TOURISM IN BELARUS: INDICATORS, SATELLITE ACCOUNT AND SURVEYS

N. Bokun
Belarus State Economic University
Minsk, BELARUS
e-mail: nataliabokun@rambler.ru

Abstract

The paper describes the tourism satellite account methodology, main tourism trends, problems of introduction of tourism households and establishment surveys in practice of Belarusian official statistics. The sampling frame, sampling design, precision estimation information sources are considered.
Keywords: satellite account, tourism, households survey, establishment survey, sample

1 Introduction

In recent years, the growing number of destinations worldwide has opened up and invested in tourism turning it into a key driver of socio-economic progress. Tourism is a complex phenomenon which is becoming one of the world's largest economic activities. International tourist arrivals have increased from 25 million globally in 1950 to 1,323 million in 2017. International tourism receipts earned by destinations worldwide have surged from US $ 2 billion in 1950 to US $ 1,340 billion in 2017. Tourism represents 7 % of the world's export, has grown faster than world trade for the last five years [1].

The Tourism Statistics (TS) as part of the National System of Statistics is viewed as basic framework for coordination of statistical information on tourism as product by all types of stakeholders. The TS is a set of interconnected components comprising statistical sources, households surveys, tourism industry entities surveys, administrative records, Balance of payments, National Accounts.

The multiplicity of information resources, kinds of tourism activity, indicators have motivated the development of tourism satellite account, methodology for specialized surveys. The first results of their use in Belarus indicated the appearance of significant problems: non-responses, enough high level of sample and non-sample errors, discrepancies between data from these surveys.

This paper has the next parts: 1) main indicators and trends; 2) tourism satellite account and possible information sources; 3) tourism households surveys; 4) tourism establishment surveys.

2 Main indicators and trends

In 2014-2017 tourism contributes directly around 2.5 % of GDP, using to 6 % if indirect impacts are also included (Travel and Tourism Economic Impact 2017 Belarus). Export revenues from tourism amount to approximately US $ 700-800 million annually,

Table 1: Main tourism indicators

Indicators	2010	2015	2016	2017
Total domestic trips, thousand	79.0	836.8	1001.8	976.8
Total international arrivals, thousand	120.1	276.3	217.4	282.7
Trips of Belarus citizens, thousand	7464.2	6962.4	8339.6	9208.6
Tourism receipts, billion rubles	156.7	1129.6	136.6	165.9
Export by "trips", million US $	440.4	728.7	710.6	789.8
Import by "trips", million US $	621.5	901.1	806.1	992.2
Number of hotel and similar establishments	693	1014	1052	1072
Total international departures	414.7	736.7	495.8	727.5

equivalent to 1.5-2 % of total exports of goods and services. In 2017 11.1 million people visited Belarus. 40 % of the clients in accommodation establishments were foreign tourists (Table 1).

Main top markets of inbound tourism are Russian Federation, Poland, Lithuania, Latvia, Ukraine. Main destinations of outbound tourism are Turkey, Egypt, Ukraine, Bulgaria, Russian Federation.

The following tourism trends in Belarus are observed:

- the tourism industry has been growing consistently, international tourist arrivals in 2017 grew by 30%;
- travel for holidays, recreation and over half of all international tourist arrivals and departures; some 10 % of all international tourist trips are travel for business and professional purposes;
- one of major tourism spheres is supporting international conferences, cultural and sport events;
- low level of service, low quality of tourism industries, low development rates of alternative kinds of tourism, low tourism efficiency;
- main statistical problems: careless, partial and discordant of information, data.

One of important directions of the tourism estimation is development of tourism satellite account.

3 Tourism satellite account and possible information sources

The multiplicity of stakeholders involved in the tourism system (international organizations, national, regional, local administrations) implies different needs in terms of typologies of information: from tourism demand to the economic role and impacts of tourism; from statistical data to quantitative analyses. The final result is an enormous and growing request for information which requires different methodologies. That is

why it is necessary to increase efforts to harmonize methodologies, develop tourism satellite account.

Nowadays the National Statistical Committee of the Republic of Belarus does preparatory work on development of tourism satellite account. In 2017 Methodological Recommendations for construction of Tourism satellite account (TSA) were adopted [2]. Since 2017-2018, the first tables of this account are calculated. Their main aims are:

- to measure the contribution of tourism to the national economy, in line with the National Accounts framework, and thus allowing comparisons with other economic domains (output and value added by tourism industry, employment, tourism consumption, demand;
- to achieve total coverage in terms of visitors, their expenditures, and the industries serving visitors, as well as reasoned reconciliation of different statistical sources involved, in order to ensure consistency among the data derived from them;
- to become part of the system of information in which individual sources are interconnected (for instance annual data are consistent with monthly or quarterly data);

Two aspects of tourism are measured: a) consumption of commodities and services by visitors (demand); b) production of tourist commodities and services by industries (supply).

Tourism expenditures are accounted by kinds of activity: accommodation of visitors, services of public catering entities, transports, tourism industry entities, sporting and others. Consumption consists of visitors consumption, gross fixed capital formation related to tourism and consumption of collective non marked services (education, museums, public health). Supply indicators include tourist product by kinds of activity; observed unit is entity.

TSA consists of seven components: 1) domestic, inbound, outbound, national tourism indicators (tables 1-4); 2) production account by tourism industries (table 5); 3) total domestic demand and supply (table 6); 4) employment (table 7); 5) gross fixed capital formations related to tourism (table 8); 6) collective non marked services (table 9); 7) non-monetary indicators (number of hotels, accommodation capacity, arrivals, departures and others).

TSA based on using of International Recommendations for Tourism Statistics 2008, WTO technical manuals on TSA [3,4], National methodological recommendations, is formed once in two years (since 2017). The main sources and instruments for formation of TSA include tourism industry enterprises censuses and system of different surveys: establishment, households samples.

4 Tourism households surveys

The main aim is asking residents in their usual environment about tourism expenditures, trips they have taken, after reference period. Two procedures to measure domestic tourism can be used: 1) specifically designed surveys to estimate tourism activity of the resident population through questionnaires or light telephone surveys (CATI); questions in the latter case need to be simpler and direct; 2) the inclusion of a "tourism module" – a set of interconnected questions to learn more about certain characteristics of visitor behavior – as part of multipurpose surveys. In Belarus the second procedure is used.

Since 1995 *Sample Survey of Households (HH)* is carried out at all country regions and separately in Minsk. It has annually covered 0.2 % or 6000 HH. Territorial probabilistic three-stage sample is used: at the first step sampling units are cities and rural soviets; at the second step – local-polling districts in city and data of the soviet account in rural soviets; at the third – HH. Procedure of selection of administrative and territorial units repeats once in 10 years. Selection of polling districts and HH is carried out annually. The methodology of weighing of the selective data is based on assignment of each finite unit (HH) the corresponding weight: $B_i = (p_1 p_2 p_3)^{-1}$, where p_1 is the probability of selection of each city and rural soviet; p_2 is the probability of selection of each polling district in cities, zones in rural soviet; p_3 is the probability of selection of every HH within polling district or a zone.

The sample program assumes filling of some questionnaires (living conditions, education, health, employment) and additional tourism module (trips, duration, tourism expenditures). Daily and quarterly questionnaires include questions about expenses on food and unfood, payment of services [5].

Since 2012 *Labour Force Survey* is conducted. Its purpose is to obtain empirical statistics on the Labour Force, employed by kinds of activity, including tourism. Survey object is the private households in urban and rural areas for each region; resident persons aged 15 – 74 years. Territorial three-stage sampling, basic weights with different probabilities, individual weights, calculated by two iterations, are used. Variables of weighting include sex, age, region, rural/urban. Sampling frame is based on the 2009 census and includes sets of cities, village councils, census enumeration districts in each selected city, villages, the household totality. Non-response weights are calculated using the weighting classic method. There are 25 census enumeration districts in cities and 16 village councils [6].

Sample Survey of individuals at automobile roads checkpoints across the State border is conducted (since 2015). Its main aims are to obtain statistical data on the volumes of commodities, imported or exported by individuals and information on the tourism expenditures and tourism trips. Two forms of blanks for inbound and outbound tourism are used; frequency: twice a year in the II and IV quarters [7].

5 Tourism establishment surveys

Purpose of the tourist establishment sample surveys is receipt of detailed information on the tourism, production, employment in the informal sector, on the structure of tourism industries.

Micro-entities Sample Survey provides information on the tourism micro-entities. Its sampling frames include: 1) micro-entities, represented the state statistical reports on the financial results for basic year (report 1-MP (micro)); 2) set of the private farms. The first file is 80 thousand units; sample fraction depends on a character of the initial information, namely: the size of total population, kind of economic activity, region. The second array includes more than 2 thousand farms; it is observed completely.

The combination of univariate and multivariate samples is used. To receive optimal sample size for i-th kind of activity and j-th region the author has developed the next algorithm:

1. The set of observed variables is allocated (for example, the wages fund, volume of production, revenues, profitability). Average, total values, variability of indicators are calculated.

2. Statistician chooses sampling method: univariate or multivariate. It should be executed one of three conditions for applying multidimensional sampling: a) variation coefficient is more than 100 %; b) survey objects are non-uniform on many variables; c) the small size of total population (top limit – 30 – 40 units). Otherwise univariate sampling should be used: random selection without allocation, simple random sample, proportional and optimal allocation.

3. It is expediently to use univariate stratified sample, total population is divided by rather homogenous groups. Then different variants of the sample size are executed (minimal is 0.05N, maximal is 0.8N). Minimal error is a main criteria of the determination of sample size. The choice of an optimum way of selection for carrying out of particular survey depends on a survey object and character of the auxiliary information, namely: degrees of uniformity, the sample size, presence of the natural isolated groups. It is expedient to approve several sampling designs for the same survey and to choose that from them which gives more precise and unbiased estimates. It is expedient to use multivariate sample, selection is carried out by cluster analysis: total population is partitioned using cluster analysis on homogenous groups to k-variables, i.e. clustering; in each received group the leading (basic) variable is determined and subsequent random selection of units is performed. Optimal sample population is chosen for each cluster, where standard errors of k-variables are criterias of productivity. If the error exceeds admissible bounds, three methods of its reduction may be applied: increasing sample population in cluster; additional stratification of the enterprises in cluster to a leading variable; repetition of clustering [8,9].

Sample population is formed once a three-four years, sampling fraction is 20-21 %. Extrapolation of sample data on the total population is carried out by three methods: traditional group weights (HT); calibration (GREG- and SYN-estimators).

Since 2015 *Visitor Survey at collective accommodation establishment (VS)* is conducted .The main purpose is estimation of visitor expenditures: average expenditures per day are measured. These expenditures consist of accommodation, food and beverages, transport, car rental, recreation services, culture, others. Observed units are visitors and accommodation establishments (hotels and similar); sampling frames are collective accommodation establishments, represented in state statistical reports ((4-tur (accommodation)). Establishment stratification is carried out by the main variable – average value of bed-place [2].

6 Concluding remarks

The experience of construction of samples in Belarus has shown that the priority is given to inclusion of a "tourism module" as part of multipurpose survey (Sample Survey of Households Living Standards, Labour Force Survey, Micro-entitites Sample Survey); main problems are connected with localization of the sample, non- responses (30-40 %), the enough high level of errors. The use of combination of univariate and multivariate samples, quasicausal samples, expert estimates, tertiary sources, increase of sample size of Border surveys, updating existing questionnaires, carrying out special surveys (transport, recreation) will provide more reliable information over larger number of tourism demand and tourism supply indicators.

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