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## SWOT Matrix: a Useful Tool for Managers to Make Decisions on Renovation of Worn-Out Textures

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**Abstract** Cities are like live beings and they always need to be renovated, and they need to renovate the worn-out texture. Older areas of the city that were responsive to the needs of residents at the time of construction were no longer strong enough to adapt to changing biological, social and economic needs. Worn-out urban textures, in addition to creating an unpleasant physical environment, have created an unsustainable social space. For this reason, urban renewal of worn-out textures is one of the major issues in the field of urban planning that requires careful planning in order to address it. Successful urban planning is made up of a set of right decisions. Those decisions are also subject to an analysis of the situation and considering the direct and indirect impacts for the future. SWOT is one of the key tools for analysis and decision making. This paper describes the SWOT analysis method and how it is used in the renovation of deteriorated areas in the Atabak neighborhood. The results show that SWOT analysis helps by providing a comprehensive view in order to make the right decision. The SWOT analysis undertaken includes 19 strengths, 27 weaknesses, 18 opportunities and 20 threats.

**Keywords** Deteriorated areas / Worn texture, Renovation, Regeneration, Strengths, Weaknesses, Threats, Opportunities

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### Introduction

Today, worn-out urban textures have created many problems for citizens, municipalities, and government institutions. The impermeability of these textures has led to a lack of proper services, and this is especially evident during emergencies and crises [1]. However, the instability of these textures in itself can cause a crisis. Alleyways with open and unmanaged wastewater and the resulting pollution, lack of green space per capita and, of course, high population density, are among the problems in these areas known as worn-out textures [2]. These textures face a lack of welfare and a shortage facilities, a shortage which is often left unchanged because of the bad economic situation of the residents, and because there is no investment from the private sector due to the lack of economic justification for it. Iran is one of the most earthquake-prone countries in the world, and the inefficient textures of cities are the most vulnerable areas in the event of an earthquake [3]. For this reason, the Ministry of Roads and Urban Development's serious plan is to implement a strategy to reduce vulnerabilities in different urban and rural areas. Therefore, the need to address the problem of worn-out textures in Tehran and throughout Iran is seriously evident. At the same time, worn-out textures are reportedly around 50,000 hectares across Iran. Therefore, formulating the right plans to renovate and refurbish these types of textures will not only solve the issues but also provide an opportunity for sustainable urban development in the social and economic fields. Therefore, the main objective of this research is to find solutions to the problem of the worn-out textures in Tehran in the form of the SWOT matrix strategies [4]. To better understand this, here are some of the technical terms associated with worn-out textures:



**Deterioration:** It means the inadequacy and reduced efficiency of one texture compared to the efficiency of other urban textures [5]. The deterioration of a texture and its internal elements are mainly due to the lack of plan for the technical development and oversight on the formation that texture. The consequence of texture deterioration, which ultimately destroys its place in the minds of the citizens, can be recognized and identified in a variety of ways, including the reduction or lack of livability and safety, as well as physical, social, economic, and institutional problems. Worn-out textures generally have common features due to the damage, but have different natures due to factors causing the damage [6].

**Improvement:** In this type of intervention, the principle is to be faithful to the past and to preserve identity. Improvement activities are aimed at utilizing existing and potential opportunities and reinforcing the positive aspects and weakening the negative aspects of support, care, maintenance, protection, renovation, reinforcement and repair.

**Reconstruction:** In this intervention, not only is there no obligation to preserve the past, it is also aimed at creating new biological, physical, spatial conditions. Reconstruction takes place when the building, complex, or urban space is completely deteriorated [4]. Usually deterioration is caused by fire, war or earthquake.

**Renovation:** The process of repairing damaged or obsolete structures. In this type of intervention, loyalty to the past is more flexible. Renovation aims to increase efficiency and productivity by restoring urban life to the texture, and is done through renewal, rehabilitation, renovation, adaptation and transformation [7]. Urban renewal is the set of actions that are taken to promote or enhance urban life.

**Worn-out texture:** The formation of some of the neighborhoods and areas of major cities is, for many reasons, in a way that contradicts today's urban and architectural standards, especially in metropolises. This texture becomes more worn over time and in addition to the deterioration of buildings, their urban utilities network is also deteriorated and loses its urban functions [8].

**Public Participation:** It can mean the serious, active, informed, voluntary, organized and effective participation of urban people, groups and organizations in the socio-economic and cultural activities of urban life to achieve communal urban goals [9]. Global experience shows that from the 1980s onwards in development programs as well as urban development, there has been an increasing focus on a participatory approach to the extent that urban participation is currently the key to the success of the urban development project as well as one of the benchmarks for evaluating the performance of the urban management system and its pillars (council and municipality).

**Urban Renewal:** is a process that leads to the creation of new urban space while preserving key spatial (physical and functional) features. In this method, a new urban space is created which, while resembling the previous urban space, exhibits substantial and essential differences with the old space. In other words, urban renewal is a comprehensive, integrated attitude and action to address urban problems in the target area of operation that will ultimately lead to sustainable economic, physical, social and environmental progress [10].

**Worn-out texture:** Worn-out texture refers to blocks that have all three conditions of instability (50% of the buildings in the block not having stability), impermeability (less than 6 meters of width for at least 50% of the block's passages), and granularity (less than 200 square meters of area for at least 50% of the buildings in that block), and are divided into three categories of cultural heritage sites, urban textures (no cultural heritage) and marginal textures (informal settlements).

## Methodology

This research is a combination of applied and developmental methods. For this purpose, theoretical and scientific resources were first collected from library documents and sources available in Tehran municipality and high-level documents from Tehran Renovation Organization, then selected parts were revisited using questionnaire. Selected patterns that were most favored by the statistical population of the interviewees were classified according to cultural patterns. Then the opinions of consulting engineers and experts were used to finalize the SWOT table factors [11].



### Research Tools (SWOT matrix)

SWOT components: SWOT analysis consists of four sections, namely Strengths, Weaknesses, Threats, and Opportunities [12]. To understand each of these four sections, you need to look inside the organization (to find strengths and weaknesses) and outside the organization (to find opportunities and threats). After reviewing the internal and external conditions of the organization, decisions should be made to utilize the strengths to take advantage of the opportunities available in the environment, as well as plan for potential threats and weaknesses. We will elaborate on how to make these decisions.

**Table 1:** Matrix of SWOT Strategies

W	S	
WO	SO	O
WT	ST	T

1. **Strengths:** The strengths of any approach are in fact the things you do better than others. You may also count strong leadership and management skills and technology in the organization or a strong technical team as your strengths.
2. **Weaknesses:** include the necessary things you don't have in your business or things that your competitors are doing better than you and are surpassing you by using them.
3. **Opportunities:** include creative ideas, low competition, and the emergence of new needs in society.
4. **Threats:** The final part of the SWOT analysis is related to the threats in the environment. Threats are the risks involved in making certain decisions or market conditions that hinder business progress and reduce sales, like a change in the economic conditions, or a change in the needs of the individuals in society.

**How to execute SWOT:** To use this analysis, certain questions must be asked about the research process. To answer these questions, we may need to prepare a questionnaire to collect the correct data [13].

### Results

After preparing the SWOT matrix, we get a complete overview of our situation in two steps:

**Step One:** First check to see if your strengths can match the opportunities. Meaning, is there an opportunity for you to use your strengths to grow your business? In making decisions and determining strategy, the first step is to make sure you get the most out of your core strengths, and the most benefit is gained from this area.

**Step Two:** You must pay attention to the weaknesses. Is it possible to strengthen the weaknesses? Can weaknesses be turned into strengths? The more important question is: should you try to turn weaknesses into strengths, or is it better to ignore them and only focus on strengths? We will answer these questions below.

**Managing Main Weaknesses:** This is where you need to be careful most of all. Turning weaknesses into strengths requires long-term planning or major changes. But you should try to reduce the vulnerability of your business against the main weaknesses. The most important and often the most successful way to address weaknesses in your main tasks is to outsource or to delegate the task to a company outside your organization.

**Trivial Strengths:** The important thing is that if you have invested anything in this group of strengths, avoid investing more. For example, if you spend money on training a particular skill for the employees and after a while you realize that there is not enough return and that its strategic importance is not high, stop the investment.

**Indifference Zone:** The weaknesses in this area are of little importance and need no special decisions.

SWOT matrix:

- SO Strategies: Use your strengths to seize your opportunities.
- WO Strategies: Take advantage of opportunities that can be used to address your weaknesses.
- WT Strategies: It is a kind of defensive strategy; when we are vulnerable to threats because of our weaknesses.
- ST Strategies: In this strategy, using your strengths, you neutralize your threats.



**Internal Environment Analysis**

<b>Weaknesses</b>	<b>Strengths</b>
Lack of use for communal and recreational green space in the interior areas	Age of residence
Existence of granular and private applications	Precious and historical monuments in the neighborhood
Lack of proper and integrated access	Existing local councils
Lack of public space	Willingness to cooperate and contribute to the improvement and renovation of the neighborhood.
Visual perturbation of the walls	Low noise pollution in the neighborhood
Non-standard materials used in most buildings	Available low-rise buildings
Existence of noise and environmental pollution	Private ownership of real estate.
Low resistance of buildings to natural hazards.	Low rental rates and house prices.
Population decline	Local markets and sellers
Low income and economic level of employees.	Organic access to old textures
Severe deterioration in the texture of the neighborhood	The mental connection and belonging of citizens with the existing space
narrow alleyways and passages	Different applications next to each other
buildings not being able to withstand natural disasters	Having an identity index in the alleys

**External Environment Analysis**

<b>Threats</b>	<b>Opportunities</b>
Continuation of population decline	Economic savings through reconstructing this area
Poor establishment of the local management	Existing rules for widening passages
Not having incentive programs	Possibility to restore space
High population density during the day and vacancy at night	Ability to use architecturally valuable building patterns in new designs
Disregarding people's participation	Ease of possession of buildings due to their deterioration and low stability, low intensity and low cost
Sharp decline in social security	Designating officials for intervention for reconstruction
Increasing poverty and unemployment among texture residents	The existence of many global and domestic experiences in restoring and reviving worn-out textures
Uniformity between new buildings and old structures	Possibility of organizing and calming the city
Lack of adequate control on travel	The presence of wasteland in the surrounding lands
Resistance of some residents to structural, functional and process changes	The existence of several abandoned garages and warehouses in the texture and the possibility of changing their use
Traffic problems and consequently environmental pollution	Pedestrian access to a variety of applications and services
Lack of coordination between officials and urban planners	Modeling environmental quality values
New construction in old texture	Economic development and revenue growth based on optimal use of business axes

Deterioration is one of the most important issues in the urban space that causes disorganization, imbalance, incompatibility and dysplasia. Deterioration in urban textures affects the body of the texture as well as its social and economic activities [14]. Physical deterioration and the deterioration of the social and economic life of the texture, in a reciprocal relationship, help to intensify each other and lead to a stagnation of urban life and a severe degradation of quality of life. Intervention in a valuable historical texture must be such that both its



structural and its material and physical features are preserved, and the historical texture is adapted to the necessities of today's and tomorrow's life so that it can continue its life as a vibrant and active urban texture.

#### **Suggested Solutions:**

1. Restoring worn-out texture from a cultural standpoint by preserving neighborhood identity (Newly constructed neighborhoods have no identity).
2. Implementation of renovation projects by development agencies and the participation of neighborhood residents
3. The government facilitating the restoration of worn-out textures and the removal of legal barriers with the help of municipalities
4. The government allocating budget for infrastructure and superstructures
5. Learning from successful projects
6. Considering systematic incentives rather than individual incentives
7. Promoting culture by force and considering serious punishments
8. Consideration identity in the renovation and reconstruction of worn-out textures (building shouldn't be the only focus)
9. Considering the process rather than the project (being process-centered, multilateral, people-centered, and taking into account social and cultural dimensions)
10. Modeling in design, land, economy, investment and participation

#### **Conclusions**

According to the findings of the research, the following is presented as a conclusion:

Experts believe that in order to do this, the government and public authorities responsible, including municipalities, roads and urban planning, the Civil Engineering Organization, the Civil and Housing Organization, and finally the country's banking system must take serious action so that, in addition to achieving the predetermined goals in this texture, they would renovate and rebuild it; otherwise the project will fail.

Therefore, the government and the contractors are major players in the renovation of dysfunctional urban textures; thus, the most important role of the government in this regard is to provide the land and define the project without conflict within the target areas at the neighborhood or urban block scale, to generate investment incentives by reducing construction costs such as license fees - branching - legal and engineering costs - tax breaks - allocating inexpensive funds, covering investment risk through schemes such as guaranteed purchases after a certain period, providing alternative housing for temporary residence or solutions such as housing allowance, coordination between the relevant authorities and removing a micro-management and economical approach in the authorities and creating incentives for residents to stay in the units built.

At the same time, contractors are also one of the main actors in the implementation and definition of these projects, the study and design of residential projects and public applications, the supply of resources - the construction and implementation of projects until transferring it to the buyer and a developmental role in textures through defining the projects and replacing them with the residents of the textures.

In the meantime, banks should support the implementation of these projects by allocating inexpensive resources for land acquisition and construction of projects relating to worn-out textures, diversification of facilities including deposits, land acquisition, construction and purchasing, and these incentives should be available for both contractors and buyers.

One of the suggested ways to encourage people to live in worn-out textures and to buy housing in these areas is to make attractions for living in worn-out areas. By shifting the use of worn-out neighborhoods to businesses or stable manufacturing and employment opportunities in these areas, more residents will be tempted to live in these areas. They believe that because the inhabitants of worn-out textures are part of the low-income strata, they are thus encouraged to renovate the worn-out areas. Implemented or under implementation in the Nemat Abad neighborhood of Tehran and a limited number of provinces, these are projects that some provincial officials believe have succeeded, and aside from the renovation of worn-out real estate, has led to an increase in property values in these areas. In contrast, some experts oppose changing the use of worn-out textures and



implementing such designs in worn-out neighborhoods, arguing that reassigning worn-out neighborhoods for commercial use in a way that the lower floors of buildings are for commercial units and the upper floors are residential units will itself be problematic. Because, contrary to what was pointed out on the topic of reconstruction, worn-out neighborhoods will become overcrowded, with the quality of life decreasing in these areas.

So, undoubtedly, an important condition for accelerating the renewal of worn-out texture is that in order to encourage investors to invest in these textures, their profits from the site must first be foreseen and a minimum interest should be specified for the investor. Because although the government also helps the investor by providing affordable facilities along the way, naturally the investor's goal for investing in this process is to gain employment and profits.

### Recommendations

Coordinated management between the municipality and other relevant institutions and bodies will have a major impact on the renovation process.

The establishment of renovation and renovation organizations in the areas is one of the outputs of the coordinated supervision and management approach that is expected to maximize the effectiveness of the areas' experiences and decisions in the renovation process of the worn-out texture. Optimizing and allocating resources optimally contributes to this [15-22]. Granularity is the first step in having a worn-out texture, and as long as we are on the granularity path we are on the opposite side of renovation, and renovation will take place along the route of deterioration.

The principal caretaker of the worn-out texture should be determined and then they should take appropriate action with a strategic management and the participation of the residents in solving this problem [23].

The involvement of the municipality as one of the most important factors in the process of renovation of the worn-out texture (the municipality can move in several ways at the same time to achieve the goals of the National Reconstruction Plan. Securing land, attracting social participation and culture-building based on the recognition of the need to renovate the worn-out texture are among the most important steps) [24].

Different entry of government and housing sector into this area (since the government is considered as the main leader and executor of renovation of worn-out texture and reconstruction plan. Therefore, timely and necessary measures are needed to implement this plan in the worn-out areas to coordinate forces affecting the worn-out texture) [25].

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