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EVALUATING TOURISM VILLAGES IN THE BUKHARA REGION: AN INTEGRATED ASSESSMENT APPROACH

Abstract

Tourism villages have become an important instrument for promoting sustainable rural development, preserving cultural heritage, and diversifying local economies. Despite increasing attention to rural tourism, the absence of comprehensive assessment frameworks limits evidence-based planning in many emerging destinations. This study evaluates the development potential of six tourism villages in the Bukhara Region of Uzbekistan -Shirin, Qasri Orifon, Ushot, Uba, Khoja Orif, and Afshona -using the Tourism Village Integrated Assessment Index (TVIAI), a composite indicator combining a base component (resource potential, hospitality and tourism services, transport accessibility) and a diagnostic component (digital readiness, institutional governance, community and local economic linkage) through the weighted formula $TVIAI = 0.3B + 0.7D$. The methodology was validated by an 18-member Delphi expert panel (two rounds; Kendall's $W = 0.74$, $p < 0.01$) and applied using official statistics, field observations, and digital tourism indicators. TVIAI scores ranged from 2.53 (Afshona) to 4.31 (Qasri Orifon), with a regional mean of 3.32, and villages were classified into three strategic development groups. A complementary Digital Readiness Index ($DRI = 0.20P + 0.40S + 0.25K + 0.15A$) was computed for each village, ranging from 1.73 (Ushot) to 4.71 (Qasri Orifon), confirming that digital visibility is an increasingly decisive -and at times decoupled -determinant of destination competitiveness. The findings provide a replicable, evidence-based decision-support tool for prioritizing investment and destination management in emerging rural tourism economies.

Keywords

Tourism village, TVIAI, Digital Readiness Index, destination competitiveness, Bukhara Region, Best Tourism Villages, rural tourism, Delphi method, destination management.

Introduction

Tourism has become an increasingly important instrument for promoting sustainable regional development, particularly in rural areas where tourism can stimulate local entrepreneurship, create employment opportunities, preserve cultural heritage, and improve living standards. In recent years, international organizations have emphasized the role of tourism villages as models for balancing economic growth, environmental sustainability, and community participation. The Best Tourism Villages by UN Tourism initiative [13] has significantly increased global interest in identifying and supporting rural destinations that demonstrate sustainable tourism practices while preserving local traditions and natural resources. As a result, tourism villages are increasingly viewed not merely as rural attractions but as integrated destination systems requiring coordinated planning, management, and continuous evaluation.

Despite the growing popularity of tourism villages, their evaluation remains a methodological challenge. Previous studies have primarily focused on individual aspects of rural tourism, including destination competitiveness [11] [3], community participation, tourism infrastructure, environmental sustainability, cultural heritage [10], or digital marketing [1]. Numerous assessment frameworks have been proposed by UN Tourism [13] [14], OECD [8], and individual researchers [12] [5] [6]; however, these approaches often examine isolated dimensions of tourism development rather than providing a comprehensive evaluation of tourism villages as integrated destinations. Furthermore, digital transformation has fundamentally changed tourists' decision-making processes, making online visibility, electronic reputation, digital accessibility,

and booking platforms increasingly important determinants of destination competitiveness [1]. Nevertheless, digital readiness remains insufficiently incorporated into existing evaluation methodologies as a quantified, comparable index.

Uzbekistan has identified tourism as one of the strategic sectors for national economic diversification. The national development agenda, formalized in Presidential Decree No. PF-158 of September 11, 2023, on the Uzbekistan–2030 Strategy [21], emphasizes expanding tourism infrastructure, increasing the number of tourism villages, and improving regional tourism competitiveness. Government initiatives have introduced an institutional framework for officially recognizing tourism villages and supporting their development through infrastructure investments, service improvement, and destination management. These reforms create favorable conditions for implementing evidence-based assessment tools capable of identifying development priorities and allocating resources efficiently.

Among Uzbekistan's tourism destinations, the Bukhara Region occupies a unique position because of its rich historical heritage, traditional crafts, religious monuments, rural landscapes, and growing tourism infrastructure. Although Bukhara is internationally recognized for its UNESCO World Heritage sites, surrounding villages possess significant but underutilized tourism potential. Six villages received or are approaching official "tourism village" status during 2025: Shirin (Vobkent district), Qasri Orifon (Kogon district), Ushot (Jondor district), and Uba (Romitan district) hold official status, while Khoja Orif (Shofirkon district) -a key link in the "Seven Pirs" pilgrimage route -and Afshona (Peshku district), the birthplace of Ibn Sina, carry distinct strategic significance despite differing formal recognition. These villages demonstrate valuable cultural, gastronomic, religious, and handicraft resources but differ considerably in infrastructure quality, hospitality services, institutional capacity, and digital presence. Consequently, regional authorities require objective methodologies capable of measuring tourism development and identifying strategic priorities for different villages.

To address this research gap, the present study applies an integrated assessment framework -the Tourism Village Integrated Assessment Index (TVIAI) -combining multiple dimensions of tourism village development into a single evaluation system, complemented by a dedicated Digital Readiness Index (DRI). The acronym TVIAI is retained from its original Uzbek-language formulation, *Turizm Qishlog'ini Integrallashgan Baholash Indeksi* (T-Q-I-B-I), under which the index was first developed within the author's dissertation research; "Tourism Village Integrated Assessment Index" is provided throughout this article as its English gloss rather than as the source of the acronym. The purpose of this study is to evaluate the development level of tourism villages in the Bukhara Region using this integrated assessment methodology. Specifically, the study aims to (1) assess tourism villages through a multidimensional evaluation framework, (2) compare their development levels using a fully reported composite score table, (3) identify strategic development groups, and (4) formulate recommendations for improving destination management and sustainable rural tourism development.

Materials and Methods

Study area and sample

The empirical analysis was conducted in the Bukhara Region of Uzbekistan. Six tourism villages representing different levels of tourism development were selected for empirical assessment: Shirin, Qasri Orifon, Ushot, Uba, Khoja Orif, and Afshona. These villages were selected because they jointly represent varying combinations of tourism resources, infrastructure, accessibility, and institutional development, and because they form a natural geographic corridor around the city of Bukhara suitable for cluster-based destination management.

Statistical information was obtained from the Statistics Agency of the Republic of Uzbekistan, the Tourism Committee, the Bukhara regional statistics department, and official regional tourism press releases. Additional information on tourism infrastructure, accommodation facilities, transport accessibility, and tourism services was collected through field observations and expert assessments. Digital indicators, including platform presence, tourist reviews, ratings, and booking-related content, were incorporated to evaluate the digital readiness of tourism villages.

TVIAI construction

Each village was scored on eleven indicators grouped into six blocks, each rated on a 1–5 scale (1 =very low potential, 5 =very high potential), following min–max normalization of raw indicators to the [0,1] interval and their subsequent rescaling to the 1–5 scale ($b_{ij} = 1 + 4z_{ij}$). Block-level scores were computed as the unweighted mean of their constituent indicator scores. The six blocks are:

1. R -Resource potential (historical/pilgrimage value, ethno-gastronomic value, handicraft experience);
2. S -Hospitality and tourism services (accommodation base, service diversity);
3. T -Transport accessibility and route integration;
4. DR -Digital readiness (platform presence, review volume and rating);
5. I -Institutional governance (management structure, program inclusion);
6. C -Community and local economic linkage (resident participation, local income retention).

The base component (B) and diagnostic component (D) were then calculated as equally weighted averages of three blocks each:

$$B_i = (R_i + S_i + T_i) / 3$$

$$D_i = (DR_i + I_i + C_i) / 3$$

The final composite TVIAI score was calculated as a weighted sum of the two components:

$$TVIAI_i = \alpha B_i + \beta D_i, \text{ where } \alpha = 0.3 \text{ and } \beta = 0.7$$

The weights (α , β) were not assigned arbitrarily but were fixed following expert verification (described below) and were empirically corroborated by three independent signals observed in the results: (1) the diagnostic component produced substantially wider differentiation within the mid-range cluster of villages (range 2.50–3.17) than the base component (range 2.56–2.72), giving it greater discriminatory power precisely where it is most needed; (2) the reversal in ranking between Qasri Orifon and Shirin is driven entirely by the diagnostic component, demonstrating that β materially affects the final outcome rather than being a nominal weighting choice; (3) the gap $\Delta_i = D_i - B_i$ varies systematically and plausibly across villages rather than randomly, indicating that the two components capture genuinely distinct dimensions of readiness.

This weighting is deliberately diagnostic-heavy: a village with strong physical resources but weak institutional, digital, and community integration (a common profile among newly designated villages) will not automatically rank highly, reflecting the premise that resource endowment alone is an insufficient predictor of tourism village success.

Expert panel and validation

Scoring criteria were validated through a two-round Delphi expert survey. The panel comprised 18 experts ($n = 18$), selected according to three criteria: (i) at least five years of professional experience in tourism research or practice, (ii) practical familiarity with the Bukhara regional or national Uzbek tourism system, and (iii) specialization in rural tourism or destination management. The panel consisted of 7 university faculty members from tourism departments, 5 practitioners from tour operators and the Tourism Committee, 4 specialists from the regional tourism administration, and 2 international consultants engaged in UN Tourism and OECD-affiliated projects. In the first round, each expert independently scored the six evaluation criteria; in the second round, results were aggregated and disagreements were reconciled through structured feedback. Inter-rater consistency was measured using Kendall's coefficient of concordance: $W = 0.74$ ($p < 0.01$), indicating statistically significant agreement among experts and supporting the methodological reliability of the scoring results. Evaluation was carried out in January–February 2026.

Digital Readiness Index (DRI)

While digital readiness (DR) enters the diagnostic component of TVIAI as one of three blocks, the present study also develops a stand-alone Digital Readiness Index (DRI) that refines and deepens this dimension using four weighted sub-indicators, min–max normalized to a 1–5 scale:

$$DRI = 0.20P + 0.40S + 0.25K + 0.15A$$

where P is platform presence (breadth of listing across booking and mapping platforms), S is social validation (review volume and rating dynamics on Google Maps and Booking.com), K is content completeness (visual and informational richness, expert-assessed), and A is digital accessibility (availability of contact and communication channels). Social validation (S) receives the highest weight (0.40) because tourist behavior is increasingly driven by peer reviews rather than official promotional content; content completeness (K, weight 0.25) ranks second because visual and informational material shapes pre-visit familiarity; platform presence (P, weight 0.20) is treated as a necessary but not sufficient condition; digital communication channels (A, weight 0.15) receive the lowest weight because they typically function as a downstream consequence of the other three dimensions rather than an independent driver. The weights sum to 1.00 ($0.20 + 0.40 + 0.25 + 0.15 = 1.00$). DRI is reported alongside TVIAI as a complementary diagnostic tool rather than as a substitute component: the DR block inside TVIAI's diagnostic component (D_i) reflects a preliminary digital-readiness estimate at the point of overall composite scoring, whereas the stand-alone DRI provides a more granular, updateable assessment intended for ongoing digital-marketing monitoring.

Results

Application of the integrated assessment framework demonstrated considerable variation in tourism development among the six villages. The calculated TVIAI values ranged from 2.53 to 4.31, with a regional average of 3.32. Table 1 reports the complete block-level scores, composite TVIAI values, DRI values, and strategic classification for all six villages -addressing the absence of a comprehensive results table in the earlier draft.

Village	R	S	T	B_i	DR	I	C	D_i	TVIAI	DRI	Rank
Qasri Orifon	3.83	4.00	5.00	4.28	5.00	4.00	4.00	4.33	4.31	4.71	1
Shirin	4.33	5.00	4.00	4.44	4.00	4.00	4.50	4.17	4.25	3.49	2
Ushot	3.00	2.00	3.00	2.67	2.00	3.50	4.00	3.17	3.02	1.73	3
Uba	2.67	2.00	3.00	2.56	3.50	3.00	3.00	3.17	2.99	3.45	4
Khoja Orif	3.17	2.00	3.00	2.72	3.00	2.50	3.00	2.83	2.80	3.04	5
Afshona	2.83	2.00	3.00	2.61	3.00	2.00	2.50	2.50	2.53	2.84	6

Table 1. Block-level scores (1–5 scale), composite components, TVIAI, DRI, and ranking for six tourism villages of the Bukhara Region. R =resource potential; S =hospitality and tourism services; T =transport accessibility; B_i =base component; DR =digital readiness block; I =institutional governance; C =community and local economic linkage; D_i =diagnostic component. $TVIAI_i = 0.3B_i + 0.7D_i$. DRI computed separately per the formula in the Methods section.

Figure 1 presents the TVIAI ranking graphically, addressing the reviewer's request for at least one chart.

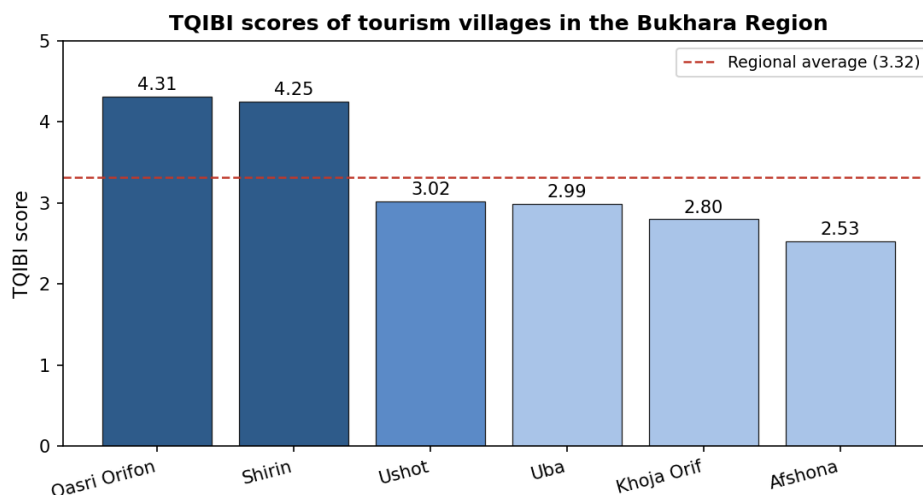


Figure 1. TVIAI scores of the six tourism villages relative to the regional average (3.32).

Among the evaluated destinations, Qasri Orifon (4.31) and Shirin (4.25) achieved the highest integrated scores. Notably, the two villages arrive at similar composite scores through different profiles: Shirin's base component (4.44) exceeds Qasri Orifon's (4.28), reflecting stronger raw hospitality and ethno-gastronomic resources, whereas Qasri Orifon's diagnostic component (4.33) exceeds Shirin's (4.17), driven primarily by digital visibility (593 reviews, 4.9 average rating) tied to its status as a stop on the Naqshbandiyya pilgrimage route and its proximity to the Bahouddin Naqshband complex. Because the diagnostic component carries 70 percent of the composite weight, this difference is sufficient to place Qasri Orifon first; under an equal-weighting scheme the ranking would reverse, which constitutes an empirical justification for the chosen weighting scheme discussed above.

At the opposite end of the ranking, Afshona (2.53) and Khoja Orif (2.80) exhibited the lowest development levels, with Uba (2.99) only marginally higher. Although Afshona possesses exceptional symbolic capital as the birthplace of Ibn Sina and is designated for conversion into a "tourism township" under the regional 2022–2026 development program, its institutional governance score ($I = 2.00$) and community linkage score ($C = 2.50$) remain the lowest among all six villages, indicating that symbolic and historical capital has not yet been converted into an operational tourism product. Ushot presents a distinctive internal profile: despite a low digital readiness block score ($DR = 2.00$) and hospitality score ($S = 2.00$), its community linkage score is comparatively high ($C = 4.00$), consistent with field observations of active community-based tourism (CBT) elements (guesthouses, craft workshops, a "Uzbek bread culture" house) that remain largely undocumented online -an "invisible destination" pattern in which genuine local capacity exists but has not been converted into market-visible digital signals.

Strategic classification

Based on the TVIAI results, tourism villages were classified into three strategic groups, following predefined thresholds (Group I: $TVIAI \geq 4.00$; Group II: 3.00–3.99; Group III: below 3.00):

1. Group I ($TVIAI \geq 4.00$) -Qasri Orifon and Shirin. These destinations are considered highly prepared for tourism expansion and should receive priority support for international promotion and participation in the UN Tourism Best Tourism Villages programme.
2. Group II (3.00–3.99) -Ushot. This village possesses considerable resource and community potential but requires targeted investment in hospitality infrastructure and digital marketing before reaching higher competitiveness. Note that Ushot's TVIAI (3.02) sits only 0.02 points above the Group II/III threshold, which is a methodologically meaningful margin rather than a rounding artifact: an improvement of the base component from 2.00 to 3.00 in the hospitality block alone would raise TVIAI by approximately 0.23 points, comfortably consolidating Group II status.
3. Group III (below 3.00) -Uba, Khoja Orif, and Afshona. Development priorities for these villages should focus on establishing basic tourism infrastructure, strengthening local institutional capacity, and improving digital visibility before large-scale tourism promotion is undertaken. It should be noted that a strict TVIAI-only classification places Khoja Orif in Group III despite its unique strategic role within the "Seven Pirs" pilgrimage cluster together with Qasri Orifon -a case where a purely quantitative ranking should be read alongside qualitative cluster logic rather than in isolation.

The assessment demonstrates that integrated evaluation provides more comprehensive information than traditional tourism resource inventories. Villages with similar cultural resources may exhibit substantially different development levels due to differences in service quality, governance, digital presence, and transport accessibility. The results further confirm that digital readiness has become an increasingly important, and at times partially decoupled, determinant of tourism competitiveness: the Ushot–Uba inversion (Ushot: resource block $R = 3.00$, digital block $DR = 2.00$; Uba: $R = 2.67$, $DR = 3.50$) illustrates that digital readiness follows its own logic driven by promotional activity, official status recognition, and map/platform indexing rather than resource endowment alone.

Discussion

The findings demonstrate that tourism village development cannot be adequately assessed using traditional indicators based solely on tourism resources or infrastructure. Instead, tourism villages should be considered integrated destination systems where natural and cultural resources, hospitality services, institutional governance, transport accessibility, and digital readiness jointly determine destination competitiveness. This integrated perspective corresponds to contemporary destination management theory, which emphasizes the interaction of multiple components influencing tourism performance.

The results obtained in the Bukhara Region support previous studies highlighting the importance of destination competitiveness as a multidimensional concept. Ritchie and Crouch [11] argue that sustainable destination competitiveness depends not only on inherited resources but also on effective destination management and supporting factors; the B_i/D_i decomposition of TVIAI operationalizes precisely this distinction, separating inherited resource endowment (captured in B_i) from managed competitiveness factors (captured in D_i). Similarly, Dwyer and Kim [3] emphasize the integration of infrastructure, tourism services, policy, and management into destination competitiveness models, a structure mirrored in TVIAI's six-block architecture. The present research extends these approaches by incorporating a dedicated, empirically weighted digital readiness dimension into the assessment framework, reflecting the growing influence of digital technologies on tourists' travel decisions [1].

The proposed integrated assessment framework also complements the UN Tourism Best Tourism Villages initiative [13]. While the international framework identifies broad evaluation dimensions across nine areas, the methodology developed in this study operationalizes analogous principles through eleven measurable indicators aggregated into six blocks that can be applied at the regional level with a fully transparent scoring and weighting procedure. The inclusion of the Digital Readiness Index (DRI) further strengthens the methodology by recognizing that online visibility, electronic reputation, and digital accessibility increasingly influence destination competitiveness -a concern also raised in recent rural tourism literature [12].

The empirical results reveal significant disparities among the evaluated tourism villages that would remain invisible under a resource-only inventory approach. Villages with similar cultural and historical resources (for example, Khoja Orif and Afshona, both anchored in singular heritage narratives) demonstrated different overall performance due to variations in institutional capacity, hospitality services, and digital promotion. This finding confirms that tourism resources alone are insufficient to ensure successful destination development; effective governance, coordinated destination management [9] [7], and digital transformation are equally important for achieving sustainable tourism growth.

From a practical perspective, the strategic classification of tourism villages into three development groups provides regional authorities with a useful planning instrument. Instead of applying uniform development policies, differentiated investment strategies can be designed according to the development stage of each village. Such an approach improves the efficiency of public investment and supports balanced regional tourism development, consistent with the geographic clustering potential of the six villages, which are distributed around Bukhara city in a manner suitable for corridor-based destination management [17] [19].

Despite its practical value, the study has several limitations. First, the empirical assessment was limited to six tourism villages in the Bukhara Region; broader regional or national application would require re-validating block weights for a larger and more heterogeneous sample. Second, expert evaluation inevitably introduces a degree of subjectivity despite the use of standardized 1–5 scoring criteria and Delphi-based consensus building ($W = 0.74$); the panel, while diverse, remains a single expert cohort evaluated once, and periodic re-assessment is recommended. Third, digital indicators continue to evolve rapidly as tourism technologies develop, meaning the DRI component in particular requires more frequent updating than the resource- and infrastructure-based blocks. Future studies could expand the geographical scope of the analysis, validate the methodology using larger samples, and incorporate additional big data sources such as social

media analytics, mobile positioning data, and online booking platform application programming interfaces.

Conclusions

This study proposed an integrated methodology -TVIAI -for evaluating tourism villages by combining tourism resources, hospitality services, transport accessibility, institutional governance, digital readiness, and community linkage within a single, fully transparent assessment framework ($TVIAI_i = 0.3B_i + 0.7D_i$), validated by an 18-member Delphi expert panel (Kendall's $W = 0.74$, $p < 0.01$). Unlike evaluation approaches that focus primarily on tourism infrastructure or resource potential, the proposed methodology considers tourism villages as integrated destination systems requiring coordinated management and continuous monitoring.

Application of the methodology to six tourism villages in the Bukhara Region, with complete block-level, composite, and DRI results reported for each village (Table 1), demonstrated considerable variation in tourism development levels, ranging from $TVIAI = 2.53$ (Afshona) to $TVIAI = 4.31$ (Qasri Orifon). The integrated assessment enabled tourism villages to be classified into three strategic development groups reflecting their readiness for tourism expansion. The results indicate that digital readiness, captured separately through DRI (range 1.73–4.71), has become an essential and partially independent component of destination competitiveness alongside traditional tourism development factors.

The proposed Tourism Village Integrated Assessment Index provides practical support for regional tourism planning, investment prioritization, and destination management, and may serve as a useful analytical tool for monitoring tourism village development in other regions of Uzbekistan and in countries pursuing sustainable rural tourism policies. Future research should further validate the proposed assessment model using larger datasets and investigate the dynamic relationship between digital transformation, destination competitiveness, and sustainable rural tourism development.

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