Regeneration of Distressed Areas of the Central District of Ahvaz City via the Sustainable Development Approach

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Abstract

Central city districts and their old roots in history have high potentials in terms of their geographical centrality, easy accessibility, as well as historical and cultural characteristics. Despite their positive characteristics, those districts suffer from physical problems (e.g., urban distressed fabrics), environmental issues, poor infrastructures, etc. Ahvaz is one of those cities with these characteristics whose urban fabric is distressed and needs strategic plans and executions. The aim is to direct the central district of Ahvaz towards sustainability with strategies and plans based on the sustainable development approach and using systematic vision models. Thus, the issue of regeneration of distressed areas is very significant in this regard.

The research used the random sampling method to select the participants. The research analysis was conducted using Strength, Weakness, Opportunity and Threat, Quantitative Strategic Planning Matrix, Oregon Model and Quality Function Deployment (QFD) model approaches. The study is an applied, descriptive-correlational research. The data were collected via the library research and field study techniques. After analyzing and investigating the data comprehensively, the research offered executive strategies for the success of sustainable development of the study area. The most important strategies obtained from the analysis are constructing green spaces such as green belts in the riverbank of the Karun River, improving the state of paths leading to historical monuments to the tourists' access, and beautifying walls of buildings near the riverbank.

Keywords: Regeneration; Distressed Area; Central District of Ahvaz; Sustainable Development

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1. Introduction

Nowadays the phenomenon of distressed urban areas is considered as a factor for preventing the realization of modern methods of urban management and development. One of the most important consequences of urbanization along with the failure in creating appropriate urban infrastructures for urban residents and migrants is emerging disordered and urban worn-out fabrics around and within cities which result in different social, cultural, economic, and environmental challenges (Teimuri et al. 2010: 2).

Presenting urban sustainable development as the main motto of the third millennium is resulted from effects of cities on the planet and different dimensions of human life. Therefore, with regard to the intrinsic complexity of cities and their different scales of influence, identifying main and key factors of accessing urban sustainability seems necessary (Hosseinzadeh Dalir et al. 2009: 2). Sustainable development is a planned process in which economic development, social justice, and sustainability of environmental resources are emphasized. This process covers all aspects of development based on the improving quality of human life and protecting the environment. Thus, it is referred to as a model integrating social, economic, and environmental purposes (Masnavi, 2003: 9).

In recent literature published over the world, the term "urban regeneration" is a general one covering other concepts such as renewal, regeneration, recreation, and rehabilitation. Urban regeneration is a process resulting generating new urban spaces with keeping main spatial (physical and functional) features. As a result, a new urban space is generated which, in addition to having basic similarities with the old one, exhibits natural and virtual differences with the older space (Zangi Abadi and Moayedfar, 2011: 2).

The central district of Ahvaz City faces many challenges including access and traffic problems, inadequate transportation facilities, population density and overpopulation due to its commercial nature, lack of green space, its early worn-out fabrics due to structural problems caused by the lack of any planning and foresight, and its residents' economic inability. These challenges are against the standards of environmental sustainable development and favorable state of urbanization. The existence of different problems in that area results in the emergence of different challenges for citizens. Therefore, conducting investigations and research seems necessary for obtaining practical solutions for reducing unfavorable effects of those problems. With the aim of directing the central district of Ahvaz City towards sustainability, the present study offers the best strategies and plans via the sustainable development approach and using systematic vision models.

2. Literature Review

The following table shows a summary of the studies which have been conducted on the subject of the present study.

Table 1 Review of literature related to the subject of the study

Author(s)	Title	Results
Steinberg (2012)	Revitalization of historic inner-city areas in Asia (Urban Renewal Potentials in Jakarta, Hanoi and Manila)	Three cities of Jakarta, Hanoi, and Manila were investigated in terms of revitalization policies. As a result, three factors affecting the fate of their urban fabrics were obtained as "sensitivity of managers to the value of urbanization heritage", the amount of budgets and financial ability of urban institutions", and "the

		amount of financial supports of residents of those areas".
Aluko and Gebdgeis (2010)	The Programme of Urban Renewal for Sustainable Urban Development in Nigeria	The study investigates issues and challenges of the city in terms of renewal of urban centers. Researchers believe that appropriately educating and informing people are prioritized for ensuring sustainable urban development.
Ozlem Geuzey (2009)	Urban regeneration and increased competitive power of Ankara in an era of globalization	He investigated strategies of revitalization of distressed areas in Ankara and knows renewal of those areas as a spatial strategy for giving identity for their residents as well as increasing facilities needed by citizens.
Sadan (2006)	Planning of community power	The author considered empowerment as a concept that still needs investigations at extensive levels. She also suggested that presenting better strategies for facilitating performances is necessary.
Lotfi Talesh (2014)	Organizing urban distressed areas; a step towards sustainable development	The researcher believed that organizing distressed urban areas causes improvement in physical development of cities; thus organizing and reconstructing distressed urban areas are effective on economic prosperity and sustainable development of cities.
Rezaei et al. (2013)	Strategic development planning of urban distressed areas	The researchers investigated (physical and functional) distressed indices in Mojahedin Neighborhood of Yazd City and identified activities and land uses cannot fulfill the residents' needs because the physical fabric of the neighborhood has been damaged to a great extent and land uses are heterogeneously constructed. As a result, some strategies for empowering the distressed area of Mojahedin Neighborhood were recommended for better planning and prevention of devastation of its historical buildings.

3. Theoretical Framework

3.1. Concept Definition

Distressed area: Urban distressed area refers to areas belonging to legal city limits which are vulnerable because of physical exhaustion as well as the lack of appropriate enjoyment of railway access, urban facilities, services, and infrastructures. Therefore, they have low spatial, environmental, and economic values. These types of areas cannot renew themselves because of poverty of their owners. In addition, investors do not have the incentive to invest in textures (Jahanshahi, 2003: 61).

Central Business District (CBD): An urban fabric covers a correlated area shaped from different topographies during urban life within city limits and urban fringes in continuation and links with cities. The central district of each city is influential in developing land uses as well as social, economic, and administrative activities of cites via their roles and performances in the fabric texture and appearance of cities. Central districts are considered as the central business district (CBD) of cities overcrowded in days and sparsely populated at nights (Ghanizadeh and Bayat Rostami, 2012: 61).

Urban regeneration: Regeneration means the production of new spatial organizations compatible with new conditions and modern features which are effective in creating new urban communication

or redefinition of old or existing urban communications. The term '*Urban regeneration*' evolved after the Second World War in Europe and Britain, mainly due to post-war decline of industries. Since then, government policies have been focusing on urban regeneration to achieve better society (McDonalds et al., 2009: 50). Thus, urban regeneration refers to a comprehensive and integrated view and a set of measures resulting in solution to urban problems; therefore, it can provide permanent improvement in economic, physical, social, and environmental-regional conditions which have been changed (Roberts and Sykes, 2000: 17).

Sustainable development: It refers to an approach in which improvement in economic, social, cultural, and technological conditions is towards social justice and does not result in polluting the ecosystem and destructing natural resources. Such a development is sustainable that is environmentally non-destructive, technically-physically appropriate, economically durable, and socially acceptable. Coordination and compatibility of these four factors can be considered as indices of sustainable development (Nastaran et al., 2010: 92).
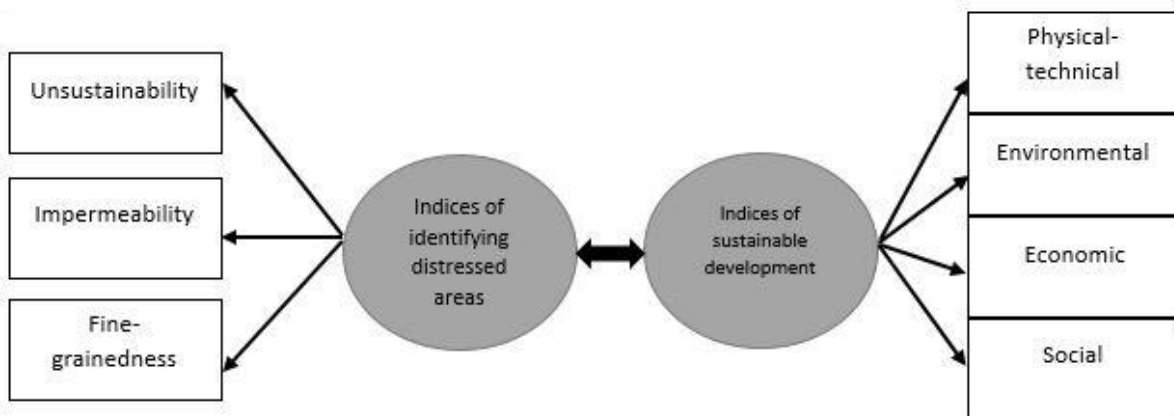

Fig 1 Relationship between indicators of sustainable development and distressed areas

Identification of the Region: Ahvaz is one of the Iranian metropolises and the capital of Khuzestan Province. Geographically, it is situated 31 degrees and 20 minutes north latitude and 48 degrees and 40 minutes east longitude in Khuzestan Plain at 18 meters above the sea level. The area of Ahvaz is 20477 hectares of which 6923 hectares are urban fabrics.

The central district of Ahvaz (the strategic area) reached north the railway and Pol-e-Siah, west Sepah Street and Ahvaz-Khorramshahr railway, south Abareh Street (Fifth Bridge) and Shahid Heidarinejad Street, south-east Bandar Imam Khomeini railway. The central distressed area of Ahvaz city reaches north Razavi road, west Azadegan and the Karun River road, south Abouzar Street, east Behbahani Street. This area is historically the initial core of the growth and development of contemporary Ahvaz. The initial origin and the central area of the city having been expanded around the river in the own historical ground show the consistent, gradual, and continuous formation and evolution.

The present study area covers some parts of zones 1 and 3 including neighborhoods 1, 2, and the CBD of region 1 and all parts of zone 3 including neighborhoods 9 and 11 (Counselling Engineers of Naqsh Piravash, 2006: 7).
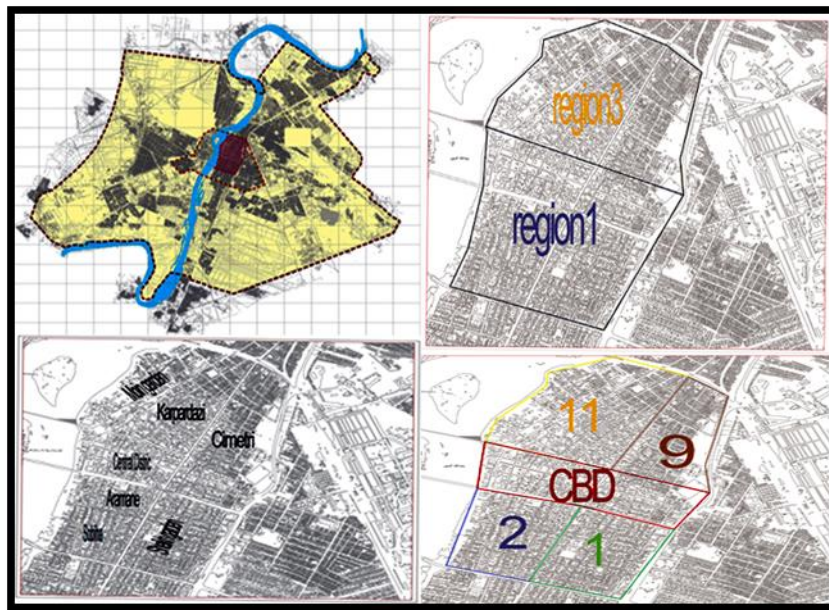
Fig 2 Location and division map of the central distressed area of Ahvaz City

3.2. Situation of Buildings

In the central disstressed area of Ahvaz City, about 26% of the buildings are in acceptable conditions and 39% of them are old and without necessary fortification. More than 63% of the buildings are above 30 years old. This issue indicates that the area is old and distressed.

Table 2 Quality and age features of the distressed buildings in the central distrcit of Ahavz

Quality of buildings		
Indices	**Frequency**	**Percentage**
No quality	402	4.1
Safety	52	0.53
Acceptable	2557	26.01
Restorable	2961	30.22
Old	3824	39
Total	9796	100
Age of buildings		
Indices	**Frequency**	**Percentage**
No life	402	4.1
0-10	1960	20
10-30	1222	12.5
30 and above	6212	63.41
Total	9796	100

3.3. Population Distribution in the Study Area

The relative population density in this area is about 119 people per hectare which is high in density compared to the relative population density of the whole city as 39 people per hectare. This shows the overpopulation in this area.

Table 3 Area, population, and housing indices in Ahvaz City and its central district

Areas	Area (hectare)	Population	Relative population density	Residential unit	Number of households	Household Density in houses
Ahvaz City	20477.1	804980	39.3	135065	147949	1.10
Central district	1034.7	123140	119.0	22445	25666	1.14
Study area	302.3	38548	127.8	7919	8755	1.11
Portion of the central district in the city	5.05	15.30		16.62	17.35	
Portion of study area in the city	1.48	4.80		5.86	5.92	
Portion of the study area in the central district	29.22	31.39		35.28	34.11	

3.4. Economic Situation of Residents of the Study Area

According to the documents of the census in 2006, presenting the residents' economic situation in the study area, 9544 employed individuals and 1083 unemployed jobseekers resided in households of this area. Thus, the active population of these two groups covers 10627 persons. Therefore, the ratio of the active population to the whole area is 27.5%. The highest degree of activity is in neighborhood 2 with 28.7%, and the lowest degree of activity is in the CBD neighborhood as 24.1% (Counselling Engineers of Naqsh Piravash, 2006: 56).

Table 4 Economic data of urban neighborhoods and central district of Ahvaz City

Neighborhoods	Population	Active population	Employed population	Unemployed jobseekers	Degree of activity	Unemployment
Neighborhood 1	10918	3084	2738	346	28.2	11.2
Neighborhood 2	7664	2201	1891	310	28.7	14.1
C.B.D	4845	1167	1081	86	24.1	7.4
Neighborhood 9	6582	1759	1638	121	26.7	6.9
Neighborhood 11	8639	2416	2196	220	28.0	9.1
Total	38648	10627	9544	1083	27.5	10.2

3.5. Identifying Elements and Buildings Enjoying Historical Values in the Distressed Area of the Central District

Historical records and the age of Ahvaz City date back to the old Elamite period in four thousand years BC in Khuzestan. The majesty of the Khuzestan region in the Achaemenid Kingdom, with Shush as its capital, reached its peak. In the late Nasser-al-Din Shah Qajar' period, a small port called Nassei port (at the time of Nezam-ul-Saltana's ruling) beside the broken dam of Ahvaz, Nasseria town, was established which caused the establishment of foundations of the present city of Ahvaz.

The broken dam of Ahvaz as the canonical area of the establishment of Nasseria town (present Ahvaz) was in place of the current suspension bridge (White Bridge). The accumulation of valuable historical monuments indicates the centrality of development and growth of the city from this place. With the development of the city along the Karun River in the south central district of Ahvaz City, a large number of valuable monuments in Mandaeans neighborhood, Armenians neigborhood, Bagh Sheikh neighborhood, and Moein neighborhood are observed. Some of the monuments are Saheb-al-Zaman mosque, Agha Seyyed Ali Dezfuli mosque, Alam-ul-Hoda mosque, Hazrat Ali mosque, remains of Moin-ul-Tojjar caravansary, Afzal house, and Monshi house (Counselling Engineers of Naqsh Piravash, 2006: 110-113).

In the next stages, with the development of the city from the north, buildings such as the Jannat bathroom, the Mahdian balcony, and the Tohid Mosque were built in this area and in the Karpardazi and Moein garden neighborhoods.
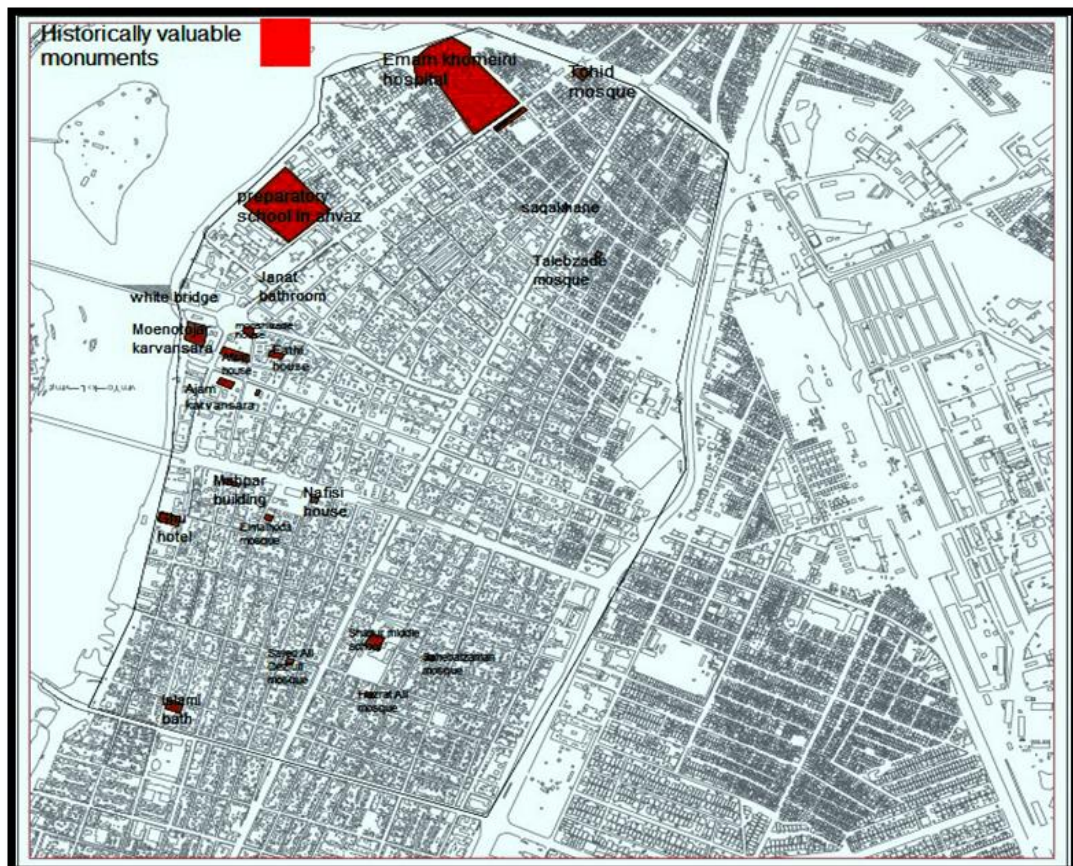

Fig 3 Historical map of valuable monuments

Fig 4 Mahdian balcony

Fig 5 An outdoor

4. Discussion

In this section, weaknesses, strengths, opportunities and threats of economic-social aspects, historical identity and physical-spatial dimensions are investigated for regenerating the distressed area of the central district of Ahvaz City. After illuminating these factors, weaknesses and strengths (i.e., internal factors) are identified in the Internal Factors Evaluation (IFE) Matrix and opportunities and threats (i.e., external factors) are presented in the External Factors Evaluation (EFE) Matrix. To determine the significance coefficient, each factor is given weight coefficient ranging from zero (insignificant) to one (highly significant). Normalization can be used for weighting as well. In this method, the sum of weight coefficients must be equal to one.

To determine the rank of factors, scores ranging from 1 to 4 were considered. Weaknesses and threats were given scores 1 or 2, and strengths and opportunities were given scores as 3 or 4 proportionate to their significance. If the final score is smaller than 2.5, it will indicate the weakness of factors; If it is larger than 2.5, it would be a sign of strength. Internal factors (IFE) and external factors (EFE) as well as scores determined for factors in each dimension are illustrated in tables 5 and 6.

Table 5 Internal Factor Evaluation (IFE) Matrix

Study area	SWOT	Significance coefficient	Rank	Final score
	Strength			
	S1 Presence of valuable historical monuments in the area	0.045	4	0.18
	S2 Economic boom in the historic area of the city	0.033	3	0.099
	S3 Proper position of the historical core in the vicinity of the Karun river and convenient access	0.043	3	0.129
Historical-geographical	S4 Historical records of the CBD	0.033	3	0.099
	S5 Continuity of historical monuments and rows of Abdul-Hamid market	0.033	3	0.099
	S6 Shriati road as the main road connecting to the city	0.043	3	0.129
	Weakness			
	W1 Growth of business activity and high activity loads	0.01	1	0.01

	W2 Distressed area	0.02	2	0.04
	W3 Large part of the CBD with ages over 30 years	0.01	1	0.01
	W4 Lack of complete organization of the riverbank and lack of criterion map in the mechanism of the fabric in the status quo	0.013	1	0.013
	W5 Business boom and further destruction of historical buildings within the CBD	0.01	1	0.01
	W6 Destruction of the valuable monuments around Abdul-Hamid market or their transformation into warehouses	0.02	2	0.04
Economic-social	Strength			
	S7 Ethnic and religious diversity in the area	0.03	3	0.09
	S8 High residency length of a lot of residents	0.03	3	0.09
	S9 High value of land and housing in the area	0.04	4	0.16
	S10 High rate of employment in the central area and multiple job opportunities in this area	0.03	3	0.09
	S11 Residents' sense of belonging to the environment	0.03	3	0.09
	Weakness			
	W7 Low potentiality of the area to attract migrants from other neighborhoods	0.02	2	0.04
	W8 Ownership limitations for renewal	0.011	1	0.011
	W9 Lowering sense of belongingness to the area because of the replacement of residents with lower social layers	0.011	1	0.011
	W10 No cultural spaces in the area	0.011	1	0.011
Physical-spatial	Strength			
	S12 Growth of activity in the CBD and its surrounding areas	0.035	3	0.105
	S13 Growth of the physical construction and renewal of the CBD area	0.033	3	0.099
	S14 Appropriate permeability into some parts of the area due to the existing grid fabric	0.043	3	0.129
	S15 Readability of the area because of differentiation of parts, dimensions, and blocks in the CBD and its surrounding fields	0.033	3	0.099
	S16 More growth in construction of walls and placement of more numbers of grains beside their surrounding passages due to the smaller sizes of the blocks	0.033	3	0.099
	S17 Lowest degree of distressed based on the determined criteria in the CBD area	0.04	4	0.16
	S18 Little distressed based on above criteria in Bagh Moein area in neighborhood 11	0.03	3	0.09
	S19 Continuity of monuments along the rows of the market	0.04	4	0.16

	Weakness			
	W11 Distressed fabric in the immediate walls due to the growth in economic activities	0.022	2	0.044
	W12 Transformation of the fabric to warehouses for business activities in the area	0.011	1	0.011
	W13 Sharp decline in permeability due to microfiber texture and narrow passages inside it	0.011	1	0.011
	W14 Low permeability between fabric and the riverbank of Karun river	0.02	2	0.04
	W15 High distressed in the fine-grained and grid fabric with small blocks in the east of Shariati street, especially in neighborhood 1	0.01	1	0.01
	W16 Weak connections of the area with the northern area because of the passage of the railway	0.011	1	0.011
	W17 Weak connection of the area with the eastern area by passing Behbahani highway with undefined closeness in most parts	0.01	1	0.01
	W18 Whole demolished-restorative-lacking in quality buildings cover about 74% of the whole area	0.02	2	0.04
	W19 According to distressed criteria, 61 blocks out of 453 blocks are among very distressed blocks.	0.032	2	0.064
	W20 Lack of appropriate spatial connection between eastern and western halves of the neighborhood	0.01	1	0.01
	W21 Low quality visual appearance	0.021	2	0.042
Total		1		2.685

Table 6 External Factor Evaluation (EFE) Matrix

Study area	SWOT	Significance coefficient	Rank	Final score
	Opportunities			
	O1 Possibility of reviving the historical and initial routes of the city in the form of trails for attracting tourists	0.036	3	0.108
	O2 Ability to use historical symbols such as horse-drawn carriages in the area's historical path for restoration of its historical identity and the growth of tourism	0.037	3	0.111
Historical-geographical	O3 Possibility of taking advantages of historical buildings and conversion of their land use for restoration of its historical identity	0.045	4	0.18
	O4 Possibility of using traditional pattern of housing for complying them with the climate conditions and the restoration of historical identity	0.035	3	0.105
	O5 Creation of a link between the Karun river and its riverbank for the growth of the CBD area	0.032	3	0.096
	O6 Possibility of reconstruction and renewal of buildings within CBD with regard to the market boom and need for new spaces as well as attentions to the historical fabric	0.033	3	0.099

	and its features			
	O7 Making an appropriate connection between the riverbank of the Karun river and Azadegan Boulevard.	0.042	3	0.126
	Threats			
	T1 Further erosion of historical elements because of the influx of too many commercial activities and supportive functions such as warehouses, etc.	0.025	2	0.05
	T2 Absence of rules and regulations for maintaining historical appearance of the area	0.012	1	0.012
	T3 Presence of activities incompatible with the nature of historical sites and its surrounding fabrics	0.011	1	0.011
Economic-social	Opportunities			
	O8 Diversity of the value of the land and buildings for attracting investors with different financial abilities	0.043	4	0.172
	O9 High focus on services and highness of price of lands in the central area is the factor accelerating the pace of renewal and investment in the sector	0.036	3	0.108
	O10 Potential value added of land and real estate	0.037	3	0.111
	O11 Existence of social capital such as older residents interested in the fabric	0.035	3	0.105
	Threats			
	T 4 Unwillingness of different ethnic groups to live together	0.012	1	0.012
	T5 Failure to attract retail investors for assembly and repair of the historical fabric	0.025	2	0.05
	T 6 Unwillingness for renewal because of the un-economically of the project	0.011	1	0.011
	T7 Low activity rates of women's activities and lack of development of the society due to the lack of their culture of economic and social participation and the absence of suitable job opportunities for this class	0.011	1	0.11
	T8 Increased insecurity in public open spaces due to neglecting lighting of those spaces and the existence of cozy and dark corners in public open spaces	0.02	2	0.04
Physical-spatial	Opportunities			
	O12 Realizing the physical revitalization of the area as a result of business boom and huge demand for land and real estates	0.033	3	0.099
	O13 Possibility of the increase in permeability with regard to small size of the blocks and possibility of widening some passages	0.035	3	0.105
	O14 Increasing permeability of the fabric through the main axes and rows as well as spreading the activities to some parts of the area	0.037	3	0.111
	O15 Possibility to design properly the riverbank of the Karun river because of its location	0.047	4	0.188

	O16 Increasing the connections among the blocks because of the development of activity rows	0.035	3	0.105
	O17 Possibility to increase shading trees in open public spaces	0.039	3	0.117
	O18 Increasing the use of elements such as public outdoor awning to provide suitable climatic conditions	0.035	3	0.105
	O19 Taking advantages of old spaces for constructing parking lots	0.045	4	0.18
	Threats			
	T9 Reduction of connections between designed elements in the fabric because of poor permeability of some parts	0.011	1	0.011
	T10 Problem of fine-grained pieces with different characteristics, reduction in policy-making and control compared to larger pieces	0.011	1	0.011
	T11 Disconnecting blocks by activating walls in the main passages and against distressed blocks inside the fabric	0.025	2	0.05
	T12 Physical destruction as a result of neglecting physical distressed of the fabric	0.023	2	0.046
	T13 Low and limited nature of reconstruction process due to microfiber texture	0.012	1	0.012
	T14 Low resistance of buildings against natural disasters	0.025	2	0.05
	T15 Visual and physical disturbance caused by the excessive concentration of incompatible activities within the fabric	0.025	2	0.05
	T16 Reduction in the quality of residence in surrounding fabrics	0.012	1	0.012
	T17 Access difficulty to all parts	0.011	1	0.012
Total		1	85	2.782

Moreover, integrated strategies can be presented with regard to the matrices. These strategies are given in table 7 by integrating each of the strengths, opportunities, weaknesses or threats.

Table 7 Strategies integrated from SWOT tables

SO Strategies	WO Strategies
S1S2S3S4O1O2O3O5O6O18: Restoration of historical elements and signs for economic boom and revival of historical identity of buildings S1S3S4O1O2 increase in the level of environmental interactions with tourists S1S3O1O5O7: Organizing the riverbank of the Karun river for tourists' walkways S8E7 construction of places for pausing, stopping, taking a break and sitting on the margin of sidewalks, public	O5w1: Interventions in commercial as well as mixed zones and passages and complexes for make compatibility, prevention of the spread of influences of activities into other neighborhoods, and increasing the economic strength of the city O7w3: Reduction in the spread of the influence of incompatible activities into the residential fabric for enhancing its vitality O6w3: Preventing the spread of the

space, and historical sites S12S13S14S15S16S19O12O13O14O16: The increase in the permeability of the fabric for stimulating more activity, walls, and the area as well as easier accesses S12S13S15S19O15O17O18O19: Increasing the number of shading trees, urban elements and facilities in public open spaces, commercial rows, historical sites and riverbank of the Karun river S12S13S14O5O6O7O13O15O17: Increasing the width of passages for the formation of marginal green spaces in neighborhood	residential fabric incompatible land uses by creating similar activity rows O1W1: Organizing physical walls of commercial activities within the CBD neighborhood and concentration of activities compatible with each other
ST Strategies	**WT Strategies**
S1T1: Interventions in the field of tourism for improving citizens' quality of life S2T3: Equipping commercial rows with private parking lots S2T4: Widening roads for easy access to fabrics of the central district of the city S8S9S10S11T2T5T6T7: Encouraging domestic and foreign investors to establish centers with compatible land uses S2, S3T6: Allocation of routes for pedestrians' walking along commercial rows and for easing traffic S1T1: Reinforcing tourism and functional activities for promote cultural performance S2T4T5: Widening some passages according to their functions for future development S2S3S5S12T1T3T9: Designing the continuous access network covering all parts of the fabric with an emphasis on pedestrian access	W9W10T2T8: Building the culture for equal treatments with all ethnic and religious groups W1W5T7: Creating job opportunities for women in the central area W8W21T2T5: Encouraging domestic and foreign investors for beautifying the physical walls and creating job opportunities for all social layers W4W13T8T9: Taking advantages of open spaces and perfect lighting in neighborhood for reducing insecurity in the area

Following the calculation of the scores of IFE and EFE matrices, the IFE-EFE diagram can be used for determining the type of the prevailing strategy. This diagram has four parts; according to the obtained scores, the cross-section of strengths and opportunities results in offensive strategy; the confluence of weaknesses and opportunities results in adaptation strategy; the confluence of weaknesses and threats results in defensive strategy; and the confluence of strengths and threats results in contingency strategy.

With regard to figure 6, the confluence of the total IFE-EFE scores on x and y axes results in SO; therefore, external opportunities should be employed using the internal strengths.
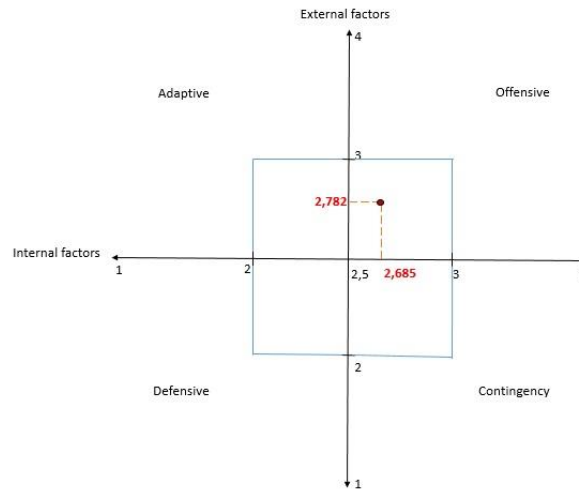
Fig 6 Results of IFE-EFE matrices

4.1. Drawing the Quantitative Strategic Planning Matrix (QSPM)

In this section, with regard to identification of the offensive strategies, their prioritization is required. The QSPM can be employed accordingly. By using this method, the best strategies can be objectively identified. In employing this matrix, analysis of the first phase and results obtained form comparing IFE and EFE factors in the second phase can be used. In the matrix, the first column covers IFE and EFE factors with the data existing in the initial matrices (i.e. significance coefficients and ranks), and in its first row, different strategies are mentioned. There is another column in this matrix in which the attractiveness score is identified, that is whether each factor enjoys a main role in the process of selection of strategies? If the answer is yes, it indicates that the factor has a significant role in selecting strategies in terms of their successes. If the answer is no, the reverse state occurs. The score allocated to attractiveness ranges from 1 to 4, where 1 indicates no attractiveness and 4 indicates high attractiveness. The criterion for evaluating the survey scores was the opinions of experts of planning of Ahvaz city. Scores are presented in table 9. Prioritization strategies are offensive strategies (SO) obtained from table 8.

Table 8 Drawing the Quantitative Strategic Planning Matrix (QSPM) for prioritizing SO

Strategy 1: Restoration of historical elements and signs for economic boom and revival of historical identity of buildings				
		Significant coefficient	Attractiveness score	Final score
	S1 Presence of valuable historical monuments in the area	0.045	4	0.18
	S2 Economic boom in the historic area of the city	0.033	2	0.066
	S3 Proper position of the historical core in the vicinity of the Karun river and convenient access	0.043	3	0.129
Factors	S4 Historical records of the CBD	0.033	4	0.132
	O1 Possibility of reviving historical and initial routes of the city in the form of trails for attracting tourists	0.036	2	0.072

	O2 Ability to use historical symbols such as horse-drawn carriages in the area's historical path for restoration of its historical identity and the growth of tourism	0.037	2	0.074
	O3 Possibility of taking advantages of historical buildings and conversion of their land use for restoration of its historical identity	0.045	3	0.135
	O5 Creation of a link between the Karun river and its riverbank for the growth of the CBD area	0.032	3	0.096
	O6 Possibility of reconstruction and renewal of buildings within the CBD with regard to the market boom and the need for new spaces as well as attentions to the historical fabric and its features	0.033	4	0.132
	O18 Increasing the use of elements such as public outdoor awning to provide suitable climatic conditions	0.035	3	0.105
Total				1.121
Strategy 2: Increase in the level of environmental interactions with tourists				
	S1 Presence of valuable historical monuments in the area	0.045	2	0.09
	S3 Proper position of the historical core in the vicinity of the Karun river and convenient access	0.043	1	0.043
	S4 Historical records of the CBD	0.033	2	0.066
	O1 Possibility of reviving the historical and initial routes of the city in the form of trails for attracting tourists	0.036	3	0.108
	O2 Ability to use historical symbols such as horse-drawn carriages in the area's historical path for restoration of its historical identity and the growth of tourism	0.037	1	0.037
	O3 Possibility of taking advantages of historical buildings and conversion of their land use for restoration of its historical identity	0.045	2	0.09
	O5 Creation of a link between the Karun river and its riverbank for the growth in the CBD area	0.032	4	0.128
Factors	O15 Possibility of properly designing the riverbank of the Karun River because of its location of parts with larger scales along the river's edge	0.047	1	0.047
Total				0.609
Strategy 3: Organizing the riverbank of the Karun river for tourists' walkways				
	S1 Presence of valuable historical monuments in the area	0.045	4	0.18
	S3 Proper position of the historical core in the vicinity of the Karun river and convenient access	0.043	4	0.172
Factors	O1 Possibility of reviving the historical and initial routes of the city in the form of trails for attracting tourists	0.036	4	0.144

	O5 Creation of a link between the Karun river and its riverbank for the growth in the CBD area	0.032	4	0.128
	O7 Making an appropriate connection between the riverbank of the Karun River and Azadegan Boulevard.	0.042	3	0.126
Total				0.75
Strategy 4: Construction of places for pausing, stopping, taking a break and sitting on the margin of sidewalks, public space, and historical sites				
Factors	S8 High residency length of a lot of residents	0.03	3	0.09
	O7 Making an appropriate connection between the riverbank of the Karun river and Azadegan Boulevard.	0.042	4	0.168
Total				0.258
Strategy 5: Increase in the permeability of the fabric for stimulating more activity, walls, and the area as well as easier access				
Factors	S1 Growth of activity in the CBD and its surrounding areas	0.045	2	0.09
	S2 Growth of physical construction and renewal in the CBD	0.033	3	0.066
	S3 Appropriate permeability into some parts of the area due to the existing grid fabric	0.043	4	0.172
	S5 Higher boom in walls and placement of more numbers of grains beside their surrounding passages due to the smaller sizes of the blocks	0.033	3	0.066
	S8 Continuity of historical monuments and rows of Abdul-Hamid market	0.03	4	0.12
	O1 Realizing of physical revitalization of the area as a result of business boom and huge demand for lands and real estates	0.036	3	0.108
	O2 Possibility of the increase in permeability with regard to small size of blocks and possibility of widening some passages	0.037	4	0.148
	O3 Increasing the permeability of the fabric through the main axes and rows as well as spreading the activities to some parts of the area	0.045	4	0.18
	O5 Increasing the connections among the blocks because of the development of activity rows	0.032	4	0.128
Total				1.078
Strategy 6: Increasing the number of shading trees, urban elements and facilities in public open spaces, commercial rows, historical sites and the riverbank of the Karun river				
Factors	S1 Growth of activity in the CBD and its surrounding areas	0.045	2	0.09
	S2 Growth of physical construction and renewal in the CBD	0.033	1	0.033
	S4 Readability of the area because of differentiation of	0.033	2	0.066

	parts, dimensions, and blocks in the center of the CBD and its surrounding fields			
	S8 Continuity of historical monuments and rows of Abdul-Hamid market	0.03	3	0.09
	O4 Possibility of properly designing the riverbank of the Karun river because of its location of parts with larger scales along the river's edge	0.035	3	0.105
	O6 Possibility of increasing the shading trees such as in open public spaces	0.033	4	0.132
	O7 Increasing the use of elements such as public outdoor awning to provide suitable climatic conditions	0.042	2	0.084
	O8 Taking advantages of old spaces for constructing parking lot	0.043	1	0.043
Total				0.643
Strategy 7: Increasing the width of passages for the formation of marginal green spaces in neighborhoods				
	S12 Growth of activity in the CBD and its surrounding areas	0.035	1	0.035
	S13 Growth of physical construction and renewal in the CBD	0.033	3	0.099
	S14 Appropriate permeability into some parts of the area due to the existing grid fabric	0.043	2	0.086
	O5 Creation of a link between the Karun river and its riverbank for the growth of the CBD area	0.032	1	0.032
	O6 Possibility of reconstruction and renewal of buildings within the CBD with regard to the market boom and the need for new spaces as well as attentions to the historical fabric and its features	0.033	4	0.132
	O7 Making an appropriate connection between the riverbank of the Karun river and Azadegan Boulevard.	0.042	2	0.084
	O13 Possibility of the increase in permeability with regard to the small size of blocks and possibility of widening some passages	0.035	3	0.105
	O15 Possibility of properly designing the riverbank of the Karun river because of its location of parts with larger scales along the river's edge	0.047	2	0.094
Factors	O17 Possibility of increasing the shading trees such as in open public spaces	0.039	1	0.039
Total				0.706

4.2. Determining Priorities and Selecting the best Strategy

After evaluating the IFE and EFE matrices and drawing the QSPM, the strategies were evaluated. According to the obtained scores, the strategies can be prioritized.

Table 9 Prioritizing offensive strategies (SO) obtained from the QSPM

Priority	Strategy	Score
1	Restoration of historical elements and signs for economic boom and revival of historical identity of buildings	1.121
2	Increase in the permeability of the fabric for stimulating more activity, walls, and area as well as easier access	1.078
3	Organizing the riverbank of the Karun river for tourists' walkways	0.75
4	Increasing the width of passages for the formation of marginal green spaces in neighborhoods	0.706
5	Increasing the number of shading trees, urban elements and facilities in public open spaces, commercial rows, historical sites and the riverbank of the Karun river	0.623
6	Increase in the level of environmental interactions with tourists	0.609
7	Construction of places for pausing, stopping, taking a break and sitting on the margin of sidewalks, public space, and historical sites	0.258

5. Conclusions and Suggestions for Further Research

The distressed fabric of the central district of Ahvaz City with a concentration of different commercial, service and administrative activities as well as almost all valuable historical monuments has a special significance. Thus, it is subject to overpopulation and traffic as well as rapid changes and transformation in its physical structure. This situation requires a special attention for preserving and reviving values existing in this area and providing proper conditions for appropriate functions of the central district. This part of the city is the origin and destination of daily traffic not only in the city, but also beyond it and even at the provincial level. This issue has resulted in overpopulation, high traffic and pollution.

The significance of this fabric has resulted in overpopulation and distressedness of grains especially due to economic reasons not only in Ahvaz City, but also in the whole region. The negative consequences of this problem are reduction in safety and security, increase in building density, lack of services and infrastructures within the fabric, replacement of native residents with non-native immigrants with different cultures, etc. Although this distressedness is significant particularly in terms of non-resistance of the structure of buildings, the fabric has a distressed view requiring comprehensive reforms and reconstructions.

With regard to their historical identity properties in Ahvaz City, prioritization and attention are required for factors such as high population and traffic, concentration of land uses and activities, poor organization and disturbances in walls, and loss of environmental quality. As a result, the conducted prioritization can be used for providing executive strategies and considerations in line with the sustainable development of the distressed areas of Ahvaz City.

Table 10 Strategies suggested for regeneration of the distressed fabric of the central district of Ahvaz City

Objectives	Strategies	Solutions
Promoting economic efficiency and suitable distribution of economic opportunities	Restoration of historical elements and signs for economic boom and revival of historical identity of buildings	Improvement in the state of paths leading to historical monuments for tourists' access Restoration of valuable elements (tourist attractions) Recruitment of skilled labor forces in the field of tourism for communication with people

		Making hotel-gardens and traditional restaurants
		Taking advantages of valuable private places as public centers of attracting tourists
		Increase in the facilities and services in the fabric
		Improvement and beautification of the historical signs and sites
Easy accessibility and growth in activities	Increase in the permeability of the fabric for stimulating more activity, walls, and the area as well as easier access	Designing entrances of neighborhoods and strengthening community centers
		Meeting the daily needs of residents of the worn-out fabrics of Ahvaz by goods and services as well as encouraging people to walk
		Developing compact cities to reduce distances on horseback and on foot
		Creating attractive, comfortable and safe routes, for walking
		Constructing walking-based streets for pedestrians an emphasis on the priority of movement
		Concentering and mixing land uses for minimizing the size of the area and increasing its permeability
		Providing easy, fast, and safe routes for cyclists' access to goods and services
		Increasing accesses to make changes in routes and passages, opening and closing different spaces, and increasing the lowest degree of links among them
Enhancing environmental quality and sustainable development	Organizing the riverbank of the Karun river for tourists' walkways	Creating green spaces including green strip along riverbank of the Karun river
		Lighting along the banks of the Karun River through traditional lighting methods (such as the use of lanterns, etc.)
		Beautifying buildings walls of buildings in the riverbank.
		Flooring via paving which enjoys therapeutic aspects
		Designing elegant and efficient furniture and facilities along the Karun river
		Legally enhancing tourists' security

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