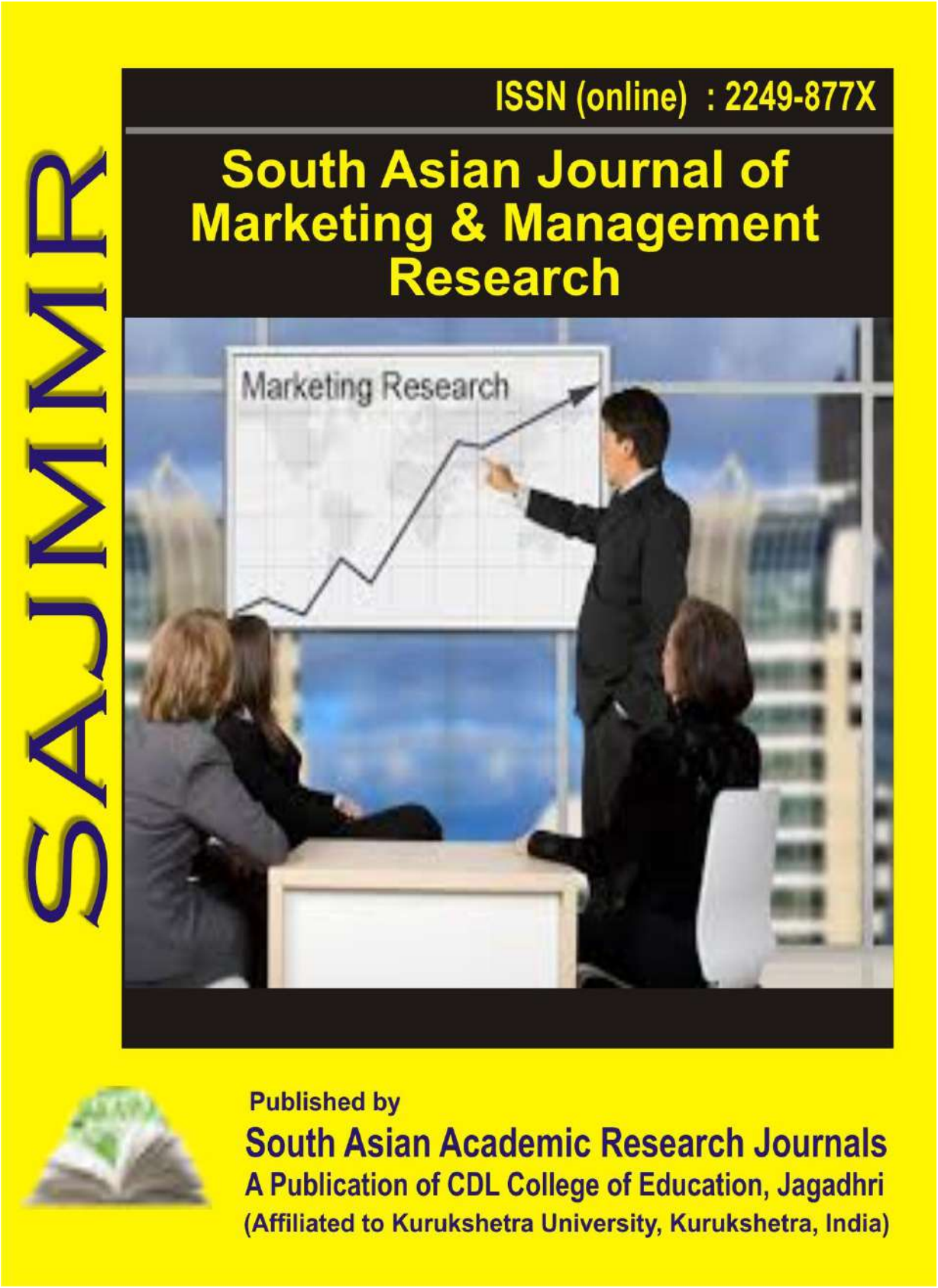
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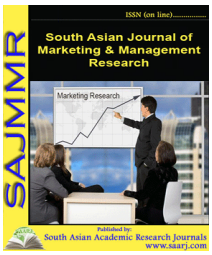

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THE EFFECT OF CORONAVIRUS PANDEMIC TO UZBEKISTAN TOURISM

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ABSTRACT

The article is dedicated to the state of the coronavirus pandemic in Uzbekistan, modeling, and estimating economic growth within the setting of the pandemic. Changes within the scale of the coronavirus widespread and its impact on the economy have been studied on the premise of time series and figure models. The model of alter within the request for tourism within the Republic of Uzbekistan over a long time, the impact of the widespread on the number of foreign tourists.

KEYWORDS: *Economic Growth, Coronavirus Pandemic, Demand In Tourism, Model, Correlation, Time Series, Regression Analysis, Determination Coefficient, Sales Volume, Volume Of Services.*

INTRODUCTION

From the earliest times when the threat of disease spread to Uzbekistan, the measures are taken by the government to secure the population from infection and social protection of the poor helped to reduce the effect of the widespread and prevent economic impoverishment.

President Sh.M.Mirziyoev's Decree No. "On priority measures to mitigate the negative impact of the coronavirus pandemic and the global crisis on sectors of the economy" PD-5969 dated March 19, 2020, states that different negative factors influence the economy of Uzbekistan as a result of the spread of coronavirus infection, which, in turn, requires successful preventive measures to moderate the negative impacts of this situation. They got to pay special attention to support the rapidly creating divisions of the economy, such as tourism, transport, pharmaceuticals, and textiles, and guaranteeing their sustainability.

The pandemic has extremely hampered the development of numerous sectors of the Uzbek economy, particularly services and tourism. Taking into account the positive impacts of tourism, the government pays awesome attention to the advanced development of tourism in our nation, expanding the level of the industry in the national economy.

In recent years, the Republic of Uzbekistan has developed a legislative system within the field of tourism, transport, inns, recreation and sports, the infrastructure of entertainment facilities, historical monuments and cultural heritage, development of relations with outside nations, visa facilitation, training, tourism infrastructure. Construction work is in full swing. No matter how effective the changes within the tourism division, the negative impact of the coronavirus pandemic have been highly reflected in the development of the tourism sector.

THE MAIN FINDINGS AND RESULTS

Modeling the development trends of the tourism industry, analyzing the level of impact of variables and conditions affecting the improvement of the industry, and forecasting the improvement of the industry within the near future may be a topical issue. The ponder created the level of the pandemic, issues of financial development and tourism improvement in the country within the occasion of a widespread, a model of economic growth and tourism development, and a forecast based on it.

Analysis of the relevant literature

Theoretical and practical aspects of modeling and forecasting economic processes, especially in the field of tourism, have been studied by many foreign economists, including Allen L. Webster [2, p. 1047], J.R. Amaikuima, L.I.Amakuima [3, pp. 11-17], Barbara Illovsky, Di Anza Kollig [4, pp. 673-704], T. Chorn, Ch.Chainbunsri [5, pp. 1-19], Ch.Chainbunsri, Prasert Chaitip [6, pp. 1-8], Damodar N. Gujarati [7, p. 1024], studied by the French H.Diebold [8, p. 371], G.Kaplan, G.L.Violante [9, pp. 167-194], Petrevska Birjana [10, pp. 45-55]. Among the scientists of the Commonwealth of Independent States: IA Bashmakov [12, pp. 32-63], II Eliseeva [13, p. 346], IA Kiseleva [14, pp. 1-7], V.A. May [15, pp. 5-28], Z.M. Mamaeva [16, p. 72] , M.A.Morozov, N.S.Morozova [17, pp. 32-36] studied in scientific works.

The issues of modeling and forecasting of socio-economic processes from Uzbek scientists have been studied in the scientific works of RH Alimov [11, p. 166], B. Hodiev, T. Shodiev, B. Berkinov [18, p. 175] and others.

RESEARCH METHODOLOGY

The article uses statistical grouping, econometric modeling, induction and deduction, logical analysis methods. Theoretical and methodological basis is the general strategy developed in the country for economic growth and tourism development, decrees of President Sh.M. Mirziyoev on prevention of coronavirus pandemic, development of economic growth and tourism in pandemic conditions, support of entrepreneurs, social protection and scientific -methodological literature.

The data of the Statistics Committee of the Republic of Uzbekistan was used as a database.

The status and outbreak of the coronavirus pandemic in the country were studied on the basis of time series and factor analysis. The model of economic growth and tourist visits in the country, as well as forecasting issues after the coronavirus pandemic were developed on the basis of Micrisoft Excel 2013.

Analysis and results

It is important to study the analysis of the coronavirus epidemic, the decline in incomes and living standards of the population of Uzbekistan. From March 15 to October 30, 2020, the number of patients diagnosed with coronavirus was 66,705. The number is 267 people. Also, the number of patients during this period was developed on the basis of Microsoft Excel using the trend equation, and the incidence of the disease with a coefficient of determination $R^2 = 0.83$, the suitability of the following model was determined:

$$K_t = 129{,}25 - 79{,}58t + 13{,}52t^2 - 0{,}43t^3 \ (1);$$

Where: K_t – the number of patients treated at ten-day intervals based on the model, per person;

t - time interval, ten days is taken as a unit.

The number of coronavirus patients varies by region, and the socio-economic indicators of the regions were studied to determine the causes of this differentiation (Table 1).

TABLE 1 NUMBER OF CORONAVIRUS CASES BY REGIONS OF THE COUNTRY AND SOCIO-ECONOMIC INDICATORS OF THE REGIONS

Regions	atients with coronavirus, s of 30.10.2020, person	he population density, as of 01.01.2020, er person / sq.km.	he volume of services provided per capita i anuary-December 2019, thousand soums	ross regional product in January-December 201 mounted to billion soums	ross regional product per capita in January ecember 2019, thousand soums	er capita income, in January-December 2019 housand soums	he volume of services provided per capita i anuary-December 2019, thousand soums	etail sales per capita in January-December 201 mounted to one thousand soums
TheRepublicofKarakalpakstan	752	11,4	3010,4	18735,7	9944,1	3390,5	3010,4	3028,4
Andijanregion	1892	727,4	3165,3	32897,2	10621,6	4108,7	3165,3	4101,7
Bukhara region	1310	47,7	4406,3	26695,0	13980,1	5641,3	4406,3	5399,2
Jizzakhregion	597	65,2	3148,8	15211,9	11126,3	3906,4	3148,8	4302,9
Kashkadaryaregion	1400	114,7	2710,7	36470,1	11233,3	3768,3	2710,7	3277,0
Navoiregion	619	9,0	5115,9	36685,2	37119,5	7431,4	5115,9	6856,2
Namangan region	2400	379,8	2785,0	23239,0	8353,6	3454,4	2785,0	3581,1
Samarkand region	2333	230,8	3331,5	37593,9	9793,9	3982,1	3331,5	3615,7
Syrdaryaregion	1113	196,8	3253,6	10477,7	12500,3	4022,5	3253,6	3427,5
Surkhandaryaregion	932	130,8	2685,8	22349,3	8597,2	3959,7	2685,8	4253,0
Fergana region	590	551,8	3142,9	32943,3	8861,5	3506,7	3142,9	3697,0

Khorazmregion	700	306,0	3113,5	19136,5	10337,4	4563,3	3113,5	3735,9
Tashkent region	13105	192,3	4988,8	50117,8	17164,2	4904,6	4988,8	5965,3
Tashkent city	38962	8572,3	25881,1	74527,6	29331,2	9041,0	25881,1	15046,0

Source: Data from the Ministry of Health of the Republic of Uzbekistan and the State Statistics Committee of the Republic of Uzbekistan.

According to the table, the number of patients with coronavirus in Tashkent is very high, which is significantly different from other regions. The number of patients with coronavirus in Tashkent is the lowest in the region (590 people). 66.0 times more than in Fergana region, as a result of such a high difference, the quadratic difference (s) between the indicators of patients with coronavirus by region is(σ) 9981.0.

Factors such as population density, per capita services, and per capita retail sales appear to be high in the number of patients with coronavirus disease. The impact of factors such as gross regional product, per capita gross regional product, per capita income on the number of patients with coronavirus disease is relatively low.

We created a regression equation based on components with a tall correlation coefficient (0.95), per capita services (0.96) and per capita retail sales (0.93) and calculated the elasticity coefficient (Table 2)

TABLE 2 ONE-FACTOR STRAIGHT-LINE REGRESSION EQUATIONS AND ELASTICITY COEFFICIENTS BASED ON FACTORS HIGHLY DEPENDENT ON THE NUMBER OF PATIENTS WITH CORONAVIRUS DISEASE

Factors	R	Regression equations	R^2	Fisher (F) criterion	Elasticity coefficient
Population density, 01.01.2020 position, per person / sq.km.	0,95	$y_{x1}=1156,9+4,4x_1$	0,89	103,8	0,76
The volume of services provided per capita in January-December 2019, thousand soums	0,96	$y_{x2}=-3569,4+1,6x_2$	0,93	153,3	1,75
The volume of retail trade per capita, thousand soums	0,93	$y_{x3}=-10947,4+3,1x_3$	0,87	80,2	3,30

Source: Based on the data in Table 1, prepared by the researcher in Microsoft Excel.

It can be seen from the table information that the correlation coefficient speaking to the calculate and result in dependence is within the extend of 0.93-0.96, the determination coefficient is within the extend of 0.87-0.93, and the Fisher basis is higher than the table values. According to the regression equations, the increment in the number of patients per capita will be due to an increase within the populace thickness by 0.76 units per 1 sq. Km, the volume of services per capita by 1.75 thousand soums, retail deals by 3.30 thousand soums per capita.

Under the influence of the coronavirus pandemic in Uzbekistan, some types of services, especially in the field of tourism, have undergone negative changes (Figure 1).

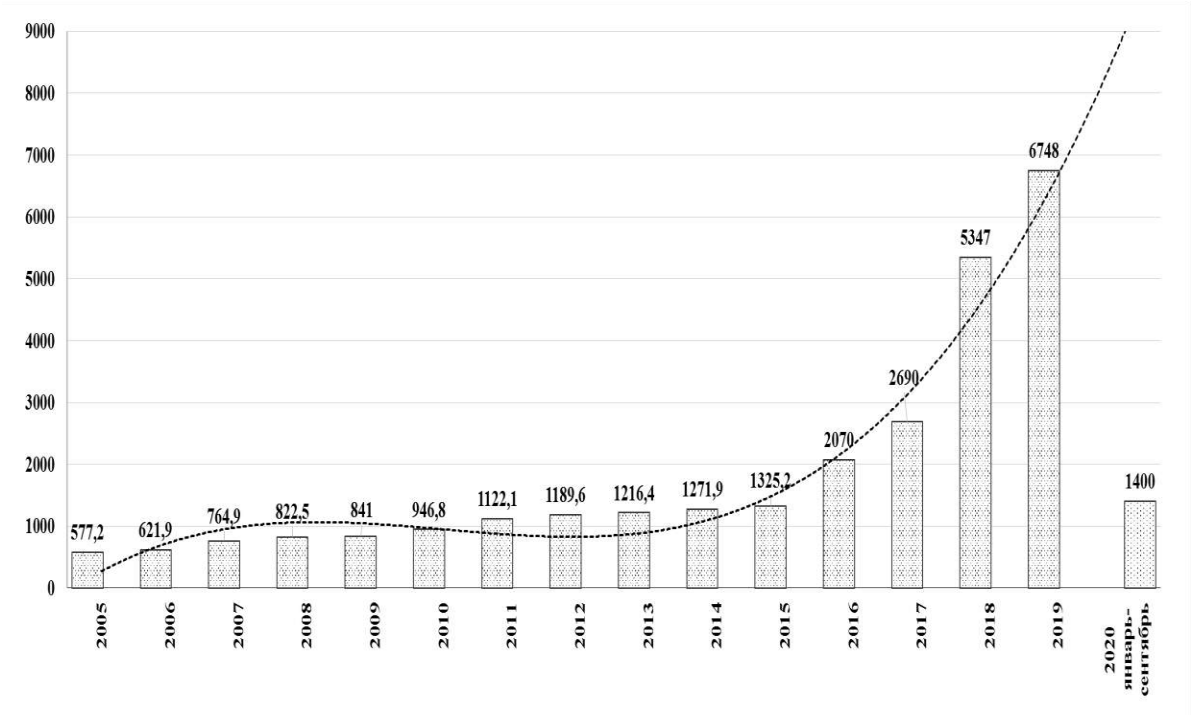

Figure 1. The trend line of the number of foreign tourists visiting the Republic of Uzbekistan and the change in the number of foreign tourists

Source: Data of the State Statistics Committee of the Republic of Uzbekistan and data of the State Committee for Tourism Development of the Republic of Uzbekistan.

The information shows that the number of tourists going by amid the analyzed period has expanded, particularly within the last three to four years, when the growth rate of this indicator was very tall. The truth that the trend of alter within the number of tourists visiting will take the frame of a parabola within the studied period means that the forecast data for future periods will be tall.

The trend of time-dependent change in the number of tourists visiting our country in the period from 2005 to 2019 with a coefficient of determination (R^2) of 0.9683 can be expressed as follows:

$$T_t = - 470,85+ 897,35t - 164,8t^2+9,1173t^3 (2);$$

Here: The number of tourists calculated on the basis of the T_t-model, thousand people.

The unit of time *t* is taken to be one unit of a year.

This situation is reflected in the drift bend, which reflects the alter within the number of tourists visited within the figure and the figure direction for 2020 based on this show. The figure data based on the model shown in Formula 2 may have reached 8 million of the number of foreign tourists visiting Uzbekistan in 2020.

The number of tourists expected to visit the country in 2020, calculated on the basis of the model, has sharply decreased due to the coronavirus pandemic, and in January-September 2020 amounted to only 1.4 million people, which is 6.0-6.5 million less than forecast. As the pandemic

continues, the total number of tourists who can visit this year is around 2.0 million and may be less than the forecast by 6.0 million.

In January-September this year, the number of foreigners visiting Uzbekistan for tourism amounted to 1.4 million people. This figure decreased by 72.6% compared to the same period last year. During this period, the number of Uzbek citizens traveling abroad for tourism amounted to 1.6 million people (a decrease of 73.5% compared to the same period last year).

The main destinations of foreigners visiting Uzbekistan are visiting relatives (88.5%), tourism (8.6%), medical treatment (1.0%), services (0.9%), trade (0.7%), and education (0.3 percent). In January-December this year, the majority of tourists are 31-55 years old and 19-30 years old, with a small share of those under 18 and over 56 years old.

CONCLUSION

Study of the coronavirus epidemic, investigation of its level during the period from March 15 to October 30, 2020, within the Republic of Uzbekistan 66,705 people were tainted with the disease or a normal of 267 people per day amid this period. Prescient data based on a time-based model of changes within the number of patients with Coronavirus within the period studied appears that the incidence rate will drop to a least within the close future. Another positive perspective of the nation is that 96.0% of sick patients are cured as a result of care for wiped outpatients, provision of quality medical care, short-term treatment.

The main reason for the contrasts in the number of patients with coronavirus in different regions of Uzbekistan is the distinction in population density and per capita services, as well as per capita services, which are the main factors influencing the alter in the number of patients. The models created on the basis of variables influencing the alter in the number of patients led to an increment in the population density by 0.67 people per 1 sq. Km, per capita services by 1.75 thousand soums and 3.3 thousand soums per capita is happening.

Given that the pandemic of 2020 had a negative impact on economic growth and tourism in the Republic of Uzbekistan, it is vital to develop measures to relieve the effects of the pandemic within the future. Incredible attention ought to be paid to the quick development of industries, agriculture, industry, which are less likely to be infected with coronavirus in the short term.

In the future, it is advisable to pay attention to the use of robots in workplaces in the automation, maintenance and manufacturing of workplaces.

Following the rules of quarantine, it is necessary to gradually revitalize the service sector, create great opportunities for the development of domestic tourism in the context of a pandemic, the population to carry out tourist activities in the regions of the country.

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