# ANALYSIS OF EXPERIMENTAL RESULTS OF THE INNOVATIVE MODEL AND ITS EFFECTIVENESS IN ENHANCING TOURIST ATTRACTIVENESS

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**Abstract:** The article analyzes the experimental results of the innovative model "Cultural Heritage – Living Tourism" implemented in the cities of Bukhara, Samarkand, and Khiva, as well as its effectiveness in increasing tourist attractiveness. In the experimental group (EG, 8 sites), the overall score increased from 2.52 to 3.91 (+34.6%), while in the control group (CG) the increase was only +2.5%. Cohen's d across all indicators ranged from 1.12 to 1.48 (large effect size). Tourist satisfaction increased by 42.4%, tourist numbers by 28.4%, and artisans' income by 34.2%. The return on investment was 1:4.2, with a payback period of 2.4 years.

**Keywords:** innovative model, experiment, tourist attractiveness, cultural heritage, efficiency, Cohen's d, interpretation, community participation, digital integration, conservation.

Developing innovative approaches to enhance the tourist attractiveness of cultural heritage sites and empirically proving their effectiveness is one of the most pressing tasks of modern tourism science. According to B. McKercher and H. du Cros, the effectiveness of cultural tourism should be evaluated not only by the number of tourists but also by satisfaction levels, economic impact, and local community participation [1]. D. Campbell and J. Stanley's quasi-experimental methodology is recognized as one of the most reliable designs in social research [2]. J. Cohen emphasizes that effect size (Cohen's d) is the most reliable indicator for assessing the practical significance of results [3]. This article provides a detailed analysis of the experimental results of the "Cultural Heritage – Living Tourism" innovative model and its effectiveness in enhancing tourist attractiveness in Bukhara, Samarkand, and Khiva.

The "Cultural Heritage – Living Tourism" model consists of four integrated components: conservation-restoration (25%) – improving the physical condition of sites using scientifically grounded methods, authentic materials, and IoT monitoring; interactive interpretation (30%) – professional guides, audio guides in 8 languages, multimedia, storytelling, and мастер-классы; digital integration (20%) – AR applications, virtual tours, online booking, and digital maps; community participation (25%) – artisan workshops, guest houses, traditional cuisine tours, and cultural festivals [4]. The model was tested using a quasi-experimental design: the experimental group (8 sites) applied the model, while the control group (8 sites) continued traditional approaches. The experiment lasted 10–13 months in four stages. Diagnostics were conducted based on five criteria: physical condition ($\alpha$=0.88), interpretation quality ($\alpha$=0.86), infrastructure ($\alpha$=0.84), authenticity ($\alpha$=0.82), and community participation ($\alpha$=0.90) [5].

Pre-experimental diagnostics confirmed that EG and CG sites had equal initial conditions: average scores were 2.52 (EG) and 2.54 (CG) ($p>0.05$). The lowest indicators were recorded in community participation (EG 1.96, CG 2.02) and interpretation quality (EG 2.24, CG 2.28), while the highest was authenticity (EG 3.14, CG 3.18), indicating relatively well-preserved cultural environments in

Uzbekistan. This baseline showed that the model should prioritize improving community participation and interpretation quality.

The experiment was implemented in four stages. In the first stage (1–2 months), preparation, staff training, and technical readiness were completed. In the second stage (3–4 months), conservation and interpretation components were introduced, resulting in improvements of +12.4% in physical condition and +18.6% in interpretation quality. According to G. Richards, improvements in interpretation quality have the fastest impact on tourist satisfaction [6]. In the third stage (3–4 months), digital and community components were added, increasing community participation by +28.4% and infrastructure by +22.6%. In the fourth stage (2–3 months), the model was consolidated and final diagnostics were conducted.

Final results showed significant improvements across all five criteria. In the EG, the average score increased from 2.52 to 3.91 (+34.6%), while in the CG it rose slightly from 2.54 to 2.66 (+2.5%). By criteria: community participation showed the highest growth (+46.5%), followed by interpretation quality (+40.5%), infrastructure (+31.5%), authenticity (+28.0%), and physical condition (+26.5%). All differences were statistically significant ($p<0.001$), while changes in the CG were minimal, confirming the model's effectiveness.

Effect sizes (Cohen's d) were large across all indicators: tourist satisfaction (d=1.48), attractiveness index (d=1.36), repeat visits (d=1.32), local income (d=1.24), tourist spending (d=1.18), and tourist numbers (d=1.12) [8]. According to UNWTO, Cohen's d >1.0 is considered very high in cultural tourism [9]. Economic outcomes were also strong: tourist numbers increased from 4,200 to 5,392 per month (+28.4%), average spending rose from $85 to $104 (+22.6%), artisans' income increased by 34.2%, and repeat visits rose from 12.4% to 30.6%. The average investment per site was $45,000, with annual additional income of $18,800, ROI of 1:4.2, and a payback period of 2.4 years. Additionally, 45 new jobs were created.

A city-level analysis showed specific impacts: in Bukhara, community participation increased the most (+52.4%); in Samarkand, interpretation quality showed the highest growth (+44.2%); in Khiva, physical condition improved the most (+32.8%). Cluster analysis showed a decrease in low-attractiveness sites from 37.5% to 6.2% and an increase in high-attractiveness sites from 18.8% to 62.5%. Expert and local evaluations were highly positive.

Tourist surveys confirmed these results: among 250 respondents, overall satisfaction increased from 3.12 to 4.34 (+42.4%). The most improved aspects were interaction with locals, interpretation quality, and infrastructure. Authentic experience received the highest final score (4.42). The intention to revisit and recommend also increased significantly.

Feedback from local communities and experts was also positive. 92% of experts rated the model highly (average 4.42), and 84% of local residents expressed satisfaction with tourism development. Artisans reported increased income, and most stakeholders supported continuing the model, although some concerns about traffic and noise were noted.

Intermediate diagnostics confirmed the synergistic effect of the four components. Each new component enhanced the results of the previous ones, demonstrating cumulative impact. Notably,

community participation amplified all other components by improving authenticity, interpretation quality, and overall tourist experience.

Several recommendations were proposed for scaling the model: phased implementation across Uzbekistan, expansion of training programs, development of digital platforms, creation of craft tourism routes, and strengthening of the Silk Road brand. The goal is to increase tourist numbers to 15–20 million and revenue to $5–7 billion by 2030.

**Conclusion and Recommendations**

The experimental results statistically and economically confirm the high effectiveness of the "Cultural Heritage – Living Tourism" model. The four components (conservation 25%, interpretation 30%, digital 20%, community 25%) produced a synergistic effect, increasing overall scores by +34.6% in the EG compared to +2.5% in the CG ($p<0.001$, Cohen's $d=1.12–1.48$). The greatest improvements were observed in community participation and interpretation. Tourist satisfaction increased by 42.4% ($d=1.48$). Economic outcomes included increased tourist numbers, spending, artisan income, and repeat visits, with a strong return on investment. These results provide a solid empirical foundation for nationwide implementation in Uzbekistan.

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