

ASSESSMENT OF THE READINESS OF THE HOTEL INDUSTRY IN THE ZHETYSU REGION FOR THE IMPLEMENTATION OF SUSTAINABLE DEVELOPMENT

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Abstract: Despite the growing prominence of sustainability frameworks in tourism and hospitality, empirical evidence on the operational readiness of hotel industries in emerging and peripheral destinations remains limited. Existing research has largely focused on sustainability outcomes, while comparatively little attention has been paid to the institutional and managerial conditions that determine the feasibility of implementation at the regional level. This study develops and applies an adapted assessment framework based on the Global Sustainable Tourism Council (GSTC) criteria to evaluate the readiness of the hotel industry in the Zhetysu region of Kazakhstan to implement sustainable development principles. The analysis employs a composite readiness index constructed across four dimensions – institutional – managerial, economic, socio-cultural, and environmental sustainability – using Likert-scale measurements and complemented by SWOT analysis. The findings indicate a moderate overall level of sustainability readiness, with relatively stronger institutional and economic preparedness and markedly weaker environmental readiness, particularly in the areas of energy efficiency, waste management, and biodiversity protection. The results further reveal a pronounced gap between formally established sustainability strategies at the governmental level and their practical adoption within hospitality enterprises. By shifting the analytical focus from outcome-based sustainability metrics to readiness-oriented institutional diagnostics, this study contributes to sustainability research in tourism and hospitality. The proposed framework offers a transferable tool for assessing sustainability readiness in emerging destinations and provides evidence-based insights for designing targeted policy instruments that support the transition toward integrated and operationally grounded models of sustainable hospitality development.

Keywords: assessment, sustainable tourism, sustainable hospitality, sustainable development, Zhetysu Region

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INTRODUCTION

The concept of sustainable development encompasses various aspects, including environmental protection, economic growth and social well-being (Sabau, 2020). The concept of sustainable tourism is gaining increasing importance, as it is viewed as an effective means of stimulating global economic development and creating employment opportunities. Implementing sustainable development principles in various economic sectors is crucial for achieving long-term environmental, social and economic goals. To this end, businesses are seeking to integrate the key principles of sustainable development into their activities to boost their competitiveness, gain international recognition, and enhance the quality of their products and services (Liao et al., 2022; Abubakr et al., 2020). Numerous studies in this field have confirmed that implementing sustainable practices in tourism and hospitality can be achieved through various strategies (Cheung & Li, 2019; León-Gómez et al., 2021; Garrigos-Simon et al., 2018; Sharpley, 2020; Yoo et al., 2019).

The Global Sustainable Tourism Council (GSTC) plays a key role in promoting sustainable practices within the tourism industry. The Council has developed sustainability criteria to ensure balanced development in various areas (Bozhinova & Georgieva, 2023; Wu et al., 2022). The GSTC criteria, which cover effective sustainability management, maximising economic benefits for the host community and minimising negative impacts, form the basis of assessments of the sustainability of tourist destinations (Modica et al., 2018; Hamimah et al., 2022). Additionally, the GSTC criteria are incorporated into the evaluation of sustainable practices within the hotel industry, in line with the European Union's sustainability indicators and framework (Alipour et al., 2019). These criteria are widely used in international practice. For instance, Hamimah et al. (2022) evaluated the sustainability of tourism and hospitality, showcasing the practical application of the GSTC in sustainability evaluations. Kruczek & Szromek (2020) emphasised the importance of GSTC criteria in determining the value proposition of tourism business models, particularly in the context of overtourism.

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Furthermore, Bricker et al. (2022) proposed a framework model for the sustainable development of tourism in national parks and their surrounding areas, in line with the GSTC's principles and criteria. However, successfully implementing these principles in practice faces a number of regional challenges. The Zhetysu region, and the city of Taldykorgan in particular, face challenges such as pronounced seasonality of tourist flows, increased environmental vulnerability of certain areas, and insufficient infrastructure and management competencies in sustainable tourism among small and medium-sized enterprises. Under these circumstances, the direct adoption of international standards is less critical than the development of a scientifically based diagnostic tool to assess the readiness of local stakeholders – including authorities, businesses, and local communities – to implement them. Conducting such an assessment is a necessary first step in developing a realistic and effective strategy for transitioning to a sustainable model of tourism and hospitality development in the region.

Thus, this study aims to comprehensively assess the readiness of the hotel industry in the Zhetysu region to implement sustainable development principles based on the adaptation of international GSTC criteria. To achieve this goal, the following tasks were set: to develop an adapted diagnostic toolkit; to conduct a survey and interviews with key stakeholders; to identify strengths, weaknesses, opportunities and threats (SWOT analysis) for the formation of a sustainable regional hospitality model. The study was conducted in the Zhetysu region, located in the south-east of the Republic of Kazakhstan (Figure 1). The region has significant tourism and natural potential, including unique natural sites and a rich cultural and historical heritage, making it attractive for the development of sustainable tourism and hospitality.

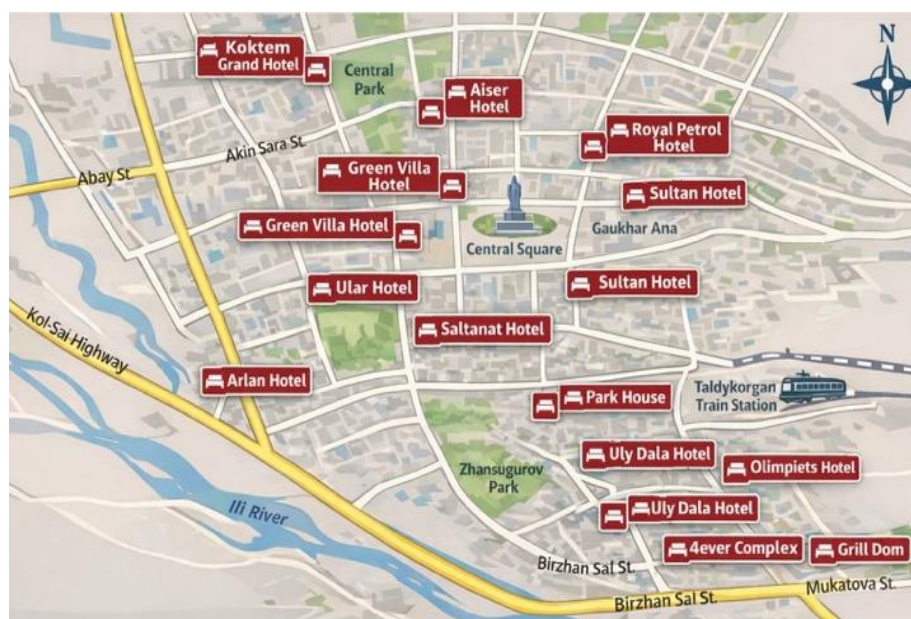


Figure 1. Hotels in Taldykorgan, the Zhetysu region (Source: Created by authors)

An analysis of current economic trends in the tourism and hotel industry in the Zhetysu region reveals the need to integrate the principles of sustainable development. The development of national criteria and the adaptation of international standards to regional conditions will ensure the balanced and sustainable development of the tourism industry in the region. This is particularly relevant given the ecological vulnerability of the territory, the seasonality of tourist flows and the specific features of the natural and climatic complex of Zhetysu.

Adapting international sustainable development criteria to local conditions will create a basis for more effective and realistic tourism development strategies, allowing for both economic and social and environmental aspects of the industry to be taken into account. In addition, involving representatives of the tourism sector in the discussion and formulation of sustainable development principles will ensure that the specifics and needs of the local market are taken into account, which contributes to the successful implementation of sustainable practices and increases the competitiveness of the industry.

Despite the growing body of research on sustainable tourism and hospitality, empirical studies focusing on sustainability readiness – rather than sustainability outcomes – remain limited, particularly in peripheral and transition economies. Existing studies predominantly assess environmental or economic performance, while comparatively little attention has been paid to institutional and managerial readiness at the regional level. This study addresses this gap by developing and applying an adapted GSTC-based readiness assessment framework to the hotel industry of the Zhetysu region. By shifting the analytical focus from outcomes to readiness, the study provides novel empirical evidence relevant for both theory and policy design in emerging tourism destinations.

LITERATURE REVIEW

Over the past two decades, sustainable development has become a central theme in the hospitality industry, driven by global environmental concerns, growing consumer awareness, and international policy agendas (UNWTO, 2022). In the hotel business, sustainable development has become one of the most important areas of transformation, particularly in regions where natural and cultural resources are vulnerable. Recent studies emphasise that sustainable hotel development

encompasses energy efficiency, water conservation, waste reduction, the responsible use of resources, and the integration of local culture into tourism products (Elkhwesky et al., 2022). Sustainable hospitality combines economic viability, environmental protection and socio-cultural responsibility, requiring hotels, restaurants and related services to reduce their environmental impact and increase local community engagement (Elkhwesky et al., 2022). Despite significant global progress, regional conditions such as those in Central Asia remain understudied, creating opportunities for local research and the implementation of sustainable practice models. Recent studies published in *Geojournal of Tourism and Geosites* also emphasize the importance of policy frameworks, ecological tourism, and the conceptual relationship between ecotourism, sustainable tourism, and nature-based tourism (Esparza-Huamanchumo et al., 2024; Minikhanova et al., 2024).

The Global Sustainable Tourism Council (GSTC) criteria provide a global framework for sustainable tourism and hospitality. These criteria cover governance, socio-economic benefits, cultural heritage, and environmental impact (GSTC, 2021). For hotels, the GSTC's practical measures include eliminating single-use plastics, using local food products, conserving water and energy, and supporting local employment (GSTC, 2024).

Regional studies have also begun to examine the impact of climate change on hotel infrastructure. A recent systematic review notes that adaptation strategies in the hotel sector are underdeveloped, particularly in transitioning economies, highlighting the need for context-specific approaches (Mota et al., 2024).

Recent studies convincingly demonstrate that sustainable development plays a vital role in achieving market stability and optimal positioning. Rather than being viewed as a cost, it is increasingly seen as an investment. Research shows that hotels with recognised sustainability standards have recovered significantly faster post-pandemic, as they align with the values of a new wave of conscious travellers (Gössling & Schweiggart, 2022). Several frameworks have been developed to ensure practical readiness. The Global Sustainable Tourism Council's (GSTC) criteria are among the most widely accepted and serve as guidelines for both tourist destinations and businesses. Research has shown that the GSTC system effectively translates abstract sustainability goals into measurable indicators. Its application in diverse settings, such as US national parks (Bricker et al., 2022), demonstrates that these criteria can be adapted to cultural and environmental conditions. However, issues such as limited data availability and weak institutional capacity often hinder their effective implementation (GSTC, 2019). For the Zhetysu region, adopting such a system could provide a structured framework for identifying gaps in environmental management, socio-economic integration and cultural heritage protection. This prospect is particularly relevant for Zhetysu, where government programmes, preferential financing and business associations could accelerate adoption of the law.

Hotel certifications play a crucial role in assessing sustainability performance by providing hotels with benchmarks to align their practices with international standards, such as those set by the Global Sustainable Tourism Council (GSTC). These certifications encourage hotels to intensify their efforts to ensure sustainability in various areas, including management practices, socio-economic impact, cultural preservation and environmental protection (Sriraksa et al., 2024).

The implementation of sustainable practices (SP) is growing rapidly in the tourism industry, particularly in developed countries. Many leading corporations are succeeding in this area as SP contributes to socio-economic growth, increases competitiveness and creates new business opportunities (Lucas et al., 2024). In addition to the GSTC, organisational theories have been used to understand enterprise-level readiness. The 'Technology–Organisation–Environment (TOE)' concept has had a particular influence in this regard, explaining the adoption of sustainable practices in terms of technological availability, organisational capacity, and external pressure. Recent empirical studies show that hotels with stronger technological capabilities (e.g. eco-innovation tools and digital solutions), management commitment and clear sustainability policies demonstrate significantly higher sustainability performance (Lucas et al., 2024).

Kusumawardhani (2024) suggests that intellectual tourism in new destinations should combine digital innovation with sustainability to create inclusive opportunities for local communities and address environmental issues.

Similarly, research on hotel waste management indicates that the feasibility of waste reduction measures depends on operational configurations such as property size and food and beverage volume, highlighting the need for a differentiated assessment of readiness (Díaz-Fariña et al., 2023). These findings highlight that readiness is not uniform, but depends on business models, supply chains and the socio-economic structure of the destination country.

Mota et al. (2024) document how hotel businesses around the world are becoming increasingly vulnerable to climate-related risks, such as extreme heat, water shortages, and natural disasters. They suggest that destination countries which take proactive adaptation measures, including impact assessments, compensation schemes and infrastructure upgrades, are better prepared to maintain competitiveness in a changing climate. Punzo et al. (2022) proposed a comprehensive sustainable tourism index (SusTour-Index), which covers economic, environmental, and social dimensions. They tested this index using regional data from Italy, providing a rigorous analytical platform for assessing regional readiness. Chen (2020) developed and validated a model for assessing sustainable tourism development in traditional Japanese villages, demonstrating how global methodologies can be adapted to local conditions. The bibliometric analysis conducted in this study not only outlines the conceptual contours of sustainable tourism research in the Balqash–Alakol basin but also indicates actionable leverage points for policymakers and regional planners. By mapping research themes, collaboration networks, and knowledge gaps, bibliometric data serve as a diagnostic tool that highlights both strengths and deficiencies in the current sustainability discourse – and these, in turn, translate into concrete policy directions.

First, the bibliometric emphasis on environmental management and carrying capacity underscores the urgent need for robust regulatory frameworks. Although many regional strategies mention sustainability, the density and prominence of these themes in the literature suggest that environmental concerns are widely acknowledged academically but have not yet been fully operationalised in governance. This gap calls for the establishment of formal environmental performance standards for tourism facilities in the basin, reinforced through monitoring systems and compliance incentives. For example, policy

instruments could include mandatory waste management plans for all tourism operators, seasonal visitor limits informed by carrying capacity research, and public reporting requirements tied to sustainability indices identified in the literature.

Second, the structure of scholarly collaboration revealed by co-authorship and thematic clustering indicates underdeveloped networks between academia, government, and industry stakeholders. To bridge this divide, policymakers could institutionalise knowledge exchange platforms, where researchers present evidence-based findings to stakeholders directly responsible for destination management – such as regional tourism boards, environmental agencies, and hotel associations. These platforms could be formalised as regional advisory councils that meet regularly and align research priorities with policy implementation needs. Furthermore, funding mechanisms might be reallocated toward applied research grants that explicitly require stakeholder participation in project design and dissemination, thereby ensuring that new research directly informs policy cycles. Third, the bibliometric focus on comparative and cross-regional studies suggests that benchmarking with similar eco-destinations enhances learning and accelerates policy innovation.

For example, many publications on Issyk-Kul (Kyrgyzstan) and Aral Sea-adjacent tourism regions highlight common challenges – such as seasonal employment dependency, insufficient environmental infrastructure, and weak enforcement of sustainability standards. By incorporating these comparative insights, Balqash–Alakol policymakers can adopt best-practice templates that have been empirically examined in neighbouring contexts: establishing environmental certification schemes, integrating sustainable tourism criteria into regional development plans, and co-creating cross-border tourism initiatives that pool resources and harmonise standards across lake basins. Taken together, the bibliometric findings act as a strategic evidence base that informs a policy agenda centred on (1) regulation with measurable targets, (2) stakeholder engagement and knowledge integration, and (3) comparative benchmarking to accelerate institutional learning.

Embedding research insights directly into policy instruments ensures that the academic discourse on sustainable tourism transitions from conceptual recognition to tangible governance outcomes within the Balqash–Alakol basin.

MATERIALS AND METHODS

The calculation of readiness indicators for the hotel industry in Taldykorgan city, Zhetysu region, was based on respondents' answers obtained using a five-point Likert scale, where each statement was rated from 1 to 5 points. The purpose of the calculation was to obtain mean scores for each area of readiness and to form a generalised readiness index. The numerical equivalent of the responses used for further quantitative analysis is presented in Table 1.

Table 1. Numerical equivalent of answers

Respondent's answer	Point
Completely absent	1
Low level	2
Average level	3
A sufficiently high level	4
High level	5

Thus, each response is automatically converted into a numerical value suitable for quantitative analysis.

The assessment of the tourism and hotel industry's readiness in the Zhetysu region to implement the principles of sustainable development was conducted based on a survey of representatives of government agencies and tourism and hotel businesses. A five-point Likert scale was used as a measurement tool, where 1 represents a complete absence of practice and 5 represents its systematic implementation. The overall methodological framework used to assess the readiness of the hotel industry in the Zhetysu region for sustainable development is illustrated in Figure 2.

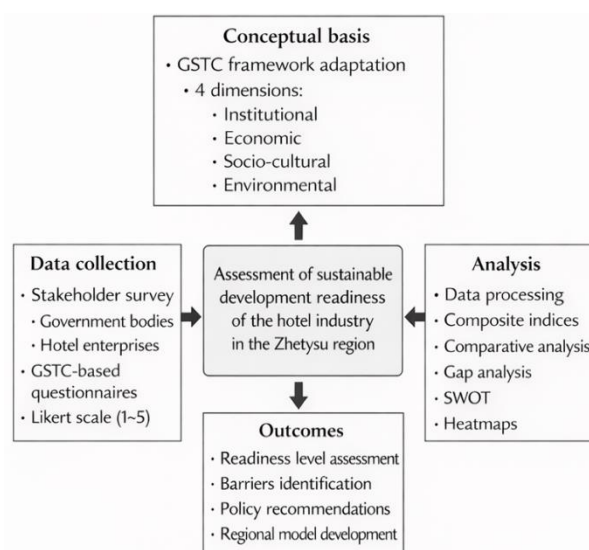


Figure 2. Methodological framework used to assess the readiness of the hotel industry in the Zhetysu region for sustainable development (Source: Created by authors)

At the first stage, the arithmetic mean was calculated for each indicator (developed by the authors):

$$\bar{x}_i = \frac{1}{n} \sum_{j=1}^n x_{ij}$$

where x_{ij} is the rating of the j -th respondent for the i -th indicator, n is the number of respondents. In the second stage, the indicators were aggregated into four broad blocks of sustainable development: institutional and managerial, environmental, socio-cultural, and economic. An integral readiness index was calculated for each block (developed by the authors):

$$I_k = \frac{1}{m} \sum_{i=1}^m \bar{x}_i$$

where m – number of indicators in the corresponding block. The integrated readiness indicators for the four sustainability dimensions are presented in Table 2. The average scores for hotel enterprises and their standardized values are shown in Table 3. The results obtained indicate an average level of readiness of the tourism and hotel industry in the Zhetysu region to implement the principles of sustainable development. The highest value was recorded in the economic dimension ($I = 3.6$), which indicates that enterprises are focused on financial stability, maintaining employment and developing tourism services as a source of income. Socio-cultural sustainability also shows relatively favourable indicators ($I = 3.4$), which is associated with the involvement of the local population, the preservation of cultural traditions and a focus on domestic tourism.

Table 2. Integrated indicators of the readiness of the tourism and hotel industry in the Zhetysu region for the implementation of sustainable development (Source: Calculated by the authors based on survey data)

Measuring stability	Integral index (I)	Measuring stability	Integral index (I)
Social and cultural sustainability	3,4	Environmental sustainability	2,8
Economic stability	3,6	Institutional and managerial sustainability	3,1

Table 3. Average scores on questions (business)

Question	Average score (max=3,4,5)	Standardised to 5 points	Question	Average score (max=3,4,5)	Standardised to 5 points
A1	2.60	3.25	C3	1.80	3.00
A4	2.60	3.25	D1.2	1.80	3.00
B2	3.60	3.60	D1.3	1.80	3.00
B3	2.60	4.33	D2.4	1.80	3.00
B7	3.00	3.75	D2.6	1.60	2.67

At the same time, environmental sustainability is characterised by the lowest integral index value ($I = 2.8$), reflecting the fragmented nature of the implementation of environmental practices, the lack of resource management systems and the limited use of environmental standards in the activities of enterprises. Institutional and managerial sustainability ($I = 3.1$) is at a borderline level and indicates the existence of strategic documents and programmes, but their practical implementation is accompanied by insufficient coordination, weak monitoring and the absence of unified regional mechanisms for managing sustainable development. The readiness levels across the four sustainability dimensions are visualized in Figure 3.

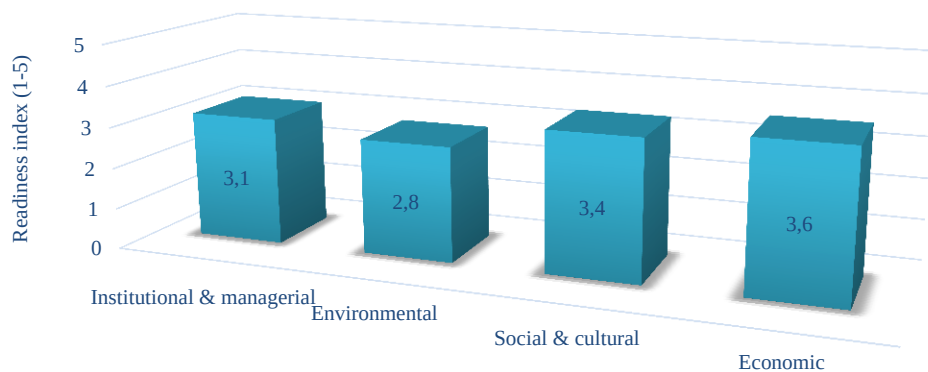


Figure 3. Readiness of the tourism and hotel industry in the Zhetysu region for sustainable development (Source: Calculated by the authors based on survey data)

Thus, a structural imbalance has been identified between the declared readiness and the actual level of implementation of sustainable practices. The indices obtained confirm the need to move from fragmented initiatives to the formation of an integrated regional model of sustainable development of the tourism and hotel industry based on institutional coordination, environmental regulation and business support. Average values were calculated based on the 16 responses from government agencies and 20 responses from businesses. Given the nascent stage of the hospitality industry in the Zhetysu region, this sample represents a significant portion of the currently active key decision-makers and registered tourism entities. The average scores obtained from representatives of state structures are presented in Table 4. A comparison of average standardised scores between state structures and enterprises by block is shown in Table 5.

Table 4. Average scores on questions (state structures)

Question	Average score (max=3,4,5)	Standardised to 5 points	Question	Average score (max=3,4,5)	Standardised to 5 points
A1	3.25	4.06	A1	3.25	4.06
A2	3.25	4.06	A2	3.25	4.06
A10	2.50	4.17	A10	2.50	4.17
B2	1.75	2.92	B2	1.75	2.92
B3	2.00	2.50	B3	2.00	2.50
C2	2.25	3.75	C2	2.25	3.75
D1.3	1.75	2.19	D1.3	1.75	2.19
D2.4	2.00	3.33	D2.4	2.00	3.33
D3.1	2.50	3.13	D3.1	2.50	3.13

Table 5. Comparison of average standardised scores by block

Block	State structures (average scores)	Enterprises (average scores)	The Gap
Management and strategy	4.10	3.25	+0.85
Social responsibility	3.38	3.54	-0.16
Environmental responsibility	2.82	2.93	-0.11
Infrastructure and support	2.76	3.00	-0.24

Standardisation was carried out using the formula (developed by the authors):

$$\text{Standardised score} = \frac{\text{Average score}}{\text{Maximum score}} \times 5$$

The questions are grouped into 4 blocks:

1. Management and strategy (A1, A4, A10)
2. Social responsibility (B2, B3, B7, C2, C3)
3. Environmental responsibility (D1.2, D1.3, D2.4, D2.6, D3.1)
4. Infrastructure and support (D1.3, D2.4 – repeatedly in the context of state support).

The heatmaps of average and normalized scores for government structures and enterprises are presented in Figures 4 and 5, respectively.

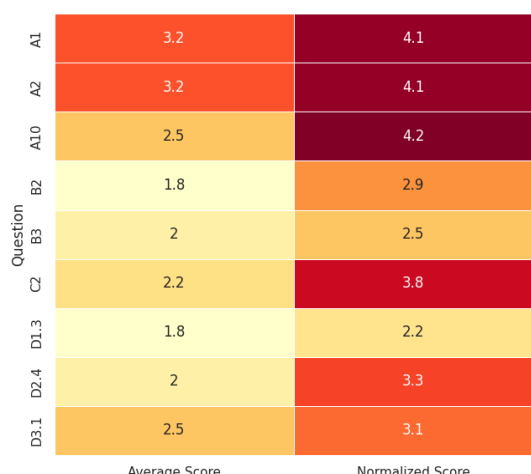


Figure 4. Heatmap of Average and Normalized Scores (Government Structures)

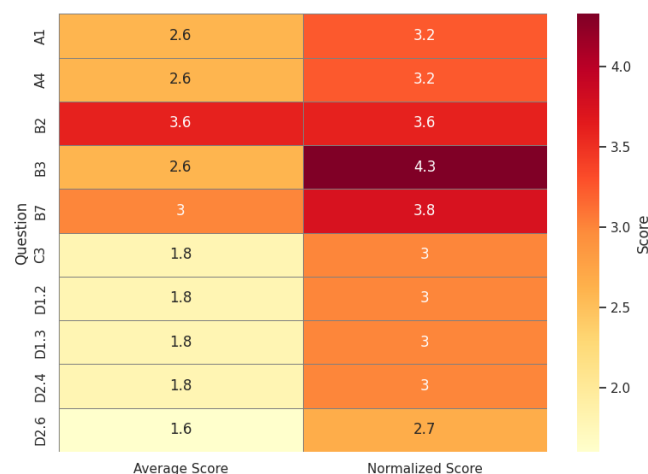


Figure 5. Heatmap of Enterprise Scores

The lowest scores were for environmental issues (D1.2–D2.6), confirming the weak systematic nature of ecological practices. The highest scores were for issues B3 (local procurement) and B2 (local employment), reflecting the social activity of the business. High standardised scores for A1, A2 and A10 indicate the strength of government structures in strategic planning and coordination. Weak areas are environmental issues (D1.3, D2.4), where scores remain low, indicating a lack of infrastructure and systemic measures. Heat maps allow you to quickly identify ‘red zones’ (low values) and prioritise areas for improvement. High scores: B2 (local employment) and B3 (local procurement) – companies demonstrate social engagement. B7 (social responsibility) is also above average. Low scores: Environmental issues (D1.2–D2.6) – weak consistency in energy conservation, waste management and biodiversity. C3 (cultural heritage) is also low, indicating a lack of integration of cultural elements into services. The level of implementation of sustainable development practices in tourism in the Zhetysu region is assessed as average (average score across all blocks – approximately 3.2 out of 5). The analysis of data based on the Likert scale allows us to draw a comprehensive conclusion about the state of sustainable tourism development in the Zhetysu region. The overall level of implementation of relevant practices is assessed as average, reflecting a transitional stage from the formation of strategic plans to their practical implementation. Government agencies demonstrate a higher level of strategic planning compared to businesses, indicating a gap between the programmes developed and their actual implementation at the local level. At the same time, enterprises are somewhat more active in the area of social responsibility, especially in terms of local employment and working with local suppliers, but this activity is more of an initiative and is not backed by systematic state support.

The most problematic area remains environmental responsibility, where both government agencies and businesses perform poorly. Energy saving, waste management and biodiversity conservation practices are implemented in a fragmented manner and are not systematic. This conclusion is confirmed by quantitative data: the average scores for the environmental block are only 2.82 and 2.93 out of a possible 5. The key obstacle to the development of sustainable practices is unanimously identified as a lack of funding and targeted support from government agencies, which correlates with low ratings of government grant and subsidy programmes themselves. Thus, the current situation is characterised by a certain imbalance: while there is a strategic vision at the regional level, there are no effective mechanisms for translating it into specific instruments of financial, infrastructural and methodological support for business, which primarily hinders the development of environmental initiatives and the full integration of sustainable development principles into the activities of the tourism sector.

For quantitative assessment, a composite index can be used to calculate the overall sustainable development index (developed by the authors):

$$I = \frac{\sum_{i=1}^n (B_i \times w_i)}{5 \times \sum w_i} \times 100\%$$

where:

- B_i – standardized score for block i ,
- w_i – block weight (can be assumed to be 1 for simplicity),
- n – number of blocks.

For our data (without weighting):

$$I_{ent} = \frac{3.25 + 3.54 + 2.93 + 3.00}{5 \times 4} \times 100\% = 64.30\%$$

$$I_{gov} = \frac{4.10 + 3.38 + 2.82 + 2.76}{5 \times 4} \times 100\% = 64.15\%$$

Both groups are at around 64% of the ideal state, confirming the need for systemic improvements.

RESULTS

The results of a survey of representatives of state and quasi-state structures involved in the regulation and development of tourism and hospitality in the Zhetysu region provide a comprehensive overview of the current state of institutional, socio-environmental and managerial aspects of sustainable development of the industry at the regional level. The GSTC-based questions developed for representatives of state structures are presented in Table 6.

Table 6. Questions for the state structure

GSTC criterion	Questions for the state structure
A1 Sustainable development management system	Is there an approved strategy or programme for sustainable tourism and hospitality development in the region?
A2 Compliance with legal regulations	How effectively is compliance with environmental and labour legislation monitored in the tourism industry?
A10 Interaction with the visited site/destination	Are there any working groups or coordination councils for the development of tourism and hospitality in the region involving government bodies, businesses and non-governmental organisations?
B2 Employment of the local population	Are there any programmes to encourage the hotel and tourism industry to employ local residents and promote their career growth?
B3 Local purchasing	Is work being done to create and promote registers of local suppliers for the tourism industry?
C2 Protection of cultural heritage	Are there any grant or other support programmes for tourism businesses that integrate elements of local cultural heritage into their services?
D1.3 Energy saving	Are there any grant or other support programmes for tourism businesses that integrate elements of local cultural heritage into their services?
D2.4 Solid waste	Is there a waste sorting and recycling infrastructure in place in the region that is accessible to tourism businesses?
D3.1 Biodiversity conservation	Are biodiversity impact assessments and mandatory compensation measures included in the conditions for allocating land for tourism facilities?

Despite the limited sample size, the data obtained is of an expert and analytical nature and reflects the systemic vision of key stakeholders responsible for the formation and implementation of regional tourism policy, which gives the research results high analytical and interpretative value. The results of a survey of representatives of state and quasi-state structures involved in the regulation and development of tourism and hospitality in the Zhetysu region provide a comprehensive overview of the current state of institutional, socio-environmental and managerial aspects of sustainable development of the industry at the regional level. Despite the limited sample size, the data obtained is of an expert and analytical nature and reflects the systemic vision of key stakeholders responsible for the formation and implementation of regional tourism policy, which gives the research results high analytical and interpretative value. The assessment of compliance with environmental and labour legislation in the tourism sector shows predominantly high scores, indicating the existence of a

formally structured regulatory framework and basic control mechanisms. However, these results should be interpreted with caution, as compliance with legal requirements is not always accompanied by the implementation of comprehensive sustainable management practices. The lack of regular monitoring, performance evaluation and feedback mechanisms reduces the potential of legal regulation as a tool for a real transition to sustainable hospitality development models.

The social dimension of sustainability, in particular issues related to human capital training and development, is characterised by a marked lack of systematicity. The survey results show that staff training programmes in sustainable tourism and hospitality are either non-existent or implemented in a fragmented manner as part of individual initiatives and projects. This situation limits the region's institutional capacity to scale up sustainable practices, as human capital is a key factor in the transformation of the industry. The lack of sustainable educational and professional programmes reduces the adaptability of the regional hospitality system to the modern requirements of sustainable development.

The environmental dimension of sustainability is also characterised by significant territorial and functional heterogeneity. In particular, assessments of the state of waste management infrastructure in tourist destinations range from a complete lack of relevant systems to the existence of relatively developed mechanisms that require further improvement. This indicates the absence of a unified regional approach to environmental management in the hospitality sector, as well as the dependence of environmental practices on local conditions and initiatives. A similar situation can be observed in the field of biodiversity conservation, where environmental factors are taken into account in the implementation of tourism projects on an irregular and predominantly reactive basis, without being institutionally enshrined in the form of mandatory procedures or standards.

A synthesis of the results obtained allows us to conclude that the key constraints to the sustainable development of hospitality in the Zhetysu region are not related to a shortage of natural or cultural resources, but to institutional and managerial factors. The region has significant competitive potential due to its rich natural and cultural heritage, but the lack of an integrated management, coordination and monitoring system significantly reduces the effectiveness of sustainable practices. Sustainability in this context is perceived primarily as a set of individual measures rather than a comprehensive model of regional development. The empirical results obtained are consistent with the provisions of the Global Sustainable Tourism Council (GSTC) criteria and confirm the feasibility of adapting them for regional-level analysis.

The most pronounced gaps were identified in the institutional and managerial dimension of sustainability, which highlights the need to shift the focus of regional tourism policy towards the formation of effective governance mechanisms. Thus, the results of the study form an empirical basis for the development of an integrated regional model of sustainable development of the hospitality industry, focused on improving institutional coherence, developing human capital, and systematically integrating environmental and socio-economic principles of sustainability.

Based on the above criteria, questionnaires were developed to assess the current state of the hotel industry in the Zhetysu region, awareness of the principles of sustainable tourism, sustainable development goals and obstacles to achieving them. The questionnaires are presented in a short version adapted for entrepreneurs and government officials. Data collection consisted of anonymous surveys using links to Google forms in the questionnaires. The questionnaires were sent to state and local institutions in the Zhetysu region, social media groups and tourism workers. The GSTC-based questions designed for hotel enterprises are presented in Table 7.

Table 7. Questions for the enterprise

GSTC criterion	Questions for the enterprise
A1 Sustainable development management system	Is there documentary evidence of the implementation of a sustainable development management system?
A4 Staff engagement	Is your staff trained in environmental and social practices?
B2 Local employment	What is the proportion of local residents in the total number of employees and in management positions?
B3 Procurement	Do you prioritise local suppliers when purchasing food, souvenirs and services?
B7 Decent work	To what extent does the organisation comply with the principles of decent work (safe conditions, decent wages, staff development)?
C3 Presentation of culture and heritage	Do you incorporate elements of local culture (design, cuisine, music, crafts) into the guest experience/service?
D1.2 Effective procurement	Are you taking measures to reduce the use of single-use plastics (bottles, straws, packaging, hygiene products)?
D1.3 Energy saving	Do you use energy-saving technologies (LED bulbs, motion sensors, smart thermostats)?
D2.4 Solid waste	Have you implemented a separate waste collection system for subsequent recycling?
D2.6 Minimising pollution	Does the hotel take specific measures to reduce pollution (air, water, soil, as well as noise, light pollution, etc.)?
Please give an example of one of your sustainable development practices that you are most proud of.	
What are the main obstacles you see to implementing such practices? (select several from the list)	

The results of a survey of representatives of the hotel and tourism industry in the Zhetysu region reveal the key features of the practical implementation of sustainable development principles in the activities of hospitality industry entities at the regional level. The data obtained reflect the perception of sustainability by businesses and demonstrate the degree of integration of environmental, social and management practices into the daily operations of enterprises. Taken together, the results form a comprehensive picture of the actual, rather than the declared, level of sustainable development in the industry.

An analysis of responses characterising the use of environmentally oriented practices shows that most enterprises either rarely or sporadically use environmentally friendly means and technologies in their activities.

Only a limited number of respondents indicate regular use of such practices. This indicates an early stage of environmental transformation of business, in which sustainable solutions are perceived as additional rather than mandatory management elements. This situation points to the existence of structural barriers, including limited financial resources, a lack of incentives and the absence of clear regulatory requirements that would facilitate the introduction of environmental innovations in the region's hotel and tourism business.

DISCUSSION

An assessment of staff training practices in the field of environmental and social sustainability revealed a marked fragmentation. A significant proportion of enterprises either do not provide specialised training at all or limit themselves to one-off events that are not integrated into the human resources management system. This indicates an insufficient understanding of the role of human capital as a key factor in the sustainable development of the hospitality industry. The lack of systematic training programmes reduces the ability of enterprises to adapt to modern requirements for sustainable tourism and limits their long-term competitiveness.

The social dimension of sustainability in business activities is manifested mainly in the form of basic compliance with labour legislation and generally accepted standards of interaction with staff and the local community. At the same time, business participation in broader social initiatives aimed at developing local communities and supporting cultural heritage is limited and unsystematic. This indicates that social responsibility is perceived by businesses as a minimum obligation rather than a strategic resource for developing and strengthening the reputation of a destination.

Environmental management, including waste reduction, rational use of resources and implementation of energy-efficient solutions, is also characterised by heterogeneity. Some enterprises demonstrate a willingness to implement individual environmental measures, but in most cases these initiatives are implemented without strategic planning and systematic monitoring. The lack of clear guidelines and sustainability standards at the regional level limits the ability of businesses to transition to more comprehensive environmental management models.

Responses concerning the interaction of businesses with government agencies and the institutional environment as a whole are particularly significant. The survey results indicate a limited level of coordination between business and government structures on issues of sustainable tourism and hospitality development. Businesses do not always have sufficient information about existing strategies, support programmes and regulatory instruments, which reduces the effectiveness of sustainable initiatives and hinders the formation of a unified regional approach.

To summarize these findings, the SWOT analysis of the hotel industry's readiness to implement sustainable development principles in the Zhetysu region is presented in Table 8.

Table 8. SWOT analysis of the readiness of the hotel industry in the Zhetysu region to implement sustainable development principles (Source: Created by authors)

Strengths	Weaknesses
The region's significant natural and cultural potential, which forms an objective basis for the development of a sustainable hotel business. The formal existence of strategic and policy documents in the field of tourism and sustainable development at the regional level. Relatively high level of compliance with environmental and labour legislation, creating the basic conditions for the implementation of sustainable principles. Readiness of some hotel businesses to implement individual elements of environmental and social responsibility. Human resource potential and interest of individual stakeholders in the development of sustainable hospitality.	Fragmentation of the institutional system for managing sustainable development in the hotel industry and insufficient interdepartmental coordination. Lack of systematic mechanisms for implementing and monitoring sustainable practices in hotel operations. Low level of integration of sustainable development into the strategic and operational management of hotel enterprises. Fragmented and sporadic use of environmentally friendly technologies and resource-saving practices. Lack of systematic training and professional development programmes for staff in the field of sustainable development and sustainable hospitality.
Opportunities	Threats
Adaptation of international standards and sustainability criteria (in particular GSTC) to the regional level and the hotel industry. Development of mechanisms for state support and incentives for hotel enterprises that implement sustainable practices. Increased demand from tourists for environmentally and socially responsible forms of accommodation. Development of training programmes, digital solutions and consulting support for the hotel business in the field of sustainable development. Strengthening cooperation between government agencies, the hotel business and local communities.	The gap between strategic declarations and the actual implementation of sustainable development remains. Limited financial resources of hotel enterprises hinder the implementation of environmental and social innovations. Increased anthropogenic pressure on natural and cultural resources in the absence of effective sustainability management mechanisms. Formalisation of sustainable development as an 'image element' without real institutional changes. Decreased competitiveness of the region in the long term due to the unsystematic implementation of sustainability principles.

Overall, the results indicate that sustainable development of the hospitality industry in the Zhetysu region at the business level is in its infancy. Enterprises demonstrate a certain readiness to implement individual elements of sustainability, but the lack of institutional incentives, systematic training and clearly formulated regional guidelines significantly limits the depth and scale of such transformations. As a result, sustainability is implemented mainly in the form of isolated practices rather than as an integrated strategy for corporate and regional development.

The empirical data obtained complement the results of the survey of government agencies and confirm the existence of a structural gap between strategic declarations and the practical implementation of sustainable development principles in the hospitality industry. This leads to the conclusion that there is a need to strengthen institutional coordination, develop mechanisms to stimulate business, and form a comprehensive regional model of sustainable development for the hospitality industry based on the principles of environmental responsibility, social engagement, and effective management.

The interviews and survey results revealed how stakeholders are involved in the development of hospitality and what their views are on the sustainable development of the industry. The interview format was structured, but at the same time left room for discussion of new topics in a less formal, open manner. The main topics of discussion at the meetings on hospitality development concerned the perception by business representatives of the principles of sustainable development of tourist destinations as an alternative to existing strategies. During the discussions, respondents noted which elements, in their opinion, should be preserved (e.g., the natural environment or socio-cultural context), which should be developed, and how their own interests could be realised in this context. The initial interviews focused on identifying the personal views and approaches of the participants, followed by a refinement of the identified concepts and directions for sustainable hospitality development.

RESEARCH LIMITATIONS AND GAPS

The present study has several limitations that should be acknowledged. First, the sample size is relatively limited, particularly about representatives of government institutions, which means that the findings should be interpreted as preliminary. Second, the study relies on self-reported survey data, which may be subject to response bias and social desirability effects. Third, the composite indices were constructed using equal weighting of indicators, which does not fully reflect potential differences in their relative importance. Fourth, the focus on a single region – the Zhetysu region – limits the external validity of the results and restricts opportunities for interregional comparison.

Finally, the cross-sectional research design does not allow for the assessment of dynamic or long-term changes in sustainability readiness within the hospitality industry. Despite these limitations, the study identifies several important gaps in the existing body of research. In particular, there remains a lack of empirical studies examining sustainability readiness in developing and peripheral tourism regions, especially in the context of Central Asia. Moreover, limited attention has been paid to integrating management readiness assessments with established ESG and GSTC frameworks. The use of composite indices based on expert assessments and Likert-scale data in regional hospitality studies also remains insufficient. Additionally, the gap between formally adopted sustainability strategies and their actual operational implementation – particularly in the environmental dimension – has not been adequately addressed in previous research.

Based on these findings, several directions for future research can be proposed. Further studies should expand the sample to include a broader range of stakeholders, such as local communities, tourists, and non-governmental organisations. The application of weighted and multi-criteria decision-making methods, including AHP, entropy-based weighting, or TOPSIS, could improve the robustness of composite indices. Longitudinal research designs would allow for tracking changes in sustainability readiness over time. Comparative interregional or cross-country studies could enhance the generalisability of results. Finally, future research should seek to integrate objective environmental indicators – such as energy consumption, waste generation, and carbon footprint metrics – with perception-based survey data to provide a more comprehensive assessment of sustainability practices in the hospitality industry. The main limitations, research gaps, and areas for future research are summarized in Figure 6.



Figure 6. Overview of Limitations, Research Gaps and Areas for Future Research (Source: Created by authors)

Despite the relevance of the results, it should be acknowledged that there are a number of limitations and several gaps in the existing literature. The study uses a cross-sectional design that reflects readiness for sustainable development at a specific point in time. This does not allow for the assessment of dynamic changes and long-term trends in the implementation of sustainable development practices. In addition, insufficient attention is paid to the gap between formal sustainable development strategies and practical operational measures, especially in the environmental aspect.

CONCLUSION

This study examines the readiness of the hotel industry in the Zhetysu region to implement sustainable development principles, based on survey data from government agencies and hotel enterprises and complemented by a SWOT analysis. The

research contributes to the literature by proposing an adapted GSTC-based readiness assessment framework for peripheral tourism regions and by empirically revealing a critical institutional gap between strategic planning and operational implementation within the hospitality sector. The findings indicate that the region possesses substantial potential to transition toward sustainable development models, underpinned by its rich natural and cultural heritage and the presence of a basic regulatory and strategic policy framework for tourism. These factors create favourable preconditions for integrating environmental, social, and managerial sustainability principles and for enhancing the long-term competitiveness of the destination. At the same time, the empirical results show that current readiness remains limited and unsystematic.

Sustainable practices are implemented in a fragmented manner and are insufficiently embedded in the strategic and operational management of hotel enterprises. The absence of robust mechanisms for monitoring, performance evaluation, and multi-stakeholder coordination significantly constrains the formation of a coherent regional model of sustainable hospitality development. The analysis further demonstrates that the primary barriers to implementation are institutional and managerial rather than resource-related. Key vulnerabilities include weak interdepartmental coordination, limited and irregular interaction between public authorities and the hotel business sector, and the lack of systematic training and professional development programmes in sustainable hospitality. These deficiencies reinforce the persistent gap between formally adopted sustainability strategies and their practical execution. The SWOT analysis suggests that maintaining the current development trajectory carries the risk of formalising sustainability as a predominantly image-driven concept. In the context of increasing tourist flows and insufficient governance mechanisms, this may intensify anthropogenic pressure on the region's natural and cultural assets and undermine long-term destination resilience.

Conversely, the results reveal significant opportunities to enhance readiness through the adaptation of international standards – particularly the Global Sustainable Tourism Council (GSTC) criteria – the development of targeted state support and incentive schemes, and the establishment of systemic educational initiatives. Realising this potential requires a decisive shift from fragmented initiatives toward an integrated, region-wide sustainability governance model for the hospitality sector. Overall, the level of readiness of the hotel industry in the Zhetysu region can be characterised as moderately low, yet with considerable potential for improvement, provided that institutional coordination is strengthened, human capital is developed, and comprehensive sustainability management mechanisms are introduced. These conclusions form an empirical and analytical basis for the development of practical recommendations aimed at increasing sectoral sustainability and strengthening the region's competitive position.

The findings have direct relevance for regional tourism governance. The identified gap between strategic intent and operational implementation underscores the need to move beyond declarative sustainability policies toward targeted and enforceable policy instruments. Priority measures include: (1) incentive-based mechanisms (such as grants, tax preferences, and co-financing schemes) linked to verifiable environmental practices in hotels; (2) the development of professional training programmes in sustainable hospitality in cooperation with universities and industry associations; and (3) the establishment of permanent multi-stakeholder coordination platforms to enhance institutional coherence and monitor sustainability initiatives. In this context, the adapted GSTC-based readiness framework proposed in this study may serve as a practical diagnostic tool for prioritising policy interventions and allocating support resources more effectively.

The results for the Zhetysu region are broadly consistent with evidence from other emerging lake-based destinations in Central Asia, including the Issyk-Kul region in Kyrgyzstan and tourism areas surrounding the Aral Sea. These destinations exhibit similar structural challenges, such as limited environmental infrastructure, fragmented governance systems, and strong dependence on seasonal tourism flows. While Zhetysu demonstrates relatively stronger institutional planning capacity, it faces comparable weaknesses in environmental management and business-level readiness, suggesting that the challenges identified are not unique but reflect broader patterns characteristic of transition economies.

Cross-regional comparisons further highlight converging policy priorities, particularly in the areas of environmental regulation, stakeholder integration, infrastructure development, and community engagement. Empirical studies from neighbouring regions emphasise the importance of integrated water-tourism governance, enforceable environmental standards, and targeted investments in waste management and water treatment infrastructure. Incorporating community-based governance models – such as participatory monitoring and co-management schemes – into the Balqash–Alakol basin could further strengthen the institutional foundations of sustainable tourism development.

In summary, although individual lake basins differ in ecological and socio-economic conditions, the convergence of policy challenges and opportunities suggests that empirically informed, regionally adapted sustainability frameworks can play a critical role in guiding effective tourism governance in transitional socio-ecological systems.

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