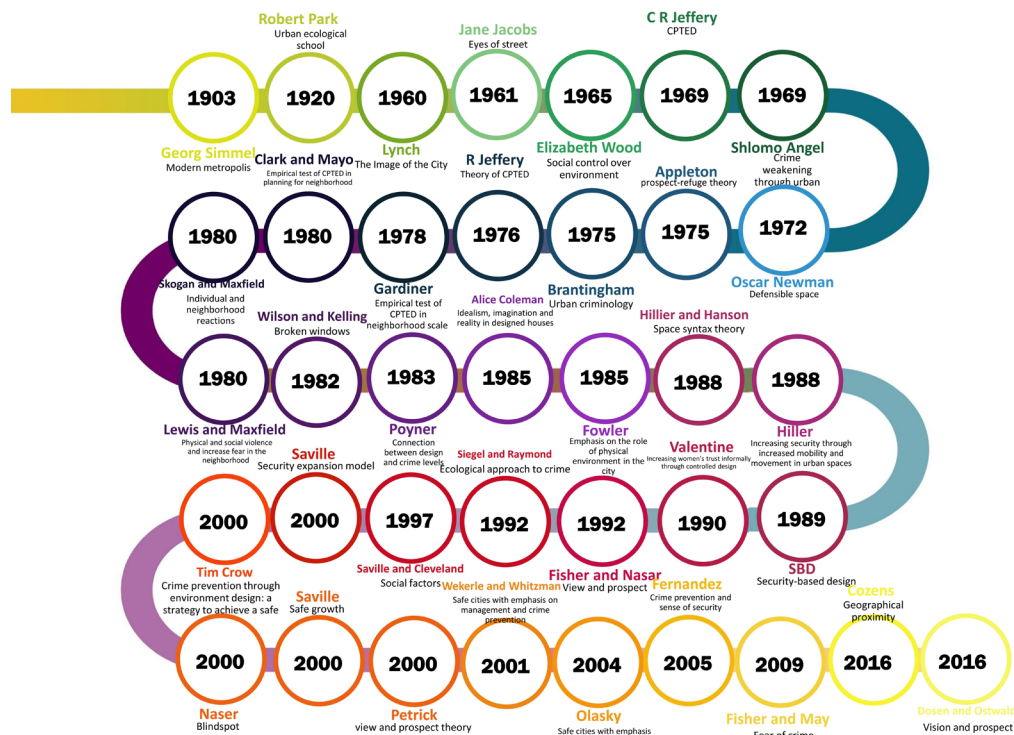


Fig. 1. Historic Trend of Scholars' Theories about Security

### 3. THEORETICAL FOUNDATIONS

Two subjective and objective approaches can be used to explain security. The objective evaluation index of security emphasizes the number of crimes that occurred in a certain time and place, while subjective evaluation of security is done by feeling it in the mind, such as a sense of ownership over space, access control, etc. (Azizi and Shabanjoola 2014). Security indeed is an inner sense of being safe and also is a kind of perception and perceptual level of the individual (Abdollahzadeh Fard, Savarzadeh, and Mohammadi 2019). In general, a sense of security is influenced by the self or the environment where the person is placed (Shamaei and Vahedinejad 2018).

Providing security and reducing the number of crimes in urban environments especially in historic and worn-out fabrics are the most important goals of the urban planning process. Historic fabrics are

valuable because they are the national capitals of each country and the origins of the culture and traditions of the nations (Ghorbani, Mondegari, and Noghsan Mohammadi 2014). Hence, a lack of security in such fabrics prevents their prosperity and reaching the needs of higher levels but also leads to lower social interactions causing the abandonment of such historical neighborhoods (Mirhoseini and Jahanbakhsh 2016).

#### 3.1. Designing a Conceptual Framework

After searching in available frameworks in different references, the category of spatial properties affecting the sense of security was selected in the initial attitude in the frame of the most comprehensive structures that include place measurement criteria within three dimensions of form, activity (performance), and mental image (meaning) (Table 1).

Table 1. Place Measurement Criteria, Punter and Montgomery

Place	Measurement Criteria
Form	Public spaces, proportion, scale, centralism, permeability, signs
Activity	Surveillance, activity diversity, cultural café, local-traditional entertainments, activity duration, activity time (particularly at night), attractive activities, economic activity
Mental Image	Memory and symbolism, legibility, sensory experiences, personal perception, vitality, psychological communications

(Crmona 2006)

### 3.2. Explaining Security Components in Proposed the Framework

Since some components extracted from the literature review, such as social connection and solidarity are classified under the social dimensions and because the social dimension has not been considered in the triple model mentioned above, a class called “social-demographic factors” were created in the suggested conceptual model. For this purpose, a suggested perception was taken based on the initial structure and derived criteria were put in for general dimensions: activity-service, physical, social-demographic, and meaning.

#### 3.2.1. Activity-Service Dimension

Various services provided in the neighborhood to realize diverse performances and activities can increase security.

- Performance: if various uses, such as commercial, cultural-residential, educational, and service uses are spatially located adjacent to and integrated with diversity also occurs so it can be claimed that mixed uses have been actualized. Functional diversity and use mix the ate some factors that can influence security and sociability simultaneously (Monfared, Hashemnejad, and Yazdanfar 2021).
- Activity: increasing the number of attractive social activities for the population in the neighborhood would lead to more mutual relationships between individuals that subsequently result in job-creation and welfare facilities. In this case, human surveillance and security will be also increased (Ziari, Asadzadeh, and Sadeghi 2013, 19). Some of the collective activities affecting security are cultural events that play a vital role in increasing public participation. Some spaces with public participation must be created to improve interactions between residents and a sense of security (Jafari Karimi, Ali Akbari, and Taleshi 2021).

#### 3.2.2. Physical Dimension

Urban physic or body indeed includes two distinct full and empty parts. Although these two parts have separate roles and functions, they must be coherent (Zekavat 2013). Physical factors can realize some cases, such as visual and environmental comfort and spatial arrangement through the suitable arrangement of full and empty spaces.

- Visual comfort: security can be increased if the city image has visual comfort and some factors such as apparent quality and visual proportions are observed, lighting and color are desirable, and the skyline creates a balanced roofline (Zarghami et al. 2018).
- Night activities in public spaces that are affected by illumination play a vital role in local life, which can considerably influence security. It is important to pay attention to two types of formal lighting provided by the government and informal lighting provided by the residents (Kretzer 2021).

- Environmental comfort: green space, trees, and natural elements can increase space security through environmental comfort. Hygiene is also an important issue, so criminal actions may occur in the polluted and messy environment where urban garbage and sewage have been left (Salehi 1998).

- Spatial arrangement: the border separation between ownership territories, including public, semi-public, semi-private, and private territories can create a clear and transparent spatial arrangement or setting, which subsequently reduces permeability and prevents crimes. Permeability means how the street network of fabric affects the movement of passengers and vehicles (Sinafar, Partovi, and Shokouhi 2015). When space arrangement hierarchy is observed, permeability can be controlled (Mirhoseini and Jahanbakhsh 2016). The definition of transparent borders defines ownership of a space but also improves the sense of territory, sense of place, and security (Atlas 1999). The properties of these borders or edges where entrances exist in particular directly affect the permeability to the interior space because it determines the accumulative load on the space, and is therefore correlated with security.

- Physical: it includes various factors, such as space size and form, density, and transparent or rigid wall. For instance, space size can affect security since a space with a human scale is peaceful while an infinite and empty space is anxious (Lotfi and Sasanipor 2020). The connection between space form and security is seen in the U-shaped and L-shaped forms that have corners and reduce the watchability so causing crime occurrence in the space (D.K.Ching 1979, 162). Other significant physical factors are worn-out neighborhoods or ruined spaces that have destroyed the spatial arrangement causing urban slums (Habibi 2013). Physical safety means preventing some issues that threaten the physical health of humans (Rafieyan, Moyedi, and Salmani 2014).

#### 3.2.3. Social and Demographic Dimension

Social factors include some issues, such as social surveillance and controllability, social relationships, and solidarity among citizens. Local spaces that provide face-to-face meetings and interaction between people can improve this dimension. These results can be searched in the active presence of people and different age-gender groups in urban spaces to improve security through it (Ahmadi, and Mehrjou 2020).

- Social control: control can be defined as the force of power, directing or preventing others. Control can create stability and discipline, so is effective in increasing security. Social control means making behaviors and actions of a person or other people conditional and limited to the goals and norms of society. Access control consists of three categories informal or natural, formal, and organized security staff, and mechanical solutions such as CCTV



- Management factors: accurate management of officials and urban managers both in cities and neighborhoods in the platform of local councils has a considerable effect in providing a sense of security.

Meaning factors are perceived through subjective evaluation of the quality of living space, which is influenced by individual psychological factors. Vitality in urban space is one of the most important meaning factors that appear when many individuals from different age and gender ranges show their presence at different hours of day and night by doing

### 3.3. Extracting Environmental Factors Affecting the Security and Their Frequencies

The most frequent factors during 2007-2019 and 1965-2019 were obtained to find the most important contexts in this approach through searching references. Accordingly, the first rank in the improvement of security was related to natural surveillance which had a frequency of 50 among 116 references. The second and third ranks were assigned to light and illumination and control over accesses and entrances with frequencies of 44 and 43, respectively. Repair and maintenance and territoriality became the fourth and fifth important factors among references with frequencies of 40 and 36, respectively.



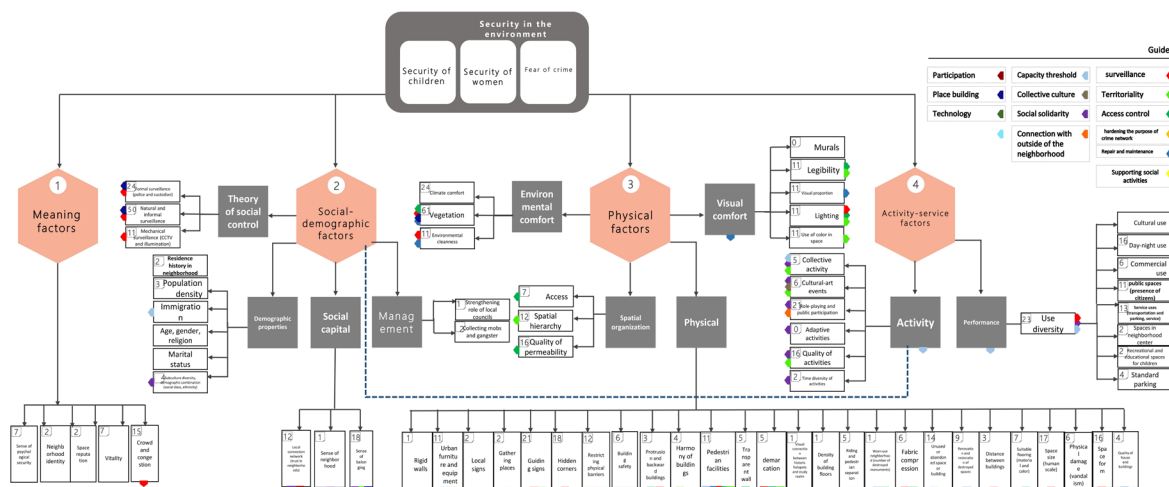
#### 4. METHOD

After the criteria were classified, the initial conceptual framework of the study was designed. The criteria and their frequencies were put into the proposed framework. To evaluate the conceptual framework, professors were asked to express their ideas and recommendations about components and conceptual structure change. The initial structure was finalized

through two-round Delphi by 8 experts. Table 2 summarizes these changes and Figure 3 depicts the modified conceptual model obtained from Delphi results. The first round of Delphi was eliminated due to the limited number of paper pages, and only the final modified diagram was reported. The four-point Likert scale questionnaire was distributed among experts to prioritize 81 obtained criteria.

**Table 2. Modifications Conducted on the Conceptual Framework of Study in the Delphi Round**

Dimension	Modification
Activity-Service	Commercial, cultural, day and night, recreational, educational, service (transportation and parking, service), public spaces, and neighborhood center spaces are classified as use diversity.  Use diversity and mixed uses are two similar components so can be integrated into one factor.
Physical	Transparency and resolution of spatial arrangement are similar to spatial hierarchy, so can be integrated into each other. The right name for this factor is the spatial setting hierarchy.  It would be better to remove the following components from this category: quality of passage network and number of intersections and public transportation network.  Vegetation, water, and green space are similar, so can be merged.  Wall pictures can be added to visual comfort.  Safety should be changed.  Fabric compression has content similar to fabric fineness, so they can be merged.
Social-Demographic	This category must be renamed to social because human factors can be put under all categories  All components of a sense of belonging, local connection network, and sense of neighborhood can be classified under a new category called social capital.
Meaning	It is better to delete social security (social solidarity) from this category.  Local connection networks (trust in neighbors) should be transferred to social factors.  Security of women and children is an index measuring security and are not of their factors, so must be removed.  Fear of crime cannot be measured. It must be deleted since it is not corresponding to other components.  Legibility must be transferred to physical factors.



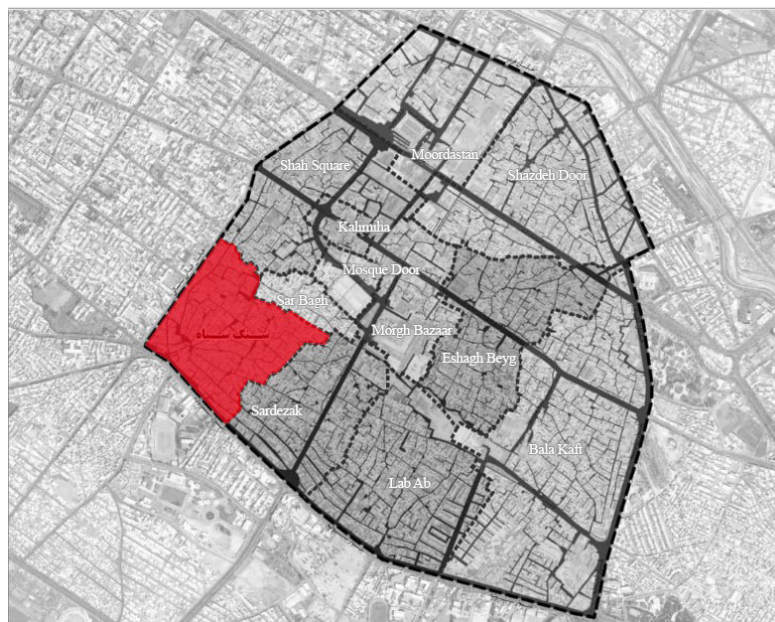
**Fig. 3. Final Conceptual Framework (after Delphi Modification)**

In the next step, the factors obtained from the Delphi method that had mean values greater than 3 were subscribed with those factors with frequencies greater than 11 in the literature (content analysis), so the table of content objective and questionnaire was designed. The questionnaire was implemented to assess the effect of 39 items on the sense of security in the studied area by using the Likert scale. Residents living in Sang Siah Neighborhood filled out 98 questionnaires. The sample size was selected based on Klein's theory that considers the right sample size as 2.5-5 times greater than the items of the questionnaire. The validity of the questionnaire was examined through the face and content validity (table of objective/content).

#### 4.1. Studied Area

The historical neighborhood Sang Siah has around 3374 members of the population and an area of 27

hectares. This neighborhood is located in the west of District 8 of Shiraz, the south and southwest of this neighborhood have been the old city wall. Shah Square and Sarbagh are located in the north of this neighborhood, and Sar Dezak neighborhood is located in the east part of it (Fig. 4). The historic axis of Sang Siah has been one of the important passages of Shiraz City and has created a good use by mixing commercial, residential, recreational, and cultural activities next to each other. Therefore, this neighborhood has kept its importance (Kiani Babookani, Sadeghi, and Shole 2017, 5-6). These mixed uses meet the financial and spiritual needs of residents but also provide a space for spending leisure time improving special interactions between occupants. Hence, these spaces serve as identity signs of the neighborhood.



**Fig. 4. Location of Sang Siah Neighborhood in District 8**

(<https://en.shiraz.ir>)

According to the physical factors affecting security in the neighborhood, it can be stated that security was well-achieved in the past due to strong mixed uses, considered privacy and hierarchy in the fabric of the neighborhood, semi-public realms with surveillance possibility, placement of entrance of several houses next to each other and increase neighboring, and lack of empty spaces in the neighborhood (Abdollahzadeh Fard, Savarzadeh, and Mohammadi 2019). However, various factors such as worn-out bodies and faces of the fabric, unused capacities, weak infrastructures and urban services for current needs, and improper economic conditions, unfortunately, have reduced the vitality, livability, and security in the neighborhood (Habibi 2013).

One previous study conducted in this neighborhood

has addressed the urban design of Sang Siah Axis by surveying residents, managers, and involved organizations. This study examined the current status and presented strengths, weaknesses, opportunities, and threats in a SWOT table. The results of this research plan introduced providing the field for social security and safety in passage space as the major goals of the study that can be realized through micro-objective, including providing the field for the active presence of people in space, strengthening the sense of belonging to place among residents and tradespeople, creating suitable physical commitment in the wall to increase surveillance over space, and removing criminal places and corners.

All dimensions must be considered for the revitalization of Sang Siah Neighborhood, including

the improvement of its security. Most urban recreation plans are one-dimensions focusing on the physical dimensions, while the important relationship between decision-makers, policymakers, executive agents, and users has been neglected (Afzali and Esmaili 2014). Among environmental elements affecting the sense of security in public spaces of Shiraz, users of public spaces introduced information, gender, and access to transportation as factors with the highest impact

factor. Crowd and space form are other variables that affect the sense of security directly without any intermediary variable (Lotfi and Sasanipor 2020).

## 5. RESULTS

Table 3 reports the demographic properties of respondents.

**Table 3. Demographic Properties of Residents Living in Sang Siah Neighborhood**

Variable	Grouping	Frequency (%)
Gender	Female	39.8
	Male	59.2
Marital Status	Single	41.8
	Married	58.2
Birthplace Distribution of Individuals	Born in the Neighborhood	52.5
	Born in another City, Country, or Neighborhood	47.5
Education	Below Diploma	24.5
	Diploma	36.2
	Associate Degree	8.1
	BA	24.2
	MA	7.1
Willingness to Residence	Interested	55.1
	Not Interested	37.8

Table 4 reports the opinions of residents living in Sang Siah Neighborhood about the effect of each factor on security. In terms of activity-service factors, first to third ranks were assigned to entertainment spaces for neighbors to gather together (public space), cultural-art events, and participation to solve problems in the neighborhood. In terms of social-demographic factors, view and informal surveillance over the surrounding environment in pedestrian routes, which is under the category of social control has the highest influence on security. Trust in residents and

trustees of the neighborhood which is a component of social capital is at the next rank. In terms of physical dimension, two factors of neighborhood maintenance from the physical category and green spaces and parks from environmental comfort are both in the first rank. The second rank is assigned to creating a hierarchy through flooring and landscaping, while space form from the physical category takes the third rank. In terms of meaning dimension, vitality is at the first rank.

**Table 4. Statistical Results of Evaluated Factors Creating Security in Sang Siah Neighborhood**

Dimension	Component	Very High	High	Low	Very low	Mean	Standard Deviation
Activity-Service	Meeting Needs in Paces of a Neighborhood Center	%6.30	%17.90	%52.60	%23.20		
	Different and Multifunctional Use of the Pace of Neighborhood Center	%17	%35.10	%19.10	%28.70	2.60	1.081
	Cultural-Art Events	%6.20	%13.40	%51.50	%28.90	3.03	.822
	Entertainment Space for Neighbors to gather together (Public Space)	%3.10	%9.20	%50	%37.80	3.22	.740
	Participate to Solve the Problems of the Neighborhood	%8.30	%19.80	%39.60	%32.30	2.96	.928



Dimension	Component	Very High	High	Low	Very low	Mean	Standard Deviation
Social-Demographic	View and Informal Surveillance over the Surrounding Environment in Pedestrian Routes	%9.60	%34	%36.20	%20.20	2.67	0.909
	Trust in Neighbors and Trustees in the Neighborhood	%20.80	%28.10	%31.30	%19.80	2.50	1.036
Physical	Green Space and Park	%9.40	%15.60	%35.40	%39.60	3.05	.966
	Hierarchy with Flooring or Landscaping	%4.30	%19.40	%47.30	%29	3.01	.814
	Accurate Deployment of Lights and Power Pole	%13.70	%21.10	%44.20	%21.10	2.73	.950
	Form of Spaces	%6.30	%21.90	%39.60	%32.30	2.98	.894
	Control the Barren Spaces	%12.40	%28.90	%39.20	%19.60	2.66	.934
	Neighborhood Maintenance	%10.30	%14.40	%35.10	%40.20	3.05	.983
Meaning	Vitality, Presence, and Diversity of Individuals	%12.40	%39.20	%24.70	%23.70	2.60	.986

## 6. CONCLUSION

The conceptual framework of the study was extracted from the subject literature by considering four main dimensions (activity-service, social-demographic, physical, and meaning) and components under each dimension. This conceptual framework has been confirmed through the Delphi technique. A

survey technique and questionnaire were used in the next step to test the mentioned framework in Sang Siah Neighborhood. It should be noted that the demographic features of the study indicate relatively high education levels of men and women with relatively equal rates. Table 5 reports the results of comparisons between security components from the viewpoint of residents and experts.

**Table 5. Comparison between three Components with higher Priority in each Dimension Based on the Comments of Experts and Residents**

Rank	Activity-Service		Social-Demographic		Meaning		Physical	
	Experts	Residents	Experts	Residents	Experts	Residents	Experts	Residents
1	Collective Activity (3.875)	Entertainment Space for Neighbors to gather together (3.22)	Sense of Belonging (3.50)	View and Informal Surveillance over the Surrounding Environment in Pedestrian Routes (2.67)	Vitality (3.75)	Vitality (2.60)	Urban Equipment and Furniture (3.875)	Green Space and Park (3.05)
2	Meeting Needs in Spaces of Neighborhood Center (3.50)	Cultural-Art Events (3.03)	Natural and Informal Surveillance (3.250) Neighborhood (3.250)	Trust (2.50)	Space Reputation (3.375)	-	Lightening (3.750)	Hierarchy through Flooring and Landscaping (3.01)
3	Use Diversity (3.375)	Participation to Solve Problems in the Neighborhood (2.96)	History of Residence in the Neighborhood (3.00)	Overlooking Buildings over Collective Spaces of the Neighborhood (2.29)			Rigid Walls (3.625)	The Shape of Spaces (2.98)

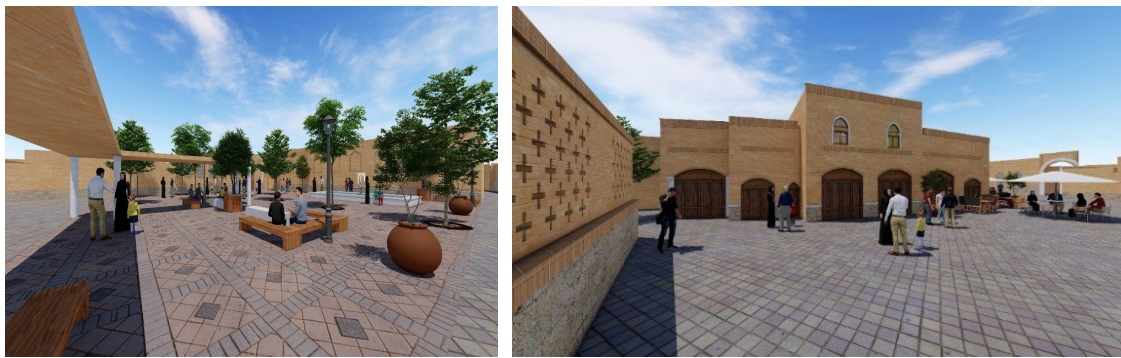
In terms of the activity-service dimension, experts assume that collective activity depends on the diversity and providing use of neighborhood centers, while people consider it as a factor depending on the collective entertaining spaces to hold cultural

events with emphasis on their participation in the structure of behavioral settings. It seems that although collective activities and cultural events in behavioral settings have been considered in different ways by people and experts, their occurrence is an

unwritten agreement between people and experts. The significant difference, in this case, is related to public participation in the mentioned activities that have not been considered by experts. In the social dimension, experts are sensitive to a sense of belonging, natural and informal surveillance, a sense of neighborhood, and accommodation duration, while people pay more attention to surveillance and overlooking to improve trust-based security. In the meaning dimension, experts, and people agree on the vitality and importance of improving security while experts consider space reputation as the most prior factor. Finally, in the physical dimension, experts introduce urban equipment and furniture, and lighting as the most important factors, while people emphasize green space, sidewalks, and space structure. According to comments given by people and experts, it seems that shared opinions are about space functions, functional

diversity, and holding cultural events. While experts link security to aesthetical issues, people look for collective and participatory acts to improve security in the neighborhood structure. The following strategies can be recommended for neighborhood centers to achieve the goals of users, including experts and people, and move towards a functional-physical paradigm in improving security to minimize meaningful aspects of viewpoints.

- Creating cultural spaces in the area of the neighborhood center, such as the cultural center and library to hold different events
- Removing or minimizing indefensible spaces and hidden places by manipulating the physical structure and physical arrangement of the neighborhood center (Figures 5 and 6) to realize the territoriality of the neighborhood



**Figs 5 & 6. The Spatial Arrangement of the Space in front of Sibboye Grave (Center of the Neighborhood)**

- Converting the indefensible space to activity-service centers to provide required services in the

neighborhood and prevent crime (Fig. 7 & Table 6).



**Fig. 7. Locating Indefensible Spaces in Sang Siah Neighborhood**

**Table 6. Proposed Use and Use of Current Status of Indefensible Spaces in Sang Sia Neighborhood**

Plate Number	Use of Current Status	Propose the Use of a Master Plan	Area (m <sup>2</sup> )	Proposed Use
1	Parking	Residential-Service Mixture	276	Multipurpose Open Space
2	Barren Land	Residential-Service Mixture	210	Self-Employment Workshop for Women
3	Barren Land	Residential-Service Mixture	1038	Cultural-Educational
4	Barren Land	Residential-Service Mixture	76	Green Space
5	Barren Land	Residential, Commercial, Service	1796	Educational
6	Parking	Residential-Service	124	Green Space
7	Parking	Park	833	An Outdoor Amphitheater, Park
8	Barren Land	Residential, Commercial, Service	864	Gym
9	Barren Land	Residential-Service Mixture	432	Restaurant and Coffeeshop

- Creating entertainment space and cultural even for collective activities in urban spaces of the neighborhood (Fig. 8)



**Fig. 8. Changing use from Parking to Playground Space for Children and Outdoor Amphitheater in the Passage of Haj Zeynal (Center of the Neighborhood)**

- Suitable light in collective spaces especially in the center of the neighborhood
- Increasing natural surveillance through increased presence of people in collective spaces
- Landscaping and green space design



**Fig. 9. Landscaping and Creating Green Space through Locating Trees and Using Proper Plants in Public Spaces**

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