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Pedestrian-Oriented Approaches for Improving Lost Spaces by Using SWOT (Case Study: Seyedqandan Overpass, Tehran)

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Abstract: *In this study by considering pedestrian-oriented approach a proper condition for social interaction and revitalizing lost spaces in the vicinity of Seyedqandan overpass in Tehran was investigated. In this analytic-descriptive study (which lasted from January to November 2014) after defining concepts related to urban lost space and finding such spaces in our study by SWOT model, the advantages and disadvantages, opportunities, and threats was introduced. Then through designing a questioner by Delphi method the internal and external factors in our case study was evaluated and at last based on the most influential factors the desired strategies was opted.*

Keywords: *Lost spaces, pedestrian movement, revitalization*

1. Introduction

Responding to the citizens‟ needs have a strong depending to quality of presence of people in public urban spaces and in result of that the most distinctive features of a city is related to the image of this space created in citizens‟ minds. On the other hand, the observed gaps in the urban environment in the form of low quality and unfavorable environmental arenas called “lost spaces” leave a destructive effect on the citizens‟ quality of life.

Revitalizing lost spaces is a workable way in order to decrease the negative effects resulting from inefficient urban spaces and the problems associated with land shortage in large cities. Roger Transik (1) defined lost urban spaces as unacceptable urban areas which required redesigning. In fact lost spaces failed to connect their constituent parts and similar to an unbounded spaces have been excluded from positive social activities. But it is important to note, these spaces present a precious opportunity to the architect to redefine and renovate them into useful urban spaces and particularly urban texture. In other words, lost spaces provide, due to their high potentials, a suitable bed for economic, social, etc. activities (2). In a study conducted in Paris, Tonlate (3) calls these spaces “urban interstices”. Sola Morales (4) uses the term “terrain vagues” and defines lost spaces as a potential urban opportunity. Bowman and Pagano (5) refer to lost spaces as “terrain incognita”, considering them as hidden disguised pieces of land. Due to their unattractive visual quality and their unsuitable irregular situation, these are regarded as harmful spaces especially in terms of security and peace of mind. In total Lost spaces are visual urban symbols which create a dull atmosphere and are a major hindrance in the way of revitalizing city centers (6). Roger Trasik classifies lost spaces into three groups, one of them being freeway margins which are abandoned without security.

A lost urban space is formed around urban overpasses and freeways. Due to their connection role being neglected by urban authorities, these spaces are not redesigned properly and as such, turn into inhospitable spaces which do not invite citizens‟ engagement. The Seyedqandan Overpass in Tehran is a particularly apt example of such crime- and pollution-prone centers. This study aimed to search for ways of revitalizing the lost urban spaces under Seysdqandan Overpass through proper pedestrian movement. The main goals are as follows:

- Providing a suitable environment for social encounters and connection among citizens through creating a pedestrian-oriented space.
- Creating new and diverse functionalities for the space under the overpass.
- Improving the physical and visual quality of these spaces.

2. Methodology

The analytical method was used to study the problem of revitalizing lost urban spaces. The library and document method, the direct observation method, and field methods were used for data collection. The Delphi method was implemented for providing a questionnaire. In collecting the Delphi questionnaires, 40 questionnaires were allocated to the sample population consisting of academics and municipal managers and experts. The snowball sampling method was used for determining the sample size. The research procedure involved asking various academics and experts to introduce different organizations and research institutes involved in activities relevant to the subject of this study. Then, the evaluation matrix for internal and external factors was calculated and the views expressed by the Delphi group were used to determine the coefficients corresponding to each factor and to decide about the significance of the strategic components. The results obtained from these matrices were subsequently implemented to calculate the final scores. Thus far, these results determine the studied area‟s situation based on the internal and external factors. In the next stage, the SWOT matrix was used to extract the aggressive/competitive (SO), the diversification (ST), the turnaround (WO), and the defensive (WT) strategies.

3. Case Sample

The present spatial organization of urban spaces in Tehran as well as the lack of meaningful connections between significant urban structures and urban areas poses a challenge to defining their boundaries of these areas. Most expressways at the city entrances direct traffic right to the city center without playing a role in the spatial organization of their surrounding areas. In certain cases, these expressways even determine the boundaries of their urban context, tearing apart these areas into unidentifiable regions where structural elements often fail to interact mutually with other urban areas; this has turned expressways into mere arteries used for passage alone without influencing the physical life of their urban context (7).

Previous studies show that Seyedqandan district in Tehran has a 150 year history, going back to Nasereddin Shah‟s time. In the past, there used to be no other neighborhoods close to this area. Seyedqandan used to be a village with pleasant weather, many trees, and extensive green spaces. As Tehran developed, the green space in Seyedqandan gradually diminished and buildings replaced trees (8). Before the construction of the expressways in this district, Seyedqandan used to enjoy a homogeneous texture. Today, the development of highways has led to an overflow of immigrants to the area, bringing about changes in the urban texture. One particular problem in Seyedqandan which has greatly influenced the social and cultural as well as the security of this district is the constant flow of street traffic (9). Seyedqandan Overpass was constructed upon demolishing a considerable part of the old urban texture based on assessment of urban traffic and transportation requirements. Therefore, the role of Seyedqandan in the urban access structure was made even more prominent. This trend continued until this area became one of the most important urban nodes in Tehran (10).

Currently, the space around Seyedqandan Overpass not only serves as an area for displacing a large number of vehicles, but also as a junction connecting important streets such as Shariati, Sohrevardi, Arasbaran, and Resalat Expressway. Moreover, being located at the exact intersection of urban Districts 3 and 7, Seyedqandan is used for commutation by the inhabitants of the area as well as the employees working at a multitude of companies and businesses in the district (Figs. 1 and 2).

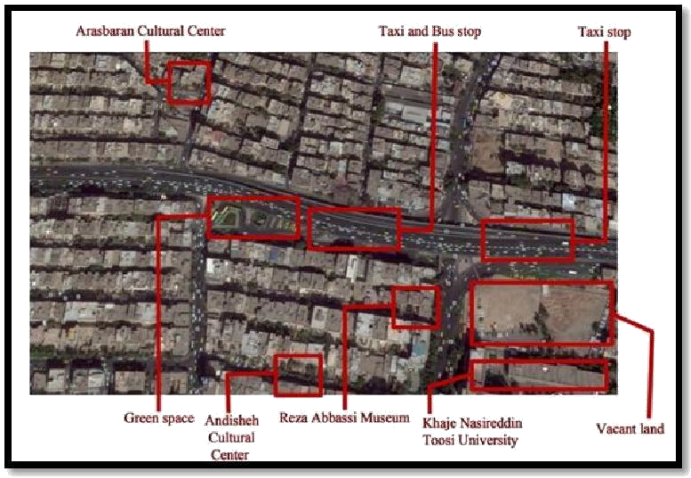

Fig. 1: Aerial view of the regions and spaces around the studied area

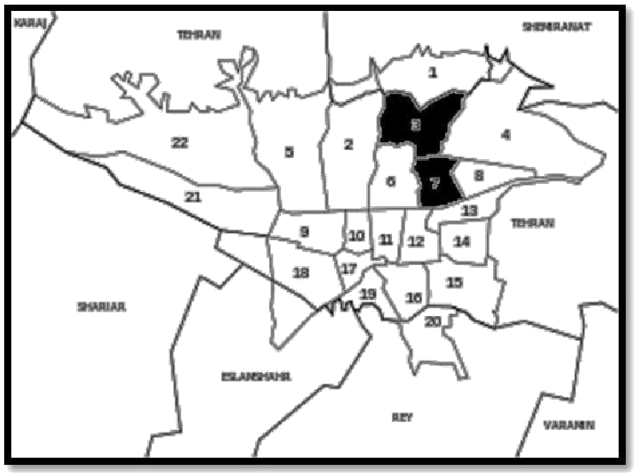

Fig. 2: The geographical location of the studied area

Seyedqandan plays an important role in connecting different areas in Tehran. For this reason, due attention must be endowed upon the spatial quality of this urban node which includes high volumes of both pedestrian and vehicle traffic. During the preliminary field studies, this urban space was divided, based on the type of occupancy and people‟s gathering in the area around and under the overpass, into the following three areas:

The western area: this section covered the areas around Sohrevardi Intersection and Resalat Expressway entrance. The area under the overpass here includes partial green space, a public toilet, and a public transportation terminal.

The central area: covering the largest area under the overpass as compared to the other two area, this part includes taxi terminals.

The eastern area: this area included the intersection between Shariati and Resalat Expressway exit. Under the overpass, there are taxi terminals with taxis carrying passengers to eastern (Resalat Street) and northern (Shariati, Pasdaran, and Tajrish Streets) Tehran (Fig. 3).

Fig. 3: The layout of the studied area and pictures from the surrounding spaces

4. Findings

In the preliminary phase of this study, the internal factors (strengths and weaknesses) as well as the external factors (opportunities and threats) associated with lost urban spaces were identified through seeking help from the urban elite and academic scholars. Then, the internal and external factors evaluation matrices were obtained, the former consisting of a list of strengths and weaknesses of the internal environment of the studied area and the latter including the opportunities and threats of the area. The SWOT factors and the internal/external evaluation matrices are shown in Tables 1 and 2.

Identifying the subject is essential in the strategic approach. In other words, in the strategic approach, goals are clarified based on the existing realities to obtain objective results. In strategic planning, all the factors must be included in the SWOT analytical framework as a part of the planning process (11). The SWOT technique (matrix) is an instrument used for identifying the existing threats and opportunities in the external environment and for recognizing the weaknesses and strengths in the internal environment aimed at measuring the circumstances and setting out strategies for directing and controlling the studied system (12). This technique also provides the opportunity (through forming a table) for regularl and systematic classification of the ruling conditions in the internal and external environments, providing realistic and favorable strategies for solving urban problems through promoting interaction/synergy among the elements of this table.

TABLE I: The strengths and weaknesses evaluation table for the studied area

	INTERNAL FACTORS	COEFFICIENTS	SCORE	FINAL SCORE
STRENGTHS	S_1: Cultural centers (Arasbaran abd Andisheh) located around Seyedqandan overpass strengthen consistent cultural and socal participation by citizens.	0.05	2	0.10
	S_2: A heightened sense of belonging exists in the areas surrounding the studies zone due to residential ownership.	0.05	1	0.05
	S_3: Suitable geographical situation of the Seyedqandan overpass area.	0.10	2	0.20
	S_4: Proper distances between the studied zone and the surrounding cultural cores.	0.20	4	0.80
	S_5: Sufficient number of projects for transfer of intrusive urban occupancies.	0.15	3	0.45
WEAKNESSES	W_1: Disregarding social forces in the approved and executive projects related to Seyedqandan district.	0.05	1	0.05
	W_2: Non-existence of pedestrian networks along the axis and lack of continuity in certain areas.	0.20	4	0.80
	W_3: Irregular formation and spreading of taxi terminals.	0.05	1	0.05
	W_4: Chaotic and irregular urban landscape in the areas around the overpass.	0.10	3	0.30
	W_5: Lack of pedestrian facilities.	0.05	2	0.10
	Total	1.00		2.90

TABLE II: The opportunities and threats evaluation table for the studied area

	INTERNAL FACTORS	COEFFICIENTS	SCORE	FINAL SCORE
STRENGTHS	O_1: Possibility of promoting cultural occupancy (regional and transregional) in the studied zone.	0.10	0.20	0.20
	O_2: Creating recreational multifunctional spaces under the overpass.	0.15	0.60	0.60
	O_3: Complicated structure of the active urban system in the area and the possibility of urban authorities paying attention to this type of structure.	0.10	0.30	0.30
	O_4: The role played by NGOs and other nongovernmental organizations in the management and planning of the studied zone.	0.05	0.10	0.10
	O_5: Financial support through traditional and value-based beliefs (charity).	0.05	0.05	0.05
	O_6: Possibility of home owners" participation in the organization of the region through offering them financial facilities.	0.05	0.05	0.05
WEAKNESSES	T_1: Possibility of emerging drug dealers and aggravated social harm.	0.20	0.80	0.80
	T_2: Vague urban regulations regarding organization of the studies area.	0.15	0.45	0.45
	T_3: No role for citizens in terms of participation and decision making.	0.05	0.05	0.05
	T_4: Existence of a geological fault across the studied zone.	0.05	0.10	0.10
	Total	1	2.70	2.70

4.1. Evaluation of Internal Factors

This step involves identifying the strengths and weaknesses and placing them in the internal factors evaluation matrix. The evaluation aims to recognize the weaknesses and strengths associated with the studied area. The weaknesses and strengths include the controllable activities in the studied area which harm or benefit the area respectively.

4.2. Evaluation of External Factors

This step involves identifying the opportunities and threats and placing them in the external factors evaluation matrix. The external environment is described to specify the opportunities and threats the area faces. The economic, social, technological, and management trends as well as the nature and situation of the various groups (including citizens and other relevant factors) which can benefit or harm the studied area are subsequently evaluated.

In the next step, the preliminary evaluations are analyzed. The results obtained from prioritizing the strengths, weaknesses, opportunities, and threats, as well as the evaluations resulting from the evaluation matrices (internal and external), showed that among the strength factors in the studied area, S4 (final score=0.80) was the most significant. Moreover, the W2 factor (i.e., lack of pedestrian networks along the Seyedqandaan axis and, in some cases, non-existence of continuity) was detrmined as the most significant weakness. Regarding the opportunities, O2 (i.e., possibility of creating recreational and multifunctional areas under the overpass) scored the maximum final score. In the last part of Table 2, the threat group is considered with T1 scoring the highest points.

Now, certain concepts used in the evaluation matrix are explained. The operation factor is a number between 0 and 1 depending on the degree of effectivity created in the studied system. Ultimately the sum of the operating factors must be equal to 1. To obtain the required accuracy in selecting operating factors, we made use of the view expressed by the Delphi group. These factors were obtained and subsequently normalized for each of the internal and external factors through calculating the corresponding mean values.

A score is a number between 1 and 4 attributed to each factor depending on its importance. Considering that scores are of utmost importance in calculating the internal/external evaluation matrices, we determined the scores based on the existing situation in the studied area (and its governing environment) and the coefficients based on the importance of each factor in the studied area. The final score for each factor was obtained by multiplying the coefficient of that factor by its order. A final score sum between 1 and 2 indicates internal weakness; between 2.1 and 3 an intermediate status, and between 3.1 and 4 an excellent status for the studied urban texture. Tables 1 and 2 shows the final scores for the internal and external factors to be 22.90 and 2.70 respectively. This implies either or all of the following: 1) the studied area has not succeeded in making proper use of the available strengths, 2) the studied area has failed to use the available opportunities, and 3) the studied area has failed to avoid the underlying factors which lead to the weaknesses and threats. Therefore, the studied area lies in a middle state and it is possible to determine strategies for solving the identified problems.

4.3. SWOT Strategies

At this stage, we use comparative analysis as well as internal and external factors evaluation matrices to propose possible planning strategies aimed at organizing the urban texture in the studies area. These strategies are divided into 4 groups: SO, WO, ST, and WT (13). The strategic options connecting the strengths, weaknesses, opport unities, and threats are sele cted fr om among these 4 groups (T ab le 3) .

TABLE III: Aggressive, diversification, turnaround, and defensive strategies for Seyedqandan Overpass

TURNAROUND STRATEGIES	AGGRESSIVE STRATEGIES
WO_1 : MAKING USE OF THE NECESSARY FACILITIES FOR PARTICIPATION OF NGOS IN THE DESIGN PROCESS, EXECUTION, AND SUPERVISION OF THE RELEVANT PROJECTS IN THE AREA WO_2: DUE ATTENTION OF MANAGERS AND URBAN PLANNERS TO VISUAL URBAN LANDSCAPE AND DESIGN OF PEDESTRIAN-ORIENTED AXES WO_3 : PROVIDING OPPORTUNITIES FOR COOPERATION OF THE HOME OWNERS AROUND THE OVERPASS IN REMOVING SOCIAL ILLS	SO_1 : ADOPTING CITIZEN-ORIENTED POLICIES AND UTILIZING THE ECONOMIC AND FUNCTIONAL POSITION OF THE STUDIED AREA FOR THE PURPOSE OF PROMOTING QUALITY OF URBAN LIFE SO_2 : INCREASING INTERACTION BETWEEN CULTURAL CENTERS AND CIVIL ORGANIZATIONS AIMED AT PREPARING THE GROUND FOR CIVIL PARTICIPATION IN FUTURE URBAN PLANNING SO_3 : CREATING CULTURAL, PUBLIC, AND RECREATIONAL SPACES WITH PROPER FUNCTIONS BASED ON REGULATIONS TO IMPROVE EFFICIENCY AND EFFECTIVITY IN THE STUDIED ZONE

DEFENSIVE STRATEGIES	DIVERSIFICATION STRATEGIES
WT_1 : COMPILING A STRATEGIC DOCUMENT BASED ON GREATER SOCIAL PARTICIPATION IN REVISING REGULATIONS FOR ORGANIZATION OF THE AREAS AROUND SEYEDQANDAN OVERPASS AND ASSIGNING THE ORGANIZATIONS TO OBSERVE SUCH REGULATIONS. WT_2 : COMPILING PROGRAMS FOR CONTROLLING THE EFFECTS OF TRANS-REGIONAL OCCUPANCIES IN THE STUDIED REGION AIMED AT REDUCING SOCIAL HARM. WT_3 : OBSERVING URBAN STANDARDS IN DESIGNING ALONG PEDESTRIAN AXES.	ST_1 : USING REGULATIONS AND REALISTIC EXECUTIVE/PARTICIPATIONSTRATEGIESINTHEMOTHER PROJECTS AND PROPERLY INFORMING THE CITIZENS ON THE ENSUING REDUCTION OF HUMAN AND ENVIRONMENTAL DAMAGE. ST_2 : PROVIDING PEDESTRIAN AND BICYCLE PRIORITY AXES BETWEEN THE CULTURAL CENTERS WITHIN THE SITE. ST_3 : RAISING AWARENESS AND CIVIL PARTICIPATION THROUGH HOLDING PUBLIC CONSULTATION SESSIONS DURING DIFFERENT CULTURAL CEREMONIES.

Aggressive strategies (SO): The Competitive approach focuses on internal strengths and takes advantage of external opportunities. Therefore, in this approach, the positive points are used for maximizing opportunities.

Diversification strategies (ST): By focusing on internal strengths and external threats, these strategies focus make use of positive internal points to reduce external threats.

Turnaround strategies (WO): Emphasizing on internal weaknesses, these strategies attempt to use the existing external opportunities to minimize the effects of internal weaknesses.

Defensive strategies (WT): These strategies are centered around reducing vulnerabilities. This state reflects the most worrying situation in strategic planning where fundamental structural modification and strengthening are required.

5. Conclusion

Due to insufficient land in city centers as well as the high price of the same, lack of pedestrian space and suitable areas for pedestrians‟ lingering and resting have always been a problem in large urban areas. This led to the idea of reusing urban land and lost spaces. On the other hand, the redesign and use of these spaces are of utmost importance. This study focused on allocating pedestrian-oriented spaces in the studied area. The specific features of the area around Seyedqandan overpass arising from its various access roads as well as strategic situation led the author to first identify the strengths, weaknesses, opportunities, and threats in the studied zone. Then, the top priority factors (S4, W2, O2, and T1) were selected based on their received scores. Subsequently, four strategies were obtained by combining internal and external factors. This study concentrated on Seyedqandan Overpass as a case study in the hopes of achieving a broader view of specialized solutions that can be used for revitalization of other similar urban zones.

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