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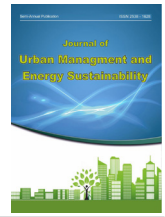

CASE STUDY RESEARCH PAPER

Physical Challenges and Cultural Determinants of Urban Sustainability on the Freydunkenar Coast (Case Study: Freydunkenar Coast, Mazandaran, Iran)

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ABSTRACT

Coastal cities are dynamic interfaces between land and sea whose long-term viability. In many Iranian cities along the Caspian Sea, rapid and poorly regulated coastal development, weak service infrastructure and the gradual erosion of indigenous culture have widened the gap between the potential and the realised sustainability of the waterfront; the city of Freydunkenar clearly exemplifies this tension. This study identifies and evaluates the physical challenges and the influential cultural factors affecting urban sustainability along the Freydunkenar coast and clarifies their relative contribution. Following an applied, descriptive–analytical design, data were gathered through document review and a structured field survey. A five-point Likert questionnaire covering nine physical and cultural indicators was administered to a host-community sample of 380 respondents, whose size was determined using Cochran's formula; content validity was confirmed by subject experts and reliability. Data were processed in SPSS using descriptive statistics, one-sample t-tests and Pearson chi-square tests. The mean effect of the physical and cultural dimensions was 3.69 and 3.86, respectively, so the cultural dimension exerted the strongest positive influence. The most critical physical challenge was the absence of commercial complexes, and the most critical cultural challenge was the limited expansion of cultural activities; chi-square tests confirmed significant relationships between both dimensions and urban sustainability ($p < 0.001$). Although urban management has not yet secured the full satisfaction of residents and tourists, safeguarding the coastal environment and indigenous culture, preventing unregulated land-use change, and institutionalising interaction with the host community are essential for the continuity of coastal sustainability.

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INTRODUCTION

Urbanisation and urban areas belong to a worldwide dynamic that profoundly reshapes the relationship between society and the environment and influences the durability and resilience of the urban system in many ways. Over recent decades, sustainability, resilience and transformation have become key concepts whose aim is to understand and respond to the progressive challenges arising from urbanisation and environmental change (Romero-Lankao et al., 2016). The world's population continues to shift towards urban areas, and cities remain the loci of capital accumulation, economic growth, political power, social and cultural activity, and technological innovation (Parnell, 2016). This high concentration of resources and activities also renders cities potentially vulnerable to a range of natural and human-made hazards.

Identifying potential hazards and preparing plans to reduce urban vulnerability is vital for achieving urban sustainability and must form an integral part of urban planning and design (Li et al., 2016; Sharifi, 2016). Urban vulnerability can be defined as the extent of the damage inflicted on the components of a city and is a function of the intensity and frequency of hazards, the sensitivity of the urban system and the city's adaptive capacity (Ghajari et al., 2017). Cities are, at the same time, the key places where social, economic and environmental challenges are confronted (Khan et al., 2020). The current and future rate of urbanisation is recognised as one of the salient challenges of the human–nature relationship and is expected to reach roughly 70% by 2050 (Topal et al., 2020). Sustainable ecosystems characterized by durable, autonomous and dynamic features, and underpinned by the values and culture of sustainability are increasingly regarded as a goal of contemporary society (Cepeliauskaite & Stasiskiene, 2020). Comparative reviews of urban-sustainability indicator frameworks show that the four dimensions of sustainability—environmental, economic, social and physical–spatial are seldom weighted equally, and that the physical and cultural dimensions in particular are frequently under-represented in both research and policy (Michalina et al., 2021; Malah & Bahi, 2022). Yet the physical form of a city and the cultural life of its inhabitants are precisely the dimensions that citizens experience most directly, and spatial indicators of the built environment are essential tools for equitable, evidence-based planning (Boeing et al., 2022). Culture, now widely treated as the fourth pillar of sustainability, is central to keeping cities inclusive, safe and resilient (Haas & Olsson, 2023; Fabbricatti et al., 2020).

The physical and cultural value of the city of Freydunkenar is an undeniable necessity. Owing to its location beside the Caspian Sea, Freydunkenar has historically hosted diverse cultural, social, economic and physical groups; today, however, because of various cultural and physical challenges, it has lost much of its true standing. The most important issues confronting the city's development are cultural, social, managerial and physical in nature. Along the southern Caspian coast, the combination of intense seasonal tourism, second-home construction and the conversion of agricultural and coastal land has placed the waterfront under mounting pressure, while integrated coastal-zone management remains weak (Jiang et al., 2023; Butt, 2024). Community-based approaches that place the host community at the centre of decision-making are increasingly proposed as a route to reconciling development with the protection of local culture and environment (Quang et al., 2023; Wani et al., 2024).

Despite a growing literature on urban sustainability, three gaps motivate the present study. First, most Iranian coastal research concentrates on the environmental and economic pillars, while the physical–spatial and cultural pillars those most directly experienced by residents remain comparatively neglected (Michalina et al., 2021; Barzegar et al., 2018). Second, the majority of coastal-sustainability assessments are expert-driven and rarely privilege the perceptions of the host community itself, even though resident perception is a decisive determinant

of the success or failure of sustainable-development initiatives (Wani et al., 2024; Ali et al., 2020). Third, the small Caspian cities that absorb the heaviest seasonal tourism pressure are under-studied relative to the large metropolitan areas. By combining physical and cultural indicators within a single host-community survey in Freydunkenar, this study addresses all three gaps and contributes locally grounded evidence to the wider debate on coastal urban sustainability. Against this background, the present study pursues three objectives: (i) to identify the principal physical challenges affecting urban sustainability along the Freydunkenar coast; (ii) to identify the influential cultural factors affecting that sustainability; and (iii) to determine the relative contribution of the physical and cultural dimensions from the perspective of the host community. Accordingly, two research questions guide the study: Is there a significant relationship between the physical challenges and urban sustainability of the coastal city of Freydunkenar? And is there a significant relationship between the cultural challenges and its urban sustainability? These questions are examined through the two hypotheses tested in Section 4.

MATERIALS AND METHODS

Physical sustainability

Within the wider debate on sustainability, the concept of physical sustainability expresses the balance and dynamism of settlements in relation to their physical–spatial structures, in such a way that the settlement remains stable through spatio-temporal processes. It can therefore be understood as a process of change and transformation aimed at the quantitative and qualitative improvement of the physical structure of cities. Change in urban environments is inevitable, and numerous forces—social, cultural, economic, demographic, technological and environmental shape the direction and intensity of this transformation. These factors, whether natural or artificial, individual or collective, planned or unplanned, alter the form, size and physical structure of cities. Physical sustainability seeks to raise the physical quality of human settlements and of the living and working environments of all people, especially the more vulnerable groups (Azizi, 2005). This perspective emphasises the protection, renewal and maintenance of buildings and the urban fabric, historic monuments, open spaces and landscapes, together with sustainable transport, sustainable energy, and biotic and physical urban form. In terms of physical dimensions and indicators, one may point to access to services and facilities, access to workplaces, housing quality, the transformation of transport systems and its effect on the fabric of communication networks, the form of thoroughfares, the realisation of urban-design ideas, diverse construction methods, and the enforcement of urban-planning regulations (Barzegar et al., 2018). Recent indicator-based and street-level assessments confirm that such built-environment attributes are measurable and strongly associated with liveability and equity outcomes (Boeing et al., 2022; Lee & Park, 2020).

Cultural sustainability

Culture is increasingly recognised as the fourth dimension of sustainable development, alongside the environmental, social and economic dimensions. Cultural sustainability concerns the safeguarding and transmission of tangible and intangible heritage, local identity, values and practices, and their integration into urban development (Haas & Olsson, 2023; Książek et al., 2022). In tourism-oriented coastal settlements, the interaction between the visitor culture and the host culture is decisive: where residents perceive that their culture and quality of life are respected, their support for sustainable development rises, whereas cultural vulnerability and social anomalies undermine it (Gautam & Bhalla, 2024; Kokkhangplu et al., 2024). The notion of heritage-community resilience further links cultural continuity to the capacity of a community to prevent, cope with and recover from disturbances (Fabbricatti et al., 2020). For coastal destinations

in particular, the cultural dimension operates through the everyday encounter between hosts and guests. Community-based tourism frameworks argue that when local people participate in decision-making, share equitably in benefits, and see their traditions valued, the resulting sense of empowerment strengthens both their quality of life and their willingness to sustain the destination (Quang et al., 2023; Kokkhangplu et al., 2024; Lee et al., 2024). Conversely, weak cultural programming, the commodification of local identity and the marginalisation of residents generate dissatisfaction and social friction that erode the social foundations of sustainability (Gautam & Bhalla, 2024; Hu et al., 2024). Assessing cultural challenges from the residents' own standpoint, as this study does, is therefore essential rather than peripheral to a sustainability diagnosis.

Sustainable development in coastal cities

The concept of sustainability emerged in the 1970s as a logical outgrowth of a new awareness of global environmental and developmental problems; because it depends on the conditions of time and place, no single interpretation can be generalised to all societies (Redclift & Goodman, 2000). The term sustainable development was first formally introduced by Brundtland in the 1987 report Our Common Future, denoting the sound and efficient management of natural, financial and human resources to meet the needs of present and future generations continuously and satisfactorily (Mohammadi et al., 2016). Sustainable urban development has broad and complex dimensions economic, cultural, social and physical that form a hierarchical structure; relying on a single factor is not a considered course of action (Birkmann, 2000). In coastal settings, these dimensions are mediated by integrated coastal-zone management (ICZM), a dynamic, multidisciplinary process that balances environmental, economic, social and cultural objectives over the long term (Jiang et al., 2023; Qing et al., 2022; Butt, 2024). Coastal cities are distinctive because they concentrate ecological sensitivity, economic opportunity and cultural identity within a narrow land–sea interface. Roughly two-thirds of the world's large cities are coastal, and coastal margins deliver a disproportionate share of ecosystem services while facing intense development pressure (Butt, 2024). In such settings, the physical form of the waterfront its infrastructure, public space and service provision interacts continuously with the cultural life of the host community, so that neither dimension can be managed in isolation. Empirical ICZM studies show that coordinated, indicator-based governance improves coastal outcomes, whereas fragmented, sector-by-sector decisions reproduce the very vulnerabilities they are meant to reduce (Qing et al., 2022; Malah & Bahi, 2022). The southern Caspian coast of Iran, where Freydunkenar is located, exhibits precisely this tension between rapid tourism-led construction and the limited institutional capacity for integrated management (Haque et al., 2023; Hosseinalizadeh et al., 2018).

Review of prior studies

A number of studies have addressed the physical and cultural dimensions of coastal and small-town sustainability. Rezaei Parchikolaei et al. examined the physical–spatial development of the coastal city of Babolsar and found that nearly 90% of the city lies within a flood-prone zone, so that the western and eastern axes are the preferred directions for development (Rezaei Parchikolaei et al., 2020). Nariman-pour and Bayboordi investigated the physical requirements of urban neighbourhoods for achieving sustainable development in Roshdiyeh, Tabriz, and offered design recommendations aligned with the cold, dry climate of the region (Nariman-pour & Bayboordi, 2018). Talebi analysed the challenges of renovating worn urban fabrics toward the physical dimensions of sustainable development in Isfahan and concluded that the absence of precise planning had produced multiple physical and social deficiencies (Talebi, 2017). Valtenbergs et al. selected indicators for the sustainable de-

velopment of the small town of Valmiera and stressed that indicators must reflect the priorities and future problems of small cities (Valtenbergs et al., 2015). Internationally, recent work links community-based tourism and resident quality of life to support for sustainable development (Wang et al., 2022; Ali et al., 2020; Hu et al., 2024), and confirms the salience of cultural and physical impacts in the Iranian coastal context (Haque et al., 2023; Hosseinalizadeh et al., 2018). Table 1 summarizes representative prior studies. (Tab. 1)

Table 1: Summary of representative prior studies.

Study	Focus / case	Method	Key finding
Rezaei Parchikolaei et al. (2020)	Physical–spatial development, Babolsar	Descriptive–analytical	Flood-prone land constrains development; E–W axes preferred
Nariman-pour & Bayboordi (2018)	Neighbourhood physical needs, Tabriz	Survey	Design guidance for sustainable neighbourhoods
Talebi (2017)	Worn urban fabric, Isfahan	Documentary–field	Lack of planning caused physical/social deficiencies
Valtenbergs et al. (2015)	Indicators for small towns	Indicator selection	Indicators must reflect small-town priorities
Wani et al. (2024)	CBT & resident quality of life	Survey, regression	Economic/socio-cultural impacts raise QoL and support
Haque et al. (2023)	Ecotourism sustainability, Iran	Review	Cultural & physical constraints on coastal sustainability

Case Study

Freydunkenar is one of the coastal counties of Mazandaran Province, situated between Babolsar and Mahmudabad and bounded on the south by the counties of Babol and Amol. It was upgraded from a district to a county in 2008 and comprises two districts (the Central district and Dehfari). The county borders the Caspian Sea to the north and is renowned for its international wetland an annual wintering site for millions of migratory birds from Siberia as well as pristine Caspian beaches, the Ojakol ornithology centre and its rice and fish markets. Its recreational new-towns (Khazarshahr North and South, Daryasar, Khazarkenar and Farzadshahr) are among the best-known coastal resorts of the province. The geographical setting of the study area is shown in Figure 1. (Fig. 1)

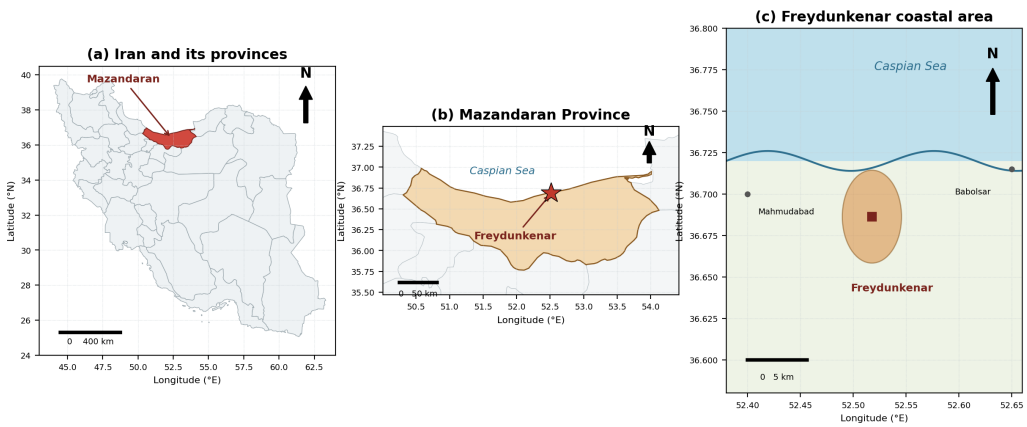

Figure 1: Location of the study area: (a) Iran and its provinces; (b) Mazandaran Province; (c) the Freydunkenar coastal area

Research design and conceptual framework

The present research is applied in terms of its objective and descriptive–analytical in terms of its nature and method, combining documentary/library study with a field survey. In the first stage, the theoretical foundations and research background were established through library resources, books, theses and articles. In the second stage, in order to answer the research hypotheses, a survey approach (a descriptive–exploratory field method) was used, and a questionnaire was designed around the physical challenges and influential cultural factors affecting urban sustainability on the Freydunkenar coast. The conceptual framework that links the two dimensions to urban sustainability is presented in Figure 2. (Fig. 2)

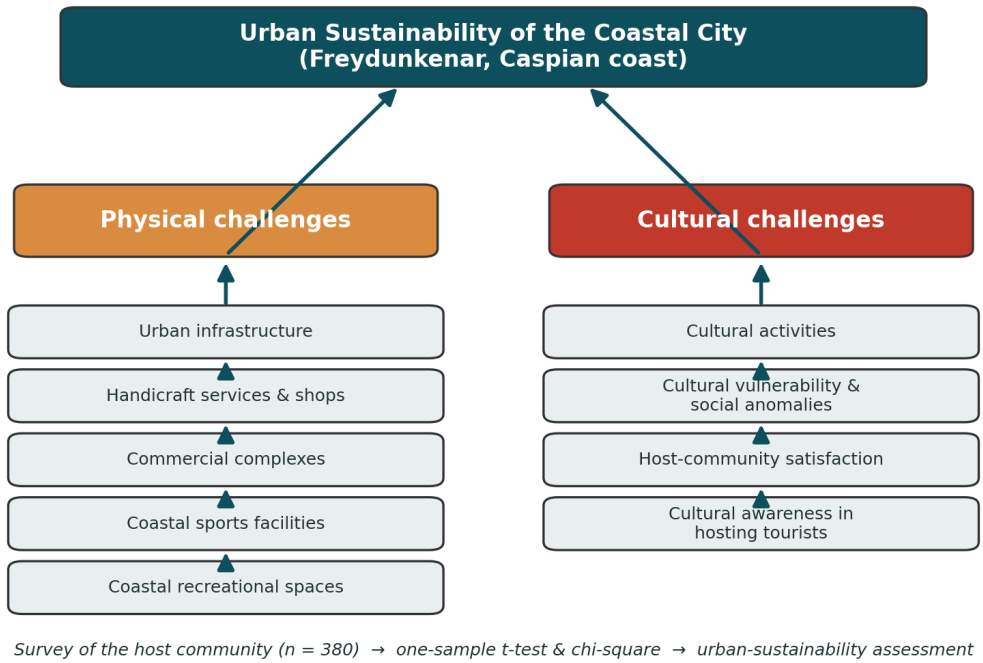

Figure 2: Conceptual framework relating physical and cultural challenges to the urban sustainability of the coastal city

Population, sampling, instrument and reliability

The statistical population comprised the host community of the coastal city of Freydunkenar. The sample size was determined using Cochran's formula, and 380 questionnaires were completed. Given the nine variables under study, a five-point Likert scale (scored 1–5) was used. The face validity of the questionnaire was confirmed by specialists in tourism and geography, and its reliability was established with a Cronbach's alpha of 0.812, which indicates good internal consistency. Data were collected through the questionnaire and direct observation. The relatively higher share of male respondents is acknowledged as a limitation of the sample and is reported transparently in Section 4.

Data analysis

Descriptive statistics (frequency, percentage, mean and standard deviation) were used to describe the variables, and inferential statistics were used to test the hypotheses. A one-sample t-test compared the mean of each indicator with the theoretical mean of the scale (3) to determine whether each challenge was perceived as significant, and the Pearson chi-square test was

used to examine the relationship between the physical and cultural challenges and urban sustainability. All analyses were performed in SPSS.

The research variables in the physical and cultural domains are listed in Table 2. (Tab. 2)

Table 2: Research variables

Variable	Challenges (indicators)
Physical	Under-development of urban infrastructure; limited handicraft services and shops; absence of commercial complexes; under-development of coastal sports facilities; lack of coastal recreational spaces
Cultural	Limited expansion of cultural activities; cultural vulnerability and social anomalies; host-community dissatisfaction with the expansion of tourism culture; lack of cultural awareness in hosting tourists

FINDINGS AND DISCUSSION

Respondent profile

Of the 380 respondents, 317 (83.4%) were men and 63 (16.6%) were women. In terms of age, the largest group was 20–35 years (170 respondents) and the smallest was under 20 years (6 respondents). In terms of education, 27 respondents had below-diploma qualifications, 105 held a diploma or associate degree, and 247 held a bachelor's degree or higher. The demographic profile is summarized in Table 3. (Tab. 3)

Table 3: Demographic profile of respondents (n = 380)

Characteristic	Category	Frequency	Percent
Gender	Male	317	83.4
	Female	63	16.6
Age	Under 20	6	1.6
	20–35	170	44.7
	36 and above	204	53.7
Education	Below diploma	27	7.1
	Diploma / associate	105	27.6
	Bachelor and above	247	65.0

Note: the age category "36 and above" is reported as the remainder of the sample; only the largest (20–35) and smallest (under 20) age groups were specified in the source data

Physical and cultural challenges

Regarding the physical challenges, 35% of residents rated the under-development of urban infrastructure as "moderate" and 34.2% as "low". In the "high" and "very high" categories combined, respondents rated the limited handicraft services and shops at 75.9%, the absence of commercial complexes at 86.6%, the under-development of coastal sports facilities at 64.5%, and the lack of coastal recreational spaces at 57.2%. Regarding the cultural challenges limited cultural activities, cultural vulnerability and social anomalies, host-community dissatisfaction with the expansion of tourism culture, and lack of cultural awareness in hosting tourists the majority of respondents rated these in the "high" and "very high" categories at 86.7%, 60.6%, 72.8% and 51.5%, respectively. The full distribution, means and one-sample t-test statistics are reported in Table 4, and the item means are visualized in Figure 3. (Tab. 4 and Fig. 3)

Table 4: Parameters affecting the urban sustainable development of Freydunkenar (percentages by response category; one-sample t-test, test value = 3)

Dim.	Indicator	V. low	Low	Mod.	High	v. high	Mean	t	Sig.
Physical	Under-development of urban infrastructure	6.3	34.2	35	15.9	8.6	2.86	−2.556	0.011
	Limited handicraft services & shops	1.6	4.2	18.3	40.7	35.2	4.04	22.137	0.000
	Absence of commercial complexes	0.3	3.7	10.4	35.8	49.9	4.31	31.250	0.000
	Under-development of coastal sports facilities	3.4	9.9	22.2	32.6	31.9	3.80	14.200	0.000
	Lack of coastal recreational spaces	3.9	13.1	25.8	48.6	8.6	3.45	9.172	0.000
Cultural	Limited expansion of cultural activities	1.0	1.3	11	35.5	51.2	4.34	32.627	0.000
	Cultural vulnerability & social anomalies	3.7	12	23.8	38.9	21.7	3.63	11.589	0.000
	Host-community dissatisfaction with tourism culture	1.6	4.2	21.4	29.2	43.6	4.09	21.886	0.000
	Lack of cultural awareness in hosting tourists	3.9	17.5	27.2	36.6	14.9	3.41	7.556	0.000

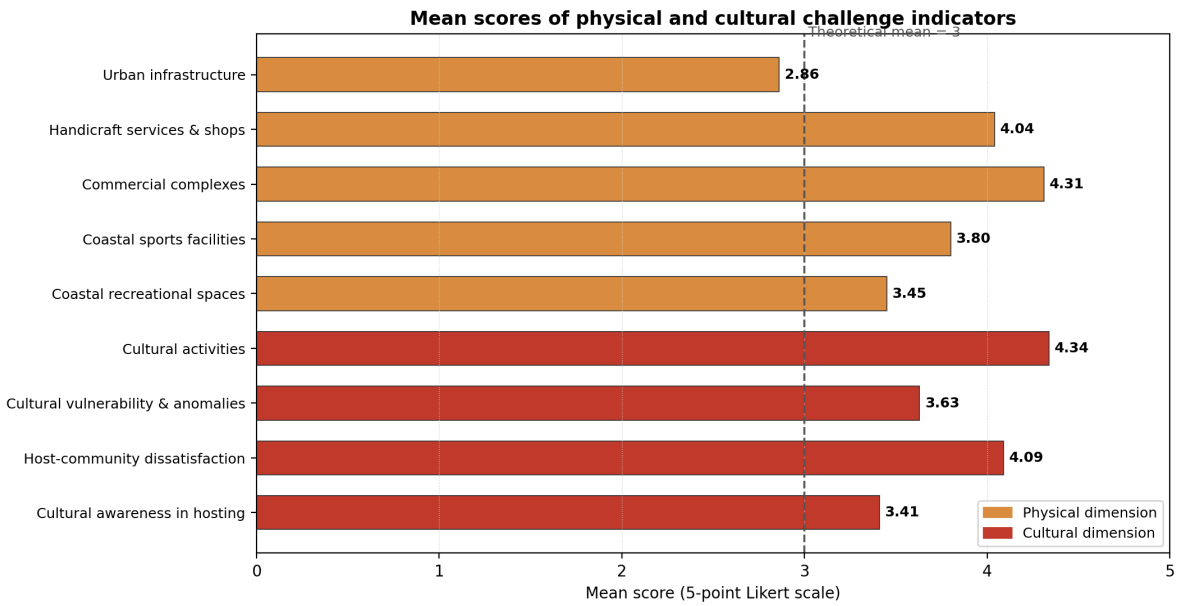

Figure 3: Mean scores of the physical and cultural challenge indicators (five-point Likert scale; the dashed line marks the theoretical mean of 3)

Hypothesis testing

Hypothesis 1. There appears to be a significant relationship between the physical challenges and the urban sustainability of the coastal city of Freydunkenar. As shown in Table 5, the Pearson chi-square value is 61.332 with 16 degrees of freedom and a significance level of 0.000, which is smaller than 0.05; therefore, the first hypothesis is confirmed, and physical sustainability performs positively with respect to the physical challenges from the viewpoint of the host community. (Tab. 5)

Table 5: Chi-square test for the first hypothesis.

Test	Value	df	Sig.
Pearson chi-square	61.332	16	0.000
N of valid cases	380		

Hypothesis 2. There appears to be a significant relationship between the cultural challenges and the urban sustainability of the coastal city of Freydunkenar. As shown in Table 6, the Pearson chi-square value is 112.312 with 44 degrees of freedom and a significance level of 0.000, which is smaller than 0.05; therefore, the second hypothesis is confirmed, and cultural sustainability performs positively with respect to the cultural challenges from the viewpoint of the host community. (Tab. 6)

Table 6: Chi-square test for the second hypothesis

Test	Value	df	Sig.
Pearson chi-square	112.312	44	0.000
N of valid cases	380		

Finally, the physical and cultural dimensions of the sustainable development of Freydunkenar were compared using a one-sample t-test and a comparison of means (Table 7). The mean effect of the physical and cultural dimensions was 3.69 and 3.86, respectively; hence the cultural dimension exerted the strongest positive influence on the coastal city of Freydunkenar. (Tab. 7)

Table 7: One-sample t-test of the physical and cultural dimensions (test value = 3)

Dimension	Mean	t	Std. deviation	Sig.
Physical	3.69	60.280	0.54946	0.000
Cultural	3.86	62.970	0.62834	0.000

RESULTS AND CONCLUSION

The results indicate that, from the perspective of the host community, both the physical and the cultural dimensions are significantly related to the urban sustainability of Freydunkenar, with the cultural dimension slightly dominant (mean 3.86 versus 3.69). This finding echoes recent evidence that socio-cultural impacts are among the strongest predictors of residents' quality of life and of their support for sustainable tourism development (Gautam & Bhalla, 2024; Wang et al., 2022; Hu et al., 2024). The prominence of the "limited expansion of cultural activities" (mean 4.34) and "host-community dissatisfaction" (mean 4.09) is consistent with community-based tourism studies showing that neglected cultural interaction erodes local support and, ultimately, sustainability (Quang et al., 2023; Wani et al., 2024; Kokkhangplu et al., 2024). On the physical side, the "absence of commercial complexes" (mean 4.31) and the shortage of handicraft services (mean 4.04) point to a service infrastructure that has not kept pace with tourism demand, whereas the below-average score for basic urban infrastructure (mean 2.86) suggests that residents regard essential infrastructure as comparatively adequate but the higher-order, tourism-supporting facilities as deficient. This pattern is in line with indicator-based assessments that distinguish between baseline provision and the qualitative, experience-oriented attributes of the built environment (Boeing et al.,

2022; Michalina et al., 2021; Malah & Bahi, 2022). The findings also reinforce the case for integrated coastal-zone management as the institutional vehicle for coordinating physical development with cultural and environmental protection along the southern Caspian coast (Jiang et al., 2023; Qing et al., 2022; Butt, 2024).

Policy and practical implications

Three practical implications follow from these results. First, because the cultural dimension carries the greatest weight, urban management should prioritise a programme of cultural activities and host–guest interaction festivals, handicraft markets, and interpretation of the wetland and migratory-bird heritage rather than treating culture as a residual concern. Second, the acute shortage of commercial and recreational complexes indicates that the service infrastructure supporting tourism, not merely the basic infrastructure, is the binding physical constraint; targeted investment in mixed-use commercial and recreational space on the waterfront would address the challenge residents rated most severe. Third, the significant chi-square relationships confirm that physical and cultural interventions are not independent luxuries but structurally linked to the city's sustainability, which strengthens the case for an integrated coastal-management plan that coordinates the two (Jiang et al., 2023; Butt, 2024). Several limitations should be acknowledged. The sample was drawn from the host community and was predominantly male (83.4%), which may under-represent women's perceptions of coastal space and culture; future surveys should stratify by gender and include the tourist population for comparison. The cross-sectional design captures perceptions at a single point in time and cannot establish causality; longitudinal or mixed-method designs would better trace how physical and cultural interventions affect sustainability over the tourism cycle. Finally, the study relies on perceptual Likert data analysed with chi-square and one-sample t-tests; complementary objective indicators of the built environment and multivariate models such as structural equation modelling would deepen and validate the findings (Boeing et al., 2022; Wang et al., 2022).

In the assessments of urban-management performance in the coastal city of Freydunkenar, the urban-sustainability parameter for the expansion of cultural activities recorded the best overall performance (mean 3.86), while the indicator "limited expansion of cultural activities" recorded the highest score among the challenges (mean 4.34). The one-sample t-test for this indicator yielded t = 32.627; compared with the empirical and theoretical means at the 5% level, no significant difference was found between the two means, so the limited expansion of cultural activities in Freydunkenar can be judged to be at a moderate-to-high level. Likewise, among the physical challenges, the indicator "absence of commercial complexes" recorded the highest score (mean 4.31), with t = 31.250; the same comparison indicated a moderate-to-high level.

Comparing the preliminary research results with the analyses carried out here, it can be concluded that coastal cities should formulate a sustainable urban-management programme as part of their macro-policies, so that, through coherent and professional urban management, they can protect the coastal environment and the indigenous culture of the people, create durable income sources, and provide suitable conditions for realizing sustainable development because urban management is one of the factors influencing the development and improvement of sustainability. The results further show that the benefits accruing to the host community from the role of urban management in the sustainable coastal development of Freydunkenar are endorsed by the local community; on the basis of the significance of the research hypotheses, it can be concluded that the interests of the host community have been taken into account in the correct implementation of the studied coastal land-uses, so that urban management exerts positive effects on the sustainable coastal development of the city, one of whose most important

functions is the provision of basic facilities and infrastructure on the coast that satisfy both the local community and tourists.

Although urban management has not yet secured the relative satisfaction of tourists in this respect, tourism activity as a sub-set of economic activity should control its share in the sustainable development of the region. Realising sustainable development within a community-based tourism framework requires the cooperation of all economic and social activities, so that, while preventing unprincipled activities on the coasts, the necessary coordination is achieved to institutionalise the interaction of tourism with the other activities of the city and, above all, the interaction of indigenous culture with the host community through urban management. Freydunkenar possesses excellent sea and coasts but remains far from the desired condition in terms of infrastructure; this opportunity should be used more effectively, which requires the participation of all governmental and non-governmental organisations, offices and institutions, and of managers and planners, therefore:

•Because the mean influence of the cultural variable exceeds that of the other variables, the involvement, awareness-raising and empowerment of the local community and tourists in planning and management should be emphasised (Ali et al., 2020).

•Appropriate policies should be adopted by the city management and the cultural-heritage organisation to prevent unprincipled land-use change in coastal areas.

•A documented strategic programme should be prepared by urban management for the use of coastal space to develop coastal tourism.

•The coastal zone of the city should have a macro-level management programme that specifies all tourism policy and management guidelines (a comprehensive management plan).

•The local people (the host community) should adhere to, and fully accept, the principles of sustainable development.

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