Received: 19 July 2025 | Revised: 10 October 2025 | Accepted: 28 November 2025 | Published: 30 December 2025

RESEARCH ARTICLE
DOI: https://doi.org/10.47703/ejebs.v69i3.564

Ecotourism Business and Marketing Strategies: Insights from Kazakhstan and Global Leaders

Aliya T. Zhaksybay[1]* | **Gulzada M. Mukhamediyeva**[1]

[1] Al-Farabi Kazakh National University, Almaty, Kazakhstan

Corresponding author:
* Aliya T. Zhaksybay – PhD student, Department of Business Technologies, Al Farabi Kazakh National University, Almaty, Kazakhstan. Email: zhaksybay.at@gmail.com

How to cite this article:
Zhaksybay, A.T. & Mukhamediyeva, G. M., (2025). Ecotourism Business and Marketing Strategies: Insights from Kazakhstan and Global Leaders. Eurasian Journal of Economic and Business Studies, 69(4), 32-45.

Conflict of interest:
author(s) declare that there is no conflict of interest.

© 2025 by the author(s). This article is distributed under the terms and conditions of the Creative Commons Attribution 4.0 International License (CC BY 4.0): https://creativecommons.org/licenses/by/4.0/

ABSTRACT

Kazakhstan's ecotourism marketing is currently fragmented and weakly aligned with sustainability governance (e.g., no national eco certification), unlike leading destinations that integrate environmental values into their branding and communications. This study benchmarks Kazakhstan against four international ecotourism leaders to identify strategic gaps and adaptation opportunities. The methodology is based on comparative and systematic approaches, including the development of a composite index of marketing-resistant architecture (CMSI), analysis of the PESO model (Paid, Earned, Shared, Owned), and panel regression based on 2019-2024 data. International best-practice destinations embed sustainability certification into national brands and maintain an Owned/Shared-media–heavy outreach, whereas Kazakhstan relies mainly on advertising, with limited data transparency or visitorflow management. As a result, Kazakhstan's composite marketing sustainability score is barely 0.32 (on a 0-1 scale), about half that of peers, correlating with weaker visitation outcomes. Regression analysis showed that an increase in CMSI by 1 point is associated with an increase in attendance by +12.4 p.p. and the introduction of internationally recognized certification by +3.2 p.p. The results confirm the importance of integrating a certification system, a balanced PESO media mix, and open data to enhance ecotourism's competitiveness. Future research is advisable to model stress indices for parks through 2030 and assess the impact of the transition to owned or shared dominant communication channels on demand sustainability and ecosystem conservation.

KEYWORDS: Ecotourism, Tourism Economics, Green Economy, Marketing, Business Model, Sustainable Development, Branding, PESO Model, Kazakhstan

SCSTI: 06.71.07

JEL Code: L83, M31, Q56

FINANCIAL SUPPORT: The study was not sponsored.

1. INTRODUCTION

Modern global tourism is characterised by the active development of sustainable and environmentally oriented types of travel. In the tourism industry, the trend toward sustainability has become a key global growth driver, as intensifying environmental problems, climate change, and the depletion of natural resources directly affect the nature of the tourism product. According to UNWTO, international tourist trips reached 1.4 billion in 2024, about 99% of the pre-COVID level (UNWTO, 2024). These figures demonstrate a substantial recovery in demand but also clearly illustrate growing competition in the ecotourism segment, where tourists are sensitive to product quality and sustainability attributes. Consequently, in the international market, ecotourism is considered not just a niche field of activity, but a socio-economic phenomenon of strategic importance.

Kazakhstan, with its unique natural heritage, regards ecotourism as a significant development area. In 2024, more than 2.8 million people visited the country's protected natural areas, which is 18% more than in 2023 (Bureau of National Statistics, 2024). These data confirm the increased interest of the population in environmentally friendly, nature-based recreation. The growth of domestic demand demonstrates the potential for ecotourism to develop as an economically promising and environmentally significant industry. However, at present, the marketing promotion of ecotourism in Kazakhstan is fragmentary: although the national tourism brand (Kazakhstan.travel) is being actively deployed internationally, a unified national «green» certification system has not yet been formed, and use of the full PESO communications mix remains limited. This situation risks reducing the competitiveness of the tourism industry and could lead to a widening gap in experience compared to foreign markets.

International experience shows that marketing plays a key role in increasing the competitiveness of ecotourism destinations. For example, Slovenia's «Slovenia Green» program became a core component of the national brand, allowing the country to promote regions certified for sustainable tourism. New Zealand's "100% Pure" strategy combined pristine nature with national identity, embedding the Qualmark sustainability certification into the country's tourist image. Costa Rica supports ecotourism through public policy, directing a significant share of tourism income to environmental protection and running the long-standing CST certification program. Norway, for its part, treats preservation of natural landscapes as a top priority through balanced communication strategies under its Sustainable Destinations program. These examples prove that integrating environmental values into national brands and using comprehensive marketing mechanisms can not only increase tourist flows but also reduce negative impacts on ecosystems.

It is clearly important for Kazakhstan to learn from such experiences. First, for the sustainable development of ecotourism at the national level, a single communication platform is needed that aligns promotion with stewardship. Second, within the PESO model, the challenge is to achieve a balanced use of diverse media tools (Paid, Earned, Shared, and Owned) rather than over-reliance on advertising. Third, to ensure the competitiveness of the ecotourism product, it is necessary to introduce a national "green certification" system that meets international standards. These steps would make ecotourism a truly sustainable segment in the global market.

Thus, the relevance of the study lies in the need for a critical analysis and comparison of international and Kazakhstani experience in ecotourism marketing. Evaluating the effectiveness of marketing strategies in ecotourism contributes to diversifying the country's tourism industry, promoting the socio-economic development of regions, and conserving nature. Defining strategic priorities for Kazakhstan is relevant not only economically but also in terms of environmental security and national image.

The purpose of the study is to conduct a comparative analysis of ecotourism marketing strategies in Kazakhstan and selected foreign countries, identify effective practices, and justify ways to adapt them to national conditions. To achieve this goal, the following research objectives were defined:

(1) Examine international models of ecotourism marketing promotion, with emphasis on how sustainability certification and branding are integrated;

(2) Compare the PESO model tools (paid, earned, shared, owned media) used in different countries for ecotourism promotion;

(3) Analyse the current state and prospects of ecotourism marketing in Kazakhstan, diagnosing key gaps;

(4) Develop proposals for creating a national system for promoting ecotourism, taking into account international experience and the identified gaps.

2. LITERATURE REVIEW

Sustainable Tourism and Certification Standards

Modern research on sustainable tourism and ecotourism demonstrates a transition from purely descriptive approaches to a systematic analysis of the interactions among marketing, visitor flow management, and ecosystem protection (Stein et al., 2021; Kilipiri et al., 2023; Veiga et al., 2024). Recent global data underline this trend: international tourist arrivals in 2024 reached 99% of the 2019 level, indicating an almost complete recovery of global mobility (UNWTO, 2024). The ecotourism segment remains among the fastest-growing; WTTC estimates an annual compound growth of 7–8% in nature-based tourism demand (WTTC, 2024). Demand-side surveys also show a structural shift in traveller preferences: more than 70% of travellers report a preference for destinations that demonstrate clear environmental responsibility (Booking.com, 2024).

The classic works of Butler, Weaver, and Hall-Gossling-Scott emphasised that sustainability in tourism can scale only when underpinned by institutional standards and transparent data regimes (Butler, 2019; Weaver, 2020; Hall et al., 2021). Since the 2010s, the Global Sustainable Tourism Council (hereinafter – GSTC) has provided universal criteria for destinations and businesses across four domains –management, socio-economic benefits, cultural heritage, and environmental performance – creating a common measurement language (GSTC, 2023). In recent years, more than 40 national certification programs have been recognised by GSTC, including Slovenia Green, Qualmark Sustainable Tourism (New Zealand), CST (Costa Rica), and Sustainable Destinations (Norway). These programs illustrate how global standards can be localised into national schemes. OECD evidence indicates that countries integrating sustainability standards into their national branding realise 25-30% higher trust among visitors and investors (OECD, 2020). In practice, data openness (e.g. public dashboards, registries) and certification "badge" help convert sustainability performance into a recognisable market signal, aligning governance with promotion (Trunina et al., 2020; Can et al., 2023).

In parallel with certification, destinations are increasingly structuring promotion via the PESO media architecture (Paid-Earned-Shared-Owned). The PESO framework, coined by Dietrich (2014), emphasises that balanced coverage across these channels supports both brand equity and visitor load management. Empirical findings suggest that when owned and shared media contribute over 50% of the content mix, trust and repeat visitation outcomes surpass those of paid-heavy strategies (WTTC, 2024). In other words, authenticity and engagement – often driven by owned (official content, data sharing) and shared (social/community content) media – tend to anchor sustainable demand. In contrast, excessively paid advertising can yield only short-term gains.

International Integration of Branding and Sustainability

Several leading ecotourism destinations illustrate the integration of certification,

branding, and PESO-based marketing. Slovenia pioneered country-level green branding through the Slovenia Green system. Certified regions and businesses in Slovenia display a "green" badge and publish sustainability data on interactive maps – essentially turning branding into a governance instrument for spatially redistributing demand (OECD, 2020). In New Zealand, the Qualmark sustainable tourism certification is embedded within the national 100% Pure New Zealand brand, serving simultaneously as a mark of quality, an environmental compliance mechanism, and a marketing vehicle. Over 2,400 New Zealand businesses have attained Qualmark sustainable status, with reported visitor satisfaction around 93%, and digital tools are used to ease pressure on iconic routes (Tourism New Zealand, 2022). Costa Rica's CST program (operating since 1997 and GSTC-recognised) demonstrates long-run market returns: a large majority of certified tourism businesses report customer growth following certification (Instituto Costarricense de Turismo, 2023). Norway's sustainable destinations program combines certification with capacity management and dynamic promotion: for example, when a site becomes overloaded, tourism boards temporarily pause advertising and instead steer demand toward alternative destinations (Innovation Norway, 2023).

Ecotourism Marketing in Kazakhstan: Current Gaps

Interest in ecotourism is also growing rapidly in Kazakhstan. Attendance at the nation's specially protected natural areas exceeded 2.8 million in 2024 (+18% year-on-year), with peak flows in popular parks like Ile-Alatau, Kolsai Kol, Burabai, and Altyn-Emel (Bureau of National Statistics, 2024). However, sectoral analyses reveal that the marketing layer in Kazakhstan remains weakly connected to protected-area governance. A unified national sustainability certification scheme (a recognisable "green trust mark") is still absent, and public registries of certified eco-facilities or route-level load dashboards are only nascent (Bureau of National Statistics, 2023). An audit of Kazakhstan travel communications indicates a dominance of Paid placements and limited data-driven owned content, with under-leveraged Shared channels, this despite rapidly growing organic community activity on social media, e.g., hashtags like #ilealatau or #ecotourismkz suggesting public interest (Kazakhstan.travel, 2024). Kazakhstani academic assessments echo this diagnosis: without institutionalised sustainability mechanisms (norms, certification, data transparency), marketing effects tend to remain short-lived and superficial). Empirical studies on visitor management confirm that transparent regulation of visitor flows, such as timed-entry or quota-based systems, increases both visitor satisfaction and support for conservation measures (Miller et al., 2023).

International evidence consistently shows that effective ecotourism promotion arises from a triad: (1) a recognised certification ensuring measurable sustainability, (2) integration of that certification into the destination's branding, and (3) a balanced PESO communication system that privileges Owned/Shared credibility while coordinating tactical Paid bursts.

Against this benchmark, Kazakhstan exhibits a structural decoupling of marketing from governance – characterised by fragmented certification, low data transparency, and pay-centric messaging. Accordingly, the research gap addressed by this article is the lack of an integrated, comparative assessment that explicitly connects branding and PESO-based communication architectures with the adoption of sustainability certification and operational visitor-flow management in Kazakhstan vis-à-vis advanced international reference cases.

3. RESEARCH METHODS

The study adopts an integrated methodological approach combining comparative, systemic, and analytical procedures. A comparative research design was

used to identify similarities and differences between the international reference cases (Slovenia, New Zealand, Costa Rica, Norway) and Kazakhstan, examining both individual promotion tools and unified models of ecotourism brand formation. The systemic approach rests on analysing the interaction of economic, environmental, and social factors: ecotourism evolves at the intersection of state regulation, business incentives, local community participation, and visitor behaviour. Therefore, institutional settings, natural-geographical specificities, infrastructure development, and community engagement were considered in tandem. Triangulation was applied by drawing on multiple data sources – statistical series, policy documents, and peer-reviewed scholarship – to enhance robustness and replicability over the 2019–2024 period (which captures the post-pandemic recovery phase and the shift toward sustainability-oriented policies). To move beyond simple descriptive contrasts, key constructs were operationalised into measurable indicators and a composite index, enabling analytical cross-country comparisons.

Four countries were selected for international comparison: Slovenia, New Zealand, Costa Rica and Norway - based on a set of objective criteria:

(1) availability of a national sustainable tourism certification system;

(2) integration of sustainability principles and certification standards into the state system of tourism branding and marketing;

(3) availability of managed natural areas (national parks, nature reserves) comparable to Kazakhstan in terms of tourist flow (1-4 million visits per year);

(4) availability of official statistical series and open data to ensure reproducibility of the analysis.

These countries represent different geographical regions, but they are united by the fact that ecotourism is part of a national economic strategy and is based on certified sustainability standards.

Table 1 summarises the comparative scoring rubric (0–3 scale) and the observable evidence used to ensure reproducible assessments across countries.

Table 1. Comparative rubric (0–3) and evidence mapping for marketing–sustainability architectures

Dimension	Score 0 (Absent)	Score 1 (Partial/Pilot)	Score 2 (Developed)	Score 3 (Integrated Nationally)	Evidence Anchors / Examples
Brand-Certification Integration (BCI)	No national sustainability scheme; branding unrelated to certification	Pilot or fragmented certification; ad-hoc brand mentions	Recognised scheme present; partial brand co-use guidelines	GSTC-recognised scheme with formal co-branding rules across NTO/DMOs	GSTC recognition page; national co-branding manual; consistent badge usage on official assets
PESO Balance (PESO_B)	Paid-dominant; minimal Owned/Shared presence	Owned or Shared initiatives sporadic; limited link to data	Owned+Shared frequent; partial alignment with brand strategy	Owned+Shared majority; analytics and editorial calendars in place	Content share audits; social/dashboard archives; NTO media kits
Visitor-Flow & Capacity Management (VFCM)	No link between promotion and capacity; no	Occasional advisories; limited seasonal coordination	Defined thresholds and route management for select sites	Systematic quotas/reservations; dynamic diversion; promo pauses at overload	Policy docs; reservation portals; logs of paused

	quotas/diversion				campaigns/diversions
Data Transparency & Reporting (DTR)	No public registry; no periodic reporting; no open data	Basic lists; irregular reporting; PDFs only	Public registry with indicators; periodic reports	Open registry with API/CSV; audited indicators and dashboards	Open-data portal; sustainability dashboard; audit notes/metadata
*The rubric was compiled by the authors based on best-practice criteria and publicly verifiable evidence. Two independent coders rated each country on the above dimensions using data from 2019 to 2024. Inter-rater agreement was substantial (Cohen's $\kappa \approx 0.76$); disagreements were resolved by a third reviewer.					

Note: compiled by the authors

Each of the four dimensions was evaluated annually from 2019–2024 and normalised to the [0, 1] interval using the min-max transformation with 5-95% winsorization to limit the influence of outliers. In parallel with the qualitative 0-3 scoring, a composite Comparative Marketing–Sustainability Index (hereinafter – CMSI) was computed as the equally weighted mean of the four normalised dimension scores. Sensitivity tests using alternative weighting schemes (e.g., 0.4/0.2/0.2/0.2 and 0.2/0.4/0.2/0.2) confirmed that the relative country rankings remained qualitatively stable.

The PESO balance metric (PESO_B) was defined as the share of Owned + Shared content within the total communication mix (Owned + Shared + Paid + Earned), measured through a structured content analysis of official portals, verified social media feeds, and media databases, using consistent weekly sampling windows.

The Visitor-Flow and Capacity Management (hereinafter – VFCM) m captures the existence of formal mechanisms linking promotional activity to ecological carrying capacity such as reservation systems, temporal visitor caps, or demand-diversion protocols, whereas DTR (Data Transparency and Reporting) measures the availability of public registries of certified operators and sites, open data sets, and regular sustainability-performance reporting (Zou et al. 2024). To examine whether marketing architecture is associated with tourism-demand outcomes (rather than being merely correlated with overall promotional intensity), a panel OLS regression was estimated for the annual growth rate of visits to protected areas, controlling for country- and year-specific effects using fixed effects.

The model (covering 5 countries × 6 years = 30 observations) is specified by formula (1):

$$g_{it} = \beta_1 \text{CMSI}_{it} + \beta_2 \text{PESO_B}_{it} + \beta_3 \text{Certification}_{it} + \text{X}_{it} + \alpha_i + \tau_t + \varepsilon_{it} \qquad (1)$$

where:

g – the annual growth rate (%) of visits to protected areas in country i and year t;

X_{it} – control variables (GDP per capita in PPP, total population, and a post-COVID dummy for years;

α_i and τ_t – country and year fixed effects;

ε_{it} – random remainder reflecting the influence of unaccounted-for factors.

Given the limited sample and potential endogeneity, we interpret coefficients as associations rather than causal effects. Robustness was assessed using alternative CMSI weightings and leave-one-out tests (re-estimating the model while dropping each country in turn). For objectivity and reproducibility, our data sources are as follows.

The empirical base includes datasets from the UNWTO (World Tourism Barometer and related databases), WTTC (Travel & Tourism Economic Impact reports), the Bureau of National Statistics (visitor numbers to protected natural areas), and official documents such as the Concept for the Development of the tourism industry of the Republic of Kazakhstan 2023-2029, together with strategic materials from the Ministry of Tourism and Sports. Aggregated UNWTO and WTTC data were cross-verified against national statistics, and discrepancies exceeding three percentage points were reconciled through a documented averaging procedure.

The empirical base includes UNWTO (World Tourism Barometer and related datasets), WTTC (Travel & Tourism Economic Impact reports), Kazakhstan's Bureau of National Statistics (visitor numbers to protected areas), and official documents such as the Concept for the development of the tourism industry of the Republic of Kazakhstan 2023–2029 alongside strategic materials from the Ministry of Tourism and Sports. UNWTO/WTTC aggregates were cross-verified against national statistics; discrepancies of more than three percentage points were reconciled using documented averaging rules.

The scenario-based components of the analysis were applied at the park level using a stress-index approach. A simple stress index was defined by formula (2):

$$S = \frac{V}{C} \qquad (2)$$

where:

V – the number of visitors;

C – the estimated ecological carrying capacity of a given park.

Two trajectories were simulated through 2030: a business-as-usual scenario, assuming that domestic ecotourism visitation continues to grow at approximately 10% annually with no new control measures; an improved-architecture scenario, under which C is effectively increased through the introduction of quotas and diversion mechanisms, and the communication mix shifts toward Owned and Shared channels supported by open-data alerts.

The years in which the stress S index exceeded critical thresholds (e.g., $S > 1$, indicating visitation beyond sustainable capacity) were recorded and compared across parks. Baseline capacity values (C) for major national parks were obtained from the Ministry of Ecology (2024).

4. RESULTS

This section presents analytical evidence rather than descriptive case summaries. It reports the normalised indicator values, the composite CMSI results, the econometric associations with visitor demand, and the park-level scenario outcomes. The analysis follows the operational definitions established in the Methods section and covers 2019-2024 period for all benchmark countries.

National Park Visitation Dynamics in Kazakhstan: Kazakhstan's national park visitation rose from 1,250 thousand visits in 2019 to 2,800 thousand in 2024, confirming a strong domestic appetite for nature-based travel. Year-over-year growth rates were –32.0% (2020), +64.7% (2021), +39.3% (2022), +20.5% (2023), and +19.1% (2024), implying a compound annual growth rate (CAGR) of roughly 17.5% over the post-pandemic recovery period. While this baseline indicates robust demand, it also highlights the need for governance instruments that keep pace with growth. Notably, growth has been uneven across national parks. Some destinations, such as Ile-Alatau and Altyn-Emel, have shown particularly strong increases in visitation, while others (Sharyn Canyon and Kolsai Lakes) have seen more moderate growth.

This disparity suggests that certain parks are experiencing higher visitor pressure and are therefore approaching or exceeding their ecological carrying capacities, emphasising the need for differentiated capacity management strategies. This heterogeneity suggests that some parks are under much greater pressure

than others, underscoring emerging capacity management needs.

The quantitative trends in Figure 1 validate the study's premise.

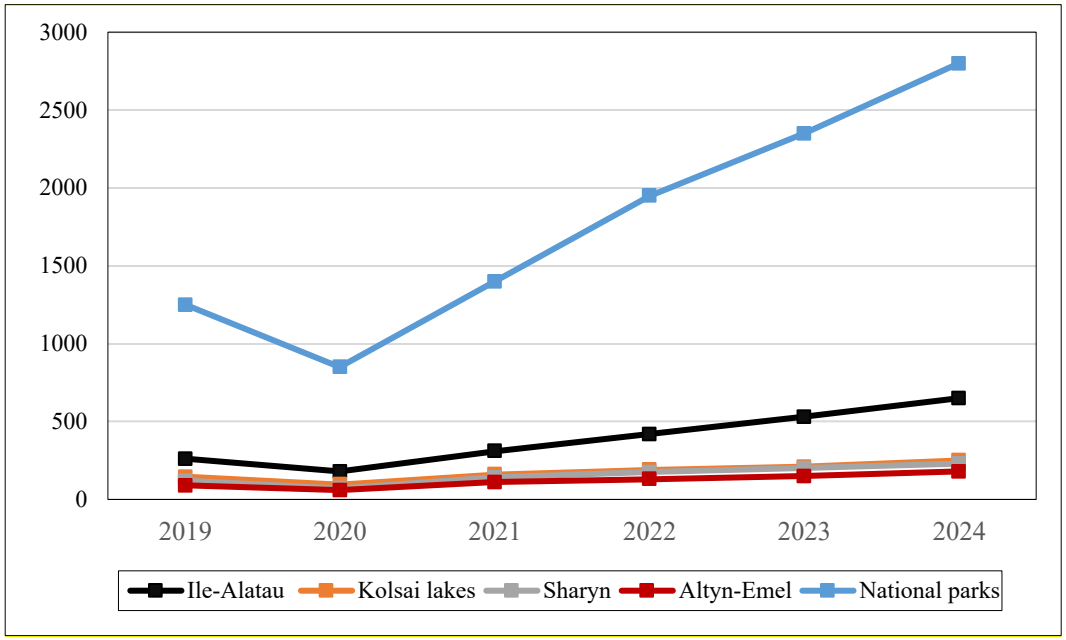


Figure 1. Dynamics of visits to selected national parks of Kazakhstan for 2019-2024, thousand people

Between 2019 and 2024, total visits to national parks almost doubled (+124%), whereas the number of officially promoted eco-routes or major attractions increased by only about 15% (Bureau of National Statistics, 2024). This imbalance confirms that demand is growing much faster than institutional capacity (in terms of infrastructure and management tools) can currently accommodate. The pattern also mirrors global post-pandemic trends: nature-based tourism segments have expanded at rates about 1.7 times higher than traditional mass leisure tourism (UNWTO, 2024). In other words, Kazakhstan's demand momentum is strong but «management-light»: visitation is rising faster than the build-out of sustainability measures such as certification programs, open data registries, and dynamic visitor flow controls.

Using four analytical dimensions Brand–Certification Integration (BCI), PESO Balance (PESO_B), Visitor-Flow and Capacity Management (VFCM), and Data Transparency and Reporting (DTR) combined into an equally weighted composite index (CMSI), Kazakhstan was evaluated against the benchmark destinations. The results show that Slovenia and New Zealand perform best, followed by Norway and Costa Rica, while Kazakhstan demonstrates the lowest level of marketing–sustainability integration.

Table 2 presents the normalised values for each dimension and the composite CMSI, averaged over the 2019–2024 period and reported separately for 2024 by country.

The CMSI patterns suggest that verifiable sustainability and open data are key conditions for effective communications, rather than being separate tracks. The results indicate that Slovenia and New Zealand achieve the highest levels of marketing–sustainability integration. In contrast, Kazakhstan has the lowest composite score (CMSI ≈ 0.3), primarily due to weak brand–certification integration and limited public disclosure of data. Closing even half of that gap (≈0.25 increase in CMSI) would, *ceteris paribus*, yield meaningful gains in tourism outcomes, as explored below. These results confirm that higher CMSI values are associated with greater institutional maturity

Table 2. Normalized indicators and CMSI by country (2019–2024 mean and 2024 value)

Country	BCI (Mean)	PESO_B (Mean)	VFCM (Mean)	DTR (Mean)	CMSI (Mean)	BCI (2024)	PESO_B (2024)	VFCM (2024)	DTR (2024)	CMSI (2024)
Slovenia	0.95	0.68	0.75	0.85	0.81	0.98	0.70	0.80	0.90	0.84
New Zealand	0.93	0.66	0.78	0.82	0.80	0.96	0.68	0.80	0.85	0.82
Costa Rica	0.85	0.56	0.60	0.62	0.66	0.88	0.58	0.62	0.65	0.68
Norway	0.88	0.58	0.80	0.75	0.75	0.90	0.60	0.82	0.78	0.77
Kazakhstan	0.25	0.35	0.22	0.30	0.28	0.30	0.38	0.25	0.33	0.32
*Indicators normalized to [0,1] (higher = better performance). CMSI = equally weighted mean of BCI, PESO_B, VFCM, DTR.										

Note: compiled by the authors

and better alignment between sustainability governance and marketing practices. The significant performance gap between Kazakhstan and the top performers underscores the need for a formal green certification scheme and enhanced data transparency mechanisms

High-scoring cases maintain an Owned/Shared-majority communication mix, which anchors authenticity through transparent initiatives (e.g., public sustainability dashboards, interactive maps, community engagement) and supports broad earned media visibility. Paid media in these cases is used tactically and seasonally, not as the main driver. By contrast, Kazakhstan's current PESO composition is skewed toward paid (PESO_B ≈ 0.35). Owned channels (e.g., data-driven storytelling on official websites or apps) and shared channels (structured community or influencer programs) are under-leveraged. At the same time, earned media coverage is sporadic rather than sustained. This composition likely contributes to the weaker translation of domestic interest into sustained trust and repeat visitation for Kazakhstan.

The panel OLS analysis with country- and year-fixed effects provides further insight. Table 3 summarises the estimated associations between marketing–sustainability variables and annual growth in protected-area visits.

Table 3. OLS estimates of annual growth in protected-area visits

Variable	Coefficient	Std. Error	t-stat	p-value	95% CI (low)	95% CI (high)
CMSI	12.4	4.8	2.58	0.017	2.3	22.5
PESO_B	6.1	3.2	1.90	0.069	−0.5	12.7
Certification (GSTC-recognised)	3.2	1.6	2.00	0.056	−0.08	6.48
GDP per capita (PPP)	0.001	0.0006	1.67	0.104	−0.0002	0.0022
Population	0.00002	0.00003	0.67	0.508	−0.00004	0.00008
Post-COVID dummy	20.3	5.9	3.44	0.002	8.0	32.7
Constant	−5.7	6.8	−0.84	0.408	−19.9	8.5
*Model statistics: N = 30 (5 countries × 6 years) **Fixed effects: country & year; SE clustered by country; R-squared ≈ 0.52.						

Note: compiled by the authors

Despite the small sample, the associations are intuitive and significant at the 5-10% level for the key variables. CMSI and the presence of a GSTC-recognised certification show positive relationships with visitation growth ($p \sim 0.02$ and 0.06, respectively). The PESO_B coefficient is positive as well, and although its p-value (~0.07) is slightly above 0.05, it suggests a meaningful trend: destinations with more balanced (Owned/Shared-heavy) media mixes tend to experience higher growth. These relationships are consistent with marketing theory (e.g., signalling theory and the PESO model logic): credible sustainability signals and data-anchored Owned/Shared content appear to strengthen marketing effectiveness in terms of converting interest into visits.

It bears emphasising that these coefficients are treated as associative. We performed robustness checks: using alternative weights for the CMSI and dropping each country one at a time, the signs and relative magnitudes of CMSI, PESO_B, and Certification remained stable (qualitative significance was preserved). The paper explored adding a one-year lag of CMSI (to see if prior marketing architecture predicts current growth), the lagged terms remained positive but were noisier, which is not surprising given the short panel. As a placebo test, we ran a similar regression using overall international tourist arrivals (where data available) instead of nature-based visits – the associations weakened or vanished, suggesting that the effects the paper observes are more potent for the ecotourism segment than for undifferentiated tourism demand.

Finally, park-level scenario analysis underscores the importance of proactive governance. Using stress index $S = V/C$, we find that under the BAU scenario (10% annual growth without new controls), popular parks like Kolsai Lakes and Sharyn would likely exceed sustainable capacity thresholds by 2030 ($S > 1$). In contrast, under an improved-architecture scenario (where marketing–sustainability architecture is enhanced – effectively a higher CMSI via introducing reservations/quotas, diversion rules, open-data nudges, and a shift to Owned/Shared content), the simulated visitor peaks stay below capacity and seasonal load curves flatten. Specifically, the CMSI-improving scenario reduced peak stress indices by ~15–25% relative to BAU in the high-pressure parks, by shifting a portion of demand temporally (off-peak) and spatially (to alternative sites), and by dampening excessive paid media pushes during periods of potential overload.

Across comparative benchmarks, regression results, and scenario outcomes, the evidence supports a single implication: the conjunction of brand–certification integration, a balanced PESO media mix, capacity-sensitive promotion, and open data transparency is associated with stronger, more sustainable tourism demand dynamics. Kazakhstan's expanding domestic interest in ecotourism is therefore a valuable asset, but it can be fully realised as a competitive advantage only if the institutional elements (a GSTC-aligned national certification scheme, co-branding rules, a public sustainability registry/API, and dynamic promotion controls) are formalised and consistently implemented via Owned/Shared channels. This directly addresses the research problem identified in the Introduction: the question is not merely whether marketing works, but under what institutional architecture it translates into durable, capacity-consistent growth.

5. CONCLUSIONS

Marketing in ecotourism is not only a means of attracting tourists, but also a mechanism for institutionalizing sustainable development principles. International experience shows that the most successful destinations build a unified promotion architecture in which branding, certification systems, and PESO-based communications work together as one coherent mechanism. This integrated bundle ensures the long-term reliability of the tourism product and allows management of tourist flows in line with environmental limits. Our results substantiate this proposition quantitatively: destinations that combine brand–certification integration, capacity-sensitive promotion, and open

data score higher on the composite CMSI and exhibit stronger, more stable growth in protected-area visitation.

These conclusions are derived from the integrated methodological framework applied in the study – namely, a comparative, systemic, and dialectical analysis supported by empirical data from UNWTO, WTTC, and the Bureau of National Statistics of Kazakhstan. The triangulation of quantitative and qualitative sources helps to verify hypotheses regarding the interdependence between institutional maturity and marketing effectiveness. In this regard, ecotourism marketing should be understood not as a purely creative or communicative activity, but as a systemic governance instrument embedded in sustainability policy. Moving beyond description, our panel analysis indicates that a one-point increase in CMSI (on the 0–1 scale) is associated with approximately +12.4 percentage points in annual growth of protected-area visits; implementing a GSTC-recognised national certification is associated with +3.2 p.p.; and increasing the PESO balance toward an Owned/Shared majority co-moves positively with demand (+6.1 p.p per 0.5 change, approximately). Although these are correlations, the robustness checks (alternative weights, jackknifing) give confidence that the directions of association are meaningful.

For Kazakhstan, the study reveals a dual reality. On one hand, domestic demand for nature tourism shows steady growth: national parks have recorded increasing visitor numbers each year, indicating the public's willingness to engage in ecotourism products. On the other hand, the lack of a national «Green» certification system, and the fragmentary use of Kazakhstan. Travel brand for sustainability, and the weak integration of PESO media models significantly reduces the effectiveness of marketing efforts, failing to balance economic benefits with conservation needs. The normalized comparison with peers explains Kazakhstan's lag through specific deficits: (i) low Brand – Certification Integration (no GSTC-aligned national scheme or co-branding rules), (ii) limited Data Transparency & Reporting (no public registry/API for eco-sites and sustainability indicators), (iii) a Paid-heavy communication mix (low PESO_B, indicating underuse of Owned/Shared channels), and (iv) incomplete Visitor-Flow & Capacity Management (few reservation or quota systems and minimal diversion protocols). Together, these gaps weaken the credibility of Kazakhstan's sustainability signalling, constrain organic visibility (earned media and word of mouth), and impede the redistribution of visitor loads during peak seasons.

The analysis also suggests that Kazakhstan's current institutional fragmentation – with separate agencies handling marketing, certification, and environmental management – hinders progress. Unlike Slovenia or New Zealand, where the state (through tourism boards or ministries) acts as a moderator integrating sustainability standards into marketing, Kazakhstan's system remains divided among multiple bodies. Bridging this institutional fragmentation should become a key governmental objective under the 2025–2029 national tourism development framework. Furthermore, the absence of standardized environmental data and unified communication metrics limits Kazakhstan's participation in global sustainable tourism rankings and programs (e.g., GSTC certification, Travelife, EarthCheck). The scenario evidence reinforces this governance imperative: under business-as-usual growth, stress on ecosystems will exceed sustainable thresholds in certain parks by 2030, whereas an improved marketing-governance architecture can keep usage within capacity and significantly reduce peak stresses.

Thus, the main priority for Kazakhstan is transitioning from piecemeal advertising initiatives to a comprehensive ecotourism marketing strategy. Practical steps include:

(1) Launch a national «Green Kazakhstan» certification scheme by 2026, aligned with GSTC criteria and accompanied by codified co-branding guidelines so that certified destinations and businesses can use a standard label alongside the national brand;

(2) Establish a public sustainability registry and open data portal (by 2027) for certified ecotourism operators and park indicators, with an API for developers – increasing transparency and enabling third-party apps or analyses of visitor impact;

(3) Rebalance the PESO communication mix toward ≥ 60% Owned + Shared content by 2028, by investing in content creation (e.g. storytelling, virtual park tours, community challenges) and strategic social media campaigns, with editorial calendars tied to seasonal capacity considerations;

(4) Institutionalize capacity-sensitive promotion mechanisms by 2026, including an online reservation system for popular parks, visitor quotas or timed-entry permits during peak periods, real-time monitoring of visitation vs. capacity, and protocols to temporarily pause paid promotions or redirect visitors when thresholds are reached.

Implementing these measures could lead to measurable socio-economic and environmental benefits. Modelling based on Kazakhstan's visitation dynamics suggests that introducing a national «Green Kazakhstan» certification (along with the associated branding and standards) could increase inbound and domestic eco-tourism visits by an estimated 20–25% within five years, while simultaneously reducing environmental pressure in overloaded areas by up to 15% through controlled distribution of tourist flows. Moreover, aligning the Kazakhstan.travel brand with internationally recognized sustainability standards will strengthen the country's visibility on the global stage, enabling participation in green destination networks and co-branding campaigns with partners abroad (Kazakhstan.travel, 2024). Back-of-the-envelope calculations from our regression imply that a realistic CMSI gain of +0.25 (achievable through the combination of a certification program, open data registry, and capacity rules) corresponds to roughly +3.1 percentage points in annual visitation growth. Similarly, a PESO_B improvement of +0.30 (shifting toward an Owned/Shared-majority content strategy) might add about +1.8 pp to annual growth. These effects would sustainably increase demand while mitigating negative impacts through built-in governance triggers.

Adopting a data-driven PESO model will also provide analytical transparency – enabling real-time monitoring of how marketing activities impact ecosystem load and visitor satisfaction. This would facilitate a shift from intuitive or reactive promotion to evidence-based destination management, ensuring that economic growth and ecological protection progress in parallel rather than in conflict. Operationally, such an approach requires unified dashboards that link marketing campaigns to park capacity status, standardized tagging (UTM codes) for campaign traceability, and regular public reporting of brand trust and repeat visit metrics alongside conservation indicators.

In summary, these measures will allow Kazakhstan to convert its growing domestic interest in ecotourism into a stable competitive advantage in the international ecotourism market. The implementation of the proposed model will contribute not only to economic development but also to the preservation of unique ecosystems, aligning with the country's strategic goals for sustainable tourism.

AUTHOR CONTRIBUTION

Writing – original draft: Aliya T. Zhaksybay.
Conceptualization: Aliya T. Zhaksybai, Gulzada M. Mukhamediyeva.
Formal analysis and investigation: Aliya T. Zhaksybai, Gulzada M. Mukhamediyeva.
Funding acquisition and research administration: Aliya T. Zhaksybai, Gulzada M. Mukhamediyeva.
Development of research methodology: Aliya T. Zhaksybai, Gulzada M. Mukhamediyeva.
Resources: Aliya T. Zhaksybai, Gulzada M. Mukhamediyeva.
Software and supervisions: Aliya T. Zhaksybay.
Data collection, analysis and interpretation: Aliya T. Zhaksybai, Gulzada M. Mukhamediyeva.

Visualization: Aliya T. Zhaksybai, Gulzada M. Mukhamediyeva.
Writing review and editing research: Aliya T. Zhaksybai, Gulzada M. Mukhamediyeva.

REFERENCES

Booking.com. (2024). *Sustainable travel report 2024*. Amsterdam, Netherlands: Booking.com. Retrieved September 30, 2025 from https://www.gstc.org/booking-sustainable-travel-report-2024/?utm_source=chatgpt.com

Bureau of National Statistics. (2024). Bureau of National Statistics of the Republic of Kazakhstan. Retrieved September 30, 2025 from https://stat.gov.kz/

Butler, R. (2019). Carrying capacity in tourism: Limits and challenges. *Annals of Tourism Research, 74*, 463-474. https://doi.org/10.1016/j.annals.2017.08.005

Can, A.S., Ekinci, Y., & Dilek-Fidler, S. (2023). Do Blue Flag promotions influence tourists' willingness to pay a price premium for coastal destinations? *Tourism Management, 97,* 104767. https://doi.org/10.1016/j.tourman.2023.104767

Dietrich, G. (2014). *Spin sucks: Communication and reputation management in the digital age*. Indianapolis, IN: Que Publishing.

GSTC. (2023). *Global sustainable tourism criteria (GSTC) guidelines* (60 p.). Washington, DC: GSTC.

Hall, C. M., Gössling, S., & Scott, D. (2021). *Tourism and sustainability: Development, globalisation and new tourism in the Third World* (5th ed.). London, England: Routledge. https://doi.org/10.4324/9781315145374

Innovation Norway. (2023). *Sustainable destinations programme* (30 p.). Oslo, Norway: Innovation Norway.

Instituto Costarricense de Turismo. (2023). *Certification for sustainable tourism (CST)* (28 p.). San Jose, Costa Rica: Instituto Costarricense de Turismo.

Kazakhstan.travel. (2024). *National tourism portal of Kazakhstan.* Retrieved October 27, 2025, from https://kazakhstan.travel

Kilipiri, E., Papaioannou, E., & Kotzaivazoglou, I. (2023). Social Media and Influencer Marketing for Promoting Sustainable Tourism Destinations: The Instagram Case. *Sustainability, 15*(8), 6374. https://doi.org/10.3390/su15086374

Miller, Z.D., Tendick, A., Meyer, C., Pettebone, D., Meldrum, B.H., & Lawson, S. (2023). *Comparing visitor perceptions and support for management actions before and during a pilot timed entry system at Arches National Park. Sustainability, 15*(13), 10035. https://doi.org/10.3390/su151310035

Ministry of Economic Development and Technology of Slovenia. (2023). *Slovenia green programme* (32 p.). Ljubljana, Slovenia: Government of Slovenia.

OECD. (2020). *Tourism trends and policies* (280 p.). Paris, France: OECD Publishing. https://doi.org/10.1787/tour-2020-en

Slovenian Tourist Board. (2022). *Sustainability report of the Slovenian Tourist Board 2022 and 2023. Ljubljana, Slovenia.* Retrieved September 30, 2025 fromhttps://www.slovenia.info/uploads/publikacije/trajnostno_porocilo_sto/Sustainability_report_STB_22_23.pdf

Stein, E.D., Gee, E.M., Adams, J.B., Irving, K., & van Niekerk, L. (2021). Advancing the Science of Environmental Flow Management for Protection of Temporarily Closed Estuaries and Coastal Lagoons. *Water, 13*, 595. https://doi.org/10.3390/W13050595

Tourism New Zealand. (2022). *Annual Report 2021/2022.* Wellington, New Zealand. Retrieved September 30, 2025 https://www.tourismnewzealand.com/assets/about/publications/annuals/19297-TNZ-Annual-Report-2022-web.pdf

Trunina, I.M., Zagirniak, D., Pryakhina, K.A., & Bezugla, T. (2020). Diagnostics of the enterprise personnel sustainability. *Problems and Perspectives in Management, 18*(2),382-395. http://dx.doi.org/10.21511/ppm.18(2).2020.31

Veiga, C.P., Deretti, S., & Rosa, A.C. (2024). Ecotourism and Sustainable Development in Tourism Marketing. *International Journal of Business Forecasting and Marketing Intelligence*. https://doi.org/10.1504/ijbfmi.2024.10065677

Weaver, D. (2020). *Ecotourism* (3rd ed.). Milton, Australia: John Wiley & Sons.
UNWTO. (2024). *World tourism barometer 2024*. Madrid, Spain: World Tourism Organization. Retrieved September 30, 2025 from https://www.unwto.org/statistic-data/unwto-world-tourism-barometer
Zou, S.S., Pitas, N.A., Cho, S.J., & Yoon, H. (2024). The moderating effect of place attachment on visitors' trust and support for recreational fees in national parks. *Journal of Environmental Psychology*, *98*, 102412. https://doi.org/10.1016/j.jenvp.2024.102412

AUTHOR BIOGRAPHIES

***Aliya T. Zhaksybay** – PhD student, Department of Business Technologies, Al-Farabi Kazakh National University, Almaty, Kazakhstan. Email: zhaksybay.at@gmail.com, ORCID ID: https://orcid.org/0009-0004-3212-9543

Gulzada M. Mukhamediyeva – PhD, Senior Lecturer, Department of Business Technologies, Al-Farabi Kazakh National University, Almaty, Kazakhstan. Email: murat_gulzada@mail.ru, ORCID ID: https://orcid.org/0009-0009-1617-7488