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ARTICLE

Developing and Assessing a Sustainable Strategy for Yasuj City: Integrating SWOT, Strategic Position and Action Evaluation Matrix, and Scenario Planning

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ABSTRACT

The cultural and natural features of Yasuj, as well as its young and educated population, make the city a promising example of sustainable urban growth in Iran. However, limitations such as poor urban management, inadequate infrastructure, and slow economic growth limit its potential. This study aims to assess the urban management of Yasuj and to develop a sustainable development strategy using SWOT (Strengths, Weaknesses, Opportunities, and Threats) and SPACE (Strategic Position and Action Evaluation) analysis. The research uses a descriptive-analytical approach and focuses on applied development. Data was collected from 40 urban planning professionals through on-site observations, document review, and questionnaires. The internal (Internal Factor Evaluation [IFE] = 2.10) and external (External Factor Evaluation [EFE] = 2.37) elements of Yasuj are below average, indicating a defensive strategic position that requires a review of policy and institutional structures. The report identifies potential in tourism, agriculture, and science and proposes solutions such as improving inter-agency cooperation, increasing public engagement, and investing in eco- and agro-tourism. Scenario planning using SWOT, SPACE, and AHP (Analytic Hierarchy Process) has helped

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to develop adaptive strategies for optimistic, moderate, and pessimistic futures. Realizing the vision of sustainable development of Yasuj requires collective efforts, continuous collaboration and strategic coordination among all local stakeholders, enhancing expertise and research capacity within academic institutions, and fostering effective and genuine partnerships among government, private and civil society sectors to ensure the continuous improvement of the quality of life of residents while preserving the identity, culture and ecosystem of the region.

Keywords: Sustainable Development; Strengths; Weaknesses; Opportunities; Threats Analysis; Urban Management; Tourism; Scenario Planning

1. Introduction

Sustainable urban development is a multifaceted challenge that requires a balance between economic growth, social equity and environmental responsibility. Despite the global emphasis on the United Nations Sustainable Development Goals (SDGs), many cities, particularly in developing regions, face significant obstacles in achieving these goals [1]. These challenges include weak institutional coordination, inadequate long-term urban planning and limited citizen participation, which leads to fragmented governance and hinders effective decision-making. In addition, infrastructural deficits and economic constraints, such as the high cost of introducing sustainable technologies and dependence on external funding, make it difficult to implement sustainable urban projects.

Governance and institutional challenges are major obstacles to sustainable urban development. Effective governance requires the involvement of different stakeholders, including public authorities, private companies and citizens, to ensure inclusive decision-making processes [2]. In Latin America, strengthening local governance through informed citizen participation is critical to building resilient and equitable cities [3]. Economic constraints, including poverty and inequality, limit the ability of cities to invest in sustainable infrastructure. In Pakistan, for example, inadequate infrastructure and political instability hinder the achievement of the SDGs [4]. The high costs associated with the introduction of sustainable technologies and the dependence on external funding are also a major obstacle for many cities [4].

Environmental and social considerations play a crucial role in sustainable urban development. Addressing environmental challenges such as resource depletion and pollution while promoting social inclusion and equity is crucial [5,6]. The impacts of climate change, including water scarcity and environmental degradation, pose additional threats to sustainable urban development. Although the challenges to sustainable urban development are considerable, there are opportunities for innovation and progress. Cities can adopt holistic, long-term solutions that prioritize the well-being of people and the planet. By fostering community capacity-building initiatives and incorporating cultural considerations into policy-making, cities can improve their resilience and inclusivity and pave the way for a more sustainable future [3,5].

Cities, as complex socio-ecological systems, require integrated strategies for environmental sustainability in the face of pressures from population growth, climate change and limited natural resources [7]. New perspectives such as the "ecological city" and the "green city" emphasize the interconnection between green infrastructure, efficient land use, reduced resource consumption and improved quality of life [1]. In the meantime, systematic analysis of the current situation and sustainable development capacities is of great importance. Tools such as SWOT, due to their ability to identify and categorize internal strengths and weaknesses and external opportunities and threats, provide a practical framework for assessing the environmental status of the city and help policymakers to develop sustainable and localized strategies based on real data and conditions [8].

The research background in the field of urban environmental sustainability strategies shows that many cities around the world have tried to implement sustainable development in the urban context by applying comprehensive approaches. For example, in a study on urban ecological planning in São Paulo, the combination of green infrastructure, biodiversity conservation, and climate resilience promotion was proposed as the main axes of the sustainable urban strategy [7]. In a study in Mexico City, the development of public transport networks and the revitalization of public spaces were identified as two key pillars in improv-

ing environmental sustainability [1]. Also, a comparative study in several European cities has shown that the success of environmental strategies depends on the effective link between local policies, community participation, and monitoring and evaluation mechanisms [8]. This evidence emphasizes that urban sustainability strategies must go beyond the level of situation identification and lead to operational and measurable actions.

Analytical models such as SWOT and SPACE provide a structured framework for city managers to assess conditions, identify strengths, weaknesses, opportunities, and threats, and develop strategies to improve livability and sustainability.

SPACE analysis assesses an organization's market position and aligns strategies with urban development goals [9]. The action assessment focuses on identifying actionable strategies based on the SWOT results and ensures a comprehensive approach to urban management.

The integration of these models into scenario planning improves strategic development by enabling decision makers to explore future possibilities.

Scenario planning as a dynamic method enables decision-makers to test strategies in the light of environmental and social changes and, using scientific and empirical data, to develop adaptive approaches. In this framework, participatory scenario planning (PSP) involves stakeholders in the co-production of knowledge about sustainable and equitable futures and ensures diverse perspectives by identifying key actors and linking visions of the future with current actions [10]. Actively engaging stakeholders such as businesses, non-governmental organizations, and local governments through structured workshops and questionnaires is crucial for developing resilient urban planning strategies in uncertain contexts [11], while dealing with socio-ecological uncertainties by creating plausible future scenarios helps decision-makers to grapple with the unknown [12,13], this approach represents a paradigm shift from traditional planning methods, which often overlook fundamental uncertainties [14].

Rapid urbanization in developing areas has led to complicated governance, environmental and socio-economic issues that require integrated strategic approaches that go beyond traditional planning methods. Although many studies have used SWOT analyses, SPACE matrices or scenario planning in isolation, there are few studies that fuse these techniques into a unified framework specifically tailored to the context of a medium-sized Iranian city [15]. This study attempts to fill this gap by combining analytical models such as SWOT and SPACE with multi-criteria decision-making approaches such as AHP and participatory scenario planning to provide a deeper understanding of both existing conditions and possible future scenarios [16].

The main objective of this research is to identify the strengths and challenges of urban management while formulating a strategic vision for sustainable development. This responds to the urgent need for practical, contextualized solutions that strengthen the management framework, improve adaptability and enhance the quality of urban life. This particular integration of tools enables the formulation of scenario-based strategies that are both adaptive and robust—able to withstand threats while capitalizing on opportunities—providing a replicable model for other cities facing similar constraints [17].

Yasuj, the administrative center of the Boyer-Ahmad district, is an ideal example of this methodology. The city is struggling with economic stagnation, even though it has rich natural and cultural resources. Uncontrolled urban expansion has affected agricultural land and jeopardized food security [18], while public health is threatened by a human fasciolosis seroprevalence of 1.86 and 4.84 neural tube defects per 1000 births [19,20]. Promoting sustainable urban planning and strengthening tourism infrastructure to emphasize the scenic attractions and heritage of Yasuj could address these issues and boost growth [21]. By contextualizing the challenges and opportunities of Yasuj within a strategic framework, this research aims to contribute to the development of effective urban management solutions.

2. Case Study: Yasuj

Yasuj, the capital of Boyer-Ahmad district, is located in the Zagros Mountains (**Figure 1**). The progressive degradation of agricultural land due to urban sprawl has a direct impact on food production and increases food insecurity in the region. This emphasizes the urgent need for sustainable urban planning and agricultural policies to mitigate these effects [22]. While urbanization can also create economic opportunities and improve infrastructure if

properly managed, current developments in Yasuj suggest that without immediate and effective action, the negative consequences will continue to overshadow the potential benefits.

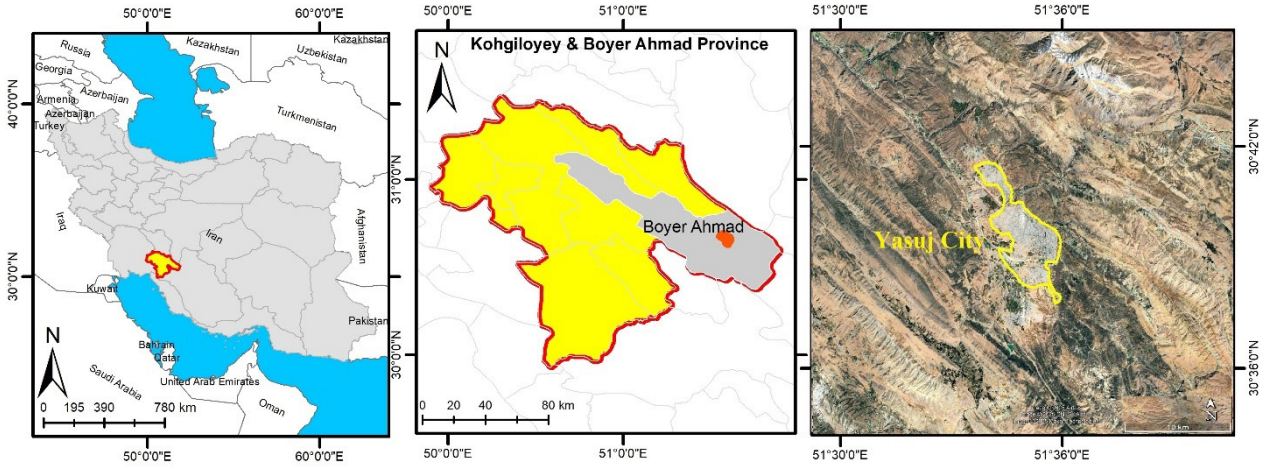

Figure 1. Location of the Area.

In addition to environmental and health challenges, Yasuj's development faces significant governance and planning obstacles. Fragmented municipal coordination and inadequate urban infrastructure hinder sustainable urban growth. Ineffective governance structures, marked by a lack of standardization of practices, create barriers to coherent development [23], while the lack of integrated decision-making between municipal departments leads to fragmented planning efforts.

In addition, rapid urban expansion has exacerbated environmental problems due to misaligned spatial-physical development, emphasizing the need for a shift towards participatory and sustainable urban planning approaches [24].

Yasuj also has considerable tourism potential with attractions such as the Yasuj Waterfall and the Zagros Mountains, which, if supported by better infrastructure, could boost local economic growth and improve the quality of life of residents. Sustainable tourism development could create employment opportunities and promote community engagement, thus improving urban resilience. However, it is critical that such tourism initiatives do not jeopardize the ecological integrity of Yasuj's natural landscapes, as this would undermine long-term sustainability [18].

Yasuj's defensive strategic posture is in line with patterns observed in other medium-sized Iranian cities such as Yazd and Sanandaj, which are similarly facing environmental problems and inefficient governance. These cities are increasingly exposed to climate-related hazards, necessitating robust disaster risk management strategies. The moderate ecological resilience of Yasuj highlights the importance of better management of natural resources and urban ecosystems. Governance challenges persist as local governments in Iran — including Yasuj — often operate under fragmented structures that hinder effective climate action and urban management. Effective governance requires the active participation of local stakeholders to enhance resilience and tailor adaptation strategies to the specific urban context [25].

While adaptation strategies are critical, underlying governance issues need to be addressed through broader systemic reforms to ultimately improve resilience and sustainable development outcomes in Yasuj and similar urban areas.

3. Materials and Methods

This study uses a multi-method strategic planning framework to create a sustainable urban development plan for Yasuj City. The methodology combines qualitative and quantitative tools such as SWOT analysis, SPACE matrix, Analytic Hierarchy Process (AHP), Internal and External Factors Evaluation (IFE/EFE) matrices, QSPM, and scenario planning. The following steps outline the research

process.

3.1. Literature Review and Field Observations

The research began with a comprehensive review of the academic literature on strategic urban planning, sustainability frameworks, and regional development. Field observations and the review of urban planning documents shed light on the socio-economic and environmental problems of Yasuj.

3.2. Expert Survey and Data Collection

We sent a standardized questionnaire to 40 urban planning experts. The Delphi technique was used to gather expert opinions and reach consensus on internal and external development issues.

3.3. SWOT Analysis

A SWOT analysis was conducted to identify internal and external elements impacting sustainable growth. In this step, local advantages, difficulties in management, development potentials (e.g., ecotourism and renewable energy), and external risks (e.g., climate change, sanctions) were categorized [26,27].

3.4. Weighting with the Analytic Hierarchy Process (AHP)

To achieve quantitative rigor, the AHP was used to weight the SWOT elements. Experts assigned relative weights to each factor through pairwise comparisons. These weights were then used in the IFE and EFE matrices [28,29].

To ensure the validity of the pairwise comparisons of experts, the Consistency Index (CI) and Consistency Ratio (CR) were calculated for each matrix. The CR value was calculated using the formula (1) and if it was greater than 0.10, the matrix was revised and modified to meet the consistency condition [17].

$$CR = CI/RI \quad (1)$$

3.5. Structure of the IFE and EFE Matrix

We designed internal and external factor evaluation matrices based on weighted SWOT considerations. The creation of internal factor evaluation (IFE) and external factor evaluation (EFE) matrices is a methodical way of determining a city's strategic position. The overall score is calculated by weighting and ranking numerous internal and external elements, with scores above 2.5 indicating a solid strategic position. This method is crucial for aligning the city's strategic vision and decision-making processes [30,31].

To calculate the final score of the IFE and EFE matrices, the weight of each factor (obtained from AHP) was multiplied by the score of that factor (rank 1 to 4) and the sum of the results was calculated as the total score of the matrix. A score above 2.5 indicates relative strength and below 2.5 indicates relative weakness in internal or external factors [32].

3.6. Strategic Positioning within the IE Matrix

The strategic zone of Yasuj was determined by plotting the total values from the IFE and EFE matrices on the internal-external (IE) matrix. In this step, it was determined whether the city [33].

3.7. Strategy Prioritization via QSPM

The Planning Matrix (QSPM) was used to prioritize the strategic options. This included:

Listing potential strategies based on the SWOT analysis.

Assigning weights according to the IFE/EFE results

Ranking the strategies according to relative attractiveness (1–4)

Calculation of the total attractiveness scores (TAS)

This systematic methodology guaranteed that the chosen methods corresponded to stakeholder priorities and contextual circumstances [34].

3.8. SPACE Matrix Evaluation

The SPACE Matrix (Strategic Position and Action Evaluation) was used to evaluate the strategic position of the city. Four main dimensions were evaluated:

- Financial Strength (FS)
- Competitive Advantage (CA)
- Environmental Stability (ES)

- Industrial Strength (IS) [35].

Yasuj's strategic orientation (aggressive, defensive, cautious or competitive) was determined based on the aggregated scores.

The SPACE matrix consists of four dimensions: Financial Strength (FS), Competitive Advantage (CA), Environmental Stability (ES), and Industry Strength (IS). In the context of urban planning, FS refers to the city's financing and investment capacity, CA refers to competitive capabilities such as city branding and unique infrastructure, ES refers to environmental sustainability, resilience to climate change and ecological pressures, and IS refers to the city's economic structure and industrial diversity [36].

3.9. Scenario Planning

Scenario planning as a strategic tool enables organizations to improve their resilience and adaptability by identifying different alternative futures — from optimistic to moderate to pessimistic — rather than relying on a single forecast Organizations can assess the effectiveness of their actions under different conditions by evaluating the robustness of strategies in these different scenarios [37], and by engaging a broad range of stakeholders, they can incorporate different perspectives into the scenario development process to arrive at more resilient decisions [38]. However, opponents claim that scenarios lack imagination and fail to reflect the complex dynamics of the real world [27].

To increase relevance and credibility, local urban planners, government officials and environmental experts participated in workshops and interviews to define the assumptions underlying the different scenario narratives. For example, the "optimistic" scenarios were based on the assumption of proactive policy implementation, economic growth and effective climate adaptation, while the "pessimistic" scenarios assumed policy stagnation, economic downturn and severe climate impacts.

3.10. Final Strategy Formulation and Action Planning

A strategy plan was developed based on prioritized strategies and scenario analysis (**Figure 2**), with a focus on:

- Institutional coordination and governance transformation.
- Infrastructure enhancements, Sustainable development in tourism, agriculture, and industry.
- Community engagement and participatory planning.

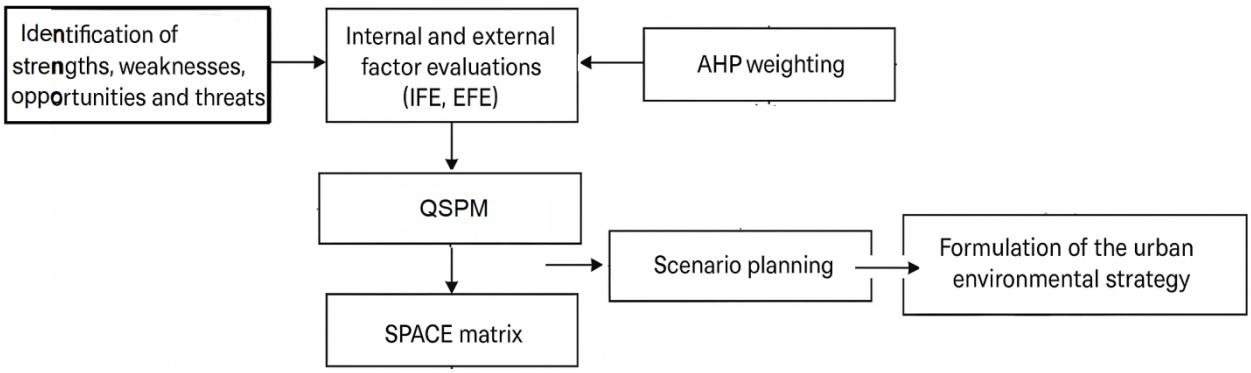

Figure 2. Research Methodological Steps for Sustainable Urban Development Planning in Yasuj City.

4. Result

4.1. Identification of internal strategic factors using SWOT-AHP

In this section, the internal strengths and weaknesses of Yasuj are analysed using the SWOT framework and the Analytical Hierarchy Process (AHP) to prioritize the factors. The internal investigation reveals strengths in the areas of nature tourism and educational capital, but also structural weaknesses in city governance, economic infrastructure, and public trust. **Table 1** shows the weight-

ed internal factors. The Yasuj Waterfall (with the highest weighted score of 0.344) and cultural diversity are highlighted as important strengths for tourism and strengthening local identity. Weaknesses in the city's development include a weak industrial structure, a lack of a legal framework for public engagement, and a high earthquake risk, indicating serious vulnerabilities. The total final scores were calculated to be 2.10 and 2.37 for IFE and EFE, respectively, which indicates the city's defensive position in the evaluation matrices.

Table 1. Internal Strategic Factors (Strengths and Weaknesses).

Internal Strategic Factors	Normalized Weight	Current Status Score	Weighted Score
Strengths			
Geographic features and unique climate conditions, which can attract tourists	0.047	3	0.141
The existence of Yasuj waterfall, which can play an effective role in attracting tourists	0.086	4	0.344
Cultural richness and ethnographic aspects	0.054	3	0.162
High literacy rate among city residents	0.027	3	0.081
Being the provincial capital of Kohgiluyeh and Boyer-Ahmad, which facilitates the concentration of offices and service activities	0.063	3	0.189
Suitable location of the city and its surroundings for agricultural and livestock activities	0.036	3	0.108
Weaknesses			
High cost of urban infrastructure development due to the city's special morphology	0.055	1	0.055
Lack of adequate management for protecting and maintaining natural resources and the surrounding forests	0.055	2	0.110
Pollution caused by factory activities, residential sewage, and hospitals	0.033	2	0.066
Lack of trust in city management by the public	0.049	2	0.098
Weak economic infrastructure	0.066	1	0.066
High unemployment rate	0.043	2	0.086
Weak industrial sector	0.049	2	0.098
Lack of legal frameworks for active public participation	0.054	1	0.054
Geopolitical position of the city	0.054	2	0.108
Seismic risk in the region	0.063	1	0.063
Distance from the national centres	0.054	1	0.054
Lack of strategic resources	0.038	2	0.076
Not a metropolitan city	0.073	2	0.146
Total	**1**		**105.2**

4.2. Identification of External Strategic Factors with the Help of SWOT-AHP

In this section, the external opportunities and challenges for the development of Yasuj are analysed. The Analytic Hierarchy Process (AHP) determines the weights and priorities of each component to make strategic decisions. **Table 2** shows these extrinsic factors. The city's proximity to natural elements such as the Zagros Mountains (with a weighted value of 0.380), the availability of skilled labour, and national plans focused on tourism all contribute to its potential for sustainable development. Inadequate infrastructure and planning pose significant risks such as industrial pollution, seismic hazards, and loss of investment.

Table 2. Extrinsic Factors, Opportunities, and Threats.

External Strategic Factors	Normalized Weight	Current Status Score	Weighted Score
Opportunities			
The city's relative location to natural elements, such as the Zagros Mountain range	0.095	4	0.380
Increased awareness and expertise of city managers	0.033	3	0.099
The existence of Yasuj College as an influential force in decision-making	0.041	3	0.123
Migration of educated and skilled people from other cities in the province to Yasuj	0.071	3	0.213
Availability of opportunities to develop trade and service activities, taking into account the oil industry and tourism	0.032	3	0.096
Provincial and national plans and programs related to tourism	0.063	4	0.252
Benefiting from natural phenomena at the district and provincial levels	0.071	3	0.213
Availability of young and skilled labour force	0.073	3	0.219
Threats			
Loss of the natural beauty of the city due to polluting industries around the city	0.095	1	0.095
Increase in environmental pollution	0.036	2	0.072
Pollution from the activities of industrial parks	0.033	2	0.066
Location of the city in a relatively high seismic zone	0.042	2	0.042
Lack of horizontal relations between the city's administrative units	0.038	1	0.038
Insufficient supervision of construction activities by the city administration	0.032	2	0.064
High migration rate in the city, leading to a high growth rate of the city	0.032	1	0.032
Outflow of investment due to insufficient infrastructure and investment security	0.032	2	0.064
Proximity to large, industrial provinces like Fars and Khuzestan	0.054	2	0.108
Lack of proper access to the sea and strategic resources	0.041	1	0.041
Flood threat due to proximity to rivers	0.026	1	0.026
Drought threat due to climate change	0.026	2	0.052
Weakness in domestic and foreign investment	0.036	2	0.072
Total	**1**		**367.2**

Yasuj is in a defensive strategic position, minimizing weaknesses while maximizing assets and possibilities.

4.3. Strategy Formulation Using the SWOT Matrix

Four strategy groups are presented in this section: SO, WO, ST, and WT. These groups combine internal strengths and weaknesses with external opportunities and threats. The strategies attempt to manage Yasuj's growth within the current socio-economic and environmental context. **Table 3** shows a strategy matrix based on internal and external factors, where each strategy group (SO, WO, ST, WT) is formed by matching Yasuj's strengths and weaknesses with the corresponding opportunities and threats. This matrix provides a structured framework for identifying specific actions aligned with the city's strategic position.

Table 3. A Strategy Matrix Based on Internal and External Factors.

Strategy Type	Description
SO, Strategies	These strategies leverage the strengths to maximize the opportunities. For example, utilizing the cultural richness and geographical location of Yasuj to promote tourism and local participation
WO Strategies	These strategies aim to minimize weaknesses by taking advantage of external opportunities, such as incorporating universities to compensate for weak economic infrastructure.
ST Strategies	These strategies utilize strengths to counter threats, such as promoting tourism infrastructure to mitigate the effects of industrial pollution.
WT Strategies	These defensive strategies aim to reduce both weaknesses and threats, such as addressing urban distrust and economic instability through institutional reform.

The SWOT-QSPM analysis highlights several specific strategies across all quadrants. Among the SO options, promoting ecotourism by taking advantage of Yasuj's natural landscape (SO1) emerges as the most attractive option, directly addressing the city's need for economic diversification. In the ST quadrant, investing in flood-resistant infrastructure (ST2) demonstrates how natural strengths can be transformed into effective protection against climate risks. On the WO side, capacity building for municipal staff (WO3) is particularly important, as it addresses internal weaknesses in governance while capitalizing on national budget opportunities. Finally, in the WT quadrant, enforcing stricter regulations on land use (WT1) is essential to avoid exacerbating existing governance gaps and reducing exposure to external environmental threats. Together, these strategies provide a balanced and practical roadmap that connects strengths and opportunities while simultaneously mitigating weaknesses and threats.

4.4. Strategic Positioning and Priorities for Action

The SPACE (Strategic Position and Action Evaluation) matrix helps to clarify Yasuj's development orientation. The matrix evaluates four dimensions: Financial Strength, Industrial Capacity, Environmental Stability, and Competitive Advantage. It determines whether the city should pursue an aggressive, conservative, defensive, or competitive strategy. **Table 4** provides the quantified scores for each of the four SPACE dimensions, offering a visual representation of Yasuj's overall strategic posture and guiding the selection of appropriate development strategies.

Table 4. SPACE Matrix and Strategic Positioning.

Dimension	Score Range	Key Observations	Average Score
Financial Strength (FS)	$1 < FS < 6$	Moderate investment in green jobs and workforce	+3
Industrial Capability (IS)	$1 < IS < 6$	Weak industrial base; potential media leverage	+3.25
Environmental Stability (ES)	$-6 < ES < 1$	Poor tech use and unsustainable employment	–4.5
Competitive Advantage (CA)	$-6 < CA < 1$	Weak differentiation and a limited private sector role	–4

The SPACE matrix suggests a defensive strategy for the city, focusing on reducing weaknesses (e.g., unemployment, pollution) and gradually capitalizing on strengths (e.g., skilled workforce, cultural wealth) (**Figure 3**).

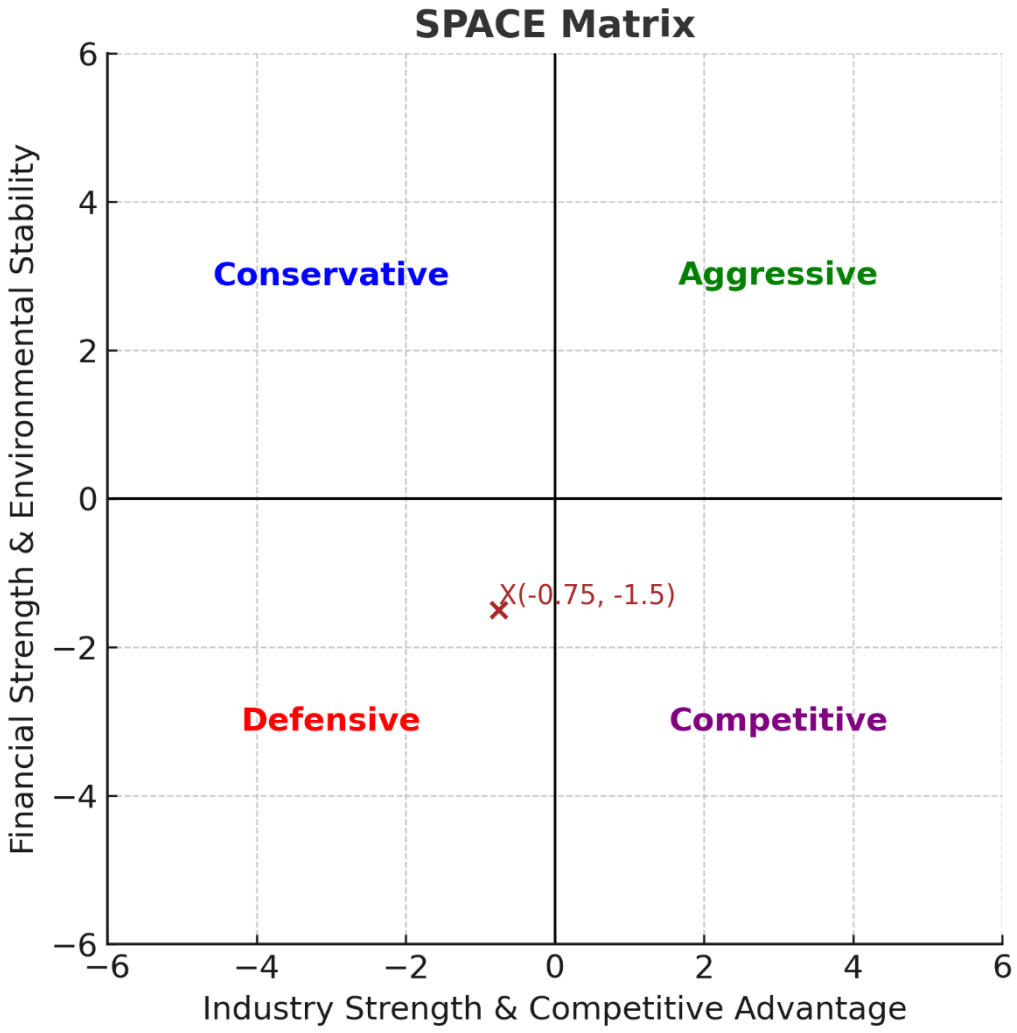

Figure 3. Position Evaluation Matrix and Strategic Action (Space).

Figure 3 shows the position of Yasuj city in the SPACE matrix. The results show a combination of negative competitive advantage (CA) and moderate environmental stability (ES), which together confirm the city's placement in the defensive quadrant. This defensive position indicates that Yasuj city currently lacks sufficient competitive assets to pursue aggressive strategies, while also facing environmental pressures that limit development opportunities. The SPACE result is consistent with the total scores of the IFE (2.10) and EFE (2.37) matrices, both of which are below the neutral threshold of 2.50 and point to an internal environment characterized by institutional weaknesses and external conditions marked by uncertainty. Overall, the SPACE position and the IFE/EFE results emphasize the need for strategies that minimize weaknesses, protect against external threats, and build incremental capacities rather than pursuing rapid growth. This alignment between multiple analytical tools strengthens the reliability of findings and provides clear direction for subsequent strategic recommendations.

4.5. Evaluation of the Strategic Options Using the SPACE Matrix

In this section, the SPACE matrix is used to quantitatively compare potential strategic moves. Yasuj evaluates

each strategy based on internal and external elements to assess its applicability and impact on the company.

Table 5 shows that the strategy with the highest combined score, "Develop local and private sector participation," has a score of 5.188, indicating that it should be prioritized for implementation. The strategy utilizes internal resources and harnesses external opportunities, including improved management awareness and tourism policy. Although "closer cooperation between executives" is crucial, it receives the lowest score (3.737), suggesting that it may be more effective when implemented alongside higher priority solutions.

Table 5. Position Assessment Matrix and Strategic Actions (SPACE).

Row	Strategy	Internal Score	External Score	Total Score
1	Development of local and private involvement of the private sector	2.808	2.380	5.188
2	Identification of complementary agribusinesses and their support	2.406	2.263	4.669
3	Increasing investment in the tourism sector	2.472	2.192	4.664
4	Improving the quality of life in low-income neighbourhoods	2.196	2.070	4.266
5	Closer collaboration between executive bodies	1.892	1.845	3.737

4.6. Scenario Planning

To prepare for future uncertainties, three development scenarios were created based on the results of the SWOT-AHP analysis. **Table 6** summarizes the optimistic, realistic, and pessimistic scenarios for Yasuj's urban development, outlining key assumptions and corresponding strategic actions for each possible future.

These scenarios offer a flexible strategy roadmap for various future conditions and support adaptive planning.

The realistic scenario represents the most likely future, based on current trends and the expert consensus during the Delphi process. It assumes moderate growth in tourism, reflecting gradual improvements rather than rapid expansion. A slight increase in municipal budgets allows for targeted interventions rather than comprehensive systemic changes. Key strategic actions under this scenario focus on improving coordination in natural resource management to ensure sustainable utilization of Yasuj's rich ecological resources. The improvement of services in impoverished areas aims at social equity and promotes inclusive development. In addition, promoting local crafts through marketing supports small businesses and cultural heritage and strengthens the local economy.

This scenario was created through iterative expert consultations, combining quantitative weightings from the AHP with qualitative assessments. It strikes a balance between capitalizing on opportunities and mitigating risks and provides a practical and adaptive roadmap for the sustainable urban planning of Yasuj.

Table 6. Strategic Scenarios for Sustainable Urban Development in Yasuj.

Scenario	Assumptions	Key Strategies
Optimistic	- Significant investment in tourism - Strong institutional cooperation - Influx of professionals	- Develop tourism infrastructure through private cooperation - Train young workers with university support - Strengthen the agricultural industries
Realistic	- Moderate growth in tourism - Slight budget increase	- Improve coordination in natural resource management - Improve services in impoverished areas - Promote local crafts through marketing
Pessimistic	- Environmental degradation - Low public confidence - Capital flight	- Enforce strong environmental policies - Prevent brain drain through retention measures - Enhance climate and seismic resilience

5. Discussion

The strategic assessment of Yasuj's development potential, based on the evaluation of internal and external factors, the placement of the SPACE matrix, and scenario planning, shows that the city has a defensive strategic posture. To counter this dilemma, it is important to minimize weaknesses while focusing on existing strengths and op-

portunities in the surrounding area.

According to the Internal Factor Evaluation (IFE) matrix, Yasuj's strengths include its unique geography, tourism potential (e.g., Yasuj Waterfall), and cultural diversity. However, obstacles to inclusive urban growth include the high cost of infrastructure development, a weak industrial base, high unemployment, and low confidence in governance. The city benefits from Yasuj College, a skilled workforce, tourism-related national programs, and its advantageous location near the Zagros Mountains. However, environmental pollution, the risk of earthquakes, the flight of investment, and limited access to the sea weaken the city's competitive advantage.

Our research findings on the defensive strategic situation of Yasuj (IFE = 2.10; EFE = 2.37) are somewhat similar to Samadi Khadem et al.'s research in Rasht [39], which shows that ecological advantages and the integration of the environmental dimension with structural problems and urban management require conservative and supportive strategies in the urban system. While development findings in larger urban planning such as Tehran usually follow rapid growth strategies, the Yasuj context is more similar to the urban middle level, requiring gradual actions and capacity building. Amani, N., Naeij's study of Rasht construction projects shows that integrating SWOT with AHP can provide more practical and weighted strategies—something that our research also follows the same purposeful logic [40].

Yasuj's limited financial and industrial resources, as well as the difficult environmental and competitive situation, make it clear how important it is to pursue a conservative and defensive strategy

(Results of the SPACE matrix). The top-rated strategic options were:

Developing partnerships between the local and corporate sectors (score: 5.188)

Strengthening complementary agricultural enterprises.

Increase investment in tourism (score: 4.664).

These solutions promote hybrid development that makes use of natural and cultural values while at the same time remedying structural deficiencies.

Scenario planning improves the strategy development process. The optimistic scenario assumes strong institutional cooperation, an inflow of investment, and skilled migration. The expansion of tourism infrastructure, vocational training, and agro-industrial development has priority. The realistic scenario expects moderate growth in national tourism policy and funding. It encourages cooperation between authorities, improves low-income regions, and promotes cultural activities.

The predictions of the pessimistic scenario emphasize increasing environmental and economic concerns and recommend resource protection, specialized tourism conservation measures, and strengthening resilience as defensive measures. These scenarios allow policymakers to anticipate and adapt to different future paths.

To move from a defensive to a competitive strategic position, Yasuj:

- Strengthen institutional trust through transparency and public participation.
- Invest in environmental protection to keep tourism viable.
- Promote local human capital through collaboration with academic institutions.
- Diversify the economy through agro-tourism and local industry.

To make Yasuj more resilient and sustainable, integrated urban governance, adaptive planning, and multi-sectoral collaboration are essential.

6. Conclusions

This study uses a robust and multidimensional framework that integrates SWOT analysis with Analytic Hierarchy Process (AHP), SPACE matrix and scenario planning to conduct a thorough assessment of Yasuj city's strengths, weaknesses and strategic posture in its pursuit of sustainable development. The results show that while Yasuj has considerable inherent advantages, such as remarkable natural resources, a rich cultural heritage and a well-educated workforce, its current situation remains vulnerable due to internal structural deficiencies and various external organizational threats. This emphasises the need for strategic planning and effective management to move beyond this stage.

A detailed examination of internal factors using the SWOT-AHP methodology revealed significant strengths, including special natural attractions — most notably the iconic Yasuj Waterfall —a diverse cultural wealth and a

well-educated human capital, all of which provide a strong foundation for promoting tourism and strengthening local identity. Nevertheless, obstacles such as a fragile industrial framework, the lack of a stable economic infrastructure, increased urban development costs due to the city's unique topography, and dwindling public confidence in the municipal administration are significant internal hurdles to development that require urgent attention and prioritized reform.

The external analysis has highlighted the opportunities and risks in Yasuj's external environment. Key opportunities include the city's proximity to pristine and invaluable natural resources such as the Zagros Mountains, the potential for a young and skilled labour force, and national policies and initiatives to promote tourism development, all of which could act as primary catalysts for sustainable urban development. In contrast, threats such as industrial pollution, environmental and earthquake risks, inadequate infrastructure to attract and retain investment, capital flight and a geographical location somewhat removed from major national centers pose serious organizational challenges that, if not addressed, could significantly hinder the sustainable development of Yasuj.

The assessment using the SPACE matrix, which considers the dimensions of finance, industry, environment and competitive advantage, highlights the limited financial and industrial resources combined with unfavorable environmental conditions and weak competitive advantages, which classifies the city's overall strategic posture as defensive. This defensive strategic framework requires cautious policies aimed at mitigating weaknesses, developing and managing counter-strategies against threats, and the gradual and deliberate utilization of existing and potential capacities.

The quantitative analysis of strategic options using the SPACE matrix identified priorities such as promoting local partnerships and strengthening meaningful private sector participation in development initiatives, strengthening complementary and supplementary agricultural enterprises and targeted investment growth in the tourism sector. These strategies not only maximise the potential of Yasuj's natural and cultural resources, but also play a critical role in addressing inefficiencies and eliminating structural gaps.

In addition, the scenario planning framework serves as a highly effective and adaptable tool for addressing the uncertainties and complexities associated with the future environmental, economic and social landscape of Yasuj, providing a multifaceted and multidimensional approach to decision-making. The optimistic scenario envisages significant investment in tourism, strong institutional partnerships and an influx of skilled labour. The realistic scenario foresees a steady growth in tourism, a gradual increase in budgetary resources, increased institutional co-operation, an improvement in infrastructure and services in underprivileged areas and a strengthening of cultural initiatives. The pessimistic scenario, on the other hand, assumes a deterioration in environmental conditions, a decline in public confidence and a flight of capital, necessitating strict protective measures, the prevention of brain drain and improved resilience to climatic and seismic threats. These scenarios enable policymakers and managers to anticipate future developments and strategies for urban management plans in a flexible and informed way.

Moving Yasuj from its current defensive posture to a competitive and development-oriented position will require the implementation of a series of coordinated strategies. These include the restoration of public trust through greater transparency and authentic participatory processes, consistent and strategic investment in environmental protection to maintain and expand tourism potential, the improvement and development of human resources through close partnerships with educational and research institutions, and economic diversification in sustainable sectors such as agriculture, rural tourism and related industries. In addition, integrated and inclusive urban governance, accelerated adaptive planning that responds to environmental and economic changes, and enhanced cross-sectoral and comprehensive cooperation are essential foundations for the realization of resilient and sustainable development in Yasuj, which deserves to be pursued continuously and seriously.

In summary, the findings emphasize the importance of balanced, integrated and comprehensive approaches that harness existing natural, cultural and human resources, thoroughly address structural deficits and environmental risks, and strengthen Yasuj's economic and managerial capabilities to put the city on a stable and sustainable growth

path. Ultimately, realizing the vision of sustainable development of Yasuj requires collective efforts, continuous collaboration and strategic coordination among all local stakeholders, enhancing expertise and research capacity within academic institutions, and fostering effective and genuine partnerships among government, private and civil society sectors to ensure the continuous improvement of the quality of life of residents while preserving the identity, culture and ecosystem of the region.

6.1. Policy Recommendations

Policy recommendations for sustainable urban development in Yasuj emerge from the strategic findings:

1 - Improve institutional coordination: promote cooperation between local governments, provincial authorities, and academic institutions, including Yasuj University, to coordinate strategies and optimize implementation.
2 - To promote tourism as a strategic pillar, offer incentives to the private sector, especially near natural attractions such as the Yasuj Waterfall and the Zagros region.
3 - To support agricultural value chains, invest in related industries through public-private partnerships, with a focus on food processing and agri-tourism.
4 - Improve human capital: Implement capacity-building initiatives for young and skilled migrants to reduce unemployment and increase labour competitiveness.
5 - Protect natural resources: Enforce strict environmental regulations to protect forests, rivers, and biodiversity, especially in the face of increasing climate and urbanization pressures.
6 - Increase public participation: Create legal and procedural frameworks to encourage public participation in decision-making and increase transparency and trust in local government.

6.2. Limitations and Future Research

Although this study covers a wide range of topics, it also has its limitations.

Data limitations: The analysis was largely based on expert opinion and secondary sources. More detailed real-time socio-economic data could improve future assessments.

Scenario Assumptions: Scenario planning is based on current trends and stakeholder insights, but may not take into account all potentially disruptive events or changes in national policy.

Generalizability: The results are limited to Yasuj and may not be transferable to other medium-sized Iranian cities without contextual adjustments.

Future research could fill these gaps by:

- Using quantitative modelling methods such as system dynamics or agent-based simulations for scenario analysis.
- Conducting longitudinal studies to monitor the effectiveness of the techniques used over time.
- Comparing the development of Yasuj with comparable cities nationally and internationally to identify transferable lessons and best practices.

Author Contributions

Conceptualization, A.S. and J.B.; methodology, A.S.; software, M.N.; validation, A.S., J.B., and M.N.; formal analysis, A.S.; investigation, A.S.; resources, J.B.; data curation, M.N.; writing—original draft preparation, A.S.; writing—review & editing, J.B. and M.N.; visualization, M.N.; supervision, J.B.; project administration, A.S.; funding acquisition, J.B. All authors have read and agreed to the published version of the manuscript.

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Conflicts of Interest

The authors declare no conflict of interest.

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