



The Role of 4E Dimensions in the Development of Water Sports and Recreation Tourism Resources on Kish Island

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DOI: [10.22034/sms.2025.142608.1431](https://doi.org/10.22034/sms.2025.142608.1431)

Received: 01.01.2025

Revised: 25.05.2025

Accepted: 03.06.2025

Available online: 23.09.2025

Keywords:

Kish Island, interaction, sports marketing, sports tourism, marine recreation

ABSTRACT

The purpose of this study was to investigate the role of the 4E dimensions in developing water sports and recreational tourism resources on Kish Island. The research was applied in purpose and descriptive-survey in method. The statistical population consisted of employees from the Kish Free Zone Organization and the Kish Institute of Sports and Recreational Activities, selected through convenience sampling (N = 257). Data were collected using a researcher-designed questionnaire, whose face and content validity were confirmed by 11 experts in sports management. Reliability was assessed using Cronbach's alpha and composite reliability coefficients. Data analysis was performed using SPSS version 25 and Smart PLS version 4. The results demonstrated that Experience (0.844), Esthetic Experience (0.913), Engagement (0.902), Advocacy Commitment (0.830), and Ubiquity (0.887) had significant impacts on the strategic development of sports tourism resources. These findings suggest that managers of sports and marine recreation centers must recognize and leverage these resources to improve performance. This study, by applying the 4E model innovatively, offers new insights into integrating experience, esthetics, engagement, advocacy, and ubiquity to foster the growth of water sports tourism on Kish Island. It highlights a dual achievement: enhancing service quality and supporting sustainable and strategic tourism development in the region.

How to Cite This Article:

Farzipor, A., Ershadi, R., Hemati, J., & Hashemi, B.B.F. (2025). The Role of 4E Dimensions in the Development of Water Sports and Recreation Tourism Resources on Kish Island. *Journal of Sport Marketing Studies*, 6 (3): 86-105. [10.22034/sms.2025.142608.1431](https://doi.org/10.22034/sms.2025.142608.1431)

1. INTRODUCTION

Due to the intensifying competition in national and international markets -along with the corresponding rise in marketing expenditures and the need to enhance the effectiveness of sports activities in coastal regions (Moradi et al., 2023), the development of comprehensive marketing strategies has become essential. With the globalization of sport, economic enterprises and sports marketers increasingly require precise marketing strategies tailored to each country (Zouni et al., 2021). Accordingly, further research is needed to better understand the E4 model in the context of delivering sports services in coastal areas. Notably, the sport and recreational services industry offers significant positive economic impacts that justify investment in this sector. For example, recent studies have shown that sport in Slovakia has contributed up to 1.2% of the country's GDP (Nemec et al., 2014). Considering such evidence and the return on investment achievable through the development of coastal sports services (Acquah-Sam, 2021), as well as the improvement of GDP indicators (Acquah-Sam, 2021), an investigation into the development of aquatic sports on Kish Island based on the E4 model is of particular importance.

Consumer experience has received considerable attention across multiple fields. Pine and Gilmore (1999) describe the “experience economy” as the next stage of economic development following the agricultural, industrial, and service economies—one in which the final product is the memorable experience offered to customers (Şeker & Kamil, 2022). Likewise, Binkhorst (2007) emphasized the importance of experiences in eliciting a deep sense of pleasure that results in positive recall. Given these perspectives, the necessity of conducting research using the E4 framework in the context of coastal sports tourism on Kish Island becomes evident. Tourist experiences at a destination consistently reflect the memories formed while visiting that location (Wang et al., 2020). The

overall tourist experience is considered one of the most significant factors influencing visitors after their trip (Braun-LaTour et al., 2006). Moreover, visitors' memories of their travel experiences are the most influential source of information for deciding whether to revisit a destination (Marschall, 2012). Therefore, if coastal areas of Kish Island can successfully develop infrastructure for aquatic and marine sports and recreation, they may provide high-quality tourist experiences that increase tourist presence. As such, offering memorable and positive experiences is essential in the competitive market of sports and recreational tourism on Kish Island's coastal zones. Identifying tourism resources that enhance visitor experience and encourage repeat visitation is thus critical for the region's economic prosperity.

What visitors remember from their trip—and how they recall those memories—plays a fundamental role in shaping future travel decisions (Barnes et al., 2016). In recent years, many tourism scholars have examined how tourists recall positive experiences and memorable events (Li, Zhou & Zhou, 2021; Kim, 2014). Zhang et al. (2018) argue that “tourism experiences” and “memorable tourism experiences” are two related but conceptually distinct constructs. Simply put, not all tourism experiences are memorable; only those experiences selectively recalled by visitors when describing a specific trip can be considered memorable tourism experiences (Kim, 2014). Tourist experience has thus gained increasing attention among scholars, becoming a central theme in the growing research domain, spanning case studies, conceptual analyses, methodological investigations, and behavioral modeling. Yet, only a limited number of researchers have employed experimental techniques within tourism literature (e.g., Li et al., 2021), and empirical support for objective methodologies to measure tourist experience remains insufficient. Therefore, the present study aims to examine, through a

quantitative approach, the role of the dimensions of the E4 model in developing strategies for aquatic and marine sports and recreational activities on Kish Island.

The core of tourism lies in the tourist experience (Perić et al., 2018). However, given the characteristics of aquatic sports tourism resources, the traditional tourism experience model is not suitable for this domain (Rangkuti et al., 2024). Therefore, the 4E experience model is applied to evaluate aquatic sports tourism resources, encompassing the dimensions of entertainment experience, educational experience, aesthetic experience, social experience, ubiquity, exchange, and evangelism marketing (Epuran, Ivasciuc & Micu, 2015). This model emphasizes enhancing the overall experience of tourists. The entertainment experience refers to stress reduction and enjoyment derived from aquatic activities. The educational experience highlights the role of learning in increasing tourists' enjoyment. The aesthetic experience underscores the uniqueness of aquatic sports tourism. The social experience focuses on fostering closer and more sustainable relationships among tourists. The "ubiquity" and "exchange" dimensions relate to ease of access and customer value assessment, whereas evangelism marketing transforms customers into active promoters of the destination.

A review of previous studies confirms the importance of the E4 model, perceived value, and tourist satisfaction in shaping behavioral intentions (Zhang, Cho, Wang & Ge, 2018; Song, Ahn & Lee, 2015). Specifically, Oh et al. (2007) developed a measurement scale based on Pine and Gilmore's (1998) 4E framework and examined relationships between the 4E dimensions and tourists' perceived quality and overall satisfaction. Song et al. (2015) investigated the impact of the 4E model on perceived functional and emotional values as well as tourists' satisfaction with their stay. Zhang et al. (2018) analyzed visitors' experiences in Macau casinos and their subsequent satisfaction. Previous researchers have also argued that perceived value refers to tourists' overall assessment of their

experience in tourism accommodations, which influences satisfaction and behavioral intentions (Jin & Park, 2019). Nevertheless, few studies have applied the four-dimensional experience-based model to the development of aquatic sports strategies (Li, Zhou & Zhou, 2021). Additional research has explored experience-oriented approaches in recreational and sport organizations to enhance aquatic tourism resources (Dimitrova, 2020; Zhu et al., 2021; Lloret et al., 2023). Other studies have independently examined determinants of sports tourist attraction (Asheghi et al., 2022), factors influencing aquatic tourism and sports development in Ardebil's Shorabil Lake (Moharramzadeh, Nouri & Javan Amani, 2022), strategic planning for aquatic tourism development in Khuzestan (with emphasis on water structures) (Moradi, Zeinivand & Mousavi Alizadeh, 2024), and key factors affecting performance management in sport tourism services (Shahbazi et al., 2025).

A review of these studies reveals that although extensive research has been conducted on sports tourism and aquatic recreation in various destinations, comprehensive investigations employing the 4E model to develop sports tourism resources -particularly in aquatic sports- remain limited. This gap is especially evident in developing regions such as Kish Island, where the application of the 4E model to design integrated strategies for aquatic sports and recreational tourism has not yet been fully explored. This indicates a clear need for further research to enrich the existing literature.

The novelty of this study lies in its application of the 4E model specifically to the development of aquatic sports and recreational tourism resources on Kish Island. Previous research has mainly focused on the effects of the 4E dimensions on quality and tourist satisfaction in general tourism destinations. In contrast, this study directly targets aquatic tourism in Kish Island and examines how enhancing these dimensions can contribute to the development of strategies for aquatic sports and recreational tourism. The study provides a more

detailed analysis of each dimension of the 4E model -including aesthetic, social, and evangelism-related experiences- in attracting and retaining tourists. It also proposes strategies for improving these dimensions within the context of aquatic tourism in Kish, an area overlooked in prior work.

By utilizing the 4E model, this study offers a new perspective on developing sports tourism resources in developing regions such as Kish Island through the analysis and enhancement of various tourism experience dimensions. The model provides a comprehensive framework emphasizing entertainment, educational, aesthetic, social, ubiquitous, exchange-related, and evangelism experiences to improve the quality of aquatic sport tourism services. In developing regions like Kish, the model can help identify tourists' specific needs and design appropriate development strategies accordingly. In particular, the "ubiquity" and "exchange" dimensions enable improved accessibility and refined evaluation of customer value, thereby increasing tourist attraction and satisfaction. This approach can enhance sports tourism infrastructure, strengthen educational components, foster social connections among tourists, and support effective marketing, contributing to more sustainable tourism development.

The practical necessity of conducting this research in Kish Island stems from the fact that this region, as a major tourism destination, requires the development of new strategies for attracting and retaining tourists. Given the intense competition in the tourism industry and the importance of offering unique experiences, the application of the 4E model to enhance various dimensions of tourist experience -including entertainment, education, aesthetics, and social interaction- can directly influence tourist attraction and satisfaction. This study assists tourism authorities and practitioners in Kish by providing data-driven and scientific analyses that help them design effective strategies for developing water-sports tourism resources and

marine recreational activities, thereby elevating the tourism potential of the island.

The scientific necessity of this research lies in the fact that, within the existing literature, most studies on sports tourism and aquatic recreation have focused on specific destinations or coastal sport activities, while the application of the 4E model to the development of water-sports tourism resources -particularly in island settings such as Kish- has received little attention. This study contributes to expanding and deepening the theoretical understanding of the 4E model in the context of sports and aquatic tourism and provides a practical framework that enriches theoretical foundations for designing resource development strategies in Kish Island. Moreover, the findings can support future research in aquatic tourism and sustainable development in similar regions and serve as a reference for policymakers and planners in developing countries.

A review of previous studies reveals several research gaps. First, the field of developing tourism-resource strategies for marine and water-based recreational sports is still emerging, and many aspects of its knowledge base and general system have not yet been examined or adapted within the sports domain. Second, most scientific findings originate from developed countries that are leaders in sports and recreational tourism, while the experiences of developing countries - such as Iran- have not been systematically documented by sport-management scholars. Considering the aforementioned needs and the importance of quantitative studies for advancing knowledge in developing regions, the present research aims to address part of this knowledge gap by proposing a conceptual analytical framework for sport-management scholars and decision-makers in Iran's sports-tourism sector. Accordingly, this study seeks to answer the following question:

How do the dimensions of experience -namely aesthetic experience, interaction, ubiquity, and promotional commitment- contribute to the

development of water-sports and marine recreation tourism-resource strategies in Kish Island?

Given the importance of developing tourism resources for water sports and marine recreation in Kish Island, and the complexity of the factors involved, the study requires a problem tree to clearly analyze the different influencing dimensions (Figure 2).

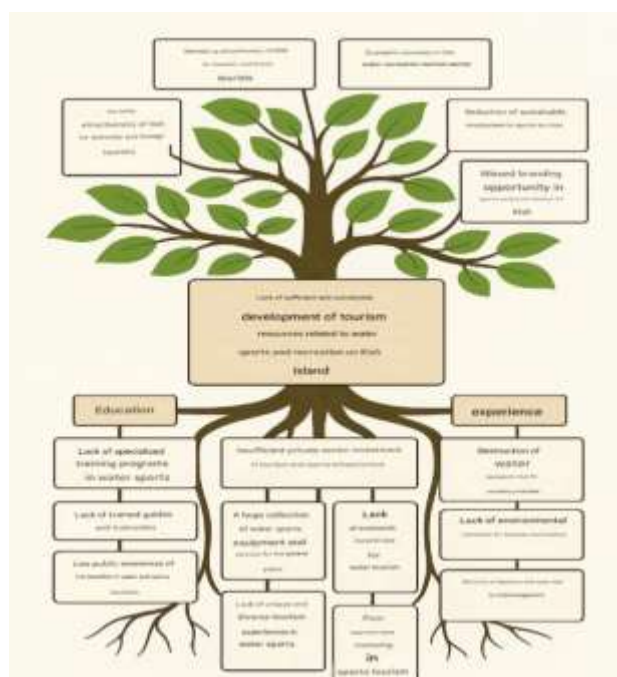


Figure 1. Research problem tree in the field of developing sports tourism resources in the field of water and marine recreation

In addition, the conceptual model of the study is presented below (Figure 1).

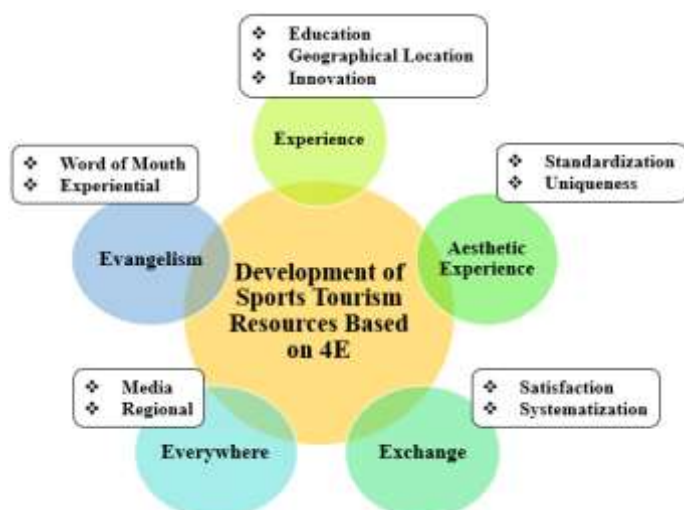


Figure 2. Conceptual model of the research (Source: taken from the qualitative phase and semi-structured interview in the thesis)

Based on the proposed conceptual model, the research hypotheses are formulated as follows:

1. The experience variable has a significant role in explaining the development of resource strategies for aquatic and marine sports tourism in Kish Island.
2. Aesthetic experience has a significant role in explaining the development of resource strategies for aquatic and marine sports tourism in Kish Island.
3. The interaction variable has a significant role in explaining the development of resource strategies for aquatic and marine sports tourism in Kish Island.
4. Advertising commitment has a significant role in explaining the development of resource strategies for aquatic and marine sports tourism in Kish Island.
5. The ubiquity variable has a significant role in explaining the development of resource strategies for aquatic and marine sports tourism in Kish Island.

The E4 experience model is introduced here to provide a more comprehensive assessment of aquatic sports tourism resources. This model, adapted from [Epuran et al. \(2015\)](#), encompasses the dimensions of entertainment experience, educational experience, aesthetic experience, social experience, ubiquity, exchange, and buzz marketing (i.e., word-of-mouth promotion).

Entertainment experience refers to tourists' ability to relieve inner pressures through aquatic and marine sports tourism activities.

Educational experience indicates that learning through leisure is an essential requirement for developing aquatic and marine sports tourism; therefore, developing human resources and providing education in aquatic sports tourism is crucial for enhancing tourists' enjoyment.

Aesthetic experience reflects tourists' perception of the uniqueness of aquatic sports tourism and the cultural value embedded in such experiences.

Social experience refers to the capacity of aquatic sports tourism to foster closer emotional connections and more sustainable social relationships among tourists.

Ubiquity highlights consumers' ability to access products whenever and wherever they desire; thus, marketers are compelled to "trace" consumers within their communication spaces rather than interrupt them.

Exchange represents the evaluation of customer value, whereby aquatic sports service providers must understand how consumers perceive their products and what is required to capture and sustain their attention.

Finally, buzz marketing represents an advanced form of word-of-mouth marketing in which companies cultivate customers who believe so strongly in a particular product or service that they voluntarily attempt to persuade others to purchase or use it. These customers become voluntary advocates who actively spread information on behalf of the company (Epuran et al., 2015).

2. Methodology

Ontology and epistemology are two fundamental philosophical concepts that significantly influence the design and execution of research. From an ontological standpoint, this study adopts a positivist orientation, while from an epistemological perspective, it employs a realist (pragmatic) approach. This is because the present investigation considers the social realities associated with the E4 experience dimensions in the development of aquatic and marine sports tourism resources in Kish Island as objective and measurable phenomena—independent of the researcher's subjective interpretations. The understanding and measurement of these phenomena rely on scientific methods and empirical data.

In practice, the researcher collects and analyzes data using quantitative methods and standardized instruments such as questionnaires, aiming to achieve an objective and generalizable

understanding of the relationships among variables. This approach is grounded in the belief that knowledge is attainable through systematic observation, empirical data collection, and the statistical testing of hypotheses. Accordingly, causal relationships among variables can be examined with precision, allowing results to be generalized to the target population and used as a scientific basis for managerial and developmental decision-making.

This study is applied in purpose and descriptive—survey in terms of method and strategy. A quantitative research design was employed to test the proposed model. Three criteria were considered for selecting participants: (1) at least four years of managerial experience in tourism-related facilities, (2) a minimum of four years of experience as a tour guide or participation in sports tourism events, and (3) at least four years of involvement in adventure sports tourism groups. The statistical population consisted of all managers and employees working in recreational, aquatic, and coastal sports businesses in Kish Island.

To determine the minimum sample size in PLS-SEM, the "10-times rule" was applied. Based on this guideline (sample size should be ten times the number of latent variables) (Nazarian et al., 2021), the minimum required sample size for 11 latent variables was estimated to be 110 participants. Although this heuristic is widely used due to its simplicity, previous studies suggest that it may not always yield precise estimations and that small samples can result in weak statistical outcomes. Larger samples, however, increase the reliability of PLS estimates. Moreover, in multivariate analyses—given the complexity of analytical procedures, the number of parameters, and the potential deviation from multivariate normality—larger samples are typically required to ensure stable and accurate estimates.

Considering these conditions and the need for robust estimations, the sample size was increased to 257 participants, recruited through convenience

sampling. This larger sample provides a more reliable representation of the population.

Additionally, because structural equation modeling (SEM) often requires substantial sample sizes for stable estimation -particularly when parameters are numerous or the assumption of multivariate normality is unclear- the increased sample further enhances the accuracy of the model. Data were collected using a two-part questionnaire. The first part contained demographic information, while the second part measured the five main constructs: experience, aesthetic experience, interaction, advertising commitment, and ubiquity. The "experience" construct was assessed using three dimensions: (a) geographical location, (b) education, and (c) innovation. Aesthetic experience was measured through two dimensions: (a) standardization and (b) uniqueness. Interaction was assessed via two dimensions: (a) satisfaction and (b) systematic

structure. Ubiquity was measured through: (a) media and (b) regional accessibility. Advertising commitment was assessed using two dimensions: (a) word-of-mouth advertising and (b) experience. All measurement items were derived from the qualitative phase of the dissertation.

A five-point Likert scale was used across all items. To ensure face and content validity, the questionnaire was reviewed by 11 sport management experts, and their comments were incorporated. Construct reliability was confirmed using Cronbach's alpha and composite reliability (Table 2). Descriptive statistics were analyzed using SPSS version 25, while hypothesis testing was performed using PLS-SEM with SmartPLS version 4. The analyses included path coefficients, their significance, explained variance, t-values, and effect sizes (Table 5). A summary of the research methodology based on the research onion model is presented in Table 1.

Table 1. Research onion based on the model of Saunders et al (2009)

Research Philosophy	Research Approach	Research Strategy	Research Method	Time Horizon	Data Collection Approach
Positivism	Inductive	Descriptive–Survey	Quantitative	Cross-sectional	Questionnaire-based

3. Findings of the Research

The research findings were presented in two parts: descriptive and inferential. The demographic description of the respondents is given in Table 1.

Table 2. Demographic characteristics of the sample

Type	Variable	Percentage	Frequency
Male	Gender	71/6	184
Female		28/4	73
Bachelor's Degree	Education	30/7	79
Master's Degree		52/1	134
PhD		17/1	44
Kish Free Zone Employees	Occupation	16/7	43
Kish Healthy Sports and Recreation Institute Employees		24/5	63
Kish Diving and Marine Recreation Club Employees		43/2	111
Kish Tourism Agency Employees		15/6	40
1 to 5 years	Experience	26/5	68
6 to 10 years		17/9	46
11 to 15 years		32/7	84
16 and above		23	59
Total		100	257
Age		SD	Mean
		8/31	38/58

In this study, confirmatory factor analysis was used to examine the construct validity of the research instrument. Confirmatory factor analysis is used to determine the ability of a predetermined model to fit the data; in other words, this type of factor analysis examines whether the factors considered by the researcher explain the variances of the observed variables in accordance with the determined pattern. The results of the factor analysis of the Smart PLS software showed that all questions in the research instrument had appropriate factor loadings, so no questions were removed from the questionnaire at this stage (Table 2).

Factor loading is a numerical value that determines the intensity of the relationship between a latent

variable and the corresponding manifest variable during the path analysis process. The higher the factor loading of an indicator in relation to a specific construct, the greater the contribution that indicator makes to explaining that construct. Depending on the level of accuracy desired by the researcher, criterion values of 0.5 to 0.7 have been introduced for factor loadings, but the lowest declared value that is acceptable is 0.4. This means that questions with factor loadings less than 0.4 are not sufficient to remain in the measurement model and should be removed and the model rerun. The factor loading values obtained from the second-order test of the model in Figure 2 showed that all components have acceptable factor loadings.

Table 3. Evaluation of reliability, convergent validity, and factor loading of the research instrument

Cronbach's alpha	Reliability Composite	AVE	Factor Loading	Question	Code	Dimension
0.915	0.917	0.629	0/758	Using different educational methods from other coastal areas of the country	Q1	Education
			0/747	Creating large educational centers related to water sports and recreation	Q2	
			0/769	Making water sports and recreation on the island more targeted and academic	Q3	
			0/854	Educating sports by highlighting the recreational dimension	Q4	
			0/839	Training employees, trainers, and managers of active complexes in the field of water sports and recreation	Q5	
			0/779	Training professional ethics	Q6	
			0/787	Training to provide services in special conditions (pandemic)	Q7	
			0/806	Training specialized water sports instructors	Q8	
0.925	0.926	0.770	0/854	Creating educational infrastructure on the beaches of Kish Island	Q9	Geographical location
			0/872	Developing exciting marine sports on Kish Island	Q10	
			0/892	Ease of access to water and marine sports and recreation services on Kish Island	Q11	
			0/892	Proximity of water sports and recreation centers to commercial complexes	Q12	
			0/877	Centralizing water and marine sports and recreation for ease of use and greater enjoyment	Q13	
0.929	0.930	0.701	0/862	Setting a model for other coastal areas of the country by holding training courses	Q14	Innovation

			0/813	Providing sports and recreation services along with teaching the correct principles of using them	Q15	
			0/824	Exporting the diversity of water sports and recreation on Kish Island to Other coastal areas of the country	Q16	
			0/864	Localizing international water sports and recreation and educating customers	Q17	
			0/872	Producing educational content in the field of water sports and recreation	Q18	
			0/823	Educating water sports and recreation and providing educational certificates to customers	Q19	
			0/800	Producing film and photography content	Q20	
0.886	0.886	0.746	0/846	Developing a procedure for establishing and transferring water sports clubs	Q21	
			0/864	Developing a procedure for controlling and supervising water sports and recreation	Q22	
			0/881	Redesigning laws and regulations in the field of water sports and recreation	Q23	Standardization
			0/862	Necessary training in the field of factors affecting safety (accident prevention) in water sports and recreation for tourists and employees of tourism complexes	Q24	
0.907	0.911	0.511	0/722	Providing new services that are not available in other parts of the country	Q25	
			0/691	Developing environmental infrastructure (communication and transportation system)	Q26	
			0/722	Ease of access to Kish Island	Q27	
			0/719	Existence of tourism infrastructure (port, terminal, airport and vessels)	Q28	
			0/708	Existence of trained and specialized personnel	Q29	
			0/651	Existence of accommodation and catering centers	Q30	Uniqueness
			0/701	Existence of commercial centers	Q31	
			0/705	Unique urban furniture	Q32	
			0/717	Providing diverse marine disciplines and recreation in Kish Island	Q33	
			0/728	Various facilities and infrastructures	Q34	
			0/602	Security and tranquility on Kish Island	Q35	
			0/565	High traffic culture and social norms	Q36	
			0/667	Clean climate	Q37	
0.937	0.940	0.556	0/647	Using experienced personnel with high social relations	Q38	
			0/555	Creating various groups and channels on the virtual network platform	Q39	
			0/571	Recording customer profiles and sending messages on important days (birthdays, wedding anniversaries, etc.)	Q40	Satisfaction
			0/799	Sending photos and videos of their entertainment on the anniversary of their presence in the recreation area	Q41	

			0/768	Training professional ethics among personnel of sports and water recreation complexes	Q42	
			0/831	Long-term relationships between members of coastal sports and recreation complexes and customers	Q43	
			0/794	Using the customer lifetime value measure to interact with customers	Q44	
			0/754	Safety, security, and peace of mind in using marine sports and recreation facilities	Q45	
			0/811	Increasing the security factor in coastal areas	Q46	
			0/785	Affordable service rates and prices	Q47	
			0/801	Quality in services	Q48	
			0/813	A survey of satisfaction with receiving services	Q49	
			0/731	Creating a platform to address complaints and criticisms	Q50	
			0/711	Encouragement in the form of membership in the audience club	Q51	
			0/564	Discipline in the environment of water recreation complexes on Kish Island	Q52	
0.884	0.892	0.556	0/795	Launching various festivals to attract sports tourism in Hot seasons of the year	Q53	
			0/728	Technical training for personnel	Q54	
			0/715	Cleanliness of the work environment and physical hygiene in recreational complexes	Q55	
			0/742	Using welcoming and farewell ceremonies in recreational and coastal sports complexes	Q56	Systematicity
			0/767	Creating various platforms on virtual networks for virtual communication with customers	Q57	
			0/836	Using virtual reality for the virtual presence of customers in sports, recreational and coastal destinations	Q58	
			0/786	Order and discipline in the environment of Kish Island water recreation complexes	Q59	
0.920	0.924	0.611	0/788	Selling part of services in other regions (other provinces) through tourist tours	Q60	
			0/756	Selling part of services in other regions (other provinces) through virtual media	Q61	
			0/749	Sites of sports and marine recreation clubs	Q62	
			0/673	Online purchase of recreational services	Q63	Media
			0/787	Information on various sites (Kish Free Zone, etc.)	Q64	
			0/836	Organizing virtual tours specifically for water sports	Q65	
			0/858	Using content marketing to create content and attract an audience	Q66	
			0/779	Introducing special services in hotels and airports	Q67	

			0/794	Producing attractive teasers of water sports	Q68	
0.869	0.870	0.718	0/797	Ease of movement of tourists from accommodation centers to tourism and sports complexes and marine recreation	Q69	
			0/883	Cooperation with accommodation facilities to promote recreational complexes and water and marine sports	Q70	Regional
			0/846	Cooperation and interaction with Kish Island tourism agencies	Q71	
			0/861	Cooperation with the urban transportation system to transport customers from residential areas to the island's sports and recreational areas	Q72	
0.932	0.933	0.710	0/822	Development of face-to-face advertising using customer images of water sports and recreation	Q73	
			0/860	Introduction of tourism, sports and recreational complexes using videos and images by customers	Q74	
			0/814	Development of customer belief in order to freely introduce a product or service	Q75	
			0/868	Turning customers into voluntary sponsors to introduce the services of the island's sports and recreational centers	Q76	Word-of-mouth
			0/836	Advertising services by famous and responsible people who lovingly promote the services	Q77	
			0/847	Advertising based on customers' feelings and emotions	Q78	
			0/850	Promoting water sports through heartfelt and internal interest	Q79	
0.764	0.766	0.680	0/828	Creating an exciting experience for customers to share it with others	Q80	
			0/852	Considering service rates for customers with different income levels to share it with people of the same income level	Q81	Experiential
			0/792	Considering customers' interest in using sports and water recreation services with Sharing it with others	Q82	

Considering the factor loading of the research items, it was determined that the items of ease of access to water sports and marine recreation services on Kish Island and the proximity of water sports and recreation centers to commercial complexes had the highest factor loading (0.892 and 0.891, respectively). Also, the items of creating various groups and channels in the context of virtual networks and discipline in the environment of water recreation complexes on Kish Island had the lowest factor loading. (0.555 and 0.564). The acceptable value in interpreting the results related to the

composite reliability index and Cronbach's alpha is considered to be greater than 0.7. As can be seen in Table 2, the Cronbach's alpha and composite reliability coefficients were obtained, which indicates the appropriate reliability of the research tool. In the section related to the convergent validity of the research variables, the extracted mean variance index was also used. The acceptable value for the desired index is estimated to be greater than 0.5 according to [Hensler et al. \(2015\)](#). In interpreting this and comparing the considered index with the data results, the condition of

convergent validity between the mentioned variables has been observed. In the section on evaluating divergent validity, one of the evaluation criteria in this section using the variance-based approach is the use of divergent or discriminant validity based on the Fresnel and Larker matrix (Table 3). Divergent or diagnostic validity is in practice proving the uniqueness of a measurement tool. If there is no or low correlation between the

desired tool and tools that measure different constructs, the test has divergent or diagnostic validity. In the presence of divergent validity, the relationship between the indicators related to different constructs must be very low. The interpretation of this matrix is that the mean square of a construct must be greater than the square of that construct with other constructs.

Table 4. Divergent validity of research dimensions using the Fresnel and Larker matrix method

Dimensions	Education	Standardization	Word-of-mouth	Experiential	Media	Satisfaction	Uniqueness	Regional	Geographical location	Systematicity	Innovation
Education	0.793										
Standardization	0.720	0.863									
Word-of-mouth	0.542	0.471	0.843								
Experiential	0.364	0.292	0.523	0.346							
Media	0.574	0.539	0.818	0.324	0.782						
Satisfaction	0.596	0.605	0.735	0.330	0.776	0.746					
Uniqueness	0.684	0.718	0.645	0.364	0.698	0.701	0.686				
Regional	0.540	0.499	0.841	0.309	0.729	0.709	0.645	0.848			
Geographical location	0.758	0.815	0.486	0.261	0.520	0.579	0.692	0.445	0.878		
Systematicity	0.355	0.354	0.663	0.339	0.770	0.695	0.627	0.594	0.348	0.746	
Innovation	0.756	0.774	0.526	0.352	0.566	0.646	0.754	0.538	0.607	0.424	0.837

The values that are in the main diameter of each column must be greater than the values below them and, if any, if the variable in question is not in the first column, greater than the values to the right of it. Therefore, in such a case, according to Table 3, we can claim that the structural model fit is ensured in terms of discriminant validity index.

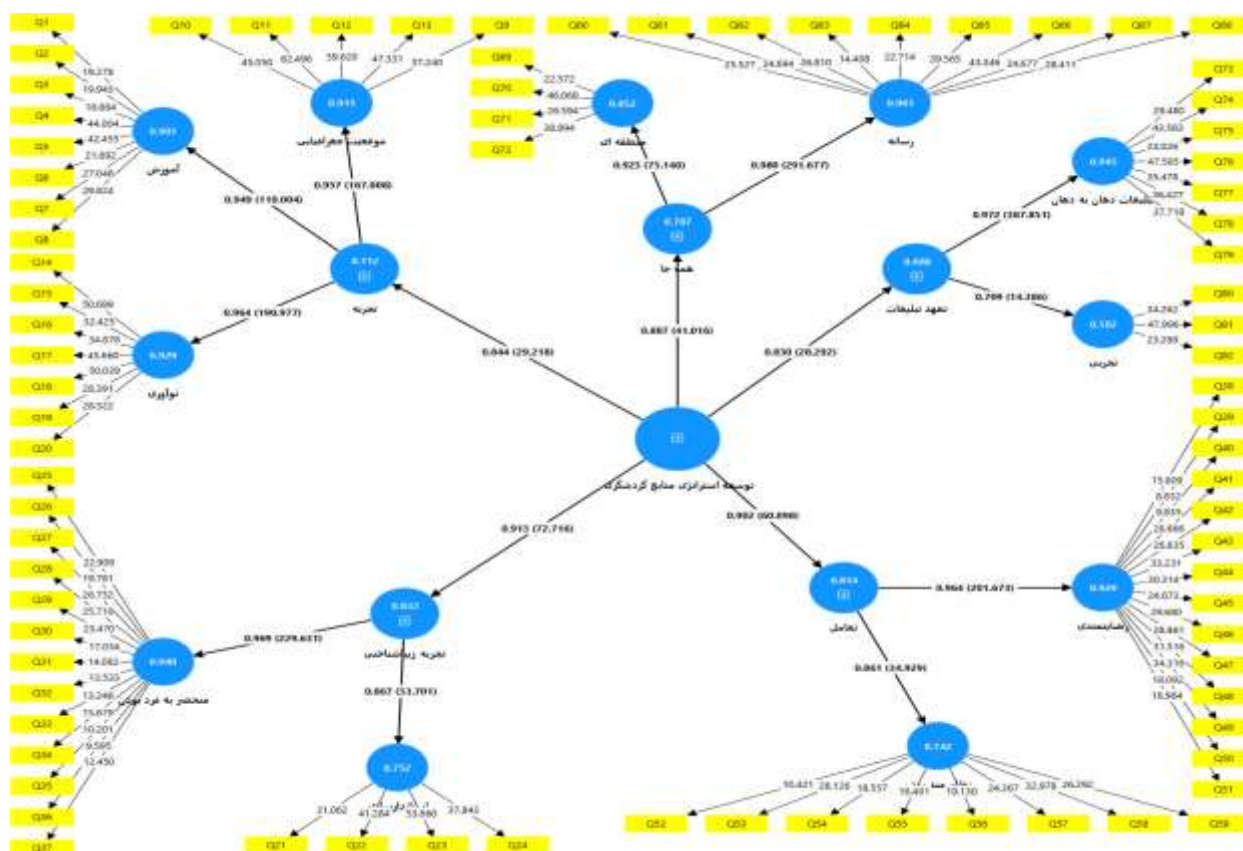


Figure 2. Research measurement model

In the following, the results of the research hypotheses are reported based on the relationships between the measurement model.

Table 5. Examination of direct research hypotheses

P	t	Path Coefficient	Relationship	Hypothesis
0.001	29.218	0.844	Tourism resource strategy development -> experience	H1
0.001	72.716	0.913	Tourism resource strategy development -> aesthetic experience	H2
0.001	60.098	0.902	Tourism resource strategy development -> interaction	H3
0.001	28.292	0.830	Tourism resource strategy development -> advertising commitment	H4
0.001	41.016	0.887	Tourism resource strategy development -> everywhere	H5

The primary criterion for assessing the significance of relationships between variables is the t-statistic, or t-value. If the observed factor loadings yield a t-value greater than 1.96, the relationship is considered significant at the 0.05 level; if greater than 2.58, it is significant at the 0.01 level. It is important to note that this statistic only indicates the validity of the relationships and does not measure their strength. As indicated in Table 5, the t-values of the study variables demonstrate that all research hypotheses are significant (t-value > 1.96). Therefore, the factors of Experience (0.844), Aesthetic Experience (0.913), Interaction (0.902), Advocacy Commitment (0.830), and Everywhere (0.887) play a significant role in explaining the development of sports and aquatic recreational tourism resource strategies in Kish Island.

4. Discussion and conclusion

This study aimed to examine strategies for developing the resources of sports, aquatic, coastal, and marine recreational tourism in Kish Island based on the E4 model. The results indicated that all research variables significantly contribute to explaining the development of strategies for sports and aquatic tourism resources on Kish Island.

In line with previous research, studies on sports and aquatic tourism have shown that many organizations have failed to develop tourism resources within an experience-based marketing system (Zhu et al., 2021). The present study demonstrated that factors such as “Experience,” “Aesthetic,” “Interaction,” “Everywhere,” and “Advocacy Commitment” may mitigate these failures

and strengthen sports and marine tourism resources (Liu et al., 2020).

The factor analysis results confirmed that the Experience variable has a significant role in explaining the development of resource strategies for sports and aquatic recreational tourism in Kish Island. This finding is consistent with Dimitrova (2020), Zhao et al., (2023), and Lloret et al., (2023). It suggests that one key approach organizations can adopt to develop aquatic sports tourism resources is a tourist experience-oriented strategy targeting visitors to coastal areas. Therefore, emphasizing the customer experience dimension is a critical strategy for developing recreational and aquatic sports tourism resources. To strengthen these resources (Zuo et al., 2021), recreational and sports organizations in coastal and aquatic areas can focus on developing exciting marine sports, facilitating access to aquatic services, localizing international aquatic sports, providing training and certification to tourists, emphasizing recreational aspects in training, and establishing large educational centers for aquatic sports (Dimitrova, 2020; Lloret et al., 2023). Overall, creating a positive and enjoyable experience for sports tourists is essential for developing coastal sports tourism resources.

Moreover, Aesthetic Experience plays a significant role in explaining the development of sports and aquatic tourism resource strategies in Kish Island. This finding aligns with Almeida Santana & Moreno-Gil (2018) and Yang et al., (2020). It suggests that aesthetic considerations are a necessary requirement for organizations involved in sports and marine recreational tourism to enhance tourism resources.

Various approaches can be applied by organizations to achieve this objective. Implementing an “aesthetic” approach can help transform tourism resources and ensure the sustainability and development of sports tourism resource strategies in a competitive environment (Almeida Santana & Moreno-Gil, 2018).

Aesthetic approaches can include “standardization” and “uniqueness” for clients and members of sports and recreational clubs in coastal areas. Specifically, through the development of aquatic and marine sports and recreational disciplines, ranking sports clubs and facilities, establishing national guidelines for the creation and management of aquatic clubs, setting comprehensive regulations for monitoring aquatic sports, providing training on safety and accident prevention, developing environmental infrastructure (communication and transport systems), improving tourism infrastructure (ports, terminals, airports, marinas, and recreational vessels), and employing trained and specialized staff, the development of sports tourism resources and greater tourist participation in coastal areas can be achieved. The results showed that the Interaction variable plays a significant role in explaining the development of sports and aquatic recreational tourism resource strategies in Kish Island. This finding aligns with the results of studies by Lampel & Germain (2016), Tiwari et al. (2021), Ma et al. (2023), and Xie et al. (2021). In interpreting this finding, it can be argued that, from a communication perspective, the “Interaction” approach can be effective in developing tourism resources in the field of

aquatic, marine, and coastal sports and recreation through enhancing tourist “satisfaction” and the “systematic” operation of service clubs (Tiwari et al., 2021). Interaction can manifest in various ways, such as employing experienced personnel with high social skills (Ma et al., 2023), creating diverse groups and channels on social media platforms (Xie et al., 2021), sharing photos and videos of their recreational activities on the anniversary of their visit, establishing long-term relationships between members of recreational sports clubs and customers (Lampel & Germain, 2016), and using customer lifetime value metrics to engage with clients. These approaches can help develop strategies for sports tourism resources in coastal areas. Considering the challenges faced by organizations and clubs responsible for sports tourism, it can be argued that interaction and long-term relationships provide numerous opportunities for these organizations to achieve sustainable profit and develop sports and recreational tourism resources. Ultimately, recreational sports organizations can create a membership platform in their clubs to foster loyalty and a sense of belonging among customers by offering special services and discounts, thereby increasing their audience and supporting sustainable revenue growth.

The results indicated that Advocacy Commitment plays a significant role in explaining the development of sports and aquatic recreational tourism resource strategies in Kish Island. This finding aligns with the results of studies by Lohana et al. (2023), PJ, Singh, Kokkranikal et al. (2023), and Ufi et al. (2023). According to this



finding, sports tourism organizations require commitment toward their customers to survive in a dynamic environment (Lohana et al., 2023). Accordingly, “Advocacy Commitment” can contribute to the development of sports and recreational tourism resource strategies in coastal areas through “word-of-mouth” and “experiential” promotion. Scientific evidence shows that if sports tourists are satisfied with the services provided (PJ, Singh, Kokkranikal et al., 2023), word-of-mouth can attract more customers to recreational and sports facilities (Ufi et al., 2023). Therefore, managers of sports-recreational tourism organizations in the coastal areas of Kish Island can stimulate tourists’ emotions to promote tourist destinations through customer-generated videos and images, freely advertise a product or service, and encourage responsible and passionate individuals to advocate for the services. Additionally, by creating exciting experiences for customers to share with others and considering service rates and customer interests across different income levels, managers can further develop strategies for aquatic and marine sports tourism. Thus, creating advocacy commitment among customers is essential for the development of sports and recreational tourism resources in coastal areas.

The results showed that the Everywhere variable plays a significant role in explaining the development of sports and aquatic recreational tourism resource strategies in Kish Island. This finding aligns with the study by PJ et al. (2023). According to this finding, maximizing the presence of organizations and clubs providing aquatic

and marine sports services in “everywhere” can contribute to the development of sports tourism resources. Specifically, the use of “media” and addressing “regional” issues may lead to the development of recreational and aquatic sports tourism resources. Previous studies have confirmed that media are crucial for improving the performance of sports clubs (Atghia & Nazarian, 2023). Therefore, content marketing to create content and attract audiences, producing engaging teasers for aquatic sports and recreational activities, addressing travel issues from hotels to recreational and sports sites to facilitate customer access in collaboration with urban transport systems, and providing ancillary services such as dining centers and relevant sports goods can effectively strengthen and develop sports tourism resources with a focus on aquatic recreation. Consequently, media and regional approaches can likely create positive experiences for tourists (Siegel et al., 2023) and strengthen sports tourism resources.

Overall, based on the results of this study, it can be stated that this research highlighted the dimensions of aquatic sports tourism resources for developing resource strategies in Kish Island according to the E4 model. The findings can likely contribute to improving the performance of sports tourism and aquatic recreational organizations. This study argues that the strategy and development of aquatic sports tourism resources require a cohesive approach considering the dimensions presented in this research. These dimensions include Experience, Aesthetic, Interaction, Everywhere, and Advocacy Commitment. It can also be stated that these dimensions play a crucial role in strategic

decision-making for sports and recreational tourism organizations, as they operate in a dynamic environment with high uncertainty. Their managers and active members need to develop a cohesive plan to navigate these variable conditions. The presented dimensions can serve as a guide for the forward development of sports tourism. Ultimately, using the results of this study can assist managers of organizations active in aquatic, coastal, and marine sports tourism in developing successful sports tourism resource strategies.

This study has several managerial implications. First, from a sports management perspective, the findings are highly important for improving the performance of sports tourism organizations in coastal areas. The study showed that the identified dimensions can serve as a guideline for management in developing strategies for sports and marine recreational tourism resources; thus, to develop sports and coastal tourism resources, responsible organizations can implement the dimensions identified in this research. Second, the study framework highlights the importance of these dimensions in developing strategies for sports tourism resources. Based on this finding, managers of organizations active in sports and marine recreational tourism should understand the value of these resources and enhance related programs within their organizations. Third, considering the importance of repeat visits by sports tourists and their advocacy potential, the current framework can help managers innovate and develop strategic plans, thereby improving organizational performance over time.

According to the study results, it is recommended that managers of tourism organizations enhance natural landscapes, implement special lighting, and create artistic and cultural spaces to emphasize the unique beauty of Kish Island, providing richer visual and cultural experiences for tourists. Additionally, creating more opportunities for tourist interaction through events, competitions, and group activities can enhance social experiences and foster long-term connections. Encouraging tourists to engage in word-of-mouth promotion through unique services and experiences can expand natural marketing and create a positive image of Kish Island. Loyalty programs and special discounts for returning tourists can further support this goal. These recommendations can improve the quality of aquatic sports tourism experiences in Kish Island and contribute to sustainable tourism development in the region.

Like any research, the framework developed in this study has limitations. First, this study focused on developing strategies for sports and aquatic recreational tourism resources based on the E4 model, which is primarily aligned with the 4P marketing framework, and other dimensions could be considered. Therefore, future research is recommended to explore diverse dimensions in marketing and sports tourism resource development through qualitative studies. Second, this study was conducted in Iran, specifically Kish Island, and management and marketing practices may differ in other regions. Therefore, similar studies are suggested in other provinces or coastal areas to advance the literature on sports tourism resources in the context of aquatic recreation.



5. Conflict of Interest

There is no conflict of interest.

6. Financing

The article has no financial sponsor or research funding, nor is it derived from a research project.

7. Acknowledgements

We would like to express our gratitude to the staff of the Journal of Sports Marketing Studies and the esteemed referees who provided valuable feedback to improve the article.

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