

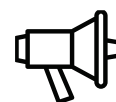
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ANALYZING THE IMPACT OF INVESTMENT VOLUME IN THE TOURISM SECTOR ON THE REGIONAL GROSS DOMESTIC PRODUCT (CASE STUDY OF SAMARKAND REGION)

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Abstract: This article explores the influence of the volume of investment in the tourism sector in the Samarkand region on the volume of regional domestic products. As a result of the study, the trend is formed on the palate. Using the Trend equation, the result of the last 3 years was obtained and analyzed.

Key words: tourism, investment, Regional Domestic Product size, Tourist Service, trend model, econometric analysis, forecasting.

INTRODUCTION

On December 24, 2022, the President of the Republic of Uzbekistan approved Decree No. PQ-455 on “Additional Measures for the Effective Use of the Tourism and Transport Potential of Samarkand Region and the Development of the Region Based on the Concept of ‘Samarkand — the Tourism Gateway of New Uzbekistan’.”

This decree places special emphasis on increasing the flow of foreign and domestic tourists to Samarkand region, creating the necessary conditions for the effective use of new tourism infrastructure facilities, providing all opportunities for foreign airline companies at the newly modernized Samarkand International Airport, developing the region’s transport and logistics system, improving and diversifying the quality of services provided[1].

In this direction, Uzbek scientists have conducted several research studies on comprehensively developing the tourism potential of Samarkand region, creating favorable conditions for foreign and local tourists, introducing new types of tourism services, and raising the region’s transport and logistics potential to international quality standards.

METHODOLOGY

The purpose of this study is to determine how investments made in the tourism sector affect the regional gross domestic product. The objectives of the research include examining the relationship between the volume of investment and the regional GDP, assessing the economic efficiency of the tourism sector, and identifying differences across regions[2].

As the object of the study, we have taken the tourism sector and the regional gross domestic product of the Samarkand region. The subject of the study is considered to be the investments made in the tourism sector and their impact on the regional GDP.

In this research, we used the following methods as a methodological approach: collecting official data on regional gross domestic product indicators and investments in the tourism sector (from the State Statistics Committee, Ministry of Finance and Investment, tourism agencies); conducting surveys with regional specialists, investors, and entities engaged in tourism activities; and carrying out analyses to identify the specifics and efficiency of tourism investments in various regions[3].

The practical significance of this research lies in providing a basis for regional government bodies to improve investment policies, develop strategies for the tourism sector, identify and promote investment projects that positively impact economic growth.

Results

We study the choice of the trend function type for the impact of the volume of investments made in the tourism sector of Samarkand region on the regional gross domestic product[4].

$$D^1_t = Y_t - Y_{t-1}$$

Trend equation $y = ct^2 + bt + a$

We find the parameters of the equation using the least squares method. The system of equations of the least squares method[5]:

$$an + b\sum t + c\sum t^2 = \sum y$$

$$a\sum t + b\sum t^2 + c\sum t^3 = \sum yt$$

$$a\sum t^2 + b\sum t^3 + c\sum t^4 = \sum yt^2$$

t	y	t ²	y ²	ty	t ³	t ⁴	t ² va
0,834	2010 yil	0,696	4040100	1676.34	0,58	0,484	1398.068
0,745	2011 yil	0,555	4044121	1498.195	0,413	0,308	1116.155
1.161	2012 yil	1.348	4048144	2335.932	1.565	1.817	2712.017
1.805	2013 yil	3.258	4052169	3633.465	5.881	10.615	6558.404
2.306	2014 yil	5.318	4056196	4644.284	12.262	28.277	10709.719
2.813	2015 yil	7.913	4060225	5668.195	22.259	62.615	15944.633
0,768	2016 yil	0,59	4064256	1548.288	0,453	0,348	1189.085
2.487	2017 yil	6.185	4068289	5016.279	15.383	38.256	12475.486
11.53	2018	132.946	4072324	23267.944	1532.888	17674.509	268284.043
9.773	2019	95.512	4076361	19731.687	933.434	9122.452	192837.777
3.794	2020	14.394	4080400	7663.88	54.612	207.2	29076.761
1.002	2021 yil	1.004	4084441	2025.042	1.006	1.008	2029.092
1.315	2022	1.729	4088484	2658.93	2.274	2.99	3496.493
15.11	2023 yil	228.297	4092529	30566.519	3449.453	52119.516	461844.811
43.832	2024 yil	1921.244	4096576	88715.968	84211.977	3691179.368	3888598.309
99.275	30255	2420.988	61024615	200650.947	90244.442	3770449.763	4898270.853
6.618	2017 yil	161.399	4068307.667	13376.73			

The system of equations for our data

$$15a + 99.27b + 2420.99c = 30255$$

$$99.27a + 2420.99b + 90244.44c = 200650.95$$

$$2420.99a + 902494747c = 4898270,85$$

We obtain the trend equation[6] $c = -0,00887$, $b = 0,608$, $a = 2014,409$

$$y = -0,00887 \cdot t^2 + 0,608 t + 2014,409$$

$$A = 0,13\%$$

Since the error is less than 7%, this equation can be used as a trend. To determine the magnitude of the error or the accuracy of the forecast for the Y indicator, we calculate the coefficient of discrepancy using the formula[7]:

$$\sum (y - y_t)^2 = 280 - 162,701 = 117,299$$

Discussions

Testing hypotheses regarding the coefficients of the linear trend equation.

t-statistic. Using the Student's t-distribution table, we find the critical value $t(nm-1; \alpha/2) = t(12; 0.025) = 2.56$

Since $1437.1929 > 2.56$, the statistical significance of the regression coefficient a_0 is confirmed (we reject the null hypothesis that this coefficient equals zero).

Because $1.9106 < 2.56$, the statistical significance of the regression coefficient a_1 is not confirmed (we accept the null hypothesis that this coefficient equals zero).

Similarly, $1.2203 < 2.56$, so the statistical significance of the regression coefficient a_2 is not confirmed (we accept the null hypothesis that this coefficient equals zero).

Interval forecast. We determine the standard error of the predicted indicator.

$Uy=y_{n+L} \pm K$ here L -leadership period; y_{n+L} - Point forecast of the model at time $(n+L)$; n – the number of observations in the time series; S_y – the standard error of the predicted indicator; T label – the table value of Student's t-test for significance level α and degrees of freedom equal to $n-2$. We find the T statistic from the table. T statistic $(n-1; \alpha/2) = (11; 0,05) = 2,56$

Point forecast, $t = 44,832$: $y(44,832) = -0,00887 * 44,832^2 + 0,608 * 44,832 + 2014,402 + 2014,4023 = 10,73 = 2013,1; 2023.83 + 10.73 = 2034.56$.

Interval forecast: $t = 44.832$: (2013.1; 2034.56).

Point forecast, $t = 45.832$: $y(45.832) = -0.00887 * 42882 * 6.03. 2014,409 = 2023,64 2023,64 - 10,98 = 2012,66; 2023.64 + 10.98 = 2034.62$.

Interval forecast: $t = 45.832$: (2012.66; 2034.62)

Point forecast, $t = 46.832$: $y(46.832) = -0.00887 * 468. * 468. * 2014,409 = 2023,42 2023,42 - 11,25 = 2012,17; 2023.42 + 11.25 = 2034.67$.

Interval forecast: $t = 46.832$: (2012.17; 2034.67)

CONCLUSION

Modeling tourism sector indicators econometrically to forecast the socio-economic condition of the sector makes a significant contribution to the region's tourism potential. When forecasting, it is advisable to consider all indicators covering the sector. In analyzing the indicators, the impact of the volume of investments made in the sector on the regional gross domestic product was studied. As a result of this study, it was concluded that investments made in the sector have a positive effect on the regional gross domestic product..

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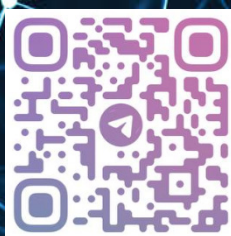
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