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JUMAYEV AKBAR MAKHMUDOVICH

STATISTICAL ASSESSMENT OF TOURISM DEVELOPMENT IN UZBEKISTAN

Concepts, Indicators and Evidence (2010–2025)

MONOGRAPH



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The monograph examines the theoretical, methodological and practical issues of the statistical assessment of tourism. It clarifies the concepts of tourism statistics and proposes criteria of the usual environment for Uzbekistan, develops a system of indicators of tourism performance and innovative development, compares the international recommendations IRTS 2008 and TSA:RMF 2008 with national practices, and analyses international and domestic tourism using official data for 2010–2025, including the Tourism Satellite Account indicators of Uzbekistan for 2019–2024. The factors of regional tourism development are assessed with SWOT–Delphi and T-ABC methods, the tourism-led growth hypothesis is tested by cointegration analysis, and directions for improving the measurement of visitor numbers, the assessment of the economic role of tourism and the forecasting of tourism indicators are proposed, including an ex-post evaluation of earlier forecasts.

The book is intended for researchers, lecturers and students of statistics and tourism economics, and for specialists of statistical agencies and tourism administrations.

Reviewers:
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PREFACE

This book grew out of the author's research on the statistical assessment of tourism in Uzbekistan, the first results of which were published in Uzbek in 2021 under the title "Improving the statistical assessment of the innovative development of tourism in New Uzbekistan". Since then the tourism sector of the country and its statistics have changed dramatically. Inbound tourism, after falling to 1.5 million trips in 2020, reached 11.7 million trips in 2025; the National Statistics Committee began to publish the indicators of the Tourism Satellite Account; and monthly data on arrivals by groups of countries became available. These changes made it both possible and necessary to revisit the earlier work.

The present edition is therefore not a simple translation. The theoretical part – the concepts of tourism statistics, the criteria of the usual environment, the system of indicators and the comparison of international standards – has been rewritten for an international readership. The statistical analysis has been updated to the latest official data (as a rule, 2024–2025). New material has been added on the post-pandemic recovery, the concentration and seasonality of inbound flows, the Tourism Satellite Account and the coverage of inbound visitors by regional statistics. The expert surveys and econometric estimates of the original study are retained and clearly dated, and the forecasts made in 2021 are evaluated against what actually happened.

Throughout the book only official statistical data of the National Statistics Committee and the Tourism Committee of the Republic of Uzbekistan, data of international organisations (UN Tourism, the World Bank, the World Economic Forum) and the results of the author's own surveys and calculations are used; the source of every table and figure is indicated.

The author is grateful to colleagues of the Department of Statistics of Tashkent State University of Economics for discussions of the research and to the reviewers for their valuable comments. Any remaining errors are the author's own.

The author

LIST OF ABBREVIATIONS

ADF	– Augmented Dickey–Fuller (test)
CIS	– Commonwealth of Independent States
ECM	– error correction model
GDP	– gross domestic product
GVA	– gross value added
HHI	– Herfindahl–Hirschman index
IRTS 2008	– International Recommendations for Tourism Statistics 2008
MAPE	– mean absolute percentage error
SWOT	– strengths, weaknesses, opportunities, threats
T-ABC	– Tourism Attractions – Basics – Context (model)
TLG	– tourism-led growth (hypothesis)
TSA	– Tourism Satellite Account
TSA:RMF 2008	– Tourism Satellite Account: Recommended Methodological Framework 2008
TTDI	– Travel & Tourism Development Index
UN Tourism	– World Tourism Organization (UNWTO)
UNESCO	– United Nations Educational, Scientific and Cultural Organization
USD	– US dollar
UZS	– Uzbek soum
VFR	– visiting friends and relatives
WEF	– World Economic Forum

INTRODUCTION

Over the past seven decades tourism has grown from a privilege of a small part of the population into one of the largest and most resilient sectors of the world economy. According to UN Tourism, the number of international tourist arrivals reached about 1.4 billion in 2024, practically returning to the pre-pandemic level, while export revenues from tourism, including passenger transport, reached a record of about 1.9 trillion US dollars [1]. Before the pandemic, tourism accounted for about 7 per cent of world exports of goods and services and almost 29 per cent of services exports, ranking third after chemicals and fuels [2]. In such conditions the accurate and internationally comparable statistical assessment of tourism – of the number of visitors, their expenditure and the contribution of tourism to output and employment – has become a practical necessity for governments, investors and researchers.

Uzbekistan is a clear example of how fast this need can arise. After a series of reforms launched in 2016–2019 – the creation of a dedicated state body for tourism, the adoption of a new Law on Tourism, the introduction of electronic visas and visa-free entry for citizens of dozens of countries, and the opening of land borders with neighbouring states – the number of trips of foreign citizens for tourism purposes increased from about 2.0 million in 2016 to 6.7 million in 2019 and, after the pandemic shock, to 11.7 million in 2025 [3, 4]. National programmes set ambitious targets for further growth of arrivals and tourism exports. Each of these targets requires reliable statistics: without them it is impossible to know whether a target has been met, which measures have worked and where resources should be directed.

At the same time, tourism is a difficult object for statistics. It is not an industry in the usual sense: it is defined by the status of the consumer rather than by the product, and the same hotel or restaurant serves both

visitors and local residents. Visitors are counted by different institutions using different definitions; a large share of trips to Uzbekistan are made by people visiting friends and relatives who stay in private homes and are therefore invisible to accommodation statistics; and the innovative development of tourism – new products, services, digital channels – is hardly reflected in traditional indicators at all. These problems were at the centre of the author's earlier research on the statistical assessment of the innovative development of tourism in Uzbekistan, published as a monograph in Uzbek in 2021 [5].

The present book is an English-language, revised and updated edition of that research. Its theoretical and methodological core – the concepts of tourism statistics, the system of indicators, the comparison of international standards, the factor (T-ABC) analysis of regional tourism and the analysis of the relationship between tourism and economic growth – is retained, rewritten and extended. All statistical series have been updated to the latest available official data (as a rule, up to 2024–2025), new sections have been added on the Tourism Satellite Account indicators that Uzbekistan began to publish from 2019, on the post-pandemic recovery and on the seasonality of tourist flows, and the forecasts made in 2021 have been evaluated against the actual outcomes.

The **aim of the book** is to develop and substantiate approaches to improving the statistical assessment of tourism development in Uzbekistan in line with international standards. To achieve this aim, the following tasks are addressed: to clarify the basic concepts of tourism statistics and to propose criteria of the usual environment for Uzbekistan; to develop a system of statistical indicators describing the performance and innovative development of tourism; to compare international recommendations and national practices of tourism statistics; to analyse the development of international and domestic tourism using official data for 2010–2025; to assess the factors of regional tourism development and

the relationship between tourism and economic growth; and to propose directions for improving the measurement of tourist numbers, the assessment of the role of tourism in the economy and the forecasting of tourism indicators.

The **information base** of the book consists of official data of the National Statistics Committee of the Republic of Uzbekistan and the Tourism Committee of the Republic of Uzbekistan, publications of UN Tourism, the World Bank and the World Economic Forum, the results of an expert survey of tour operators conducted by the author in 2019, as well as scientific works of foreign and domestic scholars. The book is organised in three chapters. Chapter 1 sets out the theoretical and methodological foundations of tourism statistics. Chapter 2 provides a statistical analysis of international tourism and of tourism development in Uzbekistan. Chapter 3 proposes directions for improving the statistical assessment of tourism, including measurement of visitor numbers, assessment of the economic role of tourism and forecasting.

The book is intended for researchers, lecturers and students of statistics, econometrics and tourism economics, as well as for specialists of statistical agencies and tourism administrations.

CHAPTER 1

THEORETICAL AND METHODOLOGICAL FOUNDATIONS OF TOURISM STATISTICS

1.1. Tourism, the visitor and the usual environment: concepts and measurement criteria

From the second half of the twentieth century, rising household incomes and the development of air and rail transport turned tourism into a mass phenomenon. In the 1950s the world counted about 25 million international tourist arrivals generating about 2.1 billion US dollars of receipts; by 1960 and 1970 these figures had grown to 70 and 130 million arrivals and to 12.2 and 40.3 billion dollars respectively [6]. As soon as it became clear that tourism is not only a social activity but also a significant source of income, many countries began to treat it as a separate branch of the economy, and statistics had to answer a new question – what exactly should be counted as tourism.

The word “tourism” derives from “tour” – a circular journey. One of the first scientific definitions was proposed in 1942 by the Swiss scholars W.Hunziker and K.Krapf, who defined tourism as the sum of relations and phenomena arising from the travel and stay of non-residents, insofar as they do not lead to permanent residence and are not connected with any earning activity [7]. The definition was criticised for ignoring the time factor, yet its contribution was fundamental: it was the first attempt to approach tourism scientifically, and this is acknowledged by later authors such as E.Cohen, D.G.Pearce, R.Sharpley and R.W.Butler [8, 9, 10].

In the 1970s the British scholars A.J.Burkart and S.Medlik distinguished between conceptual and technical definitions of tourism [11]. In the conceptual sense tourism expresses the main purposes of travel – rest, recreation, spiritual and cultural enrichment; in the technical

sense it means that people leave their usual environment for a certain period of time. J.Jafari developed this idea, defining tourism as leaving the usual environment because certain social, economic or physiological needs cannot be satisfied within it [12]. R.Sharpley and D.J.Telfer emphasise that tourism is first of all a social activity which cannot exist without people's ability and wish to travel [13]. In some literature the terms "tourism" and "tourist" are used as synonyms; we cannot agree with this, because the first describes an activity and a set of economic relations, while the second describes a statistical unit. According to A.Yu.Aleksandrova, a tourist is a visitor who travels outside his or her usual environment for less than twelve months for any main purpose other than to be employed in the place visited [14].

Tourism has also been studied by researchers in Uzbekistan (I.S.Tukhliev, B.Sh.Safarov, Sh.R.Fayzieva, N.N.Safarova, A.F.Saidov, T.Tashmuradov and others) [15, 16, 17, 18, 19], but there is no unanimity in their definitions either. A.F.Saidov defines tourism as a specific economic sphere in which various goods and services are used to satisfy people's needs [18], while T.Tashmuradov describes international tourism as the second largest branch of the world economy by income that provides foreign exchange, employment and growth of real incomes of the population [19]. We cannot fully accept the latter definition: international tourism affects the incomes of the population only indirectly, through the incomes of tourism enterprises and through the state budget.

Alongside academic definitions, official definitions were developed by international organisations. The UN Statistical Commission introduced the concept of the "international visitor" in 1953 and the concepts of visitor, tourist and excursionist in 1963. These concepts were refined in the International Recommendations for Tourism Statistics 2008 (IRTS 2008), which are now the global standard [20]. According to IRTS

2008, a visitor is a traveller taking a trip to a main destination outside his or her usual environment, for less than a year, for any main purpose other than to be employed by a resident entity in the place visited. A visitor is classified as a tourist (overnight visitor) if the trip includes an overnight stay and as a same-day visitor (excursionist) otherwise. The Law of the Republic of Uzbekistan "On Tourism" of 2019 defines a tourist as a natural person travelling to a country (place) of temporary stay for a period from twenty-four hours to twelve consecutive months, or staying there for at least one night, without engaging in paid activity from sources in that country (place) [21].

The key element of all these definitions is the **usual environment** – the geographical area within which an individual conducts his or her regular life routines [20]. In practice the boundary of the usual environment is far from obvious. The place of permanent residence and the usual environment do not always coincide: a person registered in region A who has lived and worked in region B for years makes tourist trips when visiting region A three or four times a year. Conversely, a person may have several usual environments: a place visited every week, or more than about fifty times a year – for example, a country house – belongs to the usual environment even if it is far away, while a trip made once every two or three months is a tourist trip. IRTS 2008 therefore recommends determining the usual environment on the basis of four criteria: the frequency of the trip, its duration, the crossing of administrative or national borders and the distance from the place of residence. Countries apply these criteria differently (Table 1.1).

Table 1.1

Criteria of the usual environment in selected countries and proposed criteria for Uzbekistan[1]

Country	Radius of usual environment	Border crossing	Visitor's own assessment	Frequency of trips	Duration of trip
France	100 km		✓		
USA	80–120 km				
United Kingdom					3 hours
Spain			✓		
Germany		✓	✓		
Slovenia	50 km			10 times a month	
Czech Republic		✓	✓	once a week	3 hours
Uzbekistan (proposed)	**50 km**			**once a week**	**4 hours**

As Table 1.1 shows, the radius of the usual environment is 80 kilometres or more in France and the USA and 50 kilometres in Slovenia. For Uzbekistan we determined the radius on the basis of the national administrative-territorial structure: the average distance between district centres and from regional centres to district centres was calculated, which gave about 50 kilometres. In Germany and the Czech Republic any person crossing an administrative border is regarded as a visitor, while in France, Spain, Germany and the Czech Republic the opinion of the person crossing the border is also taken into account. A single approach has not yet been adopted in Uzbekistan. We consider it reasonable to use European experience and, taking into account labour migration and cross-border shuttle trips, to set the frequency criterion at once a week: among foreign citizens crossing the border of Uzbekistan there are many who

[1] Compiled by the author based on national practices.

cross it two or three times a day, and the purpose of such crossings has nothing to do with tourism. For the same reason we propose to set the minimum duration of a trip at four hours, since most foreign citizens who stay in Uzbekistan for less than four hours are not travelling in order to see the country.

Summarising, we propose the following working definitions for Uzbekistan. A **tourist** is a natural person who leaves his or her usual environment for more than twenty-four hours but less than one year, not more often than once a week, and without receiving any financial or economic benefit in the place visited. An **excursionist** (same-day visitor) is a natural person who leaves the usual environment for more than four but less than twenty-four hours, not more often than once a week, under the same condition.

Scientific literature and official documents show that the statistical registration of tourists is problematic all over the world, including Uzbekistan [22]. In some countries every person crossing the border is registered as a tourist, in others not. International practice divides persons crossing the border into international visitors, who are counted in tourism statistics, and other travellers, who are not. According to the international standards, the following are not counted as international visitors: border workers; other international workers; temporary and permanent immigrants and their dependants; transit passengers who do not leave the airport or station; members of the armed forces (unless travelling for tourism purposes); diplomats, consular staff and employees of international organisations and their families; refugees and nomads; and prisoners with their escorts. At the same time, persons who travel for medical treatment, to visit relatives, for education of less than one year, for professional and scientific activities, pilgrimage, festivals, sports and cultural events are counted as visitors.

In our view, tourist registration must clearly distinguish between visitors, travellers, tourists and excursionists. The relationship between these categories is shown in Figure 1.1 and can be written as follows:

$$V = Tr + NV \quad (1.1)$$

$$Tr = T + Ex \quad (1.2)$$

where V is the total number of persons crossing the border (or arriving in a territory), Tr – travellers counted in tourism statistics, NV – travellers not counted as visitors, T – tourists and Ex – excursionists.

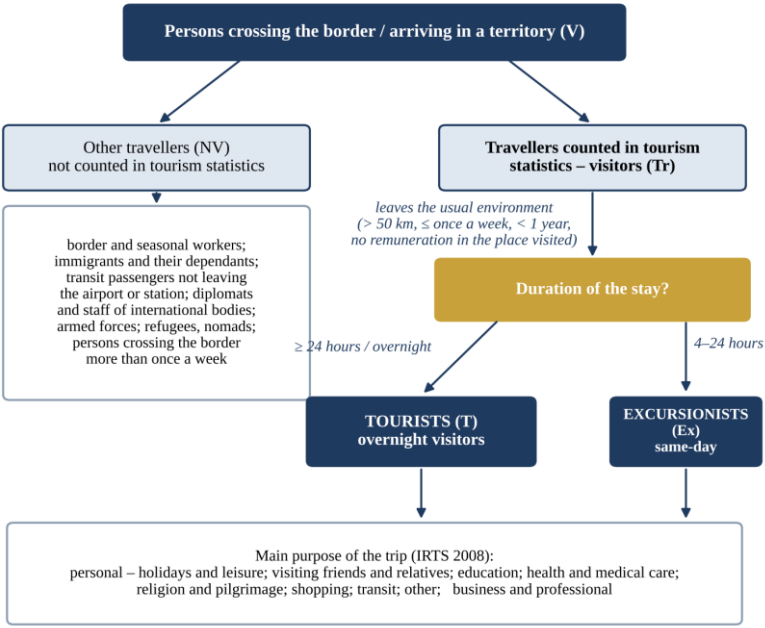


Figure 1.1. Classification of persons crossing the border for the purposes of tourism statistics[2]

[2] Developed by the author.

Figure 1.1 shows that the classification is based on three successive questions: whether the person is a traveller excluded by the international standards, whether he or she stays at least one night, and how often the trip is repeated. The purpose of the trip plays a large role in registration. IRTS 2008 divides the main purposes into personal purposes and business and professional purposes [20]. Personal purposes include holidays, leisure and recreation; visiting friends and relatives; education and training; health and medical care; religion and pilgrimage; shopping; transit (if the stop lasts more than four hours and involves some purchases); and other purposes. Since these recommendations are advisory, countries may expand or adapt the list taking into account their location and economic, social and political conditions. For Uzbekistan, as shown in Chapter 2, the distinction between visiting friends and relatives and all other purposes is of crucial importance.

At the international level, the work on tourism statistics is coordinated by the United Nations through UN Tourism (formerly the World Tourism Organization, established in 1975), whose Statistics Department studies statistical problems and prepares recommendations to countries. International standards and official documents on tourism statistics are discussed at regular conferences and committees with the participation of national statistical offices. Tourism statistics is a separate domain in the UN Classification of Statistical Activities.

Scientific and international practice recognises tourism statistics as an important branch of statistical science. In our opinion, its aim is to develop methods of collecting, processing and analysing statistical data and a system of indicators describing the state and development of tourism; as a practical activity it consists in providing government bodies and other stakeholders with statistical information on processes and phenomena occurring in tourism. Accordingly, tourism statistics solves the following tasks: providing tourism authorities with information for

formulating tourism policy, strategies and development programmes; informing managers of tourism enterprises about the state of the tourism market for investment and business decisions; informing the public, tourists and scientific and educational institutions about the main trends and results of tourism development; and supplying data to international organisations, primarily UN Tourism.

Despite considerable progress, tourism statistics still faces serious problems. First, many countries determine tourism indicators according to their own methodologies rather than common international standards. Second, there are still different approaches to distinguishing visitors from tourists: around 40 per cent of countries do not include excursionists in the number of visitors, about 10 per cent exclude persons arriving on official business, some countries group arrivals by country of residence and others by citizenship [23]. Third, as discussed below, the boundary between tourism and other types of mobility – labour migration, shuttle trade, cross-border commuting – is particularly blurred in countries such as Uzbekistan.

1.2. The system of indicators of tourism development and its information base

A statistical analysis of any sphere is carried out through a system of indicators. Such a system must characterise the development of the sphere fully and comprehensively at regional and national level, reveal its internal features and statistical tendencies and, most importantly, make it possible to assess the impact of the sphere on the quality of life of the population [24]. Some scholars propose to assess tourism by a single integral indicator, others by a system of indicators. B.Sh.Safarov, I.S.Tukhliev, B.Kh.Turaev and others consider the system approach more appropriate [15, 25]. Proposals regarding the composition of the system differ considerably (I.T.Balabanov, M.B.Birzhakov, D.C.Frechtling and

others) [26, 27]; in some studies the number of indicators exceeds twenty, and most authors divide them into groups.

S.S.Ermakov divides tourism indicators into three groups: indicators of the role of tourism in the economy, indicators monitoring the tourism market, and indicators of the state and efficiency of tourism enterprises [28]. Other authors use four groups: indicators of the potential of tourism resources, of the volume of tourism, of the financial position of tourism enterprises and of the efficiency of tourism expenditure [29]. In recent years indicators of sustainability and competitiveness of tourism have been widely recommended [30]. A.M.Hjalager argues that before measuring sustainability and competitiveness one should identify indicators of the innovative development of tourism, since innovation first makes tourism sustainable and then competitive [31]. In our opinion, a unified system of statistical indicators of the innovative development of tourism has not yet been created; this question was specially discussed by the UN Tourism Committee on Statistics in 2019 in the framework of the initiative on Measuring the Sustainability of Tourism [32].

Without rejecting the existing proposals and with the aim of improving them, we propose to divide the indicators of tourism development into two blocks: indicators of the **performance** of tourism and indicators of its **innovative development** (Figure 1.2).

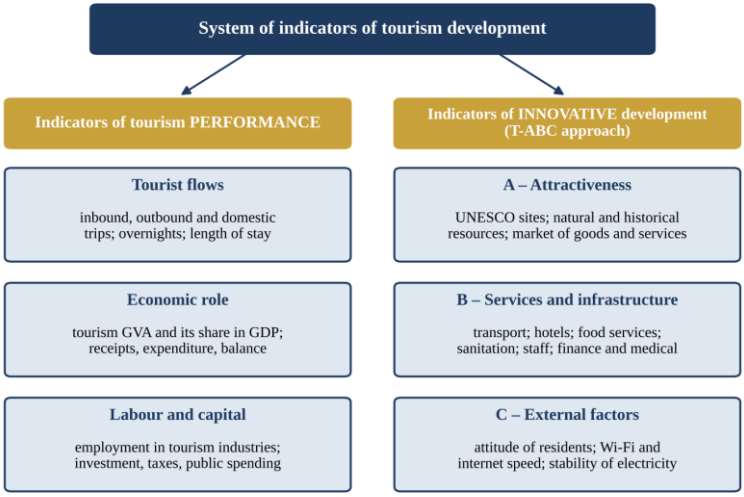


Figure 1.2. System of indicators of tourism performance and innovative development[3]

As Figure 1.2 shows, the performance block characterises the results of tourism and its place in the economy, and all its indicators should be compiled and published according to international standards. The main indicators of the role of tourism in the economy and the methods of their calculation are given in Table 1.2.

[3] Developed by the author.

Table 1.2

Statistical indicators of the role of tourism in the economy[4]

No.	Indicator	Calculation	Notation
1	Share of tourism in GDP, %	GVA_t / GDP × 100	GVA_t – gross value added generated in tourism
2	Share of tourism in total gross value added, %	GVA_t / GVA × 100	GVA – total gross value added
3	Share of tourism in total employment, %	E_t / E × 100	E_t – employed in tourism; E – total employment
4	Share of tourism receipts in exports, %	R_t / Ex × 100	R_t – tourism receipts; Ex – exports
5	Share of tourism expenditure in imports, %	X_t / Im × 100	X_t – tourism expenditure; Im – imports
6	Tourism balance	$S_t = R_t - X_t$	S_t – balance of tourism receipts and expenditure
7	Share of tourism investment in total investment, %	I_t / I × 100	I_t – investment in tourism; I – total investment
8	Share of government spending on tourism, %	G_t / G × 100	G_t – government spending on tourism
9	Share of taxes from tourism in total taxes, %	Tax_t / Tax × 100	Tax_t – taxes paid by tourism

A terminological remark is necessary here. In Uzbek-language literature the terms “tourism receipts” and “tourism expenditure” used in international standards have often been translated as tourism “exports” and “imports”. In our view, this is not accurate: tourism receipts and tourism expenditure are balance-of-payments categories that cover only part of tourism exports and imports. **Tourism receipts** are the value of

[4] Compiled by the author.

all goods and services purchased by inbound visitors in the country visited: package tours bought from local operators, transport, visa fees, currency exchange and customs fees, accommodation and other services. They are usually estimated by surveying inbound visitors when they leave the country, calculating average expenditure per visitor and multiplying it by the number of arrivals; in Uzbekistan average expenditure per visitor is differentiated for neighbouring countries, other CIS countries and far-abroad countries. **Tourism expenditure** is the value of goods and services purchased by outbound residents abroad – payments for tours and expenditure during and after the trip – and is determined in a similar way through surveys of returning residents.

Data on domestic tourism are collected in places of concentration of visitors – resorts, pilgrimage sites, hotels, bus stations, theatres, museums, parks, restaurants and shopping centres – and through the household survey on domestic tourism and physical activity, which records the number of trips, their purpose, destination region, transport used, duration and expenditure by type. According to this survey, residents of Uzbekistan made 137.7 million domestic tourist trips in 2025, 6.3 per cent more than in 2024; 53.7 per cent of them were made to visit friends and relatives, 18.7 per cent for holidays and leisure, 12.9 per cent for shopping, 9.0 per cent for pilgrimage, 2.8 per cent for business and 1.2 per cent for medical treatment [3].

We propose to divide the indicators of the innovative development of tourism into three groups, following the logic of the T-ABC model proposed by L.A.Manrai, A.K.Manrai and S.Friedeborn [33]: indicators of tourism **attractiveness** (A), of tourism **services and infrastructure** (B), and of **external factors** (C). Although such indicators are calculated and used in many countries, they are not yet compiled in Uzbekistan. Taking into account the social and economic conditions, national traditions and the capacity of statistical bodies, we consider it expedient

to calculate the following indicators: availability of UNESCO World Heritage sites, natural and historical tourism resources and the state of the market of goods and services (group A); quality of international and domestic road, air and rail services, availability and quality of hotels, volume and quality of gastronomic services, sanitary facilities, competence of tourism staff, availability of financial and medical services at tourist sites (group B); and the attitude of the local population towards tourists, availability of Wi-Fi and internet speed, and the stability of electricity supply (group C). Their assessment for the regions of Uzbekistan is presented in Chapter 2.

International experience shows that the information base of tourism statistics can be expanded through four main sources: balance of payments data; data of border services (number of arriving and departing visitors, dates of arrival and departure, purposes of trips); data of hotels and similar accommodation establishments; and data of transport organisations. Sample surveys are widely used to collect data for most indicators. In Uzbekistan, the last comprehensive sample survey of inbound and outbound tourism was conducted in 2018 by the State Statistics Committee together with the State Committee for Tourism Development and the Ministry of Foreign Trade; it covered 10,249 respondents, including 5,754 foreign visitors and 4,495 residents of Uzbekistan [34]. The tourism authority also conducts surveys to assess the attractiveness and infrastructure of tourism in the regions.

Besides sample surveys, data are collected through statistical reporting. The annual form “2-turizm” (“On services to visitors and accommodation”), introduced in 2018 and later replaced by the form 1-turizm, is submitted by tour operators, travel agents and collective accommodation establishments; it collects data on employees, the number and value of tour packages sold, the number of visitors, the room stock, purposes of trips and lengths of stay [35]. In our view, the

questionnaires and reporting forms should be reviewed in line with international standards, since it is precisely they that determine the reliability and representativeness of the data collected.

The **Tourism Satellite Account** (TSA) is one of the most important sources for measuring tourism development. The term “satellite” reflects the fact that tourism is not a separate industry in the national accounts: the TSA collects data from different industries in a set of tables and links them with the central framework of the System of National Accounts. According to the Recommended Methodological Framework 2008 (TSA:RMF 2008), the TSA describes the expenditure and consumption of visitors and forms the macroeconomic indicators of tourism consistently with the System of National Accounts [22]. Its full introduction into national statistical practice creates favourable conditions for the accelerated development of tourism and for the full and efficient use of its potential. Since 2019 the National Statistics Committee of Uzbekistan has compiled TSA indicators on the basis of the methodological regulation approved in 2019 [36]; their analysis is given in Chapter 3.

Finally, the digital economy opens new opportunities for expanding the information base of tourism statistics. Integration of the information systems and databases of government bodies, electronic document exchange, electronic accounting systems and digital surveys accelerate data collection and improve its quality. Experience of a number of countries shows that mobile network data, card payment data and online booking data can be used to measure tourist flows with high frequency and territorial detail [37, 38, 39]. In general, the use of digital tools expands the information base of tourism indicators and the possibilities of their calculation and statistical assessment.

1.3. International standards and national practices of tourism statistics

By the end of the twentieth century it became necessary to determine tourism indicators in all countries on the basis of common international standards. The decrees on tourism development adopted in Uzbekistan also stress the need to improve tourism statistics in accordance with international methodology; for example, Presidential Decree PF-5611 of 5 January 2019 requires that tourism statistics be compiled in line with international methodology and published regularly [4].

The first international recommendations on tourism statistics were adopted after a conference held in Ottawa, Canada, in 1991 and published as the Recommendations on Tourism Statistics 1993. They defined the main concepts and indicators of tourism and described how they are formed, and later served as the basis for the TSA. After their publication UN Tourism discussed practical and theoretical issues with the statistical bodies of many countries and held technical assistance events for Central and Eastern Europe and the Middle East (1995), the Russian Federation, Asia and the Pacific (1996), Africa and the Americas (1997). With the development of tourism it became clear by the beginning of the twenty-first century that the 1993 recommendations were outdated, and in 2008 the United Nations, UN Tourism, Eurostat and other organisations adopted the International Recommendations for Tourism Statistics 2008 [20]. Their main differences from the 1993 document are summarised in Table 1.3.

Table 1.3

Main differences between the Recommendations on Tourism Statistics 1993 and IRTS 2008[5]

No.	Concept	Recommendations 1993	IRTS 2008
1	Tourism trip and visit	Not defined	A visit is narrower than a trip; a trip may include several visits
2	Travel party	Not defined	Expenditure may be made for a group of visitors travelling together
3	Vacation homes	Not defined	Vacation homes are excluded from the usual environment
4	Purposes of trips	Six purposes	Two main groups (personal; business and professional) with sub-groups
5	Employment in tourism	Not defined	A separate chapter on employment in tourism industries
6	Tourism and sustainable development	Not covered	A separate chapter on tourism and sustainability

The 1993 recommendations covered only the formation of tourism indicators, the organisation of sample surveys and the design of questionnaires; they did not explain the aggregate and integral indicators of tourism or its links with macroeconomic indicators, in particular those of the System of National Accounts. To adapt the 1993 recommendations, the European Union developed its own methodology of tourism statistics, and on their basis UN Tourism developed the methodology of tourism satellite accounts. In 2000 the United Nations, UN Tourism and Eurostat jointly adopted the first TSA methodological framework, which was revised in 2008 to take into account socio-economic changes in the world (Table 1.4).

[5] Compiled by the author.

Table 1.4

Main differences between the TSA methodological frameworks of 2000 and 2008[6]

No.	Concept	TSA 2000	TSA 2008
1	Tourism expenditure and consumption	Tourism expenditure only	Tourism expenditure and tourism consumption
2	Tourism products	Same list for all countries	Country-specific lists allowed
3	Conference services	–	Conference services identified
4	Employment in tourism	Employees of tourism enterprises	Employees of tourism enterprises and seasonal workers
5	Capital in tourism	Capital of tourism organisations	Total capital related to tourism

The comparison shows that the 2008 framework introduced substantial changes. First, alongside tourism expenditure it requires the measurement of tourism consumption, which is a broader concept: tourism expenditure is only part of tourism consumption, which also includes, for example, services of vacation homes and social transfers in kind. Second, the 2000 framework required the same list of tourism products for all countries, while the 2008 framework allows countries to adapt the list. Third, conference services were introduced. Fourth, employment in tourism covers both permanent and seasonal workers. Finally, the methodology of measuring capital was changed: it now covers the total gross fixed capital formation related to tourism rather than only the capital of tourism organisations. This made it possible to determine the place of tourism in the national economy more accurately.

[6] Compiled by the author.

The TSA is compiled on the basis of sample surveys and official data and consists of ten tables, which are listed in Table 1.5 together with their availability in Uzbekistan.

Table 1.5

Standard tables of the Tourism Satellite Account and their compilation in Uzbekistan[7]

Table	Content	Published in Uzbekistan (2019–2024)
1	Inbound tourism expenditure by products and categories of visitors	Yes
2	Domestic tourism expenditure by products, categories of visitors and types of trips	Yes
3	Outbound tourism expenditure by products and categories of visitors	Yes
4	Internal tourism consumption by products	Yes
5	Production accounts of tourism industries and other industries	Yes
6	Total domestic supply and internal tourism consumption (tourism direct gross value added)	Yes
7	Employment in tourism industries	Yes
8	Tourism gross fixed capital formation	Yes
9	Tourism collective consumption by products and levels of government	Yes
10	Non-monetary indicators	No

The TSA tables are closely interrelated. D.C.Frechtling shows that the expenditure tables (1–3) feed the internal tourism consumption table (4), which, confronted with the production accounts of tourism industries (5), gives the tourism ratios and tourism direct gross value added (6), while employment (7) and investment (8) complete the picture [27]. In our view, however, his scheme does not explain sufficiently the link between table 4 and “other production”, nor the absence of a direct link

[7] Compiled by the author based on TSA:RMF 2008 and data of the National Statistics Committee of the Republic of Uzbekistan.

between table 5 and employment. An important practical point follows from Table 1.5: by 2024 Uzbekistan publishes nine of the ten standard TSA tables at the national level, but none of them is compiled by regions. The TSA therefore does not yet answer the question of what role tourism plays in the economy of individual regions.

Countries have accumulated different experience in organising tourism statistics and compiling the TSA. In Greece only four of the ten TSA tables were initially compiled; in addition to sample surveys, data on tourism receipts and expenditure are taken from the balance of payments, using information of the central bank on currency exchange and card payments by inbound and outbound visitors. This method is now widely used, but in countries with a significant informal foreign exchange market its reliability is lower. In France tourism statistics are the joint responsibility of the national statistical office, the tourism authority and the central bank: sample surveys are conducted at all border points, and the central bank publishes data on card payments of visitors. In Poland, the Central Statistical Office, in cooperation with the Institute of Tourism and the relevant ministry, publishes monthly data on accommodation establishments, conducts surveys on tourist flows and tourism receipts and expenditure six times a year, and carries out a household survey on domestic tourism every three years. In Canada, Australia and Spain regional (provincial) tourism satellite accounts and regional estimates of visitor numbers have been developed in recent years [40, 41, 42].

Thus, international experience in tourism statistics is diverse and numerous standards exist. They are advisory in nature and in many countries are applied without sufficient adaptation to national specifics. In Uzbekistan, considerable progress has been made since 2019 – the TSA is compiled, the household survey on domestic tourism is conducted and data on accommodation establishments are published – but the regional dimension of tourism statistics, the measurement of tourism

receipts and the registration of visitors still require improvement. These issues are analysed in the following chapters.

Conclusions to Chapter 1

1. Tourism is an economic activity defined by the status of the consumer, and its measurement requires a special system of concepts. The usual environment is the key concept separating tourism from other mobility; for Uzbekistan we propose a radius of about 50 kilometres, a frequency threshold of once a week and a minimum trip duration of four hours.

2. The indicators of tourism development should be divided into indicators of tourism performance and indicators of its innovative development; the latter can be grouped into attractiveness, services and infrastructure, and external factors, following the T-ABC approach.

3. International standards (IRTS 2008, TSA:RMF 2008) provide a coherent framework for tourism statistics. Uzbekistan already publishes nine of the ten TSA tables at national level, but regional tourism statistics, the measurement of tourism receipts and the registration of visitors still need to be improved.

CHAPTER 2

STATISTICAL ANALYSIS OF TOURISM DEVELOPMENT

2.1. International tourism: long-term trends, shocks and recovery

The tourism industry, with a history of more than a century, has demonstrated a steady increase in demand for its services. A retrospective look at the data shows three regularities that are confirmed in most countries: tourism develops together with the economy; changes in household incomes directly affect tourism; and the improvement of relations between states stimulates tourism, while their deterioration hinders it. At the same time, international tourism is highly exposed to external shocks, and the analysis of these shocks is important for understanding both the resilience of the sector and the limits of statistical forecasting.

Over the past three decades the growth of international arrivals has been interrupted several times. The first major crisis was the Asian financial crisis of 1997–1998: the crisis that started in Thailand spread to Malaysia, Indonesia and other countries of the region and sharply reduced both tourism receipts and arrivals. Nevertheless, the sector recovered within a year, and in 2000 international arrivals grew by about 8 per cent. The second shock was associated with the terrorist attacks in the USA in September 2001 and the SARS epidemic in 2003, which particularly affected the Americas and Asia: trips from Asia to the Americas fell by up to a third. The third was the global financial crisis of 2008–2009, which reduced the incomes of households and companies; in 2009 international arrivals declined by about 4 per cent, and tourism receipts in some destinations, such as Greece, fell much more [2, 43]. Each time the sector returned to growth faster than many other industries, and in

2012 the number of international arrivals exceeded one billion for the first time [6].

The COVID-19 pandemic was by far the deepest shock in the history of modern tourism. In 2020 international arrivals fell by roughly three quarters compared with 2019 as borders were closed and travel was restricted all over the world. The recovery took four years: according to UN Tourism, in 2024 about 1.4 billion international arrivals were recorded, which practically corresponds to the pre-pandemic level, and export revenues from tourism reached about 1.9 trillion US dollars [1]. The pandemic experience also showed the importance of timely statistics: countries that had monthly data on arrivals, accommodation and card payments were able to assess the losses and design support measures much faster than those relying on annual reports.

The geographical structure of international tourism has also changed. Throughout 1996–2019 Europe received between 40 and 60 per cent of all international arrivals. Its leading position is explained by well-developed infrastructure, short distances between countries, the possibility of visiting several countries on one trip and the role of European cities as venues for international conferences, exhibitions and business events. The Americas rank second; about half of the region's arrivals are accounted for by the USA, Mexico and Canada. The share of Asia and the Pacific increased from about 20 to about 40 per cent over the same period, mainly due to China, Thailand, Malaysia and Singapore [44]. Africa's share remains small, which is explained, among other things, by the high cost of tourism products relative to incomes in the main source markets.

On the basis of data of UN Tourism, the World Bank and Eurostat, the countries with the highest tourism performance in 1996–2019 were identified using four criteria: the number of inbound tourists, gross value

added generated in tourism, its share in GDP and the share of tourism in employment (Table 2.1).

Table 2.1

Countries with the highest tourism performance (average values for 1996–2019)[8]

No.	Country	Inbound tourists, million	Tourism GVA, USD billion	Share in GDP, %	Share in employment, %
1	France	74	180	6.5	12.0
2	USA	55	1 040	4.8	9.2
3	Spain	53	182	11.6	13.4
4	China	42	1 032	8.0	10.3
5	Italy	41	190	10.2	12.1
6	United Kingdom	27	202	8.0	10.2
7	Germany	24	210	5.6	12.0
8	Mexico	23	170	7.2	9.8
9	Türkiye	22	85	9.1	15.2
10	Russian Federation	21	90	8.6	11.9
	Uzbekistan	**2**	**5**	**2.0**	**1.0**

Table 2.1 shows that France received the largest number of tourists (on average 74 million a year), followed by the USA and Spain (55 and 53 million). In terms of tourism gross value added the USA and China are the leaders, each exceeding one trillion US dollars, which reflects the large scale of domestic tourism in these countries. Spain stands out by the share of tourism in GDP (11.6 per cent), and Türkiye by its share in employment (15.2 per cent). Against this background, the indicators of Uzbekistan for 1996–2019 were very modest. It should be noted, however, that these averages refer to the period before the Tourism Satellite Account was introduced in Uzbekistan; the TSA data analysed

[8] Compiled by the author based on data of the United Nations, UN Tourism, the World Bank and Eurostat.

in Chapter 3 show a much larger role of tourism industries in the economy.

A useful indicator for comparing the economic results of international tourism across countries is the average tourism receipt per inbound arrival. It reflects the length of stay, the structure of visitors and the price level of tourism services. The data for 2023 for Uzbekistan and selected countries are presented in Table 2.2.

Table 2.2

Tourism receipts per international arrival in selected countries, 2023[9]

Country	Receipts per arrival, USD
Armenia	1 299
World average	1 177
Azerbaijan	1 063
Türkiye	897
Georgia	883
Uzbekistan	**327**
Kyrgyzstan	120

As Table 2.2 shows, in 2023 one international arrival brought Uzbekistan on average 327 US dollars of tourism receipts (2,167 million dollars for 6,626 thousand arrivals), which is less than a third of the world average and three to four times less than in Georgia, Türkiye, Azerbaijan and Armenia [45]. The main reasons are the dominance of short trips by residents of neighbouring countries visiting friends and relatives, who spend relatively little on commercial tourism services, and the low price level: according to the International Comparison Program, the price level ratio of Uzbekistan to the USA was only about 0.22 in 2023. Thus, the increase in arrivals has not yet been accompanied by a proportional

[9] Compiled by the author based on World Bank (World Development Indicators) and UN Tourism data.

increase in receipts, and statistics must be able to show not only how many visitors come, but also who they are and how much they spend.

International competitiveness indices provide a complementary picture. In the Travel & Tourism Development Index 2024 of the World Economic Forum Uzbekistan ranked 78th out of 119 economies with a score of 3.68 [30]. The country's strongest pillars were safety and security (6.17) and price competitiveness (5.49), while the weakest was tourist services and infrastructure (1.45). These results are consistent with the expert assessments presented below: Uzbekistan has unique attractions and a favourable price level, but the quality and availability of tourism services remain the main constraint.

The retrospective analysis allows us to conclude that, despite the high resilience and adaptability of the tourism sector, international tourism indicators do not follow a stable growth path; they are subject to sharp shocks, and the variation in tourism development between continents and countries is very large. This means that statistical systems must provide not only annual totals but also high-frequency, comparable and structural data.

2.2. Tourism development in Uzbekistan: flows, structure and regional factors

Uzbekistan's location at the crossroads of the Great Silk Road and its wealth of historical monuments have always attracted travellers. Several periodisations of tourism development in the country have been proposed (S.S.Ruziev, I.S.Tukhliev, R.Khayitboev, B.Sh.Safarov, G.R.Tursunova and others) [15]. Without rejecting them, we distinguish four stages: the pre-Soviet period (before 1920); the Soviet period (1924–1991); the period of formation of independent Uzbekistan (1991–2016); and the period of New Uzbekistan (from 2016).

Travel for specific purposes has existed in Central Asia since ancient times, and its first forms date back to the opening of the Great Silk Road

in the second century BC. The Silk Road was not only a trade route but also a route of cultural exchange and scientific progress. In the Soviet period many hotels, tourist bases and boarding houses were built and workers were sent to sanatoria, but tourism was centrally planned and international tourism was strictly limited. After independence a market for tourism services began to form: in 1992 the National Company "Uzbektourism" was established, in 1993 it joined the World Tourism Organization, and in 1999 the first Law "On Tourism" was adopted.

From 2016 the tourism industry was fundamentally reformed and tourism policy became a priority of state policy [46, 4]. The main measures included the introduction of electronic visas and visa-free entry for citizens of dozens of countries, the reopening of border crossing points with neighbouring countries, the liberalisation of the foreign exchange market, the development of new tourism products and the adoption of the new Law "On Tourism" in 2019. In our view, there is every reason to call this period the innovative stage of tourism development. Its results are clearly visible in the statistics (Figure 2.1).

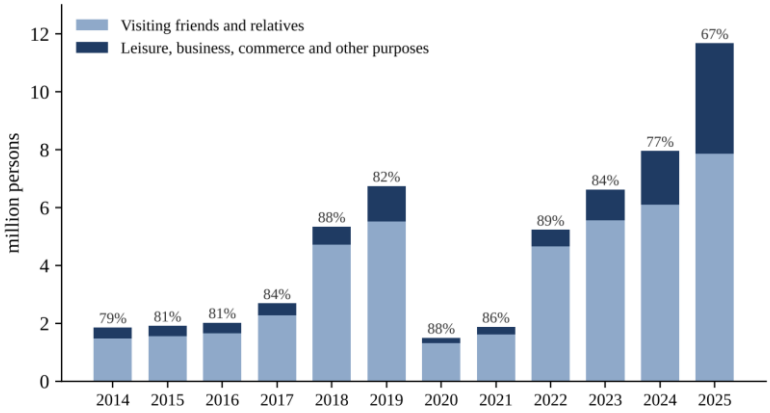


Figure 2.1. Inbound trips of foreign citizens by purpose, 2014–2025, million (share of visiting friends and relatives shown above the bars)[10]

Figure 2.1 shows that the number of inbound trips grew from 1.9–2.0 million in 2014–2016 to 6.7 million in 2019, fell to 1.5 million in 2020 and, after a rapid recovery, reached 11.7 million in 2025; in 2025 alone the growth amounted to 46.8 per cent [3]. The specific feature of inbound tourism to Uzbekistan is the very high share of trips for visiting friends and relatives (VFR): in 2014–2023 it ranged between 79 and 89 per cent. In 2024–2025 the structure changed noticeably: the VFR share fell from 83.9 per cent in 2023 to 67.3 per cent in 2025 because trips for other purposes grew much faster. The number of non-VFR trips increased from 1,227.8 thousand in 2019 to 3,816.3 thousand in 2025, or 3.1 times; leisure trips grew 1.8 times (to 1,922.1 thousand), business trips 24.9 times (to 1,321.5 thousand) and trips for commercial purposes 8.3 times (to 446.8 thousand). The structure of trips by purpose in the earlier and the latest periods is compared in Table 2.3.

[10] Compiled by the author based on data of the National Statistics Committee of the Republic of Uzbekistan.

Table 2.3

Structure of inbound and outbound trips by purpose, %[11]

Purpose of the trip	Inbound, average 2010–2019	Outbound, average 2010–2019	Inbound, 2025
Visiting friends and relatives	82.71	83.02	67.3
Leisure and recreation	8.88	8.45	16.5
Business and professional	4.51	5.95	11.3
Commerce (shopping)	1.06	0.78	3.8
Medical treatment	2.50	0.92	0.7
Education	0.35	0.96	0.4
Total	**100.0**	**100.0**	**100.0**

In 2010–2019, more than 80 per cent of both inbound and outbound trips were made to visit friends and relatives; leisure accounted for about 9 per cent, followed by business, medical and commercial trips. The share of education was the smallest, and the number of residents travelling abroad to study was almost three times higher than the number of foreigners coming to Uzbekistan to study, which is a cause for concern. By 2025 the share of leisure trips had almost doubled and the share of business trips had increased 2.5 times, reflecting the growth of investment activity and the presence of foreign companies in the country. E.Backer has shown that VFR travel is substantially underestimated in many countries because such visitors rarely use hotels and tour operators and therefore hardly appear in accommodation and travel agency statistics [47]. In Uzbekistan this problem is particularly acute, and it is discussed in Chapter 3.

Inbound tourism is also highly concentrated geographically. In 2010–2019, 55.3 per cent of inbound tourists came from Kazakhstan, 13.8 per cent from Tajikistan and 11.6 per cent from Kyrgyzstan, so that

[11] Compiled by the author based on data of the National Statistics Committee of the Republic of Uzbekistan.

Central Asian countries accounted for more than 84 per cent of the total; Russia, Türkiye and South Korea followed with much smaller shares. Outbound tourism had almost the same structure: 60.5 per cent of residents' trips were to Kazakhstan. To measure the degree of concentration of inbound flows by country of origin, the Herfindahl–Hirschman index (HHI) was calculated as the sum of squared percentage shares of all source countries (Figure 2.2).

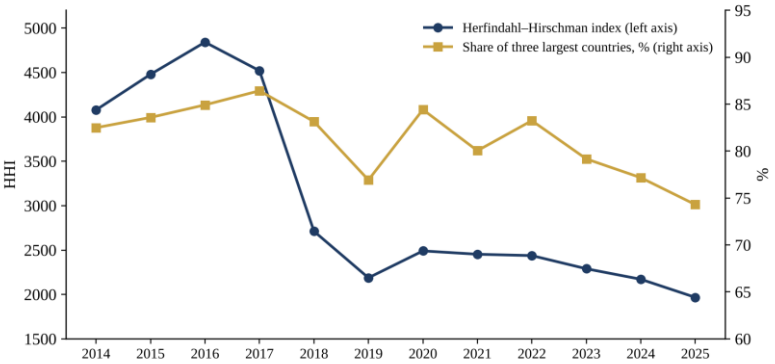


Figure 2.2. Concentration of inbound trips by country of origin, 2014–2025[12]

As Figure 2.2 shows, in 2014–2017 the inbound flow was extremely concentrated (HHI between 4,078 and 4,841), since most of it came from Kazakhstan. After the full opening of the borders with Tajikistan and Kyrgyzstan in 2018 the index fell to 2,712, and by 2025 to 1,967. Nevertheless, even in 2025 three neighbouring countries – Kyrgyzstan (3,315.1 thousand trips), Tajikistan (2,695.7 thousand) and Kazakhstan (2,667.4 thousand) – accounted for 74.3 per cent of inbound trips. Flows from distant countries are growing fast: in 2019–2025 arrivals from China increased from 54.3 to 278.9 thousand (5.1 times), from Türkiye from

[12] Author's calculations based on data of the National Statistics Committee of the Republic of Uzbekistan.

63.5 to 174.9 thousand (2.8 times) and from India from 27.9 to 80.9 thousand (2.9 times).

The ratio of inbound and outbound flows is important for assessing the impact of tourism on the balance of payments (Figure 2.3).

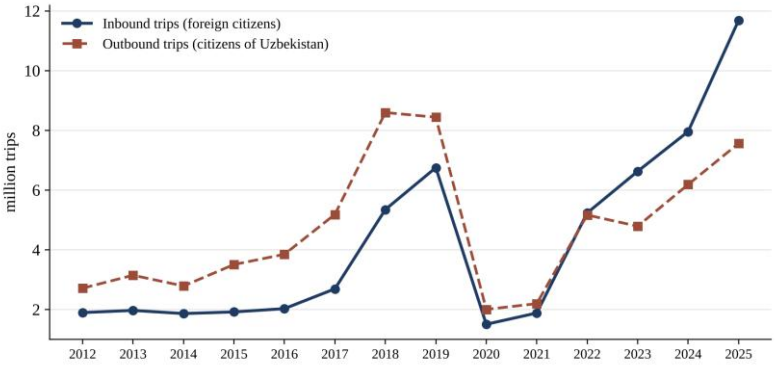


Figure 2.3. Inbound and outbound tourist trips, 2012–2025, million[13]

In 2012–2018 the number of outbound trips of Uzbek citizens considerably exceeded the number of inbound trips: in 2018, for example, there were 8.6 million outbound and 5.3 million inbound trips. In our view, it is necessary to distinguish clearly between trips abroad for tourism purposes and departures related to labour migration and daily cross-border commuting, which are partly included in these figures. From 2023 the situation reversed and inbound trips exceeded outbound ones; in 2025 there were 11.7 million inbound and 7.6 million outbound trips. Kyrgyzstan, Kazakhstan and Tajikistan remain the main outbound destinations, while trips to Saudi Arabia increased from 47.5 thousand in 2019 to 366.3 thousand in 2025, reflecting the rapid growth of pilgrimage tourism.

[13] Compiled by the author based on data of the National Statistics Committee of the Republic of Uzbekistan.

Annual data do not show how flows are distributed within the year, although seasonality determines the demand for accommodation and transport. From 2026 the Tourism Committee publishes monthly data on arrivals of foreign citizens by groups of countries, which make it possible to compute a seasonality index – the ratio of arrivals in a month to the monthly average (Figure 2.4).

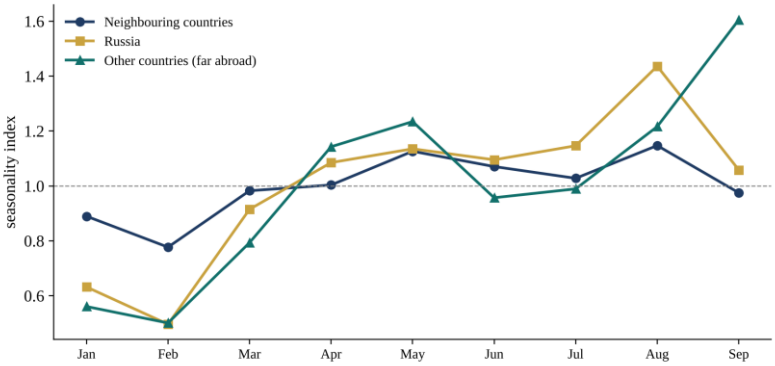


Figure 2.4. Seasonality index of arrivals of foreign citizens by groups of countries, January–September 2026[14]

Figure 2.4 shows that groups of countries differ sharply in seasonality. Arrivals from neighbouring countries are distributed relatively evenly over the year: their coefficient of variation is 10.9 per cent, and for Tajikistan only 7.2 per cent, which indicates that a large part of this flow is related to cross-border trade, family ties and transit rather than to leisure travel. For Russia the coefficient of variation is 26.8 per cent with a peak in August, and for far-abroad countries 32.9 per cent: in February their arrivals amount to half of the monthly average and in September to 1.6 times the average. This is the classical seasonality of cultural and heritage tourism concentrated in spring and autumn. Methodologically, this means that the aggregate indicator of inbound

[14] Author's calculations based on data of the Tourism Committee of the Republic of Uzbekistan.

tourism combines flows with very different behaviour, and the stable flow from neighbouring countries masks the seasonality of the flow that actually generates demand for hotels and tour operators.

Domestic tourism has become the largest segment by volume. According to the household survey, residents made 137.7 million domestic tourist trips in 2025; more than half of them were VFR trips, but the shares of leisure (18.7 per cent) and pilgrimage (9.0 per cent) are much higher than in inbound tourism [3]. According to the TSA, domestic tourism expenditure amounted to 39.5 trillion soums in 2024 and exceeded inbound tourism consumption (34.0 trillion soums).

SWOT analysis based on expert (Delphi) assessment. To assess the factors of tourism development comprehensively, SWOT, Delphi, ABC and other methods are widely used in international practice. The SWOT method was first applied in the 1960s by Harvard professor K.Andrews and is now widely used in economics and business [48]. Its strengths and weaknesses describe the positive and negative internal environment of the object, while opportunities and threats describe the positive and negative external environment. Departing from the tradition of merely listing the factors, we combined SWOT with the Delphi method and evaluated the factors statistically. In our opinion, tour operators are the most competent experts in tourism, since they deal directly with advertising, transport, accommodation, excursions and tour packages. Of the more than 1,200 tour operators operating in Uzbekistan in 2019, 30 experts were selected according to the following conditions: more than ten years of practical experience; cooperation with more than 1,000 tourists a year; and involvement in domestic tourism. Eleven of them were in Tashkent, four in Samarkand, three in Bukhara, two in Khorezm and one in each of the other regions. Each factor was evaluated on a five-point scale, and the experts could also propose their own factors. The results are given in Table 2.4.

Table 2.4

SWOT analysis of tourism development in Uzbekistan (average expert scores, 5-point scale)[15]

Factor	Score	Group average
Strengths		**3.7**
Availability of historical sites	5.0	
Location on the Great Silk Road	4.4	
Peace and stability in the country	3.5	
Hospitality of the population	3.0	
Level of services in tourism	2.5	
Weaknesses		**3.8**
State of logistics	5.0	
Weak links between transport, accommodation and tourist sites	4.0	
Seasonality of tourism	3.8	
Weak material and technical base	3.1	
Shortage of recreation places	3.1	
Opportunities		**4.0**
Attracting international companies, hotel chains and airlines	5.0	
Advertising and simplification of the visa regime	4.0	
Training of specialists	4.0	
Price competitiveness	3.5	
Diversification of types of tourism	3.3	
Threats		**2.8**
Stagnation of infrastructure development	5.0	
Tax reform	4.0	
Global competition	3.0	
Insufficient cooperation with neighbouring countries	2.0	
Negative incidents	1.0	

[15] Results of the expert survey of 30 tour operators conducted by the author in 2019.

According to the experts, the availability of historical sites is the greatest strength of tourism in Uzbekistan, and the state of logistics is its greatest weakness. Opportunities received high scores, while the threats were assessed as moderate. The summary of the analysis shows that among internal factors the negative ones prevail slightly (weaknesses 3.8 against strengths 3.7), whereas among external factors the positive ones clearly prevail (opportunities 4.0 against threats 2.8). It should be emphasised that the survey reflects the situation of 2019. Many of the measures recommended at that time – the "open sky" regime for foreign airlines, the return of part of the tourist fee to accommodation establishments, the expansion of visa-free entry – have since been implemented, and the subsequent growth of air traffic (from 1.9 million passengers in 2010 to 11.1 million in 2025) indicates that logistics constraints have been partly eased. In our view, the next step should be to increase the investment attractiveness of tourism companies and to repeat such expert surveys regularly so that changes in the assessments can be monitored.

Factor analysis of regional tourism development (T-ABC model). The SWOT analysis can also be performed for individual regions, but since tourism in the regions of Uzbekistan is developed very unevenly, we studied the factors affecting regional tourism performance. In February 2019 UN Tourism held an international conference on sustainable development of tourism and its determinants, at which several methods of assessing the innovative development of tourism were presented. Of these, we chose the T-ABC model proposed by L.A.Manrai, A.K.Manrai and S.Friedeborn [33], because it fully corresponds to the requirements of international indices of tourism development and improves on earlier approaches. In this model, tourism performance (T) is explained by tourism attractiveness (A), tourism services and infrastructure (B) and external (context) factors (C).

The same 30 tour operators evaluated the factors of the A, B and C groups (listed in Section 1.2) for each of the 14 regions on a seven-point scale; the average scores are shown in Figure 2.5 and Table A.1 of the Appendix.

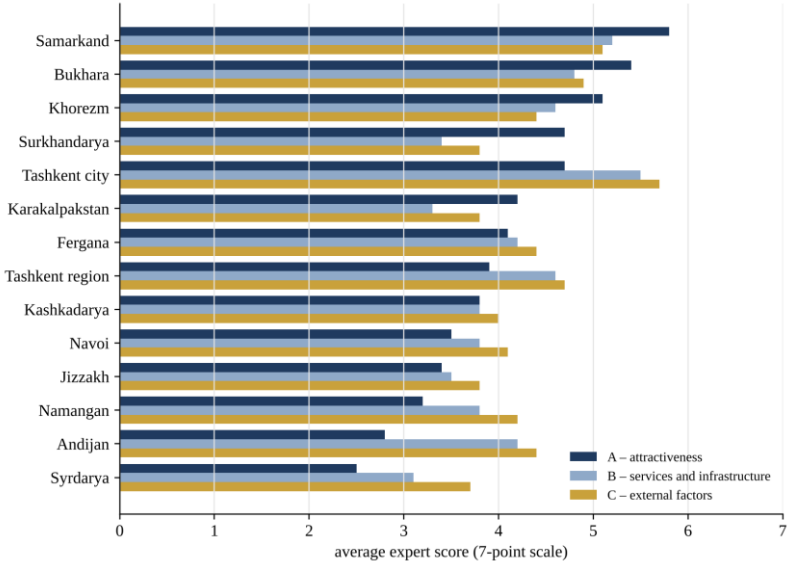


Figure 2.5. Expert assessment of tourism attractiveness (A), services (B) and external factors (C) by regions of Uzbekistan[16]

According to the experts, the average attractiveness score for Uzbekistan is 4.08. Samarkand region is the most attractive (5.8), followed by Bukhara (5.4) and Khorezm (5.1); UNESCO World Heritage sites are located only in Bukhara, Kashkadarya, Samarkand and Khorezm regions. Jizzakh, Surkhandarya and Tashkent regions have the strongest natural resources (all above 5 points), while the lowest attractiveness scores belong to Andijan (2.8) and Syrdarya (2.5). In terms of tourism services the average score is 4.1, and Tashkent city leads (5.5) because,

[16] Results of the expert survey of 30 tour operators conducted by the author in 2019.

as the capital, it has the best roads, hotels and food services. Some hotels in the regions, according to the tour operators, do not meet even basic sanitary requirements, let alone international standards; the lowest service scores belong to Karakalpakstan, Syrdarya, Surkhandarya and Jizzakh. External factors (average 4.37) are also most favourable in Tashkent city (5.7) and Samarkand (5.1). The attitude of residents towards tourists received high scores (about 5 points) in all regions, whereas Wi-Fi availability and the stability of electricity supply are still weak outside the capital.

Since regional values of tourism GVA, receipts or arrivals were not compiled in Uzbekistan, the average number of guests staying overnight in hotels of the region in 2010–2019 was used as the performance indicator (Y). The correlation coefficients between Y and the factor scores were 0.72 for attractiveness, 0.89 for services and 0.81 for external factors, i.e. the relationship is strong for all three groups. To assess their joint effect, the following regression equation was estimated:

$$Y_i = \beta_0 + \beta_1 A_i + \beta_2 B_i + \beta_3 C_i + \varepsilon_i \qquad (2.1)$$

where Y_i is the performance indicator of region i; A_i, B_i and C_i are the average expert scores; β_0, …, β_3 are the parameters and ε_i is the random error. The estimation results are given in Table 2.5.

Table 2.5

Results of the regression of regional tourism performance on T-ABC factors[17]

Indicator	Value
Intercept (β_0)	−1.01
Attractiveness, A (β_1)	0.33
Services and infrastructure, B (β_2)	0.19
External factors, C (β_3)	0.62
Coefficient of determination, R^2	0.86
Adjusted R^2	0.82
F-statistic (3; 10 degrees of freedom)	21.24
Critical value $F_{0.05}(3; 10)$	3.71
Number of observations (regions)	14

The model explains 86 per cent of the variation in the performance indicator, and the F-statistic (21.24) is much larger than the critical value at the 5 per cent significance level, so the hypothesis that the factors have no joint effect is rejected. The estimated equation is:

$$\hat{Y} = -1.01 + 0.33A + 0.19B + 0.62C \qquad (2.2)$$

The regression shows that, among the three groups, external factors (C) have the largest coefficient, followed by attractiveness (A), while the coefficient of services (B) is the smallest. Since B is the factor most strongly correlated with Y, the small coefficient reflects the close interrelationship of the factors (the regions with the best services also have the best external conditions) and the small number of observations. The results should therefore be interpreted as an indication of the relative importance of the factor groups rather than as precise elasticities. Practically, they suggest that tourism in Uzbekistan can develop faster if, first, the services and infrastructure of one or two regions (for example, Samarkand, Bukhara or Khorezm) are raised to international standards and this experience is then extended to other regions, and second, if the

[17] Author's calculations.

information environment – internet connectivity, payment services, the image of the country abroad – is improved. Many Europeans, for example, still consider Uzbekistan unsafe because it borders Afghanistan, although international indices rate the country's safety highly.

2.3. Tourism and economic growth: testing the tourism-led growth hypothesis

One of the most debated questions in tourism economics is whether tourism drives economic growth. In 2001 J.Shan and K.Wilson summarised research on the impact of tourism on growth and formulated the tourism-led growth (TLG) hypothesis [49]. This hypothesis was first tested for Spain by J.Balaguer and M.Cantavella-Jordá, who used time series for 1975–1997 and found a stable long-run relationship between real GDP growth, international tourism receipts and the real exchange rate [50]. N.Dritsakis confirmed the hypothesis for Greece using data for 1960–2000 [51], and R.Durbarry for Mauritius using data for 1952–1999 on tourism receipts, capital, human capital and exports [52]. In 2005 the hypothesis was tested for Türkiye by D.M.Demiroz and S.Ongan [53] and by L.Gunduz and A.Hatemi-J [54], and for South Korea by C.-O.Oh [55]; interestingly, these studies produced contradictory results, and for Korea no long-run relationship was found. In Uzbekistan the hypothesis was first tested by N.N.Safarova on data for 1992–2015 using cointegration and an error correction model, and it was confirmed [17].

The TLG hypothesis is usually tested by combining the cointegration method of R.F.Engle and C.W.J.Granger with an error correction model (ECM) [56]. The reason is that tourism demand variables and income variables typically have a time trend and are non-stationary; regressions between such variables may produce a high R^2 and significant coefficients even when there is no real relationship (spurious regression). If two non-stationary variables belong to one economic system, there should be an equilibrium (cointegrating) relationship that prevents them

from drifting apart, and the deviations from this equilibrium should be stationary. For Uzbekistan, the long-run relationship between economic growth and tourism was specified as:

$$\ln GDP_t = \alpha_0 + \alpha_1 \ln TA_t + u_t \quad (2.3)$$

where GDP_t is the real gross domestic product, TA_t is the number of inbound tourist arrivals and u_t is the error term (an analogous equation was estimated for tourism receipts TR_t). The analysis consists of three steps. First, the order of integration of each variable is determined using the augmented Dickey–Fuller (ADF) test [57]:

$$\Delta y_t = \mu + \gamma y_{t-1} + \sum_{j=1}^{p} \delta_j \Delta y_{t-j} + \varepsilon_t \quad (2.4)$$

where y_t is the variable tested, Δ is the first-difference operator and p is the number of lags; the null hypothesis $\gamma = 0$ means that the series has a unit root. Second, if the variables are non-stationary and integrated of the same order, the existence of a cointegrating relationship is tested using the Johansen procedure [58]. Third, the short-run dynamics and the speed of adjustment to equilibrium are estimated with an ECM. The empirical analysis used annual data of the State Statistics Committee for 1998–2019 on GDP, inbound arrivals and tourism receipts in natural logarithms. Over this period GDP and arrivals had an upward trend, while tourism receipts fluctuated strongly. The results of the unit root tests are given in Table 2.6.

Table 2.6

Results of the ADF unit root tests, 1998–2019[18]

Variable	ADF statistic	p-value	Conclusion
Levels			
ln GDP	2.36	0.89	unit root
ln TA	−1.12	0.70	unit root
ln TR	−2.28	0.30	unit root
First differences			
Δ ln GDP	−5.45	0.02	stationary
Δ ln TA	−2.34	0.01	stationary
Δ ln TR	−4.67	0.03	stationary

Table 2.6 shows that the unit root hypothesis cannot be rejected for the levels of all three variables, but it is rejected for their first differences. Hence all variables are integrated of order one, I(1), and the cointegration analysis can be applied. The results of the Johansen trace test are presented in Table 2.7.

Table 2.7

Results of the Johansen cointegration (trace) test[19]

Hypothesised number of cointegrating equations	Trace statistic	5% critical value	p-value
ln GDP and ln TA			
None	27.93	16.42	0.02
At most 1	7.45	4.38	0.03
ln GDP, ln TA and ln TR			
None	42.54	31.25	0.01
At most 1	13.43	14.58	0.05
At most 2	0.84	4.62	0.24

According to the trace test, the hypothesis of no cointegration is rejected at the 5 per cent level in both systems, i.e. there is a long-run

[18] Author's calculations based on data of the State Statistics Committee of the Republic of Uzbekistan.
[19] Author's calculations.

relationship between GDP and inbound arrivals and between GDP and tourism receipts. For the bivariate system the hypothesis of at most one cointegrating equation is also formally rejected; with only 22 observations this should be read as a sign of the limited power of the test rather than as evidence that both series are stationary. The normalised cointegration coefficients are 0.84 (standard error 0.17) for arrivals and 0.45 (standard error 0.04) for receipts; their signs correspond to the hypothesis tested. To study the short-run relationship, an ECM was estimated; the optimal lag length (three) was selected using the Akaike and Schwarz information criteria. The resulting equation is:

$$\Delta \ln GDP_t = 0.39 - 0.14 EC_{t-1} + 0.82 \Delta \ln GDP_{t-1} + 0.31 \Delta \ln GDP_{t-3} + 0.18 \Delta \ln TA_{t-3} \quad (2.5)$$

where $EC_{t-1} = \ln GDP_{t-1} + 0.84 \ln TA_{t-1} + 3.72$ is the lagged error correction term. The error correction coefficient is negative (−0.14), which means that deviations of GDP from its long-run relationship with tourism are corrected by about 14 per cent a year. Its t-statistic (−1.54) is, however, low, so the speed of adjustment is estimated imprecisely. Among the short-run terms, GDP growth depends on its own lagged values and on the change in arrivals with a lag of three years.

Several caveats are necessary. The sample is short (22 annual observations), the data cover the period before the reforms of 2017–2019 had their full effect and before the pandemic, and the number of arrivals includes a large share of VFR trips of residents of neighbouring countries, whose economic effect differs from that of leisure tourists. The coefficients should therefore be interpreted as long-run associations rather than causal elasticities, and the model should be re-estimated as longer series, including the TSA data available from 2019, accumulate. With these reservations, the results support the existence of a two-way relationship between tourism and economic growth in Uzbekistan: economic growth increases the resources available for tourism

infrastructure and for promoting the country abroad, while the growth of inbound tourism contributes to output growth. The TSA data analysed in Chapter 3 make it possible to measure the second channel directly.

Conclusions to Chapter 2

1. International tourism has repeatedly shown high resilience to crises, including the pandemic, after which arrivals returned to about 1.4 billion in 2024. At the same time, its development is uneven across regions and countries, and comparable high-frequency statistics are needed to monitor it.

2. Inbound tourism to Uzbekistan grew from about 2 million trips in 2016 to 11.7 million in 2025. Its structure is changing: the share of VFR trips fell from 83.9 per cent in 2023 to 67.3 per cent in 2025, and the concentration on neighbouring countries decreased (HHI from about 4,800 to 1,967). However, receipts per arrival (327 US dollars in 2023) remain far below the world average.

3. Expert (SWOT–Delphi and T-ABC) assessment shows that historical sites are the main strength of Uzbek tourism, while logistics and services are the main constraints; regional tourism performance is best explained by external factors and attractiveness, and services in most regions lag behind Tashkent city, Samarkand and Bukhara.

4. Cointegration analysis for 1998–2019 indicates a long-run relationship between GDP and both inbound arrivals and tourism receipts, consistent with the tourism-led growth hypothesis, although the short sample calls for re-estimation on longer and TSA-based series.

CHAPTER 3

DIRECTIONS FOR IMPROVING THE STATISTICAL ASSESSMENT OF TOURISM

3.1. Improving the measurement of visitor numbers, receipts and expenditure

To improve the calculation of any indicator, its information sources must be improved first. In Uzbekistan, statistical data on tourism are currently formed from three main sources [3]. The first is administrative data on international flows: data on foreign citizens entering Uzbekistan are provided monthly by the Border Troops of the State Security Service, and data on citizens of Uzbekistan travelling abroad by the Department of Migration and Personalisation of the Ministry of Internal Affairs; they include the distribution by purpose and country but are compiled only for the country as a whole. The second is the statistical report 1-turizm submitted by legal entities – tour operators, travel agents and accommodation establishments – which reflects their activities by region but does not cover individuals and individual entrepreneurs. The third is the household sample survey on domestic tourism.

Each of these sources has its own unit of account. In border statistics the unit is the trip: a person who enters the country several times a year is registered at each entry. In accommodation statistics the units are the guest and the overnight stay, and in the household survey the trip of a household member. Therefore the indicators of different sources cannot be compared directly, and their reconciliation requires a special methodology. Our analysis of world experience and of the work done in Uzbekistan shows that the statistical registration of tourists still involves considerable confusion and contradictory approaches. Three examples illustrate the problem.

The first is **double counting** in regional statistics. Suppose a group of 100 Japanese tourists enters Uzbekistan through Tashkent and visits Samarkand, Bukhara and Khiva. If each regional tourism administration counts the tourists who came to its territory and the regional figures are then added up, the country will report 400 tourists instead of 100. The second concerns **domestic tourism**. Suppose 700 residents of Andijan travel to Bukhara on a pilgrimage and visit the seven shrines of the city. They are domestic tourists for the national statistics only if they meet the criteria of the usual environment and the duration of the trip; yet if each shrine records its visitors and these records are summed, the regional administration may report 4,900 “tourists”. The third concerns **inconsistent totals**: for 2018, estimates of the number of domestic tourists published by different bodies ranged from about 15.5 million (Tourism Committee) to more than 100 million (statistical estimates), a difference that cannot be explained by sampling error and is due to different definitions and units of account.

A quantitative illustration of the gap between national and regional statistics is given by the comparison of the number of inbound tourists with the number of foreign citizens registered in accommodation establishments (Table 3.1).

Table 3.1

Coverage of inbound tourists by accommodation statistics[20]

Year	Inbound trips, thousand	Share of VFR, %	Non-VFR trips, thousand	Foreign guests in accommodation, thousand	Coverage, %	K
2019	6 748.5	81.8	1 227.8	–	–	–
2020	1 504.1	87.9	182.7	142.7	9.5	9.54
2021	1 881.3	85.7	268.2	300.4	16.0	5.26
2022	5 232.8	89.0	575.2	1 048.8	20.0	3.99
2023	6 626.3	83.9	1 065.2	1 174.7	17.7	4.64
2024	7 957.2	76.7	1 851.9	–	–	–
2025	11 679.6	67.3	3 816.3	–	–	–

Note: "–" – data not published; K – ratio of inbound tourists not covered by accommodation statistics to those covered.

In 2020–2023 foreign citizens registered in accommodation establishments accounted for only 9.5–20.0 per cent of inbound tourists. In other words, more than 80 per cent of inbound visitors are not reflected in regional statistics: for every foreign guest registered in a hotel there are four to nine more who are not registered anywhere in the regions. At the same time, the number of non-VFR visitors is close to the number of foreign hotel guests (in 2023 their ratio was 1.10), which suggests that visitors coming for leisure, business and commerce mainly use accommodation establishments, while VFR visitors stay in private homes. This observation offers a practical key for distributing national totals across regions: accommodation data can be used to allocate non-VFR visitors, while VFR visitors should be allocated using other information, for example the regional distribution of family ties with the source countries. UN Tourism has noted the same problem in many countries – regional estimates based on accommodation statistics ignore

[20] Author's calculations based on data of the National Statistics Committee of the Republic of Uzbekistan.

visitors who do not use commercial accommodation – and recommends combining several sources [59].

To improve the registration of tourists, we consider it necessary, first, to apply the criteria of the usual environment proposed in Chapter 1 in all sources; second, to define clearly the unit of account (trip, visitor, overnight) in each published indicator; third, to prohibit the summation of regional visitor counts into national totals; and fourth, to organise the work of the statistical body, the tourism authority, the border service and the central bank on the basis of a common methodology, using the experience of countries that have achieved good results, for example Canada, where tourism statistics, the provincial TSA and visitor surveys are coordinated within one system [40].

Along with the number of visitors, it is very important to measure **tourism receipts and expenditure**. The most convenient and reliable method of collecting data on visitor expenditure is the survey. Since special surveys are costly, expenditure of outbound residents can be partly estimated through household budget surveys supplemented by questions on trips abroad; in addition, many government organisations and companies send employees on business trips abroad and allocate funds for travel expenses, and these data should also be included in tourism expenditure. One of the most widely used methods for receipts is the expenditure diary (form), which is distributed to visitors at the beginning of the trip. On the basis of the experience of countries with developed tourism, we developed an expenditure registration form for visitors to Uzbekistan (Table 3.2).

Table 3.2

Form for registering visitor expenditure (receipts)[21]

Type of expenditure	Place of expenditure	Before the trip	Day 1	Day 2	…	Day n	Total
Package tour							
Transport							
Accommodation							
Food and beverages							
Excursions, culture, recreation							
Shopping, souvenirs							
Other							
Total							

Note: the header of the form records the visitor's country of residence, main purpose of the trip, length of stay and currency of expenditure.

For the forms to be returned, clear rules for their return must be established, the forms must be easy to keep, and the respondent must remain anonymous. The form was positively assessed by the State Committee for Tourism Development and the State Statistics Committee and accepted for practical application. Alongside it, special statistical surveys are an important source. In 2018 the State Statistics Committee, together with the State Committee for Tourism Development and the Ministry of Foreign Trade, conducted a sample survey of inbound and outbound tourism covering 10,249 respondents: 5,754 foreign visitors (for estimating tourism receipts) and 4,495 citizens of Uzbekistan (for estimating tourism expenditure) [34]. The questionnaire for inbound tourism consisted of control questions and four parts: citizenship and travel style; where, what and how in Uzbekistan; attitude towards Uzbekistan; and demography. In our view, its usefulness would increase if the following two questions were added: "How long did you stay in

[21] Developed by the author.

Uzbekistan?" (up to 4 hours; 4–24 hours; more than 24 hours but less than a year; more than a year) and "How often do you visit Uzbekistan?" (once a week or more often; once a month; occasionally). These questions make it possible to apply the usual environment criteria directly and to separate tourists, excursionists and frequent cross-border travellers, which in turn improves the estimates of visitor numbers, receipts and expenditure.

Finally, electronic tools can be used alongside forms and questionnaires: surveys via QR codes at airports and railway stations, online questionnaires, telephone surveys and, increasingly, big data. Telephone surveys are a fast and inexpensive tool for estimating the number and expenditure of outbound and domestic tourists. Mobile positioning data have been used to measure tourist flows in Estonia and in a Eurostat feasibility study [37, 39, 60], and the OECD recommends combining such alternative sources with traditional statistics [61]. For Uzbekistan, where a large part of visitors do not use hotels, the use of mobile operator and card payment data seems particularly promising for estimating the regional distribution of visitors.

3.2. Assessing the role of tourism in the economy

In any economic system, and especially during transition, the state plays the leading role in developing tourism infrastructure. Almost all countries seek to increase the importance of tourism in their economies: they invest in infrastructure, simplify visa regimes and encourage the production of tourism products and traditional goods. Several statistical methods are used to determine the place of a sector in the economy; for tourism the most common indicators are tourism gross value added and its share in GDP, employment in tourism, tourism receipts and expenditure, investment and taxes (Table 1.2).

Before the TSA was introduced, the role of tourism in the economy of Uzbekistan could only be estimated on the basis of the value added of tourism-related activities. Table 3.3 shows the results of such estimation

for 2010–2019, which were obtained for the first time in the author's earlier study [5].

Table 3.3

Growth of GDP and tourism gross value added and the share of tourism in GDP and GVA, 2010–2019[22]

Year	GDP growth, % to previous year	Tourism GVA growth, % to previous year	Share of tourism GVA in GDP, %	Share of tourism GVA in total GVA, %
2010	107.3	105.3	2.4	2.8
2011	107.8	105.9	2.1	2.4
2012	107.4	105.5	2.2	2.5
2013	107.6	105.1	2.4	2.7
2014	107.2	105.7	2.5	2.8
2015	107.4	106.3	2.1	2.4
2016	106.1	105.9	2.1	2.3
2017	104.5	107.3	2.5	2.8
2018	105.1	110.1	2.5	2.8
2019	105.1	110.2	2.2	2.5

In 2010–2015 GDP grew by more than 7 per cent a year, and from 2016 its growth slowed, reaching a minimum of 4.5 per cent in 2017. The growth of tourism GVA, by contrast, accelerated after 2016 and exceeded 10 per cent in 2018–2019, so that in these years tourism grew about twice as fast as the economy as a whole. Nevertheless, by this estimate the share of tourism in GDP remained within 2.1–2.5 per cent. The dynamics of tourism receipts and expenditure in the same period are shown in Table 3.4.

[22] Author's calculations based on data of the State Statistics Committee of the Republic of Uzbekistan.

Table 3.4

Tourism receipts and expenditure in the balance of payments, 2010–2019[23]

Year	Receipts, % to previous year	Expenditure, % to previous year	Tourism balance, USD million	Receipts in exports, %	Expenditure in imports, %
2010	–	–	197.5	2.1	0.8
2011	125.0	102.7	263.8	2.3	0.7
2012	166.3	159.1	444.1	4.2	1.0
2013	195.8	224.9	833.8	7.8	2.0
2014	94.6	103.1	764.9	7.8	2.1
2015	112.9	122.6	835.4	9.5	2.8
2016	105.5	98.1	907.1	10.4	2.8
2017	43.7	393.5	−812.0	4.4	9.7
2018	190.4	110.9	−465.8	7.4	7.8
2019	107.4	99.1	−253.6	7.2	8.5

Table 3.4 shows that tourism receipts were unstable: in some years they grew rapidly (by 90 per cent in 2018), in others they fell (in 2014 and especially in 2017, the year of the foreign exchange market liberalisation). Tourism expenditure also fluctuated, increasing almost four times in 2017. Since 2017 the tourism balance has been negative, i.e. residents' spending abroad has exceeded the receipts from foreign visitors. The share of receipts in exports reached 7–10 per cent, which shows that tourism is a significant export service for Uzbekistan. The correlation analysis for 2010–2019 showed a strong relationship between tourism GVA and tourism investment ($r = 0.94$) and tourism expenditure ($r = 0.92$) and a weaker one with tourism receipts ($r = 0.46$). The share of investment directed to tourism in total investment remained at only 1–2 per cent, which, in our view, limits the innovative development of the sector.

[23] Author's calculations based on data of the State Statistics Committee and the Central Bank of the Republic of Uzbekistan.

Tourism Satellite Account indicators. Since 2019 the National Statistics Committee has compiled TSA indicators [36], which allow the economic role of tourism to be measured according to international standards. The main TSA indicators for 2019–2024 are presented in Table 3.5.

Table 3.5

Main indicators of the Tourism Satellite Account of Uzbekistan[24]

Indicator	2019	2021	2022	2023	2024
GVA of tourism industries, UZS billion	49 684.8	64 202.2	90 261.5	113 169.1	141 688.1
share in GDP, %	8.0	7.5	8.7	9.0	9.2
Tourism direct GVA, UZS billion	21 531.6	7 956.4	15 613.6	15 918.2	37 248.9
share in GDP, %	3.5	0.9	1.5	1.3	2.4
Inbound tourism consumption, UZS billion	11 639.3	4 492.9	17 776.7	25 169.2	34 037.6
Employment in tourism industries, thousand	231.4	208.1	214.6	215.7	249.8
Inbound tourism consumption per arrival, UZS million	1.72	2.39	3.40	3.80	4.28

Table 3.5 shows that in 2024 the gross value added of tourism industries amounted to 141.7 trillion soums, or 9.2 per cent of GDP, while tourism direct GVA amounted to 37.2 trillion soums, or 2.4 per cent of GDP. The distinction between these two indicators is essential for a correct assessment of the role of tourism. The GVA of tourism industries covers the entire activity of accommodation, food services, transport and other characteristic industries, including services to local residents;

[24] Compiled by the author based on data of the National Statistics Committee of the Republic of Uzbekistan.

tourism direct GVA includes only the part that corresponds to visitor consumption. In 2024 the first was 3.8 times larger than the second. Using the first indicator as “the share of tourism in GDP” would therefore substantially overstate the contribution of tourism. The dynamics of both shares are shown in Figure 3.1.

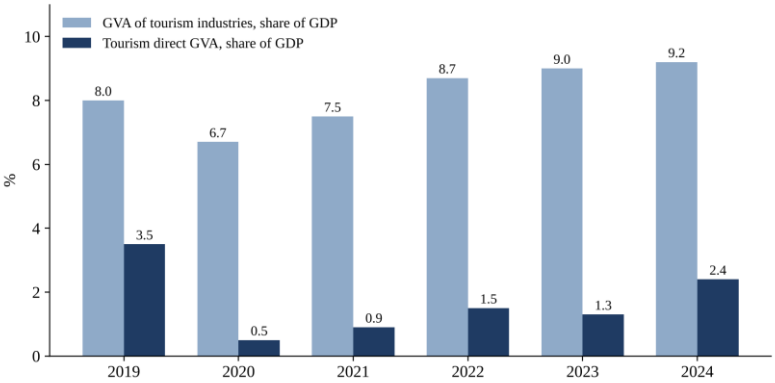


Figure 3.1. Share of the GVA of tourism industries and of tourism direct GVA in GDP, 2019–2024, %[25]

Figure 3.1 shows that the share of tourism industries in GDP was relatively stable (6.7–9.2 per cent), whereas tourism direct GVA fell from 3.5 per cent in 2019 to 0.5 per cent in 2020 and 0.9 per cent in 2021 and returned to 2.4 per cent only in 2024. Thus the direct indicator reacts much more strongly to shocks and better reflects the actual dynamics of tourism. Comparing these results with Table 3.3 shows how strongly the assessment of the economic role of tourism depends on the methodology: the TSA-based direct GVA for 2019 (3.5 per cent of GDP) is noticeably higher than the earlier estimate based on tourism-related activities (2.2 per cent). Inbound tourism consumption increased 2.9 times in 2019–

[25] Compiled by the author based on data of the National Statistics Committee of the Republic of Uzbekistan.

2024, and consumption per arrival grew from 1.72 to 4.28 million soums. Its structure by products is shown in Figure 3.2.

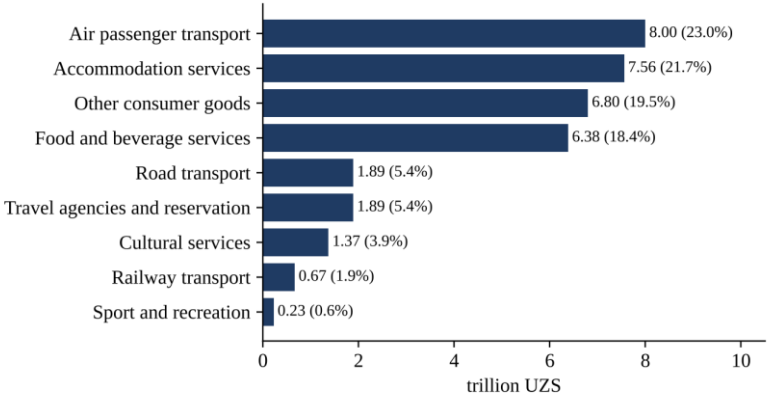


Figure 3.2. Inbound tourism consumption by products, 2024, UZS trillion (share, %)[26]

In 2024 the largest items of inbound tourism consumption were air passenger transport (23.0 per cent), accommodation services (21.7 per cent), other consumer goods (19.5 per cent) and food and beverage services (18.4 per cent); travel agency, cultural, sports and recreation services together accounted for about 10 per cent. The small share of cultural services is notable for a country whose main strength, according to experts, is its historical heritage, and it indicates the potential for developing paid cultural and excursion products.

Employment in tourism industries (in legal entities) reached 249.8 thousand people in 2024. Its structure changed considerably: in 2019–2024 employment in food services increased from 66.6 to 93.7 thousand (by 41 per cent), in accommodation from 54.5 to 69.0 thousand (by 27 per cent) and in travel agencies from 3.2 to 9.9 thousand (3.1 times), while

[26] Compiled by the author based on data of the National Statistics Committee of the Republic of Uzbekistan.

employment in land passenger transport fell from 70.9 to 30.6 thousand. In many countries, the number of people employed in tourism also includes representatives of other industries working around tourist sites. For example, near the Chor-Bakr memorial complex in Bukhara district there are many small shops, cafes, guides and parking services whose activity depends directly on visitors. We support the proposal to include such service workers in the number of people employed in tourism, which requires special sample surveys.

At the same time, the TSA of Uzbekistan has an important limitation: it is compiled only at the national level. Therefore, it does not answer the question of what role tourism plays in the economy of individual regions, although regional authorities are responsible for the development of tourism in their territories. A.A.Mamadjanov, who studied the introduction of the TSA in Uzbekistan, recommended compiling it by regions using a top-down approach [62]. In our view, a practical first step would be to distribute national TSA aggregates across regions in proportion to regional estimates of non-VFR visitors (see Section 3.1) and to accommodation and food services output, as is done in the regional TSAs of Canada, Australia and other countries [40, 41].

3.3. Forecasting tourism indicators and evaluating forecast accuracy

It has been shown that the number of tourists, tourism receipts, the role of tourism in the economy and other indicators can be forecast in the short and long term using more than 150 methods [63, 64]. They range from simple extrapolation and time series models (exponential smoothing, ARIMA, seasonal decomposition) to econometric models of demand and, more recently, machine learning methods. Large forecasting competitions have shown that no single method is best in all situations and that relatively simple time series methods often perform as well as complex ones, especially for short horizons [65]. Our analysis of earlier

studies showed that statistical modelling of tourism in Uzbekistan was carried out mainly on annual data, although the flow of tourists has pronounced seasonality.

Time series methods used for forecasting tourism indicators are divided into two groups. The first includes analytical methods (analytical indicators of dynamics, analytical smoothing, identification of seasonality, enlargement of intervals, moving averages); the second includes methods of trend and seasonal modelling. Taking into account the features of the data, the author's earlier study used the additive model to analyse and forecast inbound and outbound tourists, tourism receipts and expenditure [5, 66]. If the amplitude of seasonal fluctuations is approximately constant, an additive model is constructed in which the seasonal components are the same for different cycles:

$$Y_t = T_t + S_t + E_t \quad (3.1)$$

where each level of the series Y_t is the sum of the trend (T), seasonal (S) and random (E) components. The model is built in several stages: the series is smoothed by a centred four-quarter moving average; the seasonal components are estimated as the average deviations of actual levels from the moving average for each quarter and are corrected so that their sum equals zero; the seasonal effect is removed from the series; the trend is estimated by analytical smoothing of the deseasonalised series; and the errors of the model are calculated. The model was built on quarterly data on inbound tourists for 2015–2019. The average seasonal components for quarters I–IV were −70,396.59, 20,089.25, 43,988.40 and −23,314.25; since their sum (−29,633.2) is not zero, they were corrected using the coefficient k = −7,408.3:

$$S_i = S_i - k, \; k = \frac{\sum_{i=1}^{4} S_i}{4} \quad (3.2)$$

Table 3.6

Seasonal components of the quarterly number of inbound tourists, 2015–2019[27]

Indicator	Q I	Q II	Q III	Q IV
Average seasonal deviation, persons	−70 396.59	20 089.25	43 988.40	−23 314.25
Corrected seasonal component S_i, persons	−62 988.29	27 497.54	51 396.70	−15 905.95

The corrected components sum to zero. Thus, in the first quarter the number of inbound tourists is on average about 63 thousand below the trend level and in the third quarter about 51 thousand above it. The linear trend of the deseasonalised series (t = 1, …, 20) is:

$$T_t = 175\,557.86 + 49\,199.27t \quad (3.3)$$

with $R^2 = 0.65$. The errors of the model are calculated as:

$$E_t = Y_t - (T_t + S_t) \quad (3.4)$$

Similar equations were obtained for tourism receipts, outbound tourists and tourism expenditure, and on their basis pessimistic, average and optimistic forecasts for 2020–2024 were made (Table 3.7).

[27] Author's calculations based on data of the State Statistics Committee of the Republic of Uzbekistan.

Table 3.7

Forecasts of the main tourism indicators for 2020–2024 made in 2021[28]

Indicator	Scenario	2020	2021	2022	2023	2024
Inbound tourists, thousand	pessimistic	5 265	5 496	6 781	6 984	8 248
	average	6 464	6 830	8 265	8 630	10 065
	optimistic	7 664	8 163	9 749	10 276	11 882
Tourism receipts, USD million	pessimistic	427.0	577.1	514.4	670.1	1 024.1
	average	869.7	1 069.1	1 061.9	1 109.5	1 324.6
	optimistic	1 312.5	1 561.2	1 609.5	1 617.0	1 552.2
Outbound tourists, thousand	pessimistic	5 932	7 942	9 790	9 711	11 612
	average	8 243	10 488	12 620	12 860	15 105
	optimistic	10 554	13 034	15 450	16 009	18 599
Tourism expenditure, USD million	pessimistic	1 449.7	1 974.5	2 066.4	2 126.6	2 398.3
	average	1 771.2	2 328.8	2 460.1	2 564.8	2 884.4
	optimistic	2 092.8	2 683.1	2 853.9	3 002.9	3 370.5

Four years after these forecasts were made, they can be compared with the actual data. Such an ex-post evaluation is rarely published, but it is the only way to learn which assumptions failed. The comparison for inbound tourists is shown in Figure 3.3; its accuracy can be summarised by the mean absolute percentage error:

$$MAPE = \frac{100}{n}\sum_{t=1}^{n}\left|\frac{Y_t - \hat{Y}_t}{Y_t}\right| \quad (3.5)$$

where Y_t is the actual and $\hat{Y}_t$ the forecast value.

[28] Jumayev A.M. (2021), author's calculations.

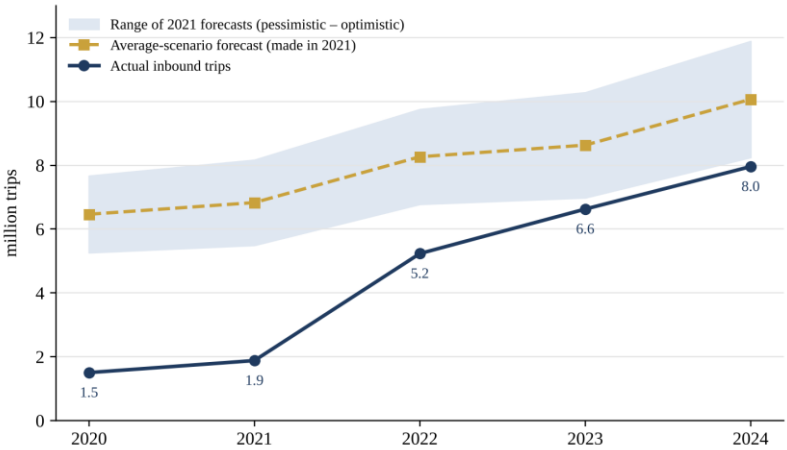


Figure 3.3. Forecasts of inbound tourists made in 2021 and actual inbound trips, 2020–2024, million[29]

Figure 3.3 leads to three lessons. First, the trend model could not foresee the pandemic: in 2020–2021 actual arrivals (1.5 and 1.9 million) were three to four times lower than even the pessimistic scenario. No extrapolation model can predict such shocks, which is why forecasts should be accompanied by scenario analysis of possible shocks and updated as soon as new data arrive. Second, once the shock was over, the series returned to the trend path remarkably quickly: in 2024 the actual number of trips (7,957.2 thousand) was only 3.5 per cent below the pessimistic scenario (8,248 thousand), but 21 per cent below the average scenario (10,065 thousand). In 2025 arrivals reached 11.7 million, i.e. the level of the optimistic scenario for 2024 was reached with a one-year delay. Third, for 2022–2024, after the borders had reopened, the mean absolute percentage error was 12.9 per cent for the pessimistic scenario and 38.2 per cent for the average scenario; for 2024 alone the errors were 3.7 and 26.5 per cent respectively. This shows that a trend fitted to five

[29] Author's calculations based on data of the National Statistics Committee of the Republic of Uzbekistan.

years of rapid post-reform growth overestimated the speed of growth, and that forecasts made on short series should be presented as ranges rather than single numbers.

Several methodological conclusions follow for improving the forecasting of tourism indicators in Uzbekistan. Forecasts should be made separately for groups of countries, since flows from neighbouring countries and from distant countries have very different dynamics and seasonality (Section 2.2). Monthly data, now published by the Tourism Committee, make it possible to move from quarterly decomposition to seasonal ARIMA or exponential smoothing models with regular re-estimation [67]. Leading indicators – air passenger traffic, which is closely related to non-VFR arrivals (the correlation coefficient for 2014–2025 is 0.91), online bookings and visa applications – should be used to update forecasts within the year. Finally, the accuracy of published forecasts should be regularly evaluated against actual outcomes, as has been done in this section.

Conclusions to Chapter 3

1. The registration of visitors in Uzbekistan requires a common methodology: uniform criteria of the usual environment, a clearly defined unit of account and a ban on summing regional visitor counts. Accommodation statistics cover only 9.5–20.0 per cent of inbound tourists, so regional estimates must combine several sources and treat VFR visitors separately.

2. The expenditure registration form and the additional survey questions on the length and frequency of visits proposed by the author make it possible to estimate visitor numbers, receipts and expenditure more accurately; digital sources such as mobile and card payment data are a promising supplement.

3. TSA data show that in 2024 tourism direct GVA amounted to 2.4 per cent of GDP and the GVA of tourism industries to 9.2 per cent; these

indicators must not be confused. The TSA should be extended to the regional level.

4. The ex-post evaluation of the 2021 forecasts shows that trend models are useful in normal periods but must be complemented by scenario analysis, disaggregation by groups of countries, monthly data and regular evaluation of forecast accuracy.

CONCLUSION

The research carried out in this book allows the following main conclusions and proposals to be formulated.

1. Tourism is defined by the status of the consumer rather than by the product, so its statistical assessment requires a special conceptual framework. The key concept is the usual environment. For Uzbekistan we propose to define a tourist as a person who leaves the usual environment for more than 24 hours and less than one year, not more often than once a week and without remuneration in the place visited, and an excursionist as a person who does so for 4 to 24 hours; the radius of the usual environment is proposed at about 50 kilometres.

2. The system of indicators of tourism development should include two blocks: indicators of tourism performance (flows, economic role, labour and capital) and indicators of innovative development grouped by the T-ABC approach into attractiveness, services and infrastructure, and external factors. The terms “tourism receipts” and “tourism expenditure” should not be equated with tourism exports and imports.

3. International standards – IRTS 2008 and TSA:RMF 2008 – provide a coherent basis for tourism statistics. Uzbekistan has made considerable progress: since 2019 nine of the ten TSA tables are compiled, and a household survey on domestic tourism is conducted. The main remaining gaps are the absence of regional tourism statistics, the weak coverage of visitors who do not use commercial accommodation and the lack of regular visitor expenditure surveys.

4. International tourism has fully recovered from the pandemic (about 1.4 billion arrivals in 2024). Inbound tourism to Uzbekistan grew from about 2 million trips in 2016 to 11.7 million in 2025, its dependence on VFR trips and on neighbouring countries is decreasing, but receipts

per arrival (327 US dollars in 2023) remain several times below the world average and those of competing destinations in the region.

5. Expert assessments (SWOT–Delphi, T-ABC) show that historical heritage is the main strength of tourism in Uzbekistan, while logistics, services and infrastructure outside the main centres are the main constraints. Regional tourism performance is best explained by external factors and attractiveness. Cointegration analysis indicates a long-run relationship between tourism and economic growth.

6. In 2024 tourism direct GVA amounted to 2.4 per cent of GDP and the GVA of tourism industries to 9.2 per cent; the inbound tourism consumption per arrival increased from 1.72 to 4.28 million soums in 2019–2024. To assess the role of tourism in the regions, the TSA should be compiled at the regional level, using regional estimates of non-VFR visitors as a distribution key.

7. The evaluation of the author's 2021 forecasts against actual data shows that the pessimistic scenario for 2024 was accurate within 3.7 per cent, while the average scenario overestimated arrivals by about a quarter. Tourism forecasts should be disaggregated by groups of countries, based on monthly data, presented as scenarios and regularly evaluated against actual outcomes.

The implementation of these proposals would make tourism statistics of Uzbekistan more complete, internationally comparable and useful for policy, investment and research decisions.

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APPENDIX

Results of the expert assessment of factors of regional tourism development (T-ABC model), average scores on a 7-point scale

Table A.1

Expert assessment of tourism attractiveness (A) by regions[30]

Region	UNESCO sites	A1	A2	A3
Karakalpakstan		4.7	4.7	3.2
Andijan		2.7	2.6	3.1
Bukhara	✓	3.6	6.9	5.6
Jizzakh		5.1	2.3	2.8
Kashkadarya	✓	4.2	4.1	3.2
Navoi		4.3	3.3	3.0
Namangan		3.4	2.7	3.4
Samarkand	✓	4.8	6.9	5.8
Surkhandarya		5.6	5.0	3.6
Syrdarya		2.8	1.8	2.8
Tashkent region		5.2	3.2	3.2
Fergana		4.0	4.2	4.1
Khorezm	✓	3.8	6.2	5.2
Tashkent city		4.0	4.9	5.2

Note: A1 – natural tourism resources; A2 – historical tourism resources; A3 – market of goods and services.

[30] Results of the expert survey of 30 tour operators conducted by the author in 2019.

Table A.2

Expert assessment of tourism services and infrastructure (B) by regions[31]

Region	B1	B2	B3	B4	B5	B6
Karakalpakstan	3.6	4.0	3.4	2.4	3.9	2.7
Andijan	4.3	4.2	5.1	3.6	4.7	3.1
Bukhara	4.9	5.0	5.4	4.1	5.8	3.4
Jizzakh	3.2	3.6	4.2	2.8	4.3	2.9
Kashkadarya	3.9	4.2	4.6	2.9	4.3	2.9
Navoi	4.0	4.1	4.1	3.2	4.3	3.0
Namangan	3.9	3.9	4.2	3.0	4.6	3.2
Samarkand	5.4	5.4	6.0	4.3	6.1	3.9
Surkhandarya	3.2	3.6	3.9	2.8	4.1	2.8
Syrdarya	3.4	3.0	3.2	2.7	3.8	2.6
Tashkent region	4.9	4.8	5.4	3.8	5.0	3.6
Fergana	4.3	4.8	4.8	3.2	4.9	3.0
Khorezm	4.8	5.0	5.3	3.6	5.3	3.3
Tashkent city	5.9	5.8	6.3	4.8	5.7	4.4

Note: B1 – international and domestic road, air and rail services; B2 – availability and quality of hotels; B3 – volume and quality of food services; B4 – sanitary facilities; B5 – competence of tourism staff; B6 – financial and medical services at tourist sites.

[31] Results of the expert survey of 30 tour operators conducted by the author in 2019.

Table A.3

Expert assessment of external factors (C) by regions[32]

Region	C1	C2	C3
Karakalpakstan	4.9	3.4	3.4
Andijan	6.0	4.0	3.7
Bukhara	5.8	4.8	4.2
Jizzakh	5.2	3.4	3.2
Kashkadarya	5.2	3.7	3.6
Navoi	5.2	3.7	3.6
Namangan	5.8	3.6	3.4
Samarkand	6.1	4.8	4.3
Surkhandarya	5.4	3.3	3.2
Syrdarya	5.1	3.2	3.1
Tashkent region	5.4	4.6	4.1
Fergana	5.9	4.1	3.8
Khorezm	6.0	3.9	3.4
Tashkent city	6.1	5.2	5.9

Note: C1 – attitude of residents towards tourists; C2 – Wi-Fi availability and internet speed; C3 – stability of electricity supply.

[32] Results of the expert survey of 30 tour operators conducted by the author in 2019.