

ECONOSCITECH INTEGRATION

ISSUE
7

INTERNATIONAL SCIENTIFIC
ELECTRONIC JOURNAL



**TASHKENT STATE
UNIVERSITY OF ECONOMICS**



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ISSN: 3060-5075



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THE SCIENTIFIC-POPULAR
ELECTRONIC JOURNAL
"ECONOSCITECH-INTEGRATION"
HAS BEEN REGISTERED UNDER
THE NUMBER C-5669651 BY THE
AGENCY FOR INFORMATION AND
MASS COMMUNICATIONS (AOKA)
OF THE REPUBLIC OF UZBEKISTAN,
EFFECTIVE FROM OCTOBER 9, 2024.

In accordance with Resolution No. 384/6 dated April 10, 2026, issued by the Presidium of the Supreme Attestation Commission under the Ministry of Higher Education, Science and Innovation of the Republic of Uzbekistan, this journal is included in the list of recommended international scientific publications for publishing the primary research findings of doctoral dissertations in the field of Economic Sciences.

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Electronic publication. Issue 7. 374 pages.
Approved for publication in July 2026.

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CONTENTS

RECONCEPTUALIZING HIGHER EDUCATION MARKETING IN THE ALGORITHMIC ERA: INSTITUTIONAL GENERATIVE AI AND MULTIDIMENSIONAL UNIVERSITY BRAND EQUITY	10
Nozima Zufarova	
DEVELOPMENT OF WAREHOUSE AND INVENTORY MANAGEMENT IN MANUFACTURING ENTERPRISES	16
Maxmidov Shirinboy Botirovich	
IMPROVING THE MECHANISM FOR ENHANCING THE POTENTIAL OF OIL AND GAS INDUSTRY ENTERPRISES IN UZBEKISTAN	25
Bekmuhamedova Malika Iskandarbekovna	
IMPROVING THE METHODOLOGY OF ARTIFICIAL INTELLIGENCE-BASED MARKETING DECISION-MAKING IN CONSTRUCTION MATERIALS MANUFACTURING ENTERPRISES	30
Uzakova Umida Ruzievna	
ORGANIZATIONAL AND ECONOMIC ASPECTS OF IMPROVING THE QUALITY OF DIGITAL SERVICES IN THE HIGHER EDUCATION SYSTEM	37
Berdiev Sunnatullo Alikulovich	
GLOBAL JUSTICE CODE AND GLOBAL JUSTICE INDEX: A CONCEPTUAL FRAMEWORK FOR GLOBAL GOVERNANCE AND SUSTAINABLE DEVELOPMENT	43
Alimov Nasimjon Hoshimovich	
IMPROVING THE MECHANISMS FOR MANAGING THE PROCESS OF DIVERSIFYING HOTEL SERVICES BASED ON INTERNATIONAL STANDARDS (USING THE FERGANA VALLEY AS AN EXAMPLE)	50
Sevarakhon Dehqonova Fatxitdin qizi	
DOES INVESTMENT SOURCE DIVERSIFICATION IMPROVE FARM PERFORMANCE? EVIDENCE FROM HORTICULTURAL PRODUCERS IN UZBEKISTAN	56
Jalilov Shohruh Zafar o'g'li	
SPECIFIC ASPECTS OF PREPARING AN AUDIT OPINION AND REPORT BASED ON ESG AUDIT RESULTS.....	65
Sayfullayev Mekhroj Sayfullayevich	
THE ROLE AND IMPORTANCE OF THE MULTIFACTOR DEVELOPMENT MODEL IN THE ECONOMIC DEVELOPMENT OF THE INDUSTRIAL SECTOR.....	70
Ne'matov Shokhruxbek Ma'murjon o'g'li	
IMPROVEMENT OF ACCOUNTING AND AUDITING OF ENVIRONMENTAL ACTIVITIES IN BUILDING MATERIALS INDUSTRY ENTERPRISES	75
Mirzaev Komiljon Abdullajonovich	
THEORETICAL EVOLUTION OF COMPETITIVENESS AND ISSUES OF THE TERRITORIAL COMPETITIVENESS OF SMALL BUSINESSES.....	82
Mamatkulova Kh. N.	
СОВРЕМЕННОЕ СОСТОЯНИЕ И АНАЛИЗ ЭКОНОМИЧЕСКОГО ПОТЕНЦИАЛА АО «УЗБЕКНЕФТЕГАЗ»	87
Бекмухамедова Малика Искандарбековна	
ОЦЕНКА ВЛИЯНИЯ ИННОВАЦИОННОЙ АКТИВНОСТИ НА РАЗВИТИЕ СОЦИАЛЬНОГО СЕКТОРА ЭКОНОМИКИ: ЭКОНОМЕТРИЧЕСКИЙ АНАЛИЗ.....	95
Холмуратов Жахонгир Салимбек ўғли	

FOREIGN EXPERIENCE IN SUPPORTING SMALL BUSINESS ENTITIES AND OPPORTUNITIES FOR ITS APPLICATION	104
Botir Baxtiyorovich Ganiyev	
STRATEGIES FOR THE DIVERSIFICATION OF INDUSTRIAL ENTERPRISES.....	108
Kalimullina Nargiza Vladimirovna	
CURRENT STATE AND CHALLENGES OF USING NATIONAL FASHION ELEMENTS IN UZBEKISTAN'S TOURISM MARKET	112
Yusupova Mokhinur Farkhod qizi	
IMPROVING THE ORGANIZATION, PLANNING, AND METHODOLOGICAL ASPECTS OF THE AUDIT OF BIOLOGICAL ASSETS	120
Akhmetova Salima Seytovna	
FACTORS DETERMINING THE DEVELOPMENT OF SMALL BUSINESS AND ENTREPRENEURSHIP	125
Imomnazarov Khurshid Ozodboevich	
SMART INCLUSIVE UNIVERSITY: A DIGITAL ECOSYSTEM MODEL FOR INCLUSIVE HIGHER EDUCATION.....	129
Kamola Makhkamova	
THEORETICAL FOUNDATIONS OF ORGANIZATIONAL AND ECONOMIC DEVELOPMENT OF THE FOOD INDUSTRY	137
Tleuov Nietulla Rakhmanovich	
SECTORAL ANALYSIS OF WATER RESOURCE USE EFFICIENCY UNDER CIRCULAR ECONOMY PRINCIPLES: EVIDENCE FROM UZBEKISTAN	143
Sotvoldiyeva Muslimaxon G'ayratjon qizi	
MECHANISMS FOR INCREASING THE IMPACT OF USING THE RESOURCES OF INTERNATIONAL FINANCIAL AND CREDIT INSTITUTIONS ON SUSTAINABLE ECONOMIC DEVELOPMENT	149
Qosimov Bobur Sobirovich	
IMPROVING ELECTRONIC SERVICES IN THE B2B AND B2G MARKET SEGMENTS OF THE REPUBLIC OF UZBEKISTAN	154
Otaboyev Nodirbek Oybek o'g'li	
MACROECONOMIC DETERMINANTS OF INDUSTRIAL DEVELOPMENT IN UZBEKISTAN: A TIME-SERIES ECONOMETRIC ANALYSIS AND SCENARIO FORECAST FOR 2026–2027	160
Khusniddin Nuriddin ugli Muydinov	
INSTITUTIONAL CHALLENGES AND DEVELOPMENT CONSTRAINTS IN SERVICE SECTOR MANAGEMENT	166
Dauletmuratov Adilbay Mirzabaevich	
ECONOMETRIC ANALYSIS OF THE FACTORS AFFECTING INTERBANK COMPETITION IN THE DIGITAL BANKING SERVICES MARKET	173
Karimov Odiljon Boqiyevich	
PRIORITY DIRECTIONS FOR ENHANCING FINANCIAL INCLUSION THROUGH INNOVATIVE BANKING SERVICES IN THE DIGITAL ECONOMY	185
Azlarova Aziza Axrorovna	
INTEGRATED INSTITUTIONAL MECHANISM OF FORMATION AND MANAGEMENT OF NATIONAL CRAFT CLUSTER.....	192
Yakhshilikov Sardor Rustam ugli	
IMPROVING THE METHODOLOGY OF PUBLIC AUDIT IN THE SYSTEM OF STATE FINANCIAL CONTROL.....	203
B. Sh. Mirzoyev	

PROSPECTS FOR THE DIGITAL TRANSFORMATION OF LOCAL GOVERNMENT AUTHORITIES	208
Achilova Firuza Kurbanovna	
Nurmurodov Zafarjon Nurmurod ugli	
A STUDY OF HOUSING STOCK MANAGEMENT ISSUES IN THE CONTEXT OF URBANIZATION BASED ON SWOT ANALYSIS.....	212
Mamanazarov Oybek Shomurodovich	
DETERMINING THE FORECAST PARAMETERS OF INDICATORS REPRESENTING AGRO-SERVICES AND THE POSSIBILITIES FOR POVERTY REDUCTION.....	217
Pardaev Mamayunus Karshibaevich	
Abilov Feruz Nematullaevich	
EVOLUTION OF PRODUCTION MANAGEMENT MODELS IN TEXTILE ENTERPRISES AND DIGITAL DIRECTIONS FOR IMPROVING EFFICIENCY.....	223
Kodirova Xurshida Ismoilovna	
DIRECTIONS FOR REDUCING POVERTY THROUGH THE USE OF DIGITAL TECHNOLOGIES IN THE SERVICE SECTOR	228
Saparov Murod Irgashovich	
FOREIGN EXPERIENCE IN HANDICRAFT MANAGEMENT AND OPPORTUNITIES FOR ITS APPLICATION IN UZBEKISTAN	233
Yakhshilikov Sardor Rustam Ugli	
REGIONAL INTERDEPENDENCIES AND CROSS-BORDER DYNAMICS: ASSESSING THE INFLUENCE OF NEIGHBOURING COUNTRIES ON THE DEVELOPMENT OF UZBEKISTAN'S TOURISM SECTOR	238
Khusniddin Egamnazarov	

REGIONAL INTERDEPENDENCIES AND CROSS-BORDER DYNAMICS: ASSESSING THE INFLUENCE OF NEIGHBOURING COUNTRIES ON THE DEVELOPMENT OF UZBEKISTAN'S TOURISM SECTOR

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Abstract. This study investigates the extent to which Uzbekistan's tourism sector is shaped by regional interdependencies with its five neighbouring countries—Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Afghanistan. Drawing on annual data from 2010 to 2024, the research employs a mixed-method design that integrates panel regression analysis with a qualitative policy review. The quantitative findings reveal that cross-border trade intensity, visa liberalisation, transport connectivity, and formal tourism cooperation have a statistically significant positive impact on inbound tourist arrivals to Uzbekistan, while exchange-rate volatility exerts a mild negative effect. The results confirm the existence of a gravity-type spillover mechanism within Central Asia's tourism network, suggesting that stronger regional linkages enhance collective competitiveness. The qualitative findings further indicate that policy coordination and infrastructure harmonisation remain key to converting geographic proximity into sustainable growth. The study contributes to the literature by providing one of the first empirical models to quantify cross-border tourism effects in Central Asia and offers actionable recommendations for developing joint visa schemes, integrated transport corridors, and regional branding strategies aligned with UNWTO and SDG 8.9 priorities.

Keywords: regional interdependencies, cross-border tourism, Central Asia, Uzbekistan, tourism cooperation, panel regression, sustainable tourism policy.

Аннотация. В данном исследовании оценивается степень влияния региональной взаимозависимости с пятью соседними государствами — Казахстаном, Кыргызстаном, Таджикистаном, Туркменистаном и Афганистаном — на развитие туристической отрасли Узбекистана. На основе ежегодных данных за 2010–2024 годы применяется смешанный методологический подход, объединяющий панельный регрессионный анализ и качественный анализ туристической политики. Результаты количественного анализа показывают, что интенсивность трансграничной торговли, либерализация визового режима, транспортная связанность и официальное сотрудничество в сфере туризма оказывают статистически значимое положительное влияние на въездной туристический поток в Узбекистан, тогда как волатильность обменных курсов оказывает умеренное отрицательное воздействие. Полученные результаты подтверждают существование гравитационного механизма сопутствующих эффектов в туристической сети Центральной Азии и свидетельствуют о том, что укрепление региональных связей способствует повышению коллективной конкурентоспособности. Результаты качественного анализа также показывают, что координация политики и гармонизация инфраструктуры остаются ключевыми условиями преобразования географической близости в устойчивый рост. Исследование вносит вклад в научную литературу, предлагая одну из первых эмпирических моделей количественной оценки трансграничных туристических эффектов в Центральной Азии, а также практические рекомендации по разработке совместных визовых механизмов, интегрированных транспортных коридоров и региональных брендинговых стратегий в соответствии с приоритетами ЮНВТО и Целью устойчивого развития 8.9.

Ключевые слова: региональная взаимозависимость, трансграничный туризм, Центральная Азия, Узбекистан, сотрудничество в сфере туризма, панельная регрессия, политика устойчивого туризма.

INTRODUCTION

Tourism has become an important instrument of economic diversification, international image-building, and cultural cooperation across developing regions, particularly in Central Asia, where shared cultural heritage and geographic proximity shape mutual development prospects. For Uzbekistan, tourism is not only a strategic economic sector but also a mechanism for strengthening regional cooperation, infrastructure integration, and cultural connectivity (UNWTO, 2024). Over the past decade, Uzbekistan's inbound tourism has expanded rapidly, yet the sector's trajectory continues to be strongly influenced by cross-border dynamics—notably through trade intensity, mobility policies, and transportation linkages with Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Afghanistan.

The literature on tourism development in transitional economies highlights the role of regional interdependencies in amplifying destination competitiveness (Hall & Page, 2014; Dwyer & Forsyth, 2006). The classical Tourism Area Life Cycle Model (Butler, 1980) and the Gravity Theory of International Exchange (Anderson & van Wincoop, 2003) suggest that proximity, policy similarity, and economic openness generate measurable spillover effects. However, empirical research examining such mechanisms in Central Asia remains limited and largely descriptive. Existing studies have focused on general regional cooperation (Kantarci & Uzbeks, 2021) or cultural linkages (Mukhamedov & Kim, 2020), but few have quantitatively modelled how neighbouring countries contribute to Uzbekistan's tourism outcomes.

Central Asia's tourism landscape presents both opportunities and contradictions. On the one hand, regional initiatives—such as the Silk Road Visa proposal, transboundary ecotourism routes, and joint marketing campaigns—illustrate the growing institutional interest in strengthening regional cooperation (OECD, 2023; UNWTO, 2024). On the other hand, differences in infrastructure development, visa procedures, and regional conditions continue to limit seamless tourist mobility. These conditions make Uzbekistan a relevant case for examining how regional proximity influences tourism interdependence and how appropriate policy measures can strengthen mutually beneficial cooperation.

Theoretically, this study contributes to the understanding of cross-border tourism interlinkages by merging economic and spatial perspectives. Empirically, it provides one of the first panel-based assessments quantifying the influence of neighbouring countries on Uzbekistan's tourism sector over the period 2010–2024. Methodologically, it integrates quantitative panel regression analysis with a qualitative policy review to capture both the measurable and institutional dimensions of regional interaction.

Accordingly, the study addresses the following research objectives:

1. To examine the extent and direction of cross-border effects from Uzbekistan's neighbouring countries on its inbound tourism.
2. To identify which economic, policy, and infrastructural factors exert the greatest influence.
3. To propose actionable policy measures for enhancing regional tourism cooperation and sustainability in Central Asia.

By addressing these aims, the paper not only fills a clear empirical gap in the literature but also aligns with the objectives of UNWTO (2024) and SDG 8.9—promoting sustainable, inclusive, and regionally integrated tourism growth. The next section reviews relevant theoretical and empirical studies underpinning this investigation.

LITERATURE REVIEW

Broad Overview: Regionalism and Tourism Interdependence

Tourism has long been recognised as a sector deeply embedded in regional dynamics, where political, economic, and social linkages among neighbouring countries shape tourism flows and competitiveness (Hall & Page, 2014). Regional tourism interdependence refers to the mutual influence of countries' policies, infrastructure, and image-building efforts that collectively define destination attractiveness (Dwyer & Forsyth, 2006). In developing regions such as Central Asia, where historical routes such as the Silk Road transcend national borders, tourism cooperation and competition coexist in complex patterns of mutual dependence (Timothy, 2001). Cross-border tourism thus represents both an economic opportunity and a policy challenge, demanding harmonised frameworks for visa facilitation, transport integration, and shared branding initiatives (UNWTO, 2022).

Seminal or Pioneering Works

The theoretical foundations for studying tourism interdependencies are often linked to Butler's Tourism Area Life Cycle (TALC) model (Butler, 1980), which conceptualises destination evolution through stages of exploration, development, and consolidation. This model highlights the role of external forces—such as neighbouring destinations—in influencing the pace of destination growth. Similarly, Leiper's Tourism System Model (1979) and Timothy's Cross-Border Tourism Framework (2001) emphasise spatial and functional

interactions between generating and receiving regions, showing that proximity and political stability shape tourist mobility. Building upon Anderson and van Wincoop's Gravity Model of Trade (2003), several scholars (e.g., Croes & Rivera, 2017) have extended economic gravity principles to tourism, arguing that shared borders, linguistic ties, and visa liberalisation significantly boost bilateral tourist flows.

Specific Works on Central Asia and Uzbekistan

In the Central Asian context, studies have gradually emerged linking regional integration to tourism development. Chon and Aliyeva (2018) examined how Kazakhstan's tourism policies influenced regional image formation, suggesting spillover benefits for neighbouring Uzbekistan and Kyrgyzstan. Mukhamedov and Kim (2020) analysed cross-border tourism between Uzbekistan and Tajikistan, concluding that cultural heritage and family ties fostered sustainable community-based tourism across borders. Similarly, Ismoilova et al. (2022) identified transport connectivity between Tashkent–Almaty and Samarkand–Dushanbe as a key determinant of regional visitor flow intensity. Other works, such as Kantarci and Uzbeks (2021), emphasised the importance of harmonising marketing and visa regimes to unlock Central Asia's collective tourism potential.

Most Recent Studies and Emerging Perspectives

Recent scholarship (2021–2025) has shifted from descriptive regionalism to quantitative and network-based analyses of cross-border tourism. Li and Timothy (2023) applied spatial econometric models to measure interdependence among Asian destinations, demonstrating that tourism performance in one country can significantly predict performance in adjacent countries. UNWTO (2024) highlighted the “Silk Road Visa” initiative as a regional success model that could enhance visitor mobility and joint branding across Central Asia. Moreover, OECD (2023) and World Bank (2023) reports pointed out that Kazakhstan's infrastructural investments and Kyrgyzstan's ecotourism strategies have measurable spillover effects on Uzbekistan's inbound tourism. These findings underscore the growing policy consensus that cross-border cooperation is essential for achieving sustainable tourism development in landlocked regions.

Controversial Studies and Conceptual Debates

Despite these advances, scholars remain divided on the degree to which regional cooperation benefits all member states equally. Some researchers argue that cross-border integration risks “tourism leakage,” whereby economic benefits disproportionately flow to more developed neighbours (Telfer & Sharpley, 2016). Other researchers, such as Tovar and Lockwood (2020), note that institutional differences, visa procedures, and border-management requirements may limit the practical implementation of regional tourism frameworks. A competing school of thought suggests that excessive dependence on regional tourists can make destinations vulnerable to external disruptions or currency fluctuations (Yasar & Sadiq, 2022). These debates highlight the need for an evidence-based assessment of both positive and negative spillovers among Central Asian economies.

Table 1
Summary of Key Reviewed Studies (2020–2025)¹

Author(s) & Year	Focus Area / Objective	Methodology / Data Source	Key Findings	Identified Gap / Relevance to Current Study
Mukhamedov & Kim (2020)	Examined cultural and economic links in cross-border community tourism between Uzbekistan and Tajikistan.	Qualitative interviews (n = 45) with local guides and households.	Cultural heritage and family ties enhance bilateral tourism cooperation and community resilience.	Did not measure economic magnitude or spillover effects empirically.
Kantarci & Uzbeks (2021)	Investigated effects of visa liberalisation and regional marketing initiatives in Central Asia.	Policy review and regional comparison of 5 countries.	Harmonised visa policies (“Silk Road Visa”) improve destination image and mobility.	Lacks econometric testing of causal relationships between policy change and arrivals.
Ismoilova, Nuritdinov & Kim (2022)	Analysed transport connectivity between major Central Asian tourism cities.	Spatial data + regression model (2010–2020).	Strong correlation between transport infrastructure and tourist flows.	Does not address qualitative policy or institutional barriers.

¹ Source: Compiled by the author based on the reviewed literature.

Yasar & Sadiq (2022)	Assessed vulnerability of emerging economies to regional tourism dependency.	Panel regression (15 developing economies, 2000–2019).	Excessive dependence on neighbouring markets increases exposure to shocks.	Not specific to Central Asia or Uzbekistan; no cross-border model.
Li & Timothy (2023)	Measured spatial interdependence among Asian tourism destinations.	Spatial econometric modelling (2012–2021).	Tourism growth in one destination significantly predicts growth in neighbours.	Does not include Central Asia in sample; no policy linkage analysis.
OECD (2023)	Report on regional tourism competitiveness in Central Asia.	Secondary data synthesis.	Kazakhstan and Kyrgyzstan show infrastructure spillovers influencing Uzbekistan.	Descriptive only; lacks theoretical or empirical framework.
UNWTO (2024)	Evaluated progress of the “Silk Road Tourism Corridor.”	Regional policy review (2018–2024).	Identified cross-border branding and visa facilitation as key accelerators.	Limited quantitative assessment; focuses on policy narratives.
World Bank (2023)	Explored transport and tourism connectivity in Central Asia.	Comparative economic analysis.	Transport corridors (Tashkent–Almaty, Samarkand–Dushanbe) improve regional mobility.	Does not connect transport development to tourism demand econometrically.
Li, Chen & Park (2025)	Studied the role of digital cooperation in cross-border tourism resilience in Asia.	Mixed methods: big data + interviews.	Cross-border digital marketing enhances regional recovery post-COVID-19.	General Asian context; no focus on landlocked developing countries like Uzbekistan.

IDENTIFIED RESEARCH GAP

Although a growing body of literature explores regional cooperation in Central Asia, few studies empirically quantify the magnitude and direction of neighbouring countries' influence on Uzbekistan's tourism sector. Most existing research remains descriptive or policy-oriented, lacking econometric validation of cross-border effects. Moreover, the interplay between economic integration (e.g., trade and exchange rates), policy harmonisation (e.g., visa regimes), and tourism outcomes remains underexplored within a unified analytical framework. Addressing this gap, the present study applies a panel regression model and a mixed-method approach to systematically measure how Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Afghanistan contribute to—or constrain—the development of Uzbekistan's tourism industry. In doing so, it advances the regional tourism literature by linking interdependency theory with empirical modelling and policy implications for sustainable development.

RESEARCH METHODOLOGY

This study adopts a mixed-method design integrating quantitative econometric modelling with qualitative policy analysis. This combination allows for both the measurement of cross-border effects and the interpretation of institutional mechanisms that shape regional tourism interdependencies in Central Asia.

The quantitative component employs a panel regression model using annual data from 2010–2024 for Uzbekistan and its five neighbouring countries—Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Afghanistan. The qualitative component involves a review of regional tourism policy documents, UNWTO and OECD reports, and semi-structured expert interviews ($n = 12$) with policymakers and tour-operator representatives.

DATA SOURCES AND VARIABLES

Data were collected from the UNWTO Tourism Statistics Database (2024), World Bank Open Data, OECD Tourism Working Papers, and national statistical committees.

Dependent variable (Y): International tourist arrivals to Uzbekistan.

Independent variables (X):

1. Cross-border trade volume (TRADE)—a proxy for economic integration.
2. Visa policy index (VISA)—a binary scale (0 = restricted, 1 = liberal).
3. Transport connectivity index (TRANS)—a composite of flight frequency and road linkages.
4. Exchange rate index (EXRATE)—the annual average local currency per USD.
5. Tourism cooperation dummy (COOP)—1 = existence of a bilateral tourism MoU, 0 = none.

Analytical Framework

To estimate the influence of neighbouring countries on Uzbekistan's tourism sector, a fixed-effects panel regression was used:

$$TOUR_{it} = \beta_0 + \beta_1 TRADE_{it} + \beta_2 VISA_{it} + \beta_3 TRANS_{it} + \beta_4 EXRATE_{it} + \beta_5 COOP_{it} + \varepsilon_{it}$$

where i denotes the neighbouring country and t denotes the year. Model diagnostics for multicollinearity, heteroskedasticity, and serial correlation were conducted using EViews 13 and SPSS 28.

Validity and Reliability

Triangulation was ensured by cross-verifying quantitative outcomes with policy narratives from UNWTO and national tourism strategies. Reliability was supported by the use of standardised data sources and consistent time series, while construct validity was strengthened through expert validation of the variable definitions.

ANALYSIS AND RESULTS**Descriptive Statistics and Model Fitness**

Preliminary descriptive analysis indicated significant variations among the five neighbouring countries in terms of trade, connectivity, and visa policies. Kazakhstan and Kyrgyzstan recorded the highest tourism cooperation scores (mean = 0.81), while Afghanistan recorded the lowest score (mean = 0.32). Correlation tests showed a strong positive relationship between cross-border trade and tourist arrivals ($r = 0.71$, $p < 0.01$), suggesting that economic openness fosters visitor mobility.

The regression model achieved a satisfactory level of explanatory power ($R^2 = 0.68$), indicating that approximately 68% of the variation in Uzbekistan's international tourist arrivals is explained by the included regional factors. All diagnostic tests confirmed the robustness of the model, with no significant multicollinearity ($VIF < 2.5$) and no heteroskedasticity detected (Breusch–Pagan test, $p > 0.10$).

Table 2
Regression Analysis Results²

Variable	Coefficient (β)	t-Statistic	Significance (p)	Interpretation
Cross-border trade (TRADE)	0.452	5.71	0.000***	Higher trade intensity between Uzbekistan and its neighbours substantially increases inbound tourist flows.
Visa policy liberalisation (VISA)	0.318	3.62	0.002**	Simplified visa regimes (e.g., "Silk Road Visa") significantly enhance cross-border tourism.
Transport connectivity (TRANS)	0.276	2.95	0.007**	Improved flight and road connections stimulate regional mobility and short-stay tourism.
Exchange rate (EXRATE)	-0.154	-2.22	0.031*	Currency depreciation in neighbouring markets slightly reduces travel affordability to Uzbekistan.
Tourism cooperation (COOP)	0.201	2.47	0.019*	Bilateral agreements and joint marketing positively correlate with tourism inflow stability.

(*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$)

² Source: Author's calculations based on data from UN Tourism, World Bank Open Data, OECD, and national statistical agencies, using EViews 13 and SPSS 28.

Interpretation and Theoretical Implications

The findings confirm the gravity-model-based interdependence among Central Asian tourism economies. Consistent with Anderson and van Wincoop (2003) and Li and Timothy (2023), countries with strong trade and transport linkages generate mutual tourism benefits through reduced transaction costs and enhanced accessibility.

Kazakhstan and Kyrgyzstan emerge as the most influential partners, providing policy spillovers through liberal visa practices and infrastructural investments. Conversely, differences in transport accessibility, border procedures, and mobility conditions involving Afghanistan and Turkmenistan continue to constrain tourism connectivity along Uzbekistan's southern routes.

Policy and Regional Implications

Empirical evidence underscores the importance of a coordinated Central Asian tourism policy that prioritises:

1. A unified regional visa system to increase multi-destination travel.
2. Strategic investments in transport corridors connecting Tashkent–Almaty–Bishkek and Samarkand–Dushanbe.
3. Joint branding and marketing under the “Silk Road Heritage Route.”

Such measures align with UNWTO's (2024) call for sustainable and inclusive regional tourism frameworks, reinforcing Uzbekistan's role as a regional hub for transboundary cultural tourism and ecotourism.

Conclusion and Suggestions

This study empirically demonstrates that Uzbekistan's inbound tourism is meaningfully shaped by regional interdependencies with its five neighbours. Panel estimates show that cross-border trade intensity, visa liberalisation, transport connectivity, and formal tourism cooperation are positively associated with international arrivals to Uzbekistan, while adverse exchange-rate movements in partner countries exert a modest dampening effect. Model diagnostics indicate satisfactory explanatory power and robustness.

Theoretically, the findings affirm a gravity-type mechanism in Central Asia's tourism system, whereby reduced frictions and stronger linkages among adjacent economies generate measurable spillover effects. Practically, the results imply that Uzbekistan's competitiveness is not only a function of domestic reforms but also of policy coordination and infrastructural complementarity with Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Afghanistan. The study contributes by quantifying directional effects long noted in descriptive work, thereby narrowing the gap between regional cooperation narratives and evidence-based policymaking.

Policy Recommendations

R1. Establish a Phased Multi-State Visa Facilitation Scheme

Adopt a “Silk Road circuit” model based on mutual e-visa recognition or a common short-stay visa, beginning with the most prepared partners, such as Kazakhstan and Kyrgyzstan, and then expanding it to other countries. Pair the scheme with streamlined border procedures and reciprocal multi-entry options for tour operators.

R2. Prioritise Cross-Border Transport Corridors with Tourism Multipliers

Target high-impact routes, such as Tashkent–Almaty–Bishkek and Samarkand–Dushanbe, by increasing service frequencies, coordinating timetables, and introducing integrated ticketing. Introduce joint wayfinding standards and interoperable booking systems.

R3. Launch Joint Destination Branding and Product Bundling

Jointly market multi-country itineraries, including Silk Road heritage routes, mountain ecotrails, and pilgrimage routes. Use shared calendars for cross-border festivals and co-fund digital campaigns and familiarisation trips for influencers that feature at least two capitals or cultural hubs.

R4. Formalise a Central Asia Tourism Coordination Platform

Create a standing working group comprising tourism boards, transport ministries, and customs authorities to harmonise standards related to signage, data definitions, and service quality; monitor key performance indicators; and remove bottlenecks associated with insurance, permits, and guide licensing.

R5. Hedge Exchange-Rate and Shock Risks

Diversify source markets beyond immediate neighbours; encourage dynamic pricing and local-currency settlement options for regional visitors; and promote travel insurance and low-deposit booking options to preserve demand during periods of volatility.

R6. Incentivise Cross-Border Small and Medium-Sized Enterprise Linkages

Provide small grants or vouchers for Uzbek and neighbouring SMEs to jointly develop package tours, community-based experiences, and circular supply chains involving handicrafts and gastronomy. Offer mutual recognition of training programmes and professional certifications.

R7. Build a Shared Evidence Base

Establish a regional tourism data protocol covering monthly arrivals by origin, purpose of travel, length of stay, and mode of transport, as well as corridor-level load factors and visa-processing times. Publish a quarterly Central Asia Tourism Barometer to guide adaptive policymaking.

Implementation Roadmap

- **Short term (0–12 months):** Pilot reciprocal e-visa arrangements with one or two neighbouring countries; publish joint route maps and coordinated schedules; and launch a co-branded microsite featuring multi-country itineraries.
- **Medium term (1–3 years):** Upgrade priority rail and air links; introduce integrated ticketing; standardise signage and guiding norms; and operationalise the SME voucher scheme.
- **Long term (3–5 years):** Expand the visa bloc; institutionalise the regional platform with a rotating secretariat; and establish common sustainability standards and certification pathways.

Risks, Limitations, and Future Research

Potential risks include external and security-related disruptions, uneven distribution of benefits, and delays in administrative coordination. The limitations of this study include the annual frequency of the data and the use of proxy-based indices for cooperation and connectivity. Future research should: (i) employ higher-frequency mobility and fare data; (ii) model network spillovers using spatial panel models; and (iii) evaluate distributional effects across regions and firm sizes within Uzbekistan. Ethical considerations include respectful community engagement and safeguards for heritage sites as visitor numbers increase.

Overall, the evidence supports a strategy that combines domestic reforms with targeted regional coordination, thereby converting geographic proximity into sustained and inclusive tourism growth for Uzbekistan.

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Proofreader: Xondamir Ismoilov
Layout and Designer: Hasan Maqsudov

2026. № 7

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