

# Future strategies for promoting tourism and petroleum heritage in Khuzestan Province, Iran

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## Abstract

**Purpose** – *Industrial tourism not only strives to preserve industrial heritage, but can also be a strategy for being familiar with the history of industry and attracting tourists to new destinations. This paper examines the issue of promoting petroleum industrial tourism in the case of Khuzestan, Iran. The research aims at determining appropriate strategies for promoting petroleum industrial tourism.*

**Design/methodology/approach** – *The data were analysed through a strengths, weaknesses, opportunities, and threats (SWOT) model.*

**Findings** – *The results revealed the competitive strategy as the best. Lastly, strategies such as: concentric diversification, joint venture strategy, conglomerate diversification and horizontal diversification were proposed as key solutions. The results support the view that establishing an exploratory ecomuseum in the territory of Khuzestan Province can be a suitable concentric diversification strategy towards petroleum industrial sustainable tourism in the future.*

**Originality/value** – *The main originality of this paper includes linking tourism with the petroleum (oil and natural gas) industry and its natural landscapes for the first time in a case study. Therefore, the results of this research can extend the literature in this regards. Moreover, this paper attracts tourists to visit natural landscapes of petroleum heritage.*

**Keywords** Ecomuseum, Industrial tourism, Natural gas, Petroleum, SWOT

**Paper type** Research paper

## Introduction

The Middle East is not only a geographically strategic region but also one of the regions with huge oil reserves among the world's largest reserves. Saudi Arabia, Iran, Iraq, Kuwait and the United Arab Emirates are the countries with the largest oil resources in the world. The Middle East also has huge reserves of natural gas. Iran and Qatar have the world's first and second largest natural gas reserves, respectively (Dargin, 2007). The oil-rich economies of the Middle East are mostly mono-product economies and oil-dependent.

Nowadays, the attention of the Middle East is attracted to an ancillary sector named petroleum industrial tourism. The establishment of petroleum museums in Oman, Kuwait and Iran are good examples in this regard (Table 1).

Since Khuzestan Province is one of the most important oils- and natural gas-producing areas in Iran, this region has been selected as the study area. The main originality of this research includes linking industrial tourism as a niche with the natural gas and petroleum industry for the first time in a case study. Therefore, it can be said that the results of this research can extend the literature. At present, the attention of petroleum industrial tourism has only emphasized establishing museums, especially traditional museums in case studies; however, this research is an initial attempt to

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**Table 1** List of petroleum and gas museums in the Middle East

<i>Museum</i>	<i>Country</i>
Oil and gas exhibition centre Al-Qurum	Oman
KOC Ahmed Al Jaber Oil and Gas Exhibition	Kuwait
Iran Petroleum Museum and Documents Center	Iran, Tehran
Iran's first petroleum museum	Iran, Abadan
Masjed Soleyman Oil Industry History Museum	Iran, Masjed Soleyman

Source(s): Authors

identify the strengths, weaknesses, opportunities and threats of promoting petroleum industrial tourism in Khuzestan Province and to investigate the appropriate strategy. Moreover, the present study strives to find solutions for preserving and introducing petroleum industry heritage sites.

## Literature review

Industrial tourism is a form of tourism in which visitors travel to enjoy and get experiences of industrial destinations. This niche tourism is recognized as a green economy (McBoyle, 1996). Industrial tourism is a popular part of heritage tourism and today many factories and companies have built tourism sites, and this has led to economic benefits for them, for example, Bingham Copper Mine, USA created a positive image of the copper industry and mines with the help of tourism and reduced the negative image of pollution and environmental degradation of the copper mines (Rudd and Davis, 1998). It is noteworthy that industrial tourism invites tourists to visit industrial and operational sites whose core activity is not tourism (Frew, 2000).

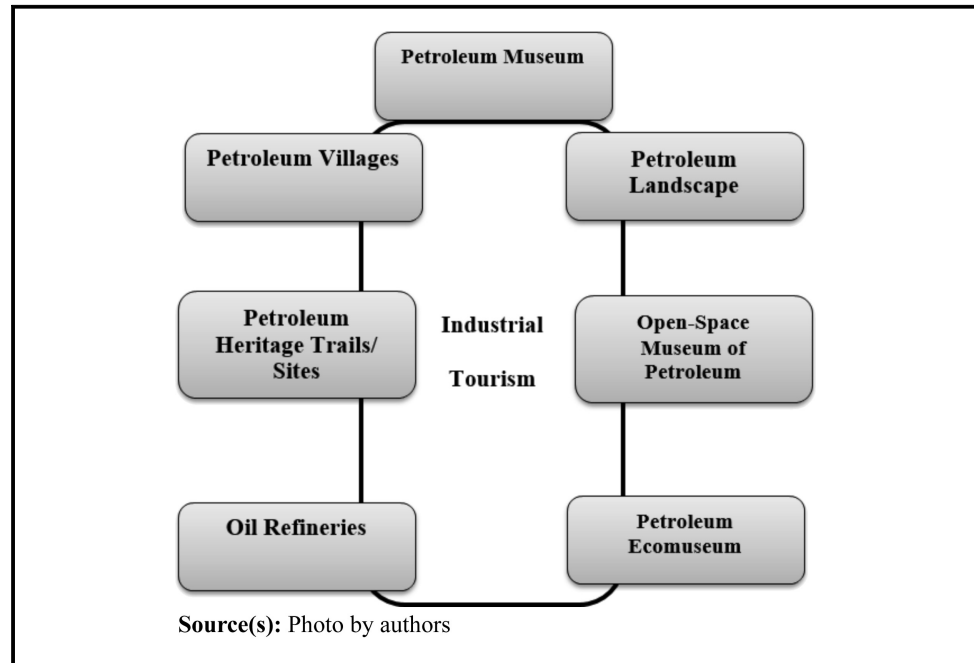
Industrial tourism is a type of tourism that includes visits to companies and industrial legacies and strives to familiarize tourists with the products, processes, uses and history of that industry (Otgaar *et al.*, 2010). Furthermore, industrial tourism can be a strategy for avoiding a mono-product economy (Bianchi, 2000). In fact, some economic activities can take advantage of ancillary products related to the core activity for some other goods or services. Regarding this, industrial tourism could make a good example of an ancillary product for industrial activities.

Nowadays, the petroleum (oil and natural gas) industry and its landscapes are known as a tourism destination (Metsaots *et al.*, 2015; Rahmiasari, 2016). Following the interest of tourists in this niche tourism, petroleum museums, the Open-Space Museum of Petroleum, petroleum villages [such as oil and gas tourism village in East Java, Indonesia (Rahmiasari, 2016)], petroleum industrial heritage trails/sites, oil refineries, petroleum natural landscapes and petroleum ecomuseums (e.g. Ecomuseum Bergslagen – history of Oljeön, Sweden, as the world's oldest remaining oil refinery) have emerged as new tourism destinations (Figure 1).

Farsani *et al.* (2014) stated that the word ecomuseums originated in France, and the concept was developed by Georges Henri Rivière and Hugues de Varine, who invented the term “ecomusée” in 1971 (Bary *et al.*, 1994). The ecomuseum paradigm was developed and fully considered by Davis (1999). Corsane *et al.* (2007) noted that the term ecomuseum as a new form of museology (Davis, 2008) and as a reuse strategy (Bottero *et al.*, 2019) includes a wide range of projects that are investigated to preserve and interpret the tangible and intangible heritage of a geographical territory. González *et al.* (2017) argued that the idea of the ecomuseum sometimes emphasizes exploration. Since one can explore oil discovery, oil history and production processes in a petroleum ecomuseum, it can be said that petroleum ecomuseum is an exploratory ecomuseum.

The Open-Space Museum of the Petroleum Industry in Bóbrka, Krosno County, Poland, is a petroleum heritage attraction, which creates an opportunity for tourists to be familiar with geotourism and educational trails regarding rock oil mines and oil production, the history of the petroleum industry, drilling techniques and petroleum exploitation methods and enjoy aesthetic petroleum landscapes (Radwański, 2009). Moreover, one of the most famous international tourist petroleum trails runs from Poland to Ukraine, displaying the petroleum industry in the 19th century

**Figure 1** Different types of industrial tourism destinations



(Kotarba, 2009; Kruczek and Kruczek, 2016). Furthermore, Metsaots *et al.* (2015) introduced the oil shale mining heritage/landscape as a tourism attraction and considered public opinions in this regard in the case study of Ida-Viru County, Estonia. The results of quantitative analysis illustrated that people pay attention to the industrial landscapes. In addition, the authors suggested European Union support funds, using the experience of international consultants for regional development of industrial regions and holistic planning as activities, which can promote this form of tourism in the region.

Industrial heritage trails are another attraction which not only preserves and revives post-industrial sites/heritage, but creates an opportunity for promoting post-industrial tourism and local community development; mining and oil industry traditions in the Polish Carpathian Mountains, registered as a European Industrial Heritage Routes system, constitute a good example in this regard (Kruczek and Kruczek, 2016).

Texas, USA, is another oil and natural gas tourism destination which has a heritage dating back over 100 years with its oil well allocated in 1866. The results of a study illustrated that interpretation centred on it has a positive impact on popularization of the oil and natural gas industry, and focussing on industrial tourism as an alternative economy can be a strategy for local development in the area (Price and Ronck, 2018).

In addition, Oil Creek Valley is the site of the world's first commercial oil well where tourists can get experience and information regarding the story of the early petroleum industry. An interpretative and educational programme, outdoor classrooms, historical tableaux, a train station visitor centre, a petroleum aesthetic landscape with features such as deep hollows, steep hillsides and wetlands are activities and services which the park offers to tourists (Oil Creek State Park, 2019).

Drake Well Museum and Park, Pennsylvania, USA, is a territory in which one can have experiences regarding the development of the petroleum industry in Pennsylvania as well as its growth into a global enterprise (Drake Well Museum and Park, 2019).

It is worth mentioning that petroleum industrial tourism is a current consideration in Iran and especially in Khuzestan Province, and there is no literature in this regard. Moreover, up to this time,

no significant work has been undertaken in the field of petroleum industrial tourism with emphasis on landscapes/heritage sites.

### Petroleum heritage/landscape of Khuzestan (case study)

Khuzestan Province is a province of Iran located in the southwest of the country, bordering Iraq and the Persian Gulf. The capital of Khuzestan is Ahvaz. It is noteworthy that Khuzestan Province is the major oil-producing region of the country, and this created an opportunity for promoting petroleum industrial tourism. Attractions such as natural gas and oil landscapes, oilfields, museums, refineries at Ahvaz, Abadan Khorramshahr, etc. and churches and a British cemetery in Masjed Soleyman and Abadan (which included the graves of the British and foreigner workers from the refineries such as George P. Kerby from Canada) and Iran's oldest petrol stations which are registered on the national heritage list are located in Khuzestan.

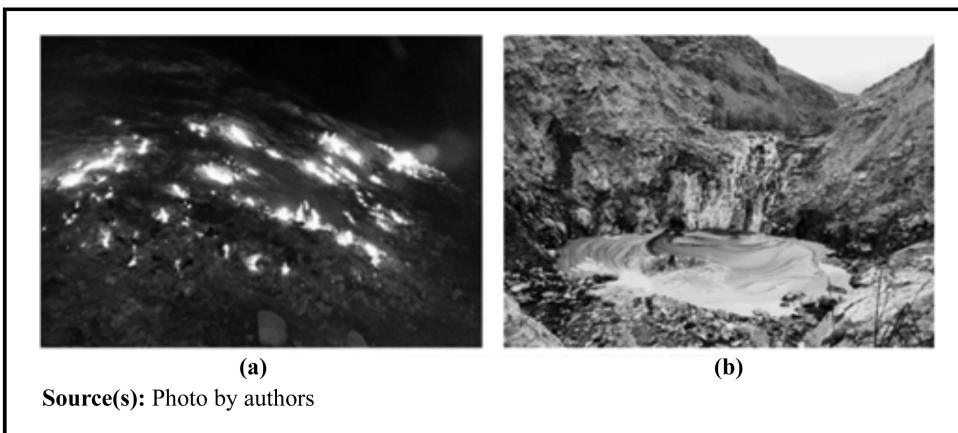
One of the natural gas landscapes which attracts tourists is Tashkooh (the Eternal Fire (Plate 1a)). The seeping of hydrocarbon materials and natural gas out of the Earth's joints and fissures and their setting light to them has created a rare landscape in Ramhormoz. This phenomenon can be seen in the vicinity of Gonbad Loraan as the result of gas emissions from Mamatein oilfields. The hill which cradles this phenomenon is composed of evaporative materials and marl (Amrikazemi, 2013). Moreover, Burnt Mountain is the same landscape in Omidiyeh, Khuzestan, on a smaller scale. Oil Springs in Masjed Soleyman are another natural petroleum landscapes in Khuzestan, especially in the C. Branch area.

Bitumen natural springs are another natural landscape in the Mamatein rural district of Ramhormoz (Plate 1b).

The Petroleum Museum is another petroleum industrial tourism attraction which was established in Abadan, Khuzestan. The museum is located in the place of the Abadan historical gas station which was built by the British Petroleum Company in Abadan (1927) and in its time provided the necessary fuel for the region, namely oil and gasoline for domestic use and transportation of vehicles, including aeroplanes (Petroleum Museums and Documents Centre, 2016).

Masjed Soleyman Oil Industry History Museum is the second museum launched in Khuzestan. Masjed Soleyman is the city of origin of the oil industry in Iran, and the city has one of the oldest mining sites in the world (Petroleum Museums and Documents Center, 2016). Moreover, the Darkhoein pumping facility was one of the first oil pumping facilities on the route connecting Masjed

**Plate 1** Natural gas and oil landscape in Khuzestan Province, Iran. (a). The Eternal Fire in Ramhormoz, (b). Bitumen natural spring in Mamatein



Soleyman to Abadan for refining. Well number one is the first oil well in the Middle East located near Masjid Soleyman in the Naftoon area. This oil well was explored in 1908.

Soroushmehr and Kahzadi Seifabad (2016) believe that petroleum museums in Khuzestan can be a solution for promoting tourism and sustainable development.

The discovery of oil and its extraction in a short time changed the culture of the local people including two main groups of nomads and Arabs, and Khuzestan province moved towards modernity in a short time. Many people from other parts of Iran and countries such as England, India, Scotland, USA, etc. migrated to this province for work. As mentioned above, there is a foreign cemetery in Zamanabad village of the Khuzestan province. Interestingly, many English words such as tomato and face still exist in the lingual culture of the local people after 80 years. The migrations have an impact on the architecture of Khuzestan Province, for example, the Rangooniha Mosque located in Abadan has a unique Indian architecture.

In addition, one of the most beautiful cultural landscapes in Khuzestan Province can be seen in the village of Naft Sefid, where women cook on the emission of gas from their homes' yard.

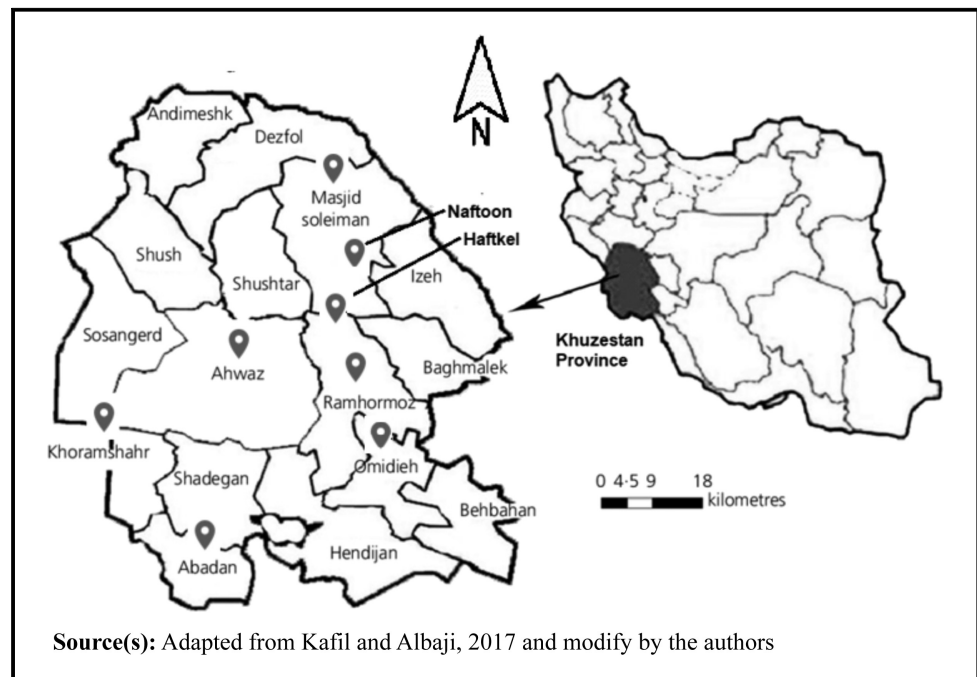
Locations of petroleum industrial tourism attraction in Khuzestan Province illustrated in Figure 2.

### Methodology

As mentioned before, this study was conducted in the Khuzestan Province, Iran, and the empirical part of the study was done from June to October 2019. Since the present study aims at finding an appropriate strategy and solutions for promoting petroleum industrial tourism in the case study, it is applied research.

The SWOT method as a qualitative method (Finastiian *et al.*, 2019; David, 2007) was used to identify the strengths, weaknesses, opportunities and threats for the petroleum industrial tourism boom in the study area in the future.

**Figure 2** Locations of petroleum industrial tourism attractions in Khuzestan Province



In the first step, an interview form was designed to investigate the strengths, weaknesses, opportunities, and threats, and the content validity ratio (CVR = 0.75) illustrated that the interview form had high validity.

The snowball sampling method was used to collect data, and the statistical population of the study comprised the experts and elites in the fields of tourism, museum, geology, petroleum industry and the local authorities. The snowball sampling method as a non-probability sampling technique is applied when samples with the target groups are not easily accessible (Biernacki and Waldorf, 1981). Obviously, the snowball sampling method has some limitations such as little control of researchers on sampling and sampling bias.

After each interview to find different themes, we started open coding. Table 1 illustrates an example of open coding of interview no 1. The results of the interview forms were analysed through the hand-coding method (open and axial). It is noteworthy that the data reached saturation point at interview no 40.

Hence, the strengths and weaknesses of promoting petroleum industrial tourism in Khuzestan were recognized (Table 2) and reflected as internal factors (IFs). Furthermore, opportunities and threats as external factors (EFs) were discovered through a hand-coding method.

In the next step, the internal factor evaluation (IFE) matrix and external factor evaluation (EFE) matrix were obtained from the results of the coding method (Table 2), and we sent the matrices to experts for scoring in the second round.

## Results

The results of coding of face-to-face interviews revealed thirteen strengths, nineteen weaknesses, five opportunities and nine threats, which are illustrated in Table 2.

In the second phase, the respondents rated each item in the matrices (IFE matrix and EFE matrix) (Tables 3 and 4). The scoring in the internal matrix ranged from 4 to 1, where strengths should receive a 4 (superior response) or 3 (an above average response) score and weaknesses must receive a 1 (a poor response) or 2 (an average response). It is obvious that the scoring for the external matrix is the same and opportunity should score 4 or 3 and threats must rate 1 or 2. Moreover, the rating for weight should be between 0 and 1 (Finastiiian *et al.*, 2019; David, 2007).

According to David (2007, p. 122) in an IFE matrix, the total weighted score can range from a low of 1.0 to a high of 4.0, with the average score being 2.5. Total weighted scores well below 2.5 characterize organizations that are weak internally, whereas scores significantly above 2.5 indicate a strong internal position. It is noteworthy that for the EFE matrix scoring is the same, and the total weighted scores above 2.5 demonstrate a strong external position, which means opportunities outweigh threats. Thus, based on the SWOT in the IFE matrix model, if the sum of the weighted score (weight  $\times$  rating) is greater than 2.5, it indicates that strengths are pre-eminent, and if the weighted score is less than 2.5, it demonstrates that the points of weakness will prevail (David, 2007, p. 122).

The results of the IFE matrix in this research indicated that [ $\sum$  (weight  $\times$  rating) = 2.53] the points of strength for promoting industrial tourism with emphasis on petroleum and natural gas in Khuzestan Province overcome the weaknesses. Hence, Khuzestan Province has a great potential [petroleum heritage/natural landscapes (S1 to S13 in Table 2)] for promoting this form of tourism.

Furthermore, the total weighted score of the EFE matrix (2.40 < 2.50) reveals that the threat points in the territory of the case study are preeminent, and the province for promoting petroleum and natural gas industrial tourism should strive to eliminate or reduce the effect of these threats using its strengths.

In the third step, in order to evaluate the strategic position of promoting industrial tourism with emphasis on petroleum and natural gas, a diagram was designed (Figure 3). The results demonstrate that the strategic position in the SWOT model is competitive. The competitive strategy aims at gaining a competitive advantage in the marketplace against competitors.

**Table 2** Strengths, weaknesses, opportunities and threats obtained from interview forms (open and axial coding)*Cods Strengths*

- S1 Establishment of petroleum and gas museums and associated products (such as Masjed Soleyman Oil Industry History Museum, Petroleum Museum of Abadan, Bibian Museum of Distillery and Sulphur Factory in Masjed Soleyman)
- S2 Existence of training and research and technical centres in some petroleum and gas companies (for training and introducing oil companies to the public)
- S3 Existence of bitumen natural spring and oil springs in the province (such as Masjed Soleyman oil spring, C. Branch (Si Berenj) oil spring in Tembi Golgir Rural District of Masjed Soleyman, Mamatein bitumen and oil spring in Ramhormoz, etc.)
- S4 Organizing petroleum and gas exhibitions (such as the Khuzestan Oil and Drilling Industry Exhibition)
- S5 Existence of beautiful petroleum and gas landscapes in the province (such as Tashkooh (the Eternal Fire) in Ramhormoz and gas flares that create a beautiful landscape, especially at night)
- S6 Ancient fireplaces (fire temple) such as Jawida ancient fireplace in Masjed Soleyman
- S7 Existence of petrochemical refineries, installations, equipment, factories and petrochemical complexes (such as Iran's first gas station, refineries, etc.)
- S8 Easy access to petroleum and gas facilities because their locations are close together
- S9 Petroleum and gas wells of the province (such as well number one in Masjed Soleyman, petroleum well of Tembi Golgir Rural District, Aghajari petroleum wells, Haftkel petroleum wells, Ahvaz, etc.)
- S10 The province's reputation for archaeology (such as Eshkaft-e Salman, Chogha Zanbil ziggurat, Haft Tapeh archaeological site, Chogha Ancient Hill, etc.)
- S11 The province's reputation for industrial tourism
- S12 The province's reputation for nature tourism (such as the beautiful nature of Dehdez, Soosan Plain, Shiman, Hoor al-Azim wetland, etc.)
- S13 Existence of petroleum celebrities, experienced pioneers and experts (such as political and social elites – petroleum industry experts and elites – petroleum explorers and pioneers such as Mohammad Mosaddegh (the head of the nationalization of the Iranian oil industry), Mohammad Javad Bagher Tondguyan (oil minister in the cabinet of Mohammad Ali Rajai), Ali Akbar Dibaj (the first petroleum industry public relations director, etc.)

*Weaknesses*

- W1 Lack of training of staff (employees) and local communities before entering tourism sector
- W2 Budget deficit in order for investment for conservation and restoration of heritage properties remaining from the petroleum industry
- W3 Lack of specialist human resources among the staff of the National Iranian Oil Company in tourism and especially industrial tourism
- W4 Lack of awareness and study of officials and staff (employees) and decision makers of industrial tourism
- W5 Lack of support and infrastructure for promoting petroleum industrial tourism
- W6 Failure to register the remaining petroleum industrial monuments and properties
- W7 No particular attention paid to the Health and Safety Executive (HSE) in the petroleum and gas industry
- W8 Lack of adequate infrastructure in the province (such as construction and development of hotels and guesthouses, tourism facilities for development of industrial tourism)
- W9 Lack of professional petroleum industrial tours for enthusiasts and schools
- W10 Lack of sufficient research and scientific study in the field of industrial tourism with emphasis on the petroleum and gas industry
- W11 Lack of information and poor advertising and marketing for industrial tourism
- W12 Inactivity in industrial tourism despite huge petroleum and gas resources and potential skills and talent
- W13 Lack of specialists in the field of museums and tourism (such as expert tour guides, museum guides and curators with emphasis on industrial tourism especially in geotourism and petroleum industrial tourism)
- W14 Lack of specialized training and service centres for local empowerment and popularization of petroleum industrial tourism in Khuzestan Province
- W15 Lack of creativity for promoting industrial tourism
- W16 Lack of proper investment of private sector and investors in industrial tourism
- W17 Officials not paying sufficient attention to preservation and conservation of the remaining historical petroleum industrial monuments and properties
- W18 Weakness of the Petroleum Public Relations in attracting and guiding visitors and tourists
- W19 Non-introduction and non-use of natives

*Opportunities*

- O1 Support the development plans of industrial areas of Khuzestan Province
- O2 Lack of serious competitors for Khuzestan Province in Iran in the field of petroleum and gas (despite competitors such as Ilam Province, Kermanshah Province, Bushehr Province, Kohgiluyeh and Boyer-Ahmad Province)
- O3 Participation of the Iran Ministry of Cultural Heritage, Tourism and Handicraft in the registering and vectoring of petroleum and gas heritage
- O4 Existence of Special Economic Zone of Khuzestan Petroleum and Gas Science and Technology as an innovation ecosystem in oil and gas fields
- O5 Situated near the Free Economic Zone and international borders

*Threats*

- T1 Political barriers and rules because oil has become a strategic priority and political product as black gold (such as security laws, confidential documents, etc.)
- T2 Bureaucratic administrative regulations for organizing tours and visiting refineries
- T3 Sanctions
- T4 Unfavourable climate conditions especially in summer
- T5 Threats from deprived areas, especially industrial cities in Khuzestan Province
- T6 Lack of coordination between Iran Ministry of Cultural Heritage, Tourism and Handicraft with National Iranian Petroleum Company for an industrial tourism boom
- T7 Possible dangers for invitees and visitors
- T8 Lack of support and attention from the government, officials and experts for promoting petroleum industrial tourism
- T9 Migration of local people due to pollution and heat

Source(s): Own construction

**Table 3** IFE matrix of promoting petroleum and natural gas industrial tourism in Khuzestan Province

Key external factors	Weight (0–1)	Rating (1–4)	Weighted score (weight × rating)
<i>Strengths</i>			
Establishment of petroleum and gas museums and associated products (such as Masjed Soleyman Oil Industry History Museum, Petroleum Museum of Abadan, Bibian Museum of Distillery and Sulphur Factory in Masjed Soleyman)	0.078	3.98	0.31
Existence of training and research and technical centres in some petroleum and gas companies (for training and introducing oil companies to the public)	0.028	3.64	0.10
Existence of oil springs in the province (such as Masjid Soleyman oil spring, C. Branch (Si Berenj) oil spring in Tembi Golgir Rural District of Masjid Soleyman, Mamatein oil spring in Ramhormoz, etc.)	0.029	3.92	0.11
Organizing petroleum and gas exhibitions (such as the Khuzestan Oil and Drilling Industry Exhibition)	0.029	3.51	0.10
Existence of beautiful petroleum and gas landscapes in the province [such as Tashkooch (the Eternal Fire) in Ramhormoz and gas flares that create a beautiful landscape, especially at night]	0.032	3.85	0.12
Ancient fireplaces (fire temple) (such as Jawida ancient fireplace in Masjid Soleyman)	0.027	3.51	0.09
Existence of petrochemical refineries, installations, equipment, factories and petrochemical complexes (such as Iran's first gas station, refineries, etc.)	0.03	3.92	0.12
Easy access to petroleum and gas facilities because their locations are close together	0.027	3.52	0.10
Petroleum and gas wells of the province (such as well number one in Masjid Soleyman, petroleum well of Tembi Golgir Rural District, Aghajari petroleum wells, Haftkel petroleum wells, Ahvaz, etc.)	0.069	3.97	0.27
The province's reputation for archaeology (such as Eshkaft-e Salman, Chogha Zanbil ziggurat, Haft Tapeh archaeological site, Chogha Ancient Hill, etc.)	0.029	3.59	0.10
The province's reputation for industrial tourism	0.03	3.81	0.11
The province's reputation for nature tourism (such as the beautiful nature of Dehdez, Soosan Plain, Shiman, Hoor al-Azim wetland, etc.)	0.027	3.44	0.09
Existence of petroleum celebrities, experienced pioneers and experts (such as political and social elites – petroleum industry experts and elites – petroleum explorers and pioneers such as Mohammad Mosaddegh (the head of the nationalization of the Iranian oil industry), Mohammad Javad Bagher Tongduyan (oil minister in the cabinet of Mohammad Ali Rajai), Ali Akbar Dibaj (the first petroleum industry public relations director, etc.)	0.029	3.72	0.11
<i>Weaknesses</i>			
Lack of training of staff (employees) and local communities before entering the tourism sector	0.03	1.41	0.04
Budget deficit in order of investment for conservation and restoration of heritage properties remaining from the petroleum industry	0.03	1.33	0.04
Lack of specialist human resources among the staff of the National Iranian Oil Company in tourism and especially industrial tourism	0.03	1.36	0.04
Lack of awareness and study of officials and staff (employees) and decision makers of industrial tourism	0.029	1.54	0.04
Lack of support and infrastructure for promoting petroleum industrial tourism	0.028	1.62	0.05
Failure to register the remaining petroleum industrial monuments and properties	0.018	1.59	0.03
No particular attention paid to the Health and Safety Executive (HSE) in the petroleum and gas industry	0.028	1.59	0.04
Lack of adequate infrastructure in the province (such as construction and development of hotels and guesthouses, tourism facilities for development of industrial tourism)	0.03	1.26	0.04
Lack of professional petroleum industrial tours for enthusiasts and schools	0.03	1.31	0.04
Lack of sufficient research and scientific study in the field of industrial tourism with emphasis on the petroleum and gas industry	0.027	1.64	0.04
Lack of information and poor advertising and marketing for industrial tourism	0.029	1.36	0.04
Inactivity in industrial tourism despite huge petroleum and gas resources and potential skills and talent	0.029	1.33	0.04
Lack of specialists in the field of museum and tourism (such as expert tour guides, museum guides and curators with emphasis on industrial tourism especially in geotourism and petroleum industrial tourism)	0.029	1.49	0.04
Lack of specialized training and service centres for local empowerment and popularization of petroleum industrial tourism in Khuzestan Province	0.027	1.54	0.04
Lack of creativity for promoting industrial tourism	0.029	1.49	0.04
Lack of proper investment of the private sector and investors in industrial tourism	0.029	1.44	0.04
Officials not paying sufficient attention to preservation and conservation of the remaining historical petroleum industrial monuments and properties	0.028	1.33	0.04
Weakness of the Petroleum Public Relations in attracting and guiding visitors and tourists	0.028	1.44	0.04
Non-introduction and non-use of natives	0.028	1.54	0.04
Total	1		2.53

Source(s): Own construction

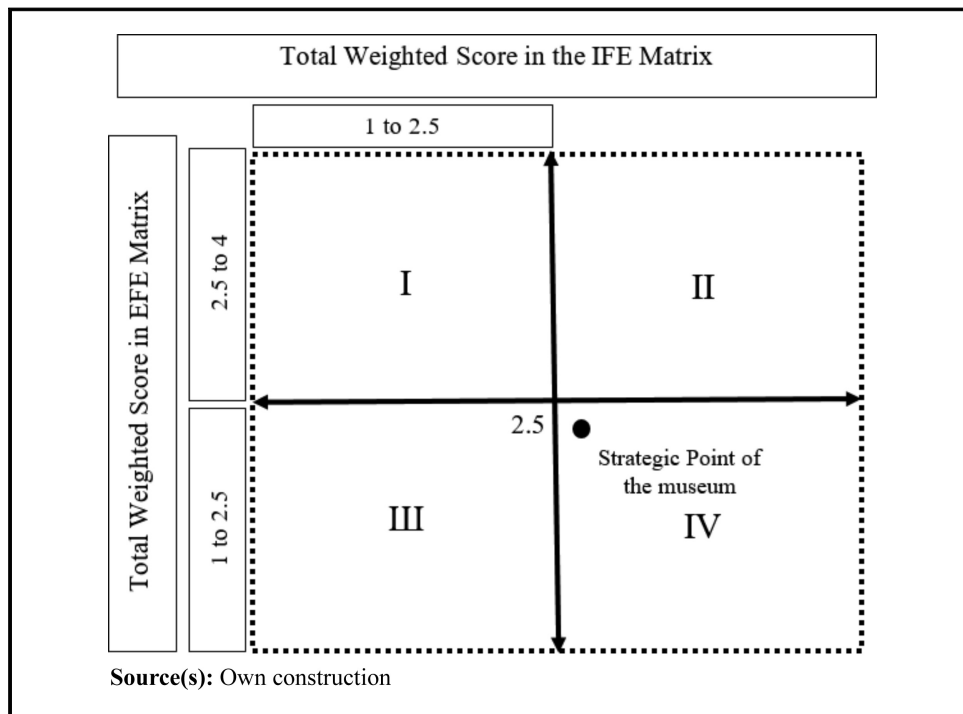


**Table 4** EFE matrix of promoting petroleum and natural gas industrial tourism in Khuzestan Province

Key external factors	Weight (0–1)	Rating (1–4)	Weighted score (weight * rating)
<i>Opportunities</i>			
Support the development plans of industrial areas of Khuzestan Province	0.07	3.62	0.25
Lack of serious competitors for Khuzestan Province in Iran in the field of petroleum and gas (despite competitors such as Ilam Province, Kermanshah Province, Bushehr Province, Kohgiluyeh and Boyer-Ahmad Province)	0.07	3.6	0.25
Participation of the Iran Ministry of Cultural Heritage, Tourism and Handicraft in the registering and vectoring of petroleum and gas heritage	0.08	3.71	0.30
Existence of Special Economic Zone of Khuzestan Petroleum and Gas Science and Technology as an innovation ecosystem in oil and gas fields	0.07	3.51	0.25
Situated near the Free Economic Zone and international borders	0.08	3.92	0.31
<i>Threats</i>			
Political barriers and rules because oil has become a strategic priority and political product as black gold (such as security laws, confidential documents, etc.)	0.07	1.38	0.10
Bureaucratic administrative regulations for organizing tours and visiting refineries	0.08	1.72	0.14
Sanctions	0.07	1.71	0.12
Unfavourable climate conditions especially in summer	0.06	1.6	0.10
Threats from deprived areas, especially industrial cities in Khuzestan Province	0.07	1.54	0.11
Lack of coordination between Iran Ministry of Cultural Heritage, Tourism and Handicraft with National Iranian Petroleum Company for an industrial tourism boom	0.09	1.98	0.18
Possible dangers for invitees and visitors	0.06	1.92	0.12
Lack of support and attention from the government, officials and experts for promoting petroleum industrial tourism	0.06	1.74	0.10
Migration of local people due to pollution and heat	0.07	1.21	0.08
Total	1		2.40

Source(s): Own construction

**Figure 3** Strategic position of promoting petroleum industrial tourism of Khuzestan Province in the SWOT model



According to [David \(2007\)](#), within the competitive strategy, the Khuzestan Province should pay particular attention to strategies such as concentric diversification, joint venture strategy, conglomerate diversification and horizontal diversification. Key strategies appropriate to each strategy illustrated in [Table 5](#) are suggested which can help promote petroleum and natural gas industrial tourism in Khuzestan Province.

## Conclusion

Industrial tourism is a niche tourism in which visiting industries is a travel motivation. As mentioned before, Iran has large natural gas and oil reserves and experience in the petroleum industry for more than 100 years. Among the Iranian provinces, Khuzestan Province is a pioneer in this regard. This paper is an initial attempt to investigate the appropriate strategies for promoting industrial tourism with emphasis on petroleum and natural gas industry in Khuzestan Province in the future. Hence, we used the SWOT method to find the strategic position point and suggest strategies. Our result clearly illustrated that a competitive strategy is appropriate for promoting petroleum industrial

**Table 5** Suggested appropriate key strategies for promoting petroleum industrial tourism of Khuzestan Province

<i>Diversification strategy</i>	<i>Key strategies suggested as appropriate</i>
Joint venture (planning strategy in which two or more firms/companies or organizations work together)	<ul style="list-style-type: none"> <li>■ Cooperation of tour guides schools/educational institutions under the supervision of Iran Ministry of Cultural Heritage, Tourism and Handicraft for training tour guides in industrial tourism</li> <li>■ Working with Kuwait and Oman to establish a network of oil and gas museums in the Middle East</li> <li>■ Cooperation of Iran Ministry of Cultural Heritage, Tourism and Handicraft with National Iranian Oil Company for promoting industrial tourism</li> <li>■ Cooperation of Iran Ministry of Cultural Heritage Tourism and Handicraft with National Iranian Oil Company and the private sector for organizing tours, fairs and exhibitions regarding industrial tourism with emphasis on petroleum and natural gas industry</li> <li>■ Cooperation of Petroleum Public Relations for attracting and guiding visitors and tourists</li> <li>■ Cooperation of Ilam Province, Kermanshah Province, Bushehr Province, Kohgiluyeh and Boyer-Ahmad Province for establishment of a network for promoting industrial tourism with emphasis on the petroleum and natural gas industry</li> <li>■ Participation of the Iran Ministry of Cultural Heritage, Tourism and Handicraft in the registering and vectoring of petroleum and gas heritage</li> </ul>
Concentric diversification (should add new but relevant products and services to your products and services)	<ul style="list-style-type: none"> <li>■ Local involvement in petroleum industrial tourism activities</li> <li>■ Establishment of a petroleum and natural gas ecomuseum in Khuzestan Province</li> <li>■ Organizing industrial tours with emphasis on natural gas and petroleum</li> <li>■ Organizing industrial tours with emphasis on natural gas and petroleum for schools</li> <li>■ Organizing geotours (geotourism tours) with emphasis on natural gas and petroleum</li> <li>■ Creating augmented reality for introducing natural gas and oil industry activities in existing museums</li> <li>■ Turning Mamatein and Naft Sefid villages into oil and gas tourism village destinations</li> <li>■ Creating petroleum industrial heritage trails in Khuzestan Province</li> </ul>
Conglomerate diversification (introduces new but irrelevant products and services to its core products and services)	<ul style="list-style-type: none"> <li>■ Integrating ecotours with industrial tours with emphasis on natural gas and petroleum in Khuzestan Province</li> <li>■ Integrating archaeological tours with industrial tours with emphasis on natural gas and petroleum in Khuzestan Province</li> </ul>
Horizontal diversification (new but irrelevant new products and services add to their products and services and offer to their current customers)	<ul style="list-style-type: none"> <li>■ Organizing industrial tours with emphasis on natural gas and petroleum for oil company staff around the world and retired staff of National Iranian Oil Company</li> </ul>

Source(s): own construction, strategic typology adapted from [David's \(2007\)](#) classification

tourism in Khuzestan. Furthermore, a joint venture strategy concentric diversification, conglomerate diversification and horizontal diversification were determined as key strategies.

Other solutions recommended for a joint venture strategy are local involvement, cooperation of tour guides schools/educational institutions under the supervision of the Iran Ministry of Cultural Heritage, Tourism and Handicraft for training tour guides in industrial tourism; working with Kuwait and Oman to establish a network of oil and gas museums in the Middle East; cooperation of Iran Ministry of Cultural Heritage, Tourism and Handicraft with National Iranian Oil Company for promoting industrial tourism; cooperation of Iran Ministry of Cultural Heritage Tourism and Handicraft with National Iranian Oil Company and private sectors for organizing tours, fairs and exhibitions regarding industrial tourism with emphasis on petroleum and natural gas industry; cooperation of Petroleum Public Relations for attracting and guiding visitors and tourists; cooperation of Ilam Province, Kermanshah Province, Bushehr Province, Kohgiluyeh and Boyer-Ahmad Province for establishment of a network for promoting industrial tourism with emphasis on petroleum and natural gas industry and participation of the Iran Ministry of Cultural Heritage, Tourism and Handicraft in the registering and vectoring of petroleum and gas heritage.

Moreover, integrating ecotours with industrial tours with emphasis on natural gas and petroleum in Khuzestan Province and integrating archaeological tours with industrial tours with emphasis on natural gas and petroleum in Khuzestan Province are key appropriate solutions for a conglomerate diversification strategy.

In addition, organizing industrial tours with emphasis on natural gas and petroleum for oil company staff around the world and retired staff of the National Iranian Oil Company was a horizontal diversification strategy suggested by experts.

The last but not the least important strategy was a concentric diversification strategy which includes the emergence of new related services and products such as the establishment of a petroleum and natural gas ecomuseum in Khuzestan Province which provides some support for the results of [Rahmiasari \(2016\)](#); organizing industrial tours with emphasis on natural gas and petroleum; organizing industrial tours with emphasis on natural gas and petroleum for schools; organizing geotours (geotourism tours) with emphasis on natural gas and petroleum; creating augmented reality for introducing natural gas and oil industry activities in existing museums; turning Mamatein and Naft Sefid villages into oil and gas tourism village destinations and creating a petroleum industrial heritage trail in Khuzestan Province between Ahvaz, Abadan, Darkhoein, Khorramshahr, Omidiyeh, Masjed Soleyman, Haftkel, Naftoon, Ramhormoz and Mamatein, which confirms the findings of [Kotarba \(2009\)](#) and [Kruczek and Kruczek \(2016\)](#).

At present, the establishment of the Petroleum Museum in Abadan and Masjed Soleyman Oil Industry History Museum and organizing tours to visit Tashkooch and oil springs are activities taken to popularize the province for promoting industrial tourism with emphasis on gas and petroleum heritage. As mentioned in [Table 6](#) the Petroleum Museum of Abadan has an average of 14,300

**Table 6** Basic coding example (what are the strengths of Kuzestan Province for promoting petroleum industrial tourism)

Interview No 1	Open coding
<p><i>“Khuzestan province has high potential for the prosperity of industrial tourism. The province has two museums, one in Masjed Soleyman and the other in Abadan. The Petroleum Museum of Abadan has an average of 14,300 visitors per year. In addition, there is a natural attraction in Ramhormoz that many tourists go there and enjoy the fire in the mountains. In addition, it has a beautiful landscape at night. There are some villages such as Naft Sefid in the province that emit gas from their yards, and this is a unique phenomenon. local women cooked on this fire. Abadan and Ahvaz refineries can also be the main sites to visit.”</i></p>	<ul style="list-style-type: none"> <li>- Establishment of petroleum and gas museums and associated products (such as Masjed Soleyman Oil Industry History Museum – Petroleum Museum of Abadan)</li> <li>- Existence of beautiful petroleum and gas landscapes in the province (such as Tashkooch (the Eternal Fire) in Ramhormoz)</li> <li>- Existence of petrochemical refineries, installations, equipment, factories and petrochemical complexes (such as Iran’s first gas station, refineries, etc.)</li> <li>- Naft Sefid villages</li> </ul>

visitors per year, which indicates that visitors/tourists are interested in petroleum heritage in this region.

Since the petroleum heritage/natural landscapes and petroleum facilities are located in the territory, we believe that the establishment of an exploratory ecomuseum can be a good future solution for the conservation of petroleum heritage and attracting tourists. It is noteworthy that there is a new museology emphasis on territorial museums more than traditional museums, and this strategy – the establishment of an exploratory ecomuseum – can be a step towards sustainability, local involvement and a new museology movement.

Therefore, preparing a content plan for the establishment of an ecomuseum with an emphasis on the petroleum heritage can be a practical topic for future research.

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