

## Identifying Attractive Fisheries-Tourism Activities in the Caspian Sea Coastline: Using Delphi Technique

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### ABSTRACT

Fisheries tourism is one of the types of tourism that has not received much attention in Iran, despite its good status. The benefits of the tourism industry with the high potential of the fisheries and fishing industry can provide an ideal option to connect the two industries in order to leave the difficult conditions of the fishery areas and move toward development. The first step in planning for fisheries tourism development is to accurately identify the potentials and fisheries' attractions to absorb tourists. Thus, the present study aimed to identify the tourists' attractions of fisheries using a qualitative methodology with an exploratory approach. This research was applied in terms of purpose, and is descriptive and survey in terms of nature and method. The statistical population of this study was relevant subject experts. Using the purposeful snowball sampling method, 23 experts were selected to determine the panel of the experts based on their subject expertise, experiences, and the theoretical adequacy principle. In three rounds, the attractiveness and attractive fisheries activities for tourism were identified using the Delphi technique. In the first round of Delphi, 30 attractions and attractive activities for fisheries tourism were introduced by experts. After the removal of the less important items in the second and third round of Delphi, finally, the consensus was reached about 12 attractions of fisheries tourism, in three categories of fishing and fishery, fisheries industries, and coastal aquaculture.

**Keywords:** Sustainable fishing management, Fisheries tourism, Fisheries attraction, Delphi Technique.

### INTRODUCTION

According to the latest UN (2017) report, the world's population of 7.6 billion is expected to reach 8.6 billion in 2030 and 9.8 billion in 2050. Global food crisis was worse in 2020 and 2021 as a result of supply shortage caused by adverse weather conditions exacerbated by climate change, war, and internal conflicts in various countries, and economic shocks after the Covid-19. The subsequent disruption with anticipated population growth for the years ahead have raised fundamental concerns about the earth's ability to retain humanity

(Peterson, 2022). Indeed, many of the world's nutritional resources, including the world's fisheries sources, are considerably influenced by this demands. Given that we have encountered exploitation limitation in the fisheries and aquaculture sector, increasing productivity through applied education and extension, coordination between stakeholders and relevant organizations, and supporting this activity, can have a promising role in improving the conditions of fisheries and fishing communities. The coastal areas of the Caspian Sea are of the most important fishing areas in Iran. Today, illegal fishing, excessive harvesting of fish stocks in the

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Caspian Sea, over-harvesting of river water for agricultural use, and conflicts among fishermen are among the most important challenges of the fisheries sector in the coastal areas of the Caspian Sea (Migolinejad, 2013). Researchers all over the world have so far presented various strategies to eradicate poverty from developing countries. One of these strategies in fishing area is the economic diversification strategy generating new sources of income for the fishermen and their families (Idda *et al.*, 2009; Mourde, 2016; Nicolosi *et al.*, 2016; Rodrigues *et al.*, 2017). Tourism, in fact, is one of the most likely and promising types of development in rural coastal areas (Miller, 2022). Besides providing additional revenue sources for fishermen and other local residents, tourism can raise awareness of fishermen's activities and products of a region and enhance the sale of local fish through a wide range of activities, including direct sale of goods to tourists, advertising in local restaurants, and holding festivals. (Brookfield *et al.*, 2005; Miret-Pastor *et al.*, 2015; Nicolosi *et al.*, 2016; Rogelja and Spreizer, 2017). At the same time, many touristic areas search for some methods to offer something different from ordinary tourism. To attract tourists, other than the basic conditions necessary for tourism development, these conditions alone may not be enough to win the competition with many other similar destinations (FARNET, 2013). So, something extra and ideally something unique shall be offered to tourists. Traditional activities such as fishing can help attract visitors seeking a unique experience, and create a type of tourism that is more sustainable and help the local community (González and Piñeiro Antelo, 2020).

The benefits of the tourism industry and the high potential of the fisheries and fishing industry can present an ideal choice to connect the two industries to solve the problems of fisheries in Iran. United States is the primary source of global fishing tourists (Ditton, 2002) and recreational fishing, as a major tourism activity (Hall,

2021), is a cultural cornerstone and an important economic driver in the United States. Thousands of local communities depend on the revenues generated from recreational anglers and related tourism; as does the industry providing lures, reels, rods, line, tackle boxes and more (ASA, 2020). In 2016, recreational saltwater fishing in the United States supported 472,000 jobs, generated \$68 billion in sales impacts across the economy, and contributed \$39 billion to the GDP (NOAA, 2018). Hyder *et al.* (2017) estimated that more than 9 million European people participate in marine recreational fishing each year. These tourists spend approximately six billion euros per year in the fishing tourist destination (Hyder *et al.*, 2017). Therefore, connecting fisheries to tourism, besides meeting the needs to create innovative tourism products, can find new sources of fisheries' revenue for enhancing their profitability and sustainability (Mozumder *et al.*, 2018). Fisheries tourism is a relatively new concept of merging tourism with fisheries to supplement incomes of fishermen, their families and local people in the situation of declining living resources of the sea and to provide an attractive activity for tourists visiting the sea coast (Molina García *et al.*, 2016). In fact, fisheries tourism has various effects on economic, social and environmental aspects of coastal areas. Diversifying the income of fishermen, creating new job opportunities, reducing the pressure on fishing resources, and increasing the awareness of experts and tourists are the effects of fisheries tourism (González and Piñeiro Antelo, 2020). Although tourism helps address certain challenges on the way of fishermen and their communities, negative impacts of tourism occur when the level of visitors is higher than the environment's ability to cope with. Some of the main challenges of fisheries tourism are as follows (FARNET, 2014):

- Competition for scarce resources,
- Revenues generated leaving the area,
- Displacement or by-passing of local staff and resources,

- Low paid and seasonal jobs,
- Pressure and conflicts from high tourist activity,
- Commodification of local assets.

Although it is difficult to define how the tourism focus of fisheries started, it seems that it has been probably as old as tourism itself (Piasecki *et al.*, 2016). However, there is no universal definition for fishing tourism (Mozumder *et al.*, 2018) and it has different names in different countries (Gomei and Bellia, 2019; Tsafoutis and Metaxas, 2021). The review of the literature shows that, so far, terms such as fishing tourism, fishery-based tourism, pescaturism, and recreational fishing have been used to describe this phenomenon; but each of these terms is different from the other. Fishing Tourism can be defined as a set of activities carried out by professional fishers, and more specifically by small-scale fishers (Gomei and Bellia, 2019). In order to differentiate their incomes, they promote and valorize their profession and sociocultural heritage, and enhance a sustainable use of marine ecosystems, by means of boarding non-crew individuals on fishing vessels (MAREMED, 2013). Another term, pescaturism, as a defined concept, was born in Italy and soon was spread to other Mediterranean countries (Saba *et al.*, 2013). Pescaturism is to be considered as a different activity from fisheries tourism, or recreational fishing (including charter fishing), which usually denote angling (Piasecki *et al.*, 2016). While “fishing tourism” is a generic term that may concern any tourist service related to fishing, the term “pesca-tourism” refers to accompanying fisherman during his work, primarily to observe how he does his work (FARNET, 2013). Recreational fishing, i.e. non-commercial exploitation of living aquatic resources for recreation, tourism or sport is of the most frequent leisure activities in coastal zones and inland waters worldwide (Cooke and Cowx, 2004). Recreational fisheries is now a great, well-developed segment of ecotourism, and definitely is not covered by the majority of

definitions of pescaturism (Piasecki *et al.*, 2016). In some other countries, the term fisheries-based ecotourism is used. Fisheries-based ecotourism combines responsible travel to fishery areas with recreational fishing to conserve the environment and improve local people’s lives (FAO, 2017). We defined fisheries tourism and distinguished that from other related activities. In our definition, activities in fisheries tourism vary widely and might include fishing, homestays with fishermen, watching coastal views, visiting aquaculture farms, assisting with onshore chores like mending or preparing nets and gear, sailing to fishing grounds and participating with the crew, and/or preparing and eating local catch with the fishermen or their families. In this research, for the development of fisheries tourism, we used this definition for fisheries tourism to identify all the attractions and activities related to fisheries.

Tourism industry experts believe that Iran is one of the top ten countries in the tourism industry capacities. Iran ranked fifth in natural attractions, and ranked 10th in ancient and historical attractions (Movagharpak and Ghorbani, 2020). However, Iran's share of revenue from international tourism market is very small (Yaghoubi Manzari and Aghamiri, 2019). Also, for investment in the tourism industry, Iran ranked 172<sup>th</sup> among 174 countries and ranked the last among the Middle East (Movagharpak and Ghorbani, 2020). On the other hand, the distribution of local tourism in Iran is not suitable from spatial and temporal dimension, so, diversifying tourism goals and planning to use different forms of tourism can create and enhance sustainable income for fisheries-related individuals and cause appropriate spatial and temporal distribution of tourists in Iran, and reduce tourism pressure on specific touristic areas. Thus, fisheries tourism can both improve the status of the Iranian tourism industry and implement a strategy for distributing the appropriate spatial and temporal distribution of tourists in Iran. With more than 2544 kilometers of water border in the south of



the country and more than 900 kilometers in the north of the country, Iran has pristine fishery capacities and also can present a great opportunity to attract fisheries tourists (Ahmadian and Shami, 2015; Esmaeilniya and Adeli, 2001).

Attractions are the most important components in the tourism system. Tourism attractions are one of the most important reasons for traveling to a particular destination (Zayyari and Rokhsari, 2019). So far, numerous researches have been conducted on the importance and role of attractions in tourism (Moorthy, 2014; Jacek *et al.*, 2015; Erislan, 2017; Truchet *et al.*, 2016; Erislan, 2017; Wang *et al.*, 2020; Weidenfeld *et al.*, 2010; Sarah *et al.*, 2020). A research done by Kazemiyeh *et al.* (2018) showed that the increasing tendency to use nature for relaxation and recreational activities, increasing attention to rural tourism, investing in folklore cultures such as music, local and traditional clothing are the most important opportunities for tourism development. These attractions play a crucial role in the development of all types of tourism, including fisheries tourism. Nicolosi *et al.* (2016) indicated that the most important attractions of fisheries-related tourism are festivals and traditions related to local fisheries and foods, and local food and aquatic plants. Also, Effendi *et al.* (2019) described the most important attractions of marine ecotourism as diversity, beauty, and uniqueness of coastal plant species, animal species in coastal ecosystems, shallow marine coral reefs, and historical objects related to maritime life in the past. According to some researchers, besides these attractions, the most important incentive for fisheries tourists is recognizing the internal aspects of the fisheries sector and acquiring fisheries knowledge and participating in fisheries and fishing activities and being familiar with culture and food (González and Piñeiro Antelo, 2020; Padín *et al.*, 2016). Despite the high importance of attractions and their role in the success and development of tourism destinations (Guo *et al.*, 2001), an

examination of global studies in fisheries tourism indicates that limited research has been conducted on the identification and discovery of fishery activities that have the potential to attract tourism. Most of the researches has introduced the overall tourism attractions of a region and prioritized these areas in terms of various criteria. Despite the excellent and extraordinary tourism capacities of this sector in Iran, there has been no research on the tourist attractions of the fisheries sector. Therefore, the present study is of particular importance from this perspective.

## MATERIALS AND METHODS

The present study is practical in terms of purpose, and qualitative research in terms of paradigm with an exploration approach aimed at identifying attractive attractions and attractive tourism activities in fisheries sector. The review of research sources by the authors showed that, so far, few researches have been done on fishing tourism in Iran. Therefore, the Delphi method was used to conduct this research, as Delphi is a scientific method for organizing and structuring an expert discussion with the aim of generating insights on controversial topics with limited information (Rowe and Wright, 2011; Beiderbeck *et al.*, 2021). In this study, the classical Delphi method was used, in which the statistical population is subject experts being selected purposefully. In this method, there are often less than 50 participants and mostly 15 to 20 individuals (Landeta, 2006; Powell, 2003). The statistical population of this study consisted of 23 experts (Table 1). According to various studies, if the number of statistical samples in the Delphi technique is more than 13, the questionnaire's reliability is above 0.8 (Roberts and Dyer, 2004; Smalley and Retallick, 2011). Thus, given the number of statistical samples in this study as 23, it can be said that this study is of good reliability. In the first step, an open question, i.e. "What are the most important attractions of the

**Table 1.** Profile of the expert panel members.

Organization	Organizational position	Specialized field of activity	Education	Work Experience	Gender
Fisheries Department in Mazandaran, Gilan and Golestan Provinces	Manager, General Manager, General Assistant, Expert	Fishing and fishing ports, Restoration and protection of genetic resources, Extension and education of aquatics, Social and welfare affair of fishermen, monitorization and improvement of marine resources, Aquatic development of inland waters, Development of fish farming in cage system	5 PhD, 3 Master's Degrees	21	Male 5 Female 3
Gorgan University of Agricultural Sciences and Natural Resources, University of Guilan, Sari Agricultural Sciences and Natural Resources University, Tarbiat Modares University	Faculty Member	Aquaculture, Seafood processing, Production and utilization of aquatics	PhD	13.5	Male 4 Female 3
Iran Fisheries Organization	Manager, General Manager, General Assistant, Expert	Aquaculture production Planning quality improvement Aquatic processing and aquatic market development	PhD	14	Male 2 Female 1
Iranian Fisheries Researches Institute	Expert	Extension and transmission of findings	PhD	20	Male 1 Female 1
Tourism tour	Guide to tourism tours	Nature-based tourism ecotourism	BS	11	Male 1 Female 1
<b>Beach Cooperatives Seine</b>	Board of directors of fishing cooperatives	Beach seine fishing and throwing nets	BS	12	Male

Source: Research findings.

Caspian sea coastal areas for attracting tourists?", was asked and the respondents were required to mention the attractions and the attractive activities of the fisheries. By reviewing and analyzing the responses, 30 attractions and attractive tourism activities in the fisheries sector were identified by the majority of experts, and they were summarized in the first round of the research. In the second round of Delphi, respondents were asked to explain the importance of each attraction, and the activities identified in the previous round

based on a five-point Likert scale (1= Very low, 2= Low, 3= Medium, 4= High, 5= Very high). The items in this stage were investigated using average and standard deviation statistics. Normally, the average is considered as the criterion used to determine the importance, which is acceptable when it is equal or greater than 3.5 (Conner *et al.*, 2013; Nistler *et al.*, 2011; Smalley and Retalick, 2011; Warner and Washburn, 2009). Thus, the attractions and activities of the average score of 3.5 and higher were selected for the third round of the Delphi



method. In the third round of the research, agreement assessment was conducted to determine the levels of agreement and opposition to the experts' opinion on each of the attractions. In this round, the degree of acceptable agreement for each option in the studies was considered more than two-thirds or more than 66.66% (Martin *et al.*, 2006; Nistler *et al.*, 2011; Roberts and Dyer, 2004). In another study, the acceptable agreement was 60% (Niederberger and Spridge, 2020). However, in order to increase accuracy in the selection of fisheries tourism attractions, the study agreement level was 80% and higher. Finally, 12 attractions and attractive activities in the fisheries tourism sector that experts agreed on attracting tourists considerably were identified. Then these items classified into three groups of fishing and fishing industries attractions, attractions related to fisheries industries, and coastal aquaculture attractions.

## RESULTS

The present study aimed to identify the attractions and attractive activities of fisheries for tourists. In the first round of Delphi, 30 attractiveness and attractive activity of the fisheries section for tourists were identified. As shown in Table 2, activity "Staying in the house of local people and being familiar with local fishing communities (cultures and customs)" has the highest frequency by research experts. Then, activity "Marine tourism tour and being familiar with the fish farming systems in the sea" is in the next place with 69.5%. Activities "Watching beach seine fishing and throwing nets" and "Participation in local festivals related to fisheries" with 65.2% and activities "Marine patrol", "Visit the local seafood markets", and "Visiting marine fish cages" with 60.8% have the next ranks in terms of frequency mentioned by experts for attractive fisheries tourism activities. Later, activity "Visit fisheries restaurants and specialized fishing catering

complexes and experience cooking and eating local seafood" with 56.5%, activity "Being familiar with fisheries cooperatives" and "Visit marine habitats" with 52.2% were other attractions of fishing tourism. Among the identified attractive activities, "Visit major and concentrated aquatic markets of province" and "Visit the best units of aquaculture breeding and supply" with 26.1%, "Staying in fishing huts of beach seine cooperative", "Watch the extraction of caviar from sturgeon", "Visit refrigeration units for fisheries and places for keeping all kinds of aquatic animals", and "Visit cold water fish breeding centers such as trout" with 21.7%, "Visit tropical fish farming-dams and fish farms" with 17.3% and, finally, "Visit the marine floats construction workshops" and "Visit the aquaculture centers of sturgeons and coastal complex" with 8.6% have the lowest percentage of frequency among attractive tourism activities (Table 2).

The frequency of the number of experts who mentioned a specific activity as the attraction of the fisheries sector does not necessarily mean that this activity is more important among other activities. Thus, to determine the importance of each of the attractive activities, the second round of Delphi was performed. At this round, experts were asked to rate the importance of each of the 30 attractions and attractive activities identified in the fisheries sector of the coastal areas of the north of Iran for tourism based on a five-point Likert scale (1= Very low, 2= Low, 3= Moderate, 4= High and 5= Very high). The results of the analysis of this stage, which are presented in Table 3, indicated that, based on the average score of each activity, 12 activities received an average score above 3.5. The results of this section showed that "Recreational fishing with Hook and Line" with an average importance score of 4.58 is the most important activity identified among fisheries tourism activities. Then, "Watching beach seine fishing and throwing nets" was placed in the next rank with an average score of 4.52. Also, analysis of experts' opinions in

**Table 2.** Attractions and attractive activities of the fisheries sector for tourism (n=23).

The attractive attractions and activities of fisheries for tourism (n= 23)	%	Frequency
Staying in the house of local people and being familiar with local fishing communities (Cultures and customs)	73.9	17
Marine tourism tour and being familiar with the fish farming systems in the sea	69.5	16
Watching beach seine fishing and throwing nets	65.2	15
Participation in local festivals related to fisheries	65.2	15
Marine patrol	60.8	14
Visit the local seafood markets	60.8	14
Visiting marine fish cages	60.8	14
Visit fisheries restaurants and specialized fishing catering complexes and experience cooking and eating local seafood	56.5	13
Being familiar with fisheries cooperatives	52.2	12
Visit marine habitats	52.2	12
Watch fishing ports	43.5	10
Visit shrimp breeding centers	43.5	10
Being familiar with catching salmon and <i>Rutilus kutum</i> in breeding season	39.1	9
Caspian sea sprat fishing with boats and funnel nets	39.1	9
Visit breeding and improved farmed aquaculture centers	39.1	9
See fishing with traditional fishing boats	34.7	8
Recreational fishing with Hook and Line	34.7	8
Net weaving	34.7	8
Being familiar with aquaculture systems	34.7	8
Visit the factories of fishing net	30.4	7
Visit factories producing fishery products and canning, filleting and packaging units and ready-to-eat aquatic products	30.4	7
Visit major and concentrated aquatic markets of province	26.1	6
Visit the best units of aquaculture breeding and supply	26.1	6
Staying in fishing huts of beach seine cooperatives	21.7	5
Watch the extraction of caviar from sturgeon	21.7	5
Visit refrigeration units for fisheries and places for keeping all kinds of aquatic animals.	21.7	5
Visit cold water fish breeding centers such as trout	21.7	5
Visit tropical fish farming - dams and fish farms	17.3	4
Visit the marine floats construction workshops	8.6	2
Visit the aquaculture centers of sturgeons and coastal complex	8.6	2

Source: Research findings.

this study showed that "Participation in local festivals related to fisheries" and " Visit fisheries restaurants and specialized fishing catering complexes and experience cooking and eating local seafood", "Visit marine habitats", "Marine tourism tour and being familiar with the fish farming systems in the sea" with an average score of 4.41 are the other important activities and attractions of fisheries tourism in the regions. Activity "Staying in the house of local people and being familiar with local fishing

communities (cultures and customs)", with an average score of 4.35, "Caspian sea sprat fishing with boats and funnel nets" with an average score of 4.33, "Visit the local seafood markets" with an average score of 4.11, and "Visiting marine fish cages" with an average score of 4.05 were placed in the next ranks of fisheries tourism attractions (Table 3). However, among the attractive activities identified in the first round, there were activities that received an average score of less than 3 in the second round of



Delphi. Activities "Visit refrigeration units for fisheries and places for keeping all kinds of aquatic animals", "Visit breeding and improved farmed aquaculture centers", "Being familiar with fisheries cooperatives", "Being familiar with aquaculture systems", and "Watch the extraction of caviar from sturgeon", with average score of importance less than 3, were the lowest among all fisheries tourism activities, respectively. The reasons for the low average score of these activities are that most of these activities are some kind of scientific activity related to special groups such as students in scientific fields related to these activities. Thus, in the second round of Delphi in this research, considering the cross-sectoral view of the tourism phenomenon, most of the experts have selected other attractive activities being on the priority in view of the majority of tourists.

Finally, the third round of Delphi was designed in the form of an online questionnaire with the purpose of achieving the final consensus of experts and determining the percentage of agreement with the identified tourism attractions of the fisheries. This questionnaire included a short introduction and 12 two-choice questions (1: Agree and 2: Disagree) along with the images related to each attraction to facilitate and increase the accuracy of answers. The results of this round in Table 4 showed that all experts and specialists had a complete consensus regarding the attractiveness of activities "Participation in local festivals related to fisheries", "Visit marine habitats", "Watch fishing ports", and "Recreational fishing with Hook and Line". Also, the activities "Watching beach seine fishing and throwing nets", "Visit fisheries restaurants and specialized fishing catering complexes and experience cooking and eating local seafood", "Marine tourism tour and being familiar with the fish farming systems in the sea" were placed in the second rank of prioritizing attractive fisheries activities for tourism with 94% agreement. In addition, it was found that experts agree that "Caspian sea sprat fishing with boats and funnel nets",

"Being familiar with catching salmon and *Rutilus kutum* in breeding season" and also "Visit the local seafood markets" are other attractive activities that the fisheries sector can encourage different tourists to select for tourism trips. The degree of agreement between experts regarding the attractiveness of these activities was 80% or more.

After identifying the attractions and attractive activities of fisheries tourism, the findings were distributed among a panel of fisheries experts in order to classify these attractions. The result of this part of the research was to classify attractions and attractive activities of fisheries tourism in three groups. At this stage, fisheries experts found that all identified attractions and attractive activities of the fishery are placed in three categories including the attractions of fishing and fishery sector, the attractions of the fisheries industries sector, and the attractions of the coastal aquaculture sector (Figure 1). The results of this classification indicated that half of the attractions and fisheries tourism activities that were agreed by experts (6 cases) were related to the fishing industry, and the other half of the attractions belonged to the other two sections of fisheries and coastal aquaculture industries (3 cases each).

## DISCUSSION

Based on the current condition of fisheries in the world and Iran, increasing the value added of fishery products with activity and income diversification, investing and strengthening environmental assets of fishery areas, and promoting social welfare and maritime cultural heritage in fishery areas are among the most important goals that should be attained in the fisheries sector. On the other hand, using the potentials of each sector depends on accurate identification along with the details of its capacities and opportunities. Therefore, this study seeks to identify the capacities and potentials of fisheries that have the potential to become tourist



**Table 3.** The importance of attractions and attractive activities of the fisheries for tourism (n= 23).

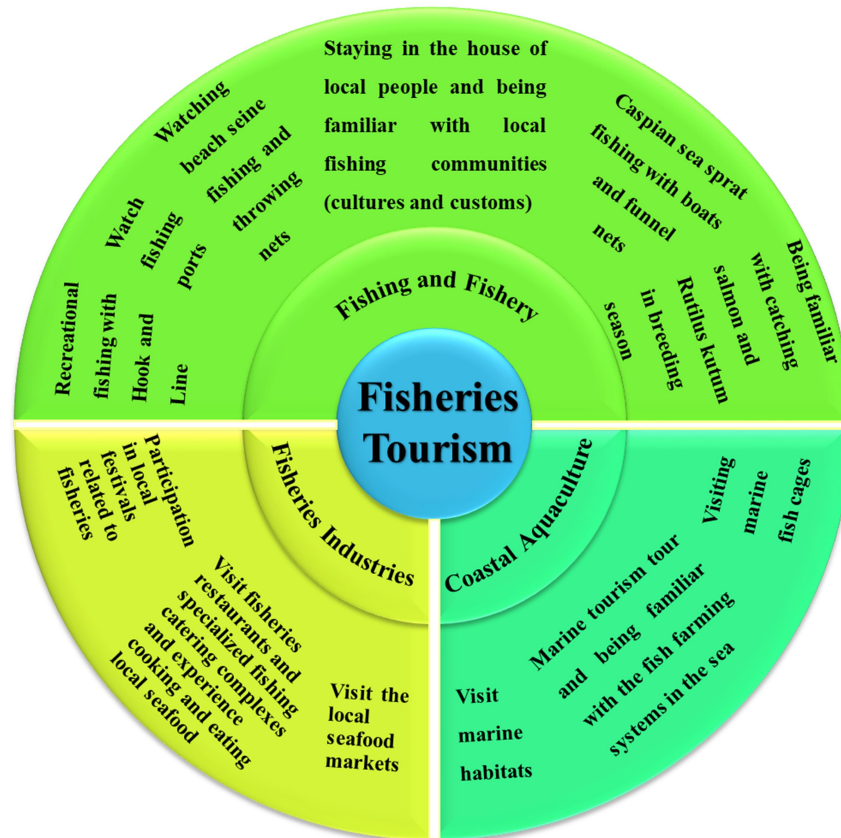
The attractions and attractive activities of the fisheries for tourism	Mean	Std.
Recreational fishing with Hook and Line	4.58	0.5
Watching beach seine fishing and throwing nets	4.52	0.51
Participation in local festivals related to fisheries	4.41	0.61
Visit fisheries restaurants and specialized fishing catering complexes and experience cooking and eating local seafood	4.41	0.61
Visit marine habitats	4.41	0.71
Marine tourism tour and being familiar with the fish farming systems in the sea	4.41	0.93
Staying in the house of local people and being familiar with local fishing communities (Cultures and customs)	4.35	0.7
Caspian sea sprat fishing with boats and funnel nets	4.33	0.97
Visit the local seafood markets	4.11	0.85
Visiting marine fish cages	4.05	1.24
Watch fishing ports	3.94	0.74
Being familiar with catching salmon and <i>Rutilus kutum</i> in breeding season	3.82	0.8
Visit major and concentrated aquatic markets	3.47	1.23
Visit shrimp breeding centers	3.47	1.22
Marine patrol	3.45	0.91
Visit the aquaculture centers of sturgeons and coastal complex	3.45	1.06
See fishing with traditional fishing boats	3.42	1.01
Visit the best units of aquaculture breeding and supply	3.41	1.06
Visit the Net weaving	3.38	0.87
Staying in fishing huts of beach seine cooperatives	3.35	0.99
Visit the factories of fishing net	3.35	1.11
Visit the marine floats construction workshops	3.23	1.3
Visit cold water fish breeding centers such as trout	3.17	1.13
Visit factories producing fishery products and canning, filleting and packaging units and ready-to-eat aquatic products	3.05	0.96
Visit tropical fish farming - dams and fish farms	3.05	0.89
Watch the extraction of caviar from sturgeon	2.94	1.43
Being familiar with aquaculture systems	2.88	1.05
Being familiar with fisheries cooperatives	2.76	1.25
Visit breeding and improved farmed aquaculture centers	2.62	1.02
Visit refrigeration units for fisheries and places for keeping all kinds of aquatic animals	2.58	0.93

Source: Research findings.

**Table 4.** Agreement with the identified attractions of the fisheries tourism (n= 16).

The attractive attractions and activities of fisheries for tourism	Degree of agreement	No
Participation in local festivals related to fisheries	100	16
Visit marine habitats	100	16
Watch fishing ports	100	15
Recreational fishing with Hook and Line	100	15
Watching beach seine fishing and throwing nets	93.8	16
Visit fisheries restaurants and specialized fishing catering complexes and experience cooking and eating local seafood	93.8	16
Marine tourism tour and being familiar with the fish farming systems in the sea	93.8	16
Staying in the house of local people and being familiar with local fishing communities (Cultures and customs)	87.5	16
Visiting marine fish cages	87.5	16
Caspian sea sprat fishing with boats and funnel nets	86.7	15
Being familiar with catching salmon and <i>Rutilus kutum</i> in breeding season	81.3	16
Visit the local seafood markets	80	15

Source: Research findings.



**Figure 1.** Classification of attractions and attractive activities of fisheries tourism.

attractions before planning to start and develop fisheries tourism in the country. In this regard, this research, with the aim of identifying the potential of the fisheries sector and the attractiveness of the tourism sector in the Caspian Sea coastal areas, attempts to plan for using fisheries tourism capacity. In addition to introducing fisheries tourism capacities and fisheries attractions, results can play an important role in the enhancement of the tourism industry, which will improve the livelihood of the fisheries community in Iran. To set up a fisheries tourism, an accurate planned management strategy is needed (Muzamder *et al.*, 2018). Practically, starting fisheries tourism is possible through proper guidelines that cause the coastline a driver for the national economy of Iran. Sarker *et al.* (2018)

propose a strategic framework for fisheries tourism management consisting of three factors: focus on potential sectors, information gathering through study, and fisheries tourism governance. In this study, we investigated the main attraction of fisheries tourism in Iran (focus on potential sectors) by gathering information from experts (information gathering through study). Then, the results can be used for fisheries tourism governance (fisheries tourism governance). According to the research literature on fisheries tourism, to attain this goal, the Delphi technique was used. Based on three Delphi rounds, the results identified 12 attractions and attractive activities of fisheries tourism in the coastal areas of the Caspian Sea in Iran. These attractions and attractive activities were

categorized in the three groups of fishing and fishery, fisheries industries, and coastal aquaculture. This model of fisheries tourism division in Spain, defined as all tourism activities related to fishing/aquaculture sector, consists of three sections: Fish or marine tourism, aquaculture and pesca-tuism (Anonymous, 2020). The most important attractions and attractive fisheries activities in the fishing and fishery sector were “Watch fishing ports”, “Recreational fishing with Hook and Line”, “Watching beach seine fishing and throwing nets”, “Staying in the house of local people and being familiar with local fishing communities (cultures and customs)”, “Caspian sea sprat fishing with boats and funnel nets”, and “Being familiar with catching salmon and *Rutilus kutum* in breeding season”. These results are consistent with the results of previous research (Nicolosi *et al.*, 2016; Padín *et al.*, 2016). The findings also showed that, in the fisheries industries, the most important attractions and attractive activities of fisheries were “Participation in local festivals related to fisheries”, “Visit fisheries restaurants and specialized fishing catering complexes and experience cooking and eating local seafood”, and “Visit the local seafood markets”. In their studies, Nicolosi *et al.*, (2016), Padín *et al.* (2016), and González and Piñeiro Antelo, (2020) found that being familiar with the culture, tradition and food culture of fishery regions are the most important incentive of tourists. It was also found that, in the coastal aquaculture sector, the most important attractions and attractive activities of fisheries were “Visit marine habitats”, “Marine tourism tour and being familiar with the fish farming systems in the sea”, and “Visiting marine fish cages”. These results are in line with the findings of Effendi *et al.* (2019). Developing sustainable aquaculture and investment in the natural assets of fishing areas to improve their attractiveness as fishing tourism destinations is one of the most important goals in some European countries, including Cyprus. Also, in Ireland, local biodiversity and protected

habitats have been emphasized for the development of marine tourism and ecotourism (Grati and Perretta, 2022).

The results show that there is a high degree of final consensus about the attractiveness and attractive activities of the fisheries sector for the tourism sector in the Caspian Sea coastal areas. The fisheries and fishing sector in Iran has many unused capacities and potentials. Fisheries activities and the fishing sector can be regarded as an important attraction in the economy (FARNET, 2014), provided that planning in fisheries tourism in coastal areas is performed in accordance with the followings:

Detailed and comprehensive studies,

Government and private institutions present informing programs as well as monitoring and evaluation programs regarding sustainable fisheries and fishing activities,

Abilities and interests of fishermen and the local community in changing their livelihood from fishing to fishing tourism.

Fisheries tourism with a set of attractive activities identified in this study can be performed by professional fishermen in order to earn different incomes, enhance and value the fishing profession and social cultural heritage, and strengthen the sustainable use of marine ecosystems. Thus, fisheries tourism can bring money from outside the region and thus stimulates the regional economy and regional development. Given the importance of fisheries tourism and the novelty of this type of tourism, as well as the lack of theoretical literature in fisheries tourism and the lack or the absence of a similar comprehensive research at the national and international level, the results of the present research can theoretically enrich the knowledge of fisheries tourism. Also, by identifying the potentials and capacities of this field, this research provides the basis for economic prosperity and enhance the livelihood of fishing communities. The results of this research are a valuable guide for policy makers and the authorities in rural



development in fishing areas. In this regard, focusing on fisheries tourism by state and private organizations can have effective results in solving the issues and problems of the fisheries sector and the fishing community. The results of this study can be used in planning for the creation and development of the fisheries tourism industry in the Caspian Sea coastal areas, and an accurate planning can be done for the implementation of each of these attractions based on the attractions and attractive activities identified in this paper.

Although this research provides a detailed insight into the attractions and attractive activities of fisheries tourism in the Caspian Coastal Areas of Iran, it has some limitations. It is worth to mention that these findings are related to the Caspian Coastal Areas of Iran, and these attractions may be different in other coasts. As tourists usually search for new areas and different experiences, finding new and different attractions in each area can enhance the development of fisheries tourism in those areas. In making decisions based on the results of this research, another point that should be mentioned is that the fisheries tourism attractions identified in this study are based on the opinion of fisheries experts. Despite the fact that the experts participating in this study attempted to answer the questions by considering all aspects, finally, the opinion of other groups related to fisheries tourism and especially tourists may be different or similar to these findings. Hence, before planning to create and develop fisheries tourism, examining the opinion of groups related to tourism, including tourists, fishermen, beach seine cooperatives, local communities, tourism experts, the private sector for investment, government institutions, and other organizations and departments is necessary. Another limitation of this study is that the identified attractions are not classified based on the effective factors on the choice of an attraction by tourists. Thus, future studies can identify the priority of each attraction for each specific group of tourists.

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## شناسایی فعالیت‌های جذاب گردشگری شیلات در مناطق ساحلی دریای خزر: کاربرد تکنیک دلفی

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### چکیده

گردشگری شیلات یکی از انواع گردشگری است که در کشور ایران، علی‌رغم موقعیت بسیار مناسب، تاکنون به آن پرداخته نشده است. مزایای صنعت گردشگری در کنار پتانسیل بالای گردشگری صنعت شیلات و ماهیگیری، می‌تواند گزینه‌ای ایده‌آل برای ایجاد ارتباط بین این دو صنعت به منظور برون‌رفت از شرایط دشوار



مناطق شیلاتی و حرکت به سمت توسعه ارایه کند. اولین قدم در برنامه‌ریزی جهت توسعه گردشگری شیلات، شناسایی دقیق پتانسیل‌ها و جذابیت‌های بخش شیلات برای جذب گردشگران است. لذا پژوهش حاضر با هدف شناسایی جذابیت‌های بخش شیلات به روش کیفی با رویکرد اکتشافی انجام شده است. این پژوهش از نظر هدف، کاربردی و از حیث ماهیت و روش، توصیفی-پیمایشی است. جامعه آماری این تحقیق را متخصصان و کارشناسان موضوعی تشکیل دادند. با استفاده از روش نمونه‌گیری هدفمند گلوله برفی و بر اساس اصل کفایت نظری ۲۳ نفر از آنان بر اساس تخصص موضوعی و تجربه حرفه‌ای ایشان، برای تعیین پانل متخصصان انتخاب شدند. با بهره‌گیری از تکنیک دلفی طی سه مرحله، جذابیت‌ها و فعالیت‌های جذاب شیلات برای گردشگری شناسایی شد. در مرحله اول دلفی ۳۰ جذابیت و فعالیت جذاب برای گردشگری شیلات، از سوی متخصصان معرفی شد. پس از حذف گویه‌های کم‌اهمیت‌تر در مراحل دوم و سوم دلفی، در نهایت در مورد ۱۲ جذابیت گردشگری شیلات، در سه بخش صید و صیادی، صنایع شیلاتی، و آبی‌پروری ساحلی، اجماع حاصل شد.