
# Developing Empowerment Strategies and Physical Analysis of Deteriorated Urban Fabric Using an Integrated AHP and SWOT Approach (Case Study: District 12 of Tehran)

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**Abstract**

One of the challenges facing every city is the presence of deteriorated urban fabric. Deteriorated fabrics are not merely collections of buildings, streets, and alleys but are also socio-residential complexes formed by various social, economic, and cultural variables, among others. This study adopts a descriptive-analytical approach, utilizing field studies and library research methods, and employs the SWOT model and the Analytical Hierarchy Process (AHP) with the assistance of Expert Choice software. In this research, the strengths, weaknesses, opportunities, and threats of the deteriorated urban fabric in District 12 of Tehran have been analyzed. The findings from the above model analysis indicate that the most significant strengths include the preparation of a rehabilitation and renovation plan for the deteriorated fabric (final weight: 0.315), the presence of urban infrastructure such as water, electricity, and gas (final weight: 0.274), and easy access to the market and other parts of the city (final weight: 0.163). The most important weaknesses are the high unemployment rate (final weight: 0.284), low income levels (final weight: 0.195), and inadequate pathways (final weight: 0.158). Additionally, the most significant opportunities include the historical residential background dating back to the Safavid era (final weight: 0.41), proximity to city shopping centers (final weight: 0.184), and the presence of residential areas surrounding the fabric (final weight: 0.123). Meanwhile, the major threats to the area during the process of organizing, renovating, and rehabilitating include the increasing influx of migrants into the fabric (final weight: 0.349), the negative perception of others towards residing in this area (final weight: 0.216), and the lack of attention to public participation (final weight: 0.198). The final analyses in this study have led to key strategies for the improvement and renovation of the deteriorated urban fabric in the studied area.

***Keywords:*** *Deteriorated urban fabric, regeneration, renovation, planning, AHP-SWOT*

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## 1. Introduction

Many cities in the country are facing the phenomenon of urban neighborhood deterioration [1]. The tangible manifestation of this deterioration is the decline of social life in these fabrics [2]. The consequences of this deterioration include semi-abandoned and abandoned buildings [3], inadequate and substandard housing, and the decline in socio-economic quality [4]. Today, most cities are grappling with numerous issues, including inefficient and deteriorated fabrics, leading to various physical, environmental, economic, social, and managerial challenges. The existence of these challenges and the absence of clear and well-documented strategies for the management and planning of deteriorated fabrics have exacerbated these problems [5]. Therefore, the rehabilitation and renovation of deteriorated urban fabrics should be considered in all social and economic development policies and programs at all levels [6]. Since the mid-20th century, various approaches have been adopted to organize and improve the conditions of cities and neighborhoods, including revitalization in the 1960s, renovation in the 1970s, regeneration in the 1980s, urban redevelopment in the 1990s, and urban renaissance in the 2000s [7]. Urban regeneration has emerged as a modern policy in recent urban theories aimed at mitigating the problems associated with deteriorated fabrics [8]. As a comprehensive and integrated policy, urban regeneration strives to improve economic and social conditions, enhance the environment, and rehabilitate deteriorated fabrics [9]. However, achieving sustainable development in deteriorated urban areas through regeneration is insufficient. Urban management must redefine the concept of regeneration within a forward-looking framework, enabling such deteriorated fabrics to compete with other areas and stand out in the network of global, national, and regional cities. According to the latest theories on future cities, the branding approach can be proposed as a supreme goal for the development of deteriorated fabrics, which has recently become a subject of discussion among urban scholars and researchers worldwide.

A city is a complex composite of physical and social spaces and areas, with its central part historically being the most active section of any city [10]. These areas meet various human needs, including cultural, commercial, and social-urban functions [11]. Any dysfunction, damage, or inefficiency in these urban areas ultimately leads to the city's overall inefficiency, manifesting in numerous urban issues and challenges. Consequently, problematic urban areas become visible. Depending on the unique conditions and characteristics of each city, these areas house the most critical and prominent activities, reflecting the quantity and quality of the city's performance [12]. One of the fundamental challenges in the sustainable development of cities is the presence of deteriorated urban fabrics, which, as underdeveloped areas, have formed for various reasons and currently face economic, social, cultural, and environmental issues. Neglecting these areas and failing to plan appropriately for them can plunge the entire city into crisis [13]. Deteriorated fabrics are considered a manifestation of structural ailments in urban residential complexes, rendered vulnerable due to inadequate services and characterized by low locational and economic value [14]. Currently, over 67,000 hectares of deteriorated and inefficient urban fabrics, accommodating more than 8.5 million people in 383 cities across Iran, have been identified. A comprehensive view of all urban elements and dimensions reveals that addressing urban deterioration and deteriorated fabrics is one of the top priorities for urban management, requiring appropriate interventions [15]. Since 1995, the term "urban regeneration" has been widely used in urban planning literature as a replacement for urban renewal. "Couch" describes this substitution as urban regeneration transcending the ideals and achievements of urban renewal, which was seen as a process of fundamental physical changes, and urban revitalization, which proposed action whenever necessary, often failing in refining a specific approach [16, 17]. Roberts views urban regeneration as a process that creates new urban spaces while preserving their original physical and functional characteristics. Urban regeneration encompasses a comprehensive and integrated approach aimed at resolving urban issues, resulting in lasting improvements in the economic, physical, social, and environmental conditions of altered urban fabrics [18].

Extensive studies on urban regeneration of deteriorated fabrics have been conducted both domestically and internationally, with recent ones highlighted here. Goodarzi et al. (2021) developed a macro-process model for managing deteriorated fabrics using an interpretive paradigm and qualitative approach through meta-synthesis. Their study highlighted that despite conceptual similarities, deteriorated fabrics in different cities differ based on governance structures, cultural variances, residents' readiness, and institutional responsibilities, recommending case studies for each city's governance system to propose a comprehensive national framework through clustering and categorization [19]. Yazdani et al. (2021) examined sustainable urban

regeneration in historical fabrics of Rey and Qom, revealing that the lack of integrated management and perspectives caused numerous issues, sidelining residents of deteriorated fabrics from planning and policymaking over time [20]. Veisi et al. (2020) compared the capacity for sustainable urban regeneration in deteriorated and informal neighborhoods in Marivan, showing that residents identified social improvement, economic prosperity, physical enhancement, and environmental betterment as crucial potentials for sustainable urban regeneration that must be considered by implementers [21]. Hashemzadeh Qaleh Jogh et al. (2020) identified key factors in advancing urban management programs for deteriorated fabrics in Maku, emphasizing the importance of coordinated management among executive bodies and infrastructure development for integrated urban management [22]. Mirzakhani et al. (2021) highlighted the necessity of a comprehensive legal system and integrated management for historical urban fabric regeneration in Iran [23]. The literature review underscores that sustainable urban regeneration succeeds only when social and environmental dimensions are prioritized alongside economic factors. This study, focusing on the central fabric of Mashhad metropolis, innovatively emphasizes four dimensions (physical, economic, social, and environmental) to explore citizen participation with organizations and urban managers in regenerating the central deteriorated fabric. Yiannakou (2020) analyzed urban regeneration as a continuous planning process in Greek cities, highlighting stakeholders' distinct roles and their binary relationships with other stakeholders [24]. Radulescu et al. (2016) studied stakeholder management in urban regeneration projects, revealing that social network analysis serves as a valuable decision-making tool [25].

The historical review of urban branding indicates that applying this new strategy to enhance the efficiency and revival of deteriorated fabrics for competitive advantage is less than three decades old [26, 27]. Researchers and planners believe that this strategy can enhance cities' competitive advantages and serve as an effective tool for regenerating valuable and historical neighborhoods. Thus, establishing an integrated framework for deteriorated fabric revitalization, considering both branding and urban regeneration strategies, can yield significant positive results. Accordingly, the present study aims to plan for the regeneration of deteriorated urban fabrics with a renovation approach in District 12 of Tehran.

Although deteriorated urban fabrics have recently gained attention, prompting city officials to seek urgent solutions, extensive construction in the area has increasingly turned deteriorated fabrics into dilapidated zones.

## 2. Methodology

This study is applied in terms of its objective and adopts a descriptive-analytical approach in terms of its methodology. Data collection involved both documentary reviews and field studies, including interviews and questionnaires. The questionnaire, designed based on the research variables, consists of 36 items: the first 7 items (1-7) cover general and social aspects, 6 items (8-13) address economic factors, and 23 items (14-36) pertain to physical-spatial dimensions. Of all the questionnaire items, 2 are open-ended, while the rest are closed-ended, using a five-point Likert scale and multiple-choice format. The validity tests employed in this study include face validity and content validity, conducted by presenting the questionnaire to urban planning experts and specialists, particularly those with expertise in deteriorated urban fabrics, for review and validation. Additionally, feedback from students and researchers in related urban planning fields was incorporated, leading to necessary revisions, deletions, and additions to the questionnaire, resulting in a final version comprising 36 items. Cronbach's alpha method, using SPSS software, was applied to assess the reliability of the questionnaire. A preliminary study of 55 questionnaires yielded a Cronbach's alpha coefficient of 0.8091. Since a Cronbach's alpha above 0.70 indicates high reliability (Tashkeh et al., 2024), the questionnaire used in this study is considered highly reliable.

The statistical population of this study consists of residents of the deteriorated fabric in District 12 of Tehran, with an estimated population of approximately 239,611 people in 2011. The sampling method is simple random sampling. For data analysis and formulating strategies to improve the deteriorated urban fabric of Dogonbadan, the SWOT analytical matrix was employed. A list of strengths, weaknesses, opportunities, and threats was compiled based on the current condition of the fabric and expert opinions, as well as data from the questionnaires. Additionally, interviews with officials and stakeholders from the Renovation and Rehabilitation Organization and the Urban Development and Housing Organization were conducted to supplement the data. The internal and external strategic factors, which form the foundation for strategy development, were then organized into a SWOT strategic matrix. Finally, the factors in the SWOT matrix were weighted based on

expert opinions and interviewee perspectives, and the integrated AHP-SWOT model was applied using Expert Choice software. After comprehensive analyses, the optimal intervention strategies for the deteriorated fabric of District 12 in Tehran were prioritized based on their weights.

District 12 of Tehran Municipality holds significant importance due to its historical background, numerous historical buildings, and political and governmental centers, including foreign embassies. Additionally, this district has long been a notable center for scientific growth and development, hosting various academic institutions. As previously mentioned, its residential history dates back to the Safavid era, and during the Qajar period, it was designated as the Dar al-Khilafah, or the administrative center of Tehran. Historical reports indicate that the major physical and social development of this district occurred during the Qajar era. Due to its historical significance and the diversity of cultural, historical, religious, and commercial landmarks, District 12 is referred to as the historical heart of Tehran. It is one of the key districts for attracting tourists from across Tehran, Iran, and internationally.

According to the 2011 Census of Population and Housing conducted by the Statistical Center of Iran, as cited by the Tehran Municipality website, the total population of District 12 was 239,611, comprising 121,937 women and 117,674 men, with 78,506 households residing in the district. Another report from the same census indicates a population of 240,720 people (76,628 households), including 122,141 men and 118,579 women. The total area of the district is approximately 1,600.8235 hectares.

## 3. Findings and Results

After identifying the multidimensional aspects of the physical analysis of deteriorated urban fabrics in the study area, it is necessary to comprehensively analyze the key factors and components affecting the renovation and rehabilitation of deteriorated urban fabrics from an expert perspective. Given the nature of this study, the most appropriate analytical technique is the qualitative-strategic SWOT analysis.

**Table 1.** Analysis of Strengths, Weaknesses, Opportunities, and Threats in the Deteriorated Fabric of District 12, Tehran

| Threats (T) | Opportunities (O) | Weaknesses (W) | Strengths (S) |
|---|---|---|---|
| T1: Low investment levels | O1: Access to services in neighboring areas | W1: High unemployment rate | S1: Easy access to markets and other parts of the city |
| T2: Distance from main public routes | O2: Employment opportunities in surrounding areas | W2: Low income levels | S2: Suitable investment returns |
| T3: Neglect of deteriorated fabric rehabilitation | O3: Establishment of regional service institutions | W3: Low education levels | S3: Establishment of an independent responsible institution |
| T4: Lack of public participation | O4: Efforts to reduce gender and ethnic disparities | W4: Lack of information on activities and actions | S4: Residents' willingness to continue living in the area |
| T5: Insufficient technical and financial support for construction | O5: Access to shopping areas | W5: Social disintegration | S5: Preparation of a renovation plan for the deteriorated fabric |
| T6: Negative perceptions of residing in the area | O6: Location in a historical area | W6: Lack of support for local organizations | S6: Suitable location of the fabric |
| T7: Environmental pollution | O7: Presence of residential areas and population centers nearby | W7: Lack of citizen awareness programs | S7: Residents' interest in renovation and rehabilitation |
| T8: Increasing influx of migrants into the deteriorated area | | W8: Lack of construction oversight | S8: Reasonable land prices |
| | | W9: Shortage of services and facilities | S9: Availability of sufficient land |
| | | W10: Inadequate pathways | S10: Presence of urban infrastructure (water, electricity, gas) |
| | | W11: Social crimes | |

SWOT analysis is considered a vital tool in the strategic planning process, though it has some limitations. One significant drawback is that this model often lacks the capability to comprehensively assess decision-making scenarios, relying mainly on listing factors within the categories of strengths, weaknesses, opportunities, and threats. Given that the planning process frequently involves numerous criteria and their internal dependencies, using

SWOT alone may be insufficient. Therefore, to enhance the efficiency of strategic planning, this study proposes integrating SWOT with the Analytical Hierarchy Process (AHP). AHP is a method that quantifies SWOT factors and facilitates decision-making assessments. In this integrated approach, SWOT provides the foundational framework for decision-making analysis, while AHP contributes to a more detailed and analytical evaluation. In this study, after identifying the strengths, weaknesses, opportunities, and threats of the deteriorated urban fabric in District 12 using SWOT, the AHP method was employed to prioritize these factors and their respective categories. To improve the quality of the AHP-SWOT analysis, several urban planning experts familiar with or residing in the study area participated in the weighting process of the SWOT factors within the AHP framework. AHP is a flexible, robust, and straightforward method used for decision-making when conflicting criteria complicate the selection process (Nobahar Qezeljeh Meydan et al., 2024). It is one of the most comprehensive multi-criteria decision-making systems, allowing for hierarchical problem structuring, consideration of both quantitative and qualitative criteria, involvement of various options, sensitivity analysis of criteria and sub-criteria, and pairwise comparisons that facilitate judgments and calculations while indicating the consistency of decisions.

This method includes three main steps:
a) Generating the pairwise comparison matrix.
b) Calculating the weights of the criteria.
c) Estimating the consistency ratio.

Accordingly, the pairwise comparison of SWOT factors within the AHP framework was conducted for the deteriorated urban fabric in District 12, followed by weighting and prioritization. The results are presented in the following tables.

Table 2 illustrates the pairwise comparison of factors within the strengths category of the deteriorated fabric in District 12. The highest relative weight (0.315) is attributed to the preparation of a renovation and rehabilitation plan for the deteriorated fabric, highlighting its significance. The presence of urban infrastructure, including water, electricity, and gas, is the second most critical strength with a relative weight of 0.274, emphasizing the area's access to essential services. Easy access to the market and other parts of the city follows with a relative weight of 0.163, indicating the strategic location of the area. Other strengths include the availability of open spaces (0.077), the potential for investment returns (0.048), and reasonable land prices (0.042).

**Table 2.** Pairwise Comparison of Strengths in the Deteriorated Fabric of District 12, Tehran

| Strengths | S1 | S2 | S3 | S4 | S5 | S6 | S7 | S8 | Relative Weight |
|---|---|---|---|---|---|---|---|---|---|
| Urban infrastructure (water, electricity, gas) | 1 | 3 | 6 | 5 | 1 | 5 | 5 | 5 | 0.274 |
| Easy access to market and city | 0.33 | 1 | 5 | 4 | 0.25 | 4 | 4 | 5 | 0.163 |
| Residents' interest in renovation | 0.16 | 0.2 | 1 | 0.5 | 0.2 | 0.25 | 0.33 | 0.5 | 0.029 |
| Availability of sufficient land | 0.2 | 0.25 | 2 | 1 | 0.16 | 1 | 1 | 1 | 0.049 |
| Renovation and rehabilitation plan | 1 | 4 | 5 | 6 | 1 | 6 | 6 | 6 | 0.315 |
| Availability of open spaces | 0.2 | 0.25 | 4 | 1 | 0.16 | 1 | 2 | 4 | 0.077 |
| Potential for investment returns | 0.2 | 0.25 | 3 | 1 | 0.16 | 0.5 | 1 | 1 | 0.048 |
| Reasonable land prices | 0.2 | 0.2 | 2 | 1 | 0.16 | 0.25 | 1 | 1 | 0.042 |

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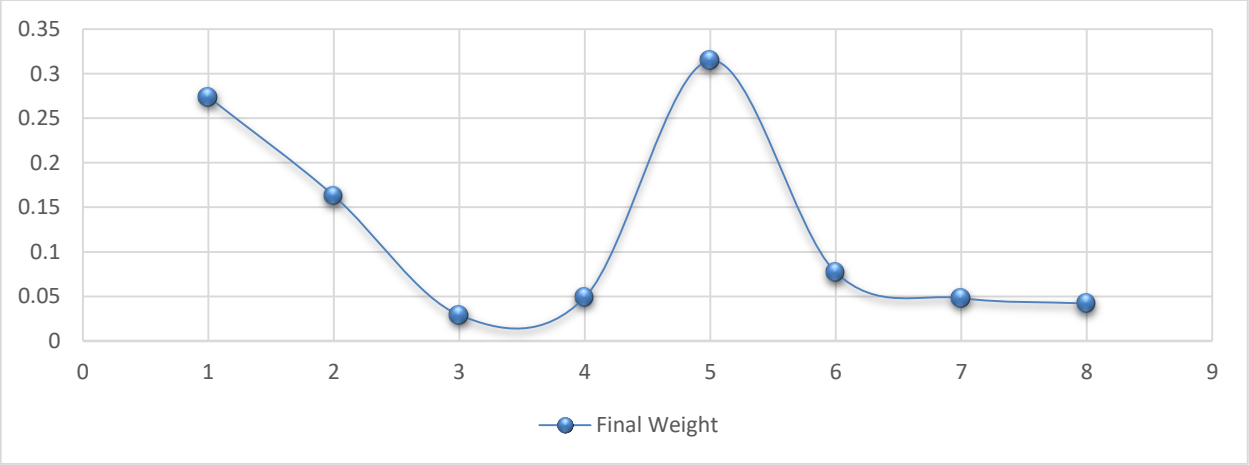


**Figure 1.** Final Weight for Strengths

Table 3 presents the pairwise comparison of weaknesses. The highest weight (0.284) is assigned to the high unemployment rate, reflecting a critical challenge for the area. Inadequate income levels (0.195) and poor pathways (0.158) follow, highlighting economic and infrastructural concerns. Other weaknesses include social disharmony (0.087), lack of public awareness initiatives (0.019), and inadequate oversight of construction activities (0.025).

**Table 3.** Pairwise Comparison of Weaknesses in the Deteriorated Fabric of District 12, Tehran

| Weaknesses | W1 | W2 | W3 | W4 | W5 | W6 | W7 | W8 | W9 | W10 | Relative Weight |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Crime rate | 1 | 3 | 4 | 3 | 0.33 | 0.25 | 0.33 | 1 | 4 | 1 | 0.075 |
| Lack of services and facilities | 0.33 | 1 | 4 | 4 | 0.2 | 0.2 | 0.2 | 0.33 | 3 | 0.33 | 0.048 |
| Lack of public awareness | 0.25 | 0.25 | 1 | 0.25 | 0.2 | 0.16 | 0.16 | 0.25 | 0.33 | 0.25 | 0.019 |
| Low literacy rate | 0.33 | 0.25 | 4 | 1 | 0.2 | 0.16 | 0.2 | 0.25 | 4 | 0.25 | 0.036 |
| Poor pathways | 3 | 5 | 5 | 5 | 1 | 0.25 | 0.33 | 4 | 5 | 4 | 0.158 |
| High unemployment rate | 4 | 5 | 6 | 6 | 4 | 1 | 3 | 5 | 6 | 4 | 0.284 |
| Low income levels | 3 | 5 | 6 | 5 | 3 | 0.33 | 1 | 4 | 6 | 3 | 0.195 |
| Lack of public communication | 1 | 3 | 4 | 4 | 0.25 | 0.2 | 0.25 | 1 | 4 | 0.33 | 0.069 |
| Inadequate construction oversight | 0.25 | 0.33 | 3 | 0.25 | 0.2 | 0.16 | 0.16 | 0.25 | 1 | 0.33 | 0.025 |
| Social disharmony | 1 | 3 | 4 | 4 | 0.25 | 0.25 | 0.33 | 3 | 3 | 1 | 0.087 |

C.I. = 0.1494

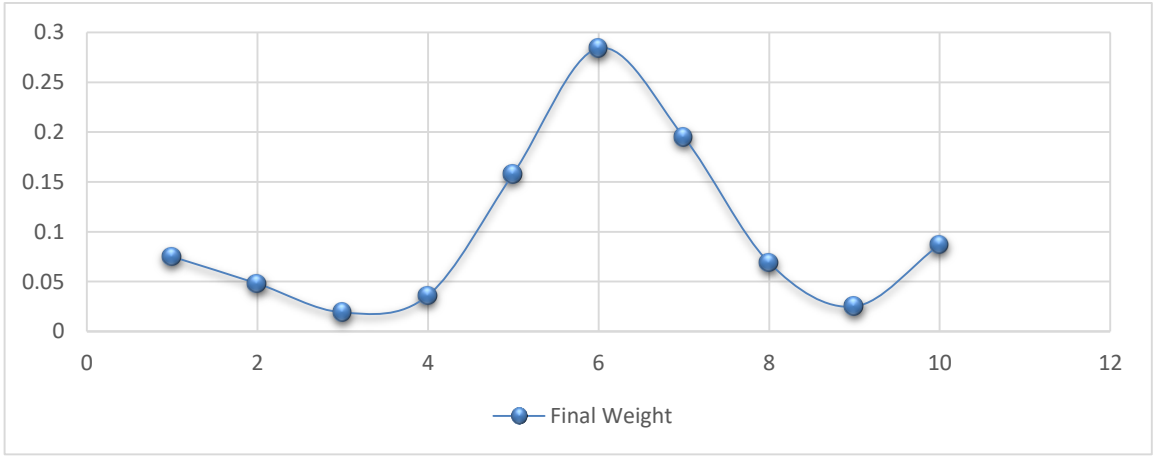

**Figure 2.** Final Weight for Weaknesses

Table 4 displays the pairwise comparison of opportunities. The historical significance of the area (0.41) is the most weighted factor, underscoring its potential for cultural and heritage-based development. Proximity to city shopping centers (0.184) and surrounding residential areas (0.155) are also notable opportunities. Other factors include efforts to reduce socio-ethnic disparities (0.123) and access to neighboring service centers (0.043).

**Table 4.** Pairwise Comparison of Opportunities in the Deteriorated Fabric of District 12, Tehran

| Opportunities | O1 | O2 | O3 | O4 | O5 | O6 | O7 | Relative Weight |
|---|---|---|---|---|---|---|---|---|
| Proximity to shopping centers | 1 | 1 | 0.2 | 4 | 4 | 4 | 4 | 0.184 |
| Surrounding residential areas | 1 | 1 | 0.25 | 1 | 5 | 5 | 5 | 0.155 |
| Historical significance | 5 | 4 | 1 | 5 | 4 | 5 | 5 | 0.41 |
| Reducing socio-ethnic disparities | 0.25 | 1 | 0.2 | 1 | 4 | 5 | 4 | 0.123 |
| Access to neighboring service centers | 0.25 | 0.2 | 0.25 | 0.25 | 1 | 1 | 1 | 0.043 |
| Employment opportunities in nearby areas | 0.25 | 0.2 | 0.2 | 0.2 | 1 | 1 | 1 | 0.040 |
| Establishing regional service institutions | 0.25 | 0.2 | 0.2 | 0.25 | 1 | 1 | 1 | 0.041 |

C.I. = 0.1149

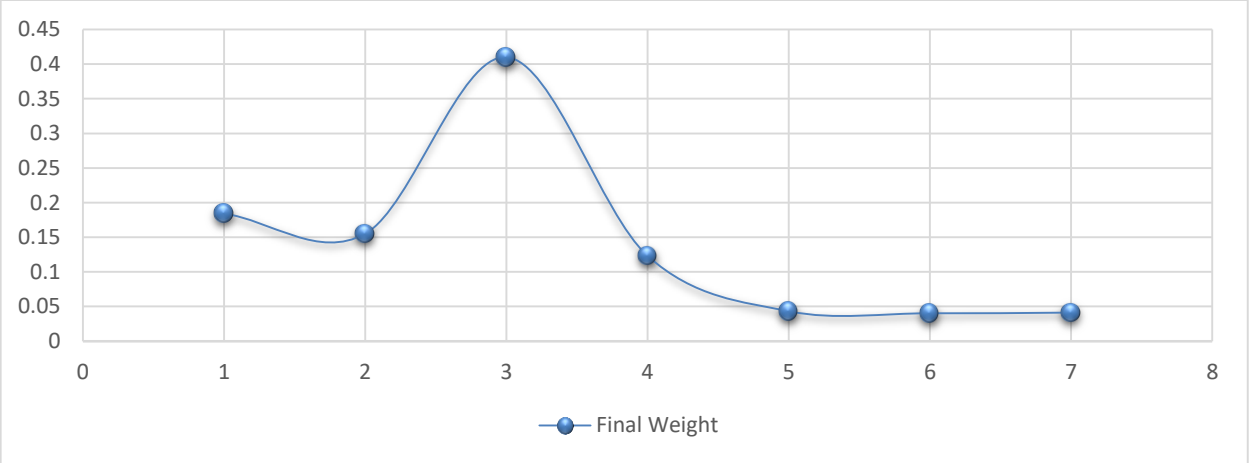


**Figure 3.** Final Weight for Opportunities

Table 5 presents the pairwise comparison of threats in the deteriorated fabric of District 12 of Tehran, showing that the most critical threat is the increasing influx of migrants into the area with a relative weight of 0.349. This highlights the strain on existing infrastructure and services. Negative perceptions of residing in the area follow with a weight of 0.216, reflecting social stigma. The lack of public participation in decision-making processes ranks third with a weight of 0.198. Other threats include insufficient technical and financial support for construction (0.106), neglect of deteriorated fabric rehabilitation (0.068), low investment levels (0.031), and environmental pollution (0.029).

**Table 5.** Pairwise Comparison of Threats in the Deteriorated Fabric of District 12, Tehran

| Threats | T1 | T2 | T3 | T4 | T5 | T6 | T7 | Relative Weight |
|---|---|---|---|---|---|---|---|---|
| Neglect of deteriorated fabric rehabilitation | 1 | 0.2 | 5 | 0.33 | 0.2 | 0.2 | 4 | 0.068 |
| Negative perceptions of residing in the area | 5 | 1 | 6 | 4 | 1 | 0.33 | 6 | 0.216 |
| Low investment levels | 0.2 | 0.16 | 1 | 0.2 | 0.2 | 0.2 | 1 | 0.031 |
| Lack of technical and financial support | 3 | 0.25 | 5 | 1 | 0.33 | 0.25 | 5 | 0.106 |
| Lack of public participation | 5 | 1 | 5 | 3 | 1 | 0.33 | 6 | 0.198 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Increasing influx of migrants | 5 | 3 | 5 | 4 | 3 | 1 | 6 | 0.349 |
| Environmental pollution | 0.25 | 0.16 | 1 | 0.2 | 0.16 | 0.16 | 1 | 0.029 |

C.I. = 0.1202

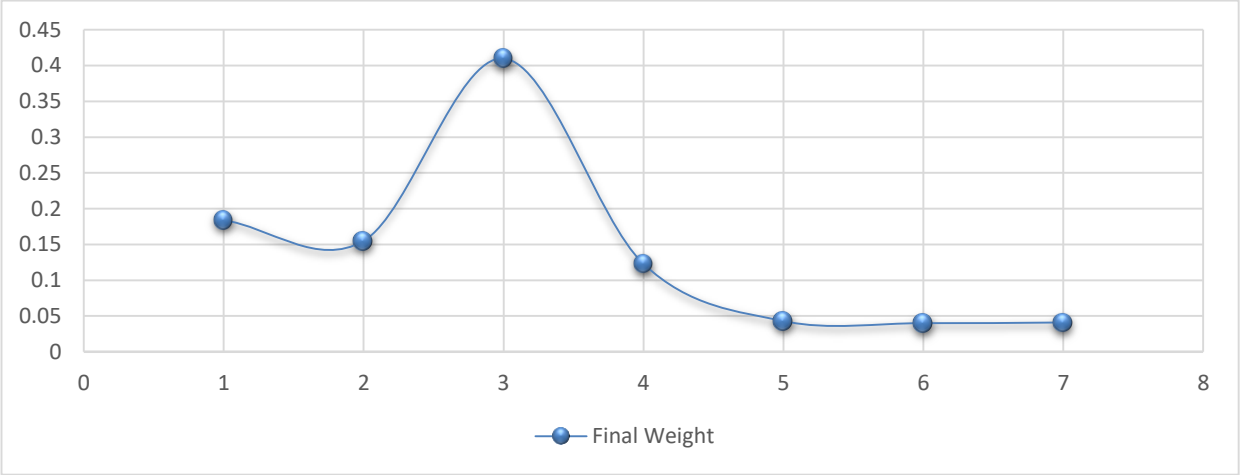


**Figure 4.** Final Weight for Threats

The final priority matrix of SWOT factors for optimizing the deteriorated fabric of District 12 is displayed in Table 6. The highest priority is the preparation of a renovation and rehabilitation plan with a weight of 0.315, followed by the presence of urban infrastructure (0.274) and easy access to markets and other city areas (0.163). High unemployment (0.284), low income levels (0.195), and poor pathways (0.158) are the top weaknesses. The district's historical significance (0.41), proximity to shopping centers (0.184), and surrounding residential areas (0.123) are key opportunities, while the influx of migrants (0.349), negative perceptions (0.216), and lack of public participation (0.198) are the main threats.

**Table 6.** Final Priority Matrix of SWOT Factors for Optimizing the Deteriorated Fabric of District 12, Tehran

| SWOT Factors | Final Weight | Rank | Cumulative Priority |
|---|---|---|---|
| Renovation and rehabilitation plan (S5) | 0.315 | 1 | 1 |
| Urban infrastructure (water, electricity, gas) (S1) | 0.274 | 2 | 2 |
| Easy access to markets and city areas (S2) | 0.163 | 3 | 3 |
| Availability of open spaces (S6) | 0.077 | 4 | 4 |
| Availability of sufficient land (S4) | 0.049 | 5 | 5 |
| Potential for investment returns (S7) | 0.048 | 6 | 6 |
| Reasonable land prices (S8) | 0.042 | 7 | 7 |
| Residents' interest in renovation (S3) | 0.029 | 8 | 8 |
| High unemployment rate (W6) | 0.284 | 1 | 9 |
| Low income levels (W7) | 0.195 | 2 | 10 |
| Poor pathways (W5) | 0.158 | 3 | 11 |
| Social disharmony (W10) | 0.087 | 4 | 12 |
| Crime rate (W1) | 0.075 | 5 | 13 |
| Lack of public communication (W8) | 0.069 | 6 | 14 |
| Lack of services and facilities (W2) | 0.048 | 7 | 15 |
| Low literacy rate (W4) | 0.036 | 8 | 16 |
| Inadequate construction oversight (W9) | 0.025 | 9 | 17 |
| Lack of public awareness initiatives (W3) | 0.019 | 10 | 18 |
| Historical significance (O3) | 0.41 | 1 | 19 |
| Proximity to shopping centers (O1) | 0.184 | 2 | 20 |

| | | | |
|---|---|---|---|
| Surrounding residential areas (O2) | 0.155 | 3 | 21 |
| Reducing socio-ethnic disparities (O4) | 0.123 | 4 | 22 |
| Access to neighboring service centers (O5) | 0.043 | 5 | 23 |
| Establishing regional service institutions (O7) | 0.041 | 6 | 24 |
| Employment opportunities in nearby areas (O6) | 0.040 | 7 | 25 |
| Increasing influx of migrants (T6) | 0.349 | 1 | 26 |
| Negative perceptions of residing in the area (T2) | 0.216 | 2 | 27 |
| Lack of public participation (T5) | 0.198 | 3 | 28 |
| Lack of technical and financial support (T4) | 0.106 | 4 | 29 |
| Neglect of deteriorated fabric rehabilitation (T1) | 0.068 | 5 | 30 |
| Low investment levels (T3) | 0.031 | 6 | 31 |
| Environmental pollution (T7) | 0.029 | 7 | 32 |

The final SWOT evaluation using the AHP model, as shown in Table 7, identifies 15 strengths and opportunities as advantages and 17 weaknesses and threats as challenges for the rehabilitation of the deteriorated fabric in District 12. Effective strategies must address these challenges by mitigating weaknesses, overcoming threats, leveraging strengths, and exploiting opportunities.

**Table 7.** Top SWOT Priorities for Interventions in the Deteriorated Fabric of District 12, Tehran

| Group | Final Weight | Title | Rank |
|---|---|---|---|
| S5 | 0.315 | Renovation and rehabilitation plan | 1 |
| S1 | 0.274 | Urban infrastructure (water, electricity, gas) | 2 |
| S2 | 0.163 | Easy access to markets and city areas | 3 |
| W6 | 0.284 | High unemployment rate | 4 |
| W7 | 0.195 | Low income levels | 5 |
| W5 | 0.158 | Poor pathways | 6 |
| O3 | 0.41 | Historical significance | 7 |
| O1 | 0.184 | Proximity to shopping centers | 8 |
| O2 | 0.123 | Surrounding residential areas | 9 |
| T6 | 0.349 | Increasing influx of migrants | 10 |
| T2 | 0.216 | Negative perceptions of residing in the area | 11 |
| T5 | 0.198 | Lack of public participation | 12 |

The SWOT analysis identified 15 strengths and opportunities as advantages and 17 weaknesses and threats as challenges. Thus, for the rehabilitation and renovation of District 12's deteriorated fabric, strategies must focus on overcoming these challenges by addressing weaknesses, mitigating threats, enhancing strengths, and utilizing opportunities.

The final evaluation of SWOT factors using the AHP model, as shown in Table 11, highlights that the top strengths include the preparation of a renovation and rehabilitation plan (0.315), the presence of urban infrastructure (0.274), and easy access to markets (0.163). The most significant weaknesses are high unemployment (0.284), low income levels (0.195), and poor pathways (0.158). Key opportunities include the district's historical significance (0.41), proximity to shopping centers (0.184), and surrounding residential areas (0.123). The most critical threats are the influx of migrants (0.349), negative perceptions (0.216), and lack of public participation (0.198). Therefore, strategic planning must aim to strengthen advantages, address challenges, and develop sustainable solutions for the rehabilitation of the deteriorated fabric in District 12 of Tehran.

## 4. Discussion and Conclusion

As explained throughout the various stages of this study, the rehabilitation and renovation of deteriorated urban fabrics involve multiple dimensions, necessitating the development of strategies and solutions across these dimensions. Utilizing the results of the SWOT analytical model, the strategies and solutions for rehabilitating and renovating the deteriorated urban fabric in District 12 of Tehran are categorized into four strategic types: aggressive, diversification, revision, and defensive strategies.

Aggressive/Competitive strategies, based on internal strengths and external opportunities, propose the following actions for rehabilitating and renovating the deteriorated urban fabric in the district: Developing a renovation and rehabilitation plan for the deteriorated fabric is essential, particularly as residents' interest in social participation can significantly enhance the success of these plans and projects. The presence of urban infrastructure, including water, electricity, and gas, along with the area's historical significance, provides a solid foundation for establishing essential services for residents and creating institutions with a broader service radius. The relatively young population in the area serves as a strong asset for the rehabilitation process, contributing to better cultural development and supporting urban development efforts. Additionally, creating employment opportunities for unemployed residents in surrounding areas is crucial. The presence of open spaces around the deteriorated fabric offers potential for establishing green spaces, cultural centers, sports and recreational facilities, and parking, addressing the area's severe shortage of such amenities and significantly contributing to its rehabilitation and renovation.

Diversification strategies, focused on internal strengths and external threats, aim to diversify services and facilities to attract development drivers and retain current residents. Recommendations include diversifying existing services and amenities to satisfy residents and attract affluent groups to the area, thereby eliminating negative perceptions of living in this part of the city. Special attention should be given to engaging various social groups and incorporating diverse opinions in the rehabilitation process. Offering tax and fee discounts can encourage compliance with construction regulations within the deteriorated fabric. Establishing various support mechanisms and creating investment opportunities will attract investors, given the area's potential for capital returns. An independent institution dedicated to managing deteriorated urban fabrics can also play a significant role in the successful rehabilitation and renovation of these areas.

Revision strategies emphasize addressing internal weaknesses while leveraging external opportunities to overcome obstacles in the rehabilitation process. Specific recommendations include utilizing the district's location within Tehran, which, with proper planning, can significantly facilitate the rehabilitation process by serving as a development catalyst in physical, institutional, economic, and social dimensions. Given the area's proximity to city shopping centers and surrounding underdeveloped population centers, rehabilitation efforts should focus on improving transportation, expanding services (including regional services), enhancing residents' quality of life, and creating employment opportunities that increase residents' income and attract investment. This economic development can reduce crime and foster social and cultural growth. Efforts to reduce ethnic and gender-based disparities can also address social disintegration within the deteriorated fabric, promoting social justice. Additionally, utilizing existing services in neighboring areas can temporarily meet residents' needs until appropriate facilities are established within the fabric.

Defensive strategies focus on addressing internal weaknesses to reduce vulnerability to external threats. Recommendations include enforcing construction regulations to prevent informal settlements, which thrive due to lax oversight and low-cost housing opportunities. Increasing public awareness of citizens' rights and responsibilities, along with informing residents about current and planned initiatives by responsible organizations, is essential. Supporting social organizations can also facilitate extensive citizen participation in the rehabilitation and renovation processes.

## Authors' Contributions

Authors equally contributed to this article.

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## Declaration of Interest

The authors report no conflict of interest.

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## Ethical Considerations

All procedures performed in this study were under the ethical standards.

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