

DEPENDENCE AND LEVEL OF INFLUENCE OF THE SERVICES SECTOR ON THE ECONOMY OF UZBEKISTAN

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Abstract

The article discusses the features, problems, advantages and disadvantages of the development of the service industry in Uzbekistan, and in general, the role of the industry today. The main goal of the article is to fill this gap, and for this we will consider the share of the services sector in the GDP. In this, we will analyze the data from 2017 to 2022, and its peculiarity is that this research is focused on the general network of the service sector. We used correlation-regression econometric analyzes to determine the general relationship between variables. The result of the econometric analysis showed that there are strong correlations between the main factor and the factors affecting it. The results of the pairwise correlation coefficient in the study have a very strong correlation. Therefore, this study is focused on determining the general impact of changes in the service sector on the growth of the country's economy. Since the service sector plays an important and decisive role in the growth of the economy of Uzbekistan, the role of services in the modern economy, the reasons for the growth of services in Uzbekistan and changes in this sector are analyzed in the study. The main problems faced by service enterprises are carefully considered and ways to solve them are proposed.

Key words: Gross domestic product, Service sector, Correlation coefficient, Regression model, Fisher criterion, Elasticity coefficient, Approximation, Darbin Watson, Income, Cost, Enterprise.

Аннотация

В статье рассматриваются особенности, проблемы, преимущества и недостатки развития сферы услуг в Узбекистане, и в целом роль отрасли на сегодняшний день. Основная цель статьи восполнить этот пробел, и для этого мы рассмотрим долю сферы услуг в ВВП. В этом мы проанализируем данные с 2017 по 2022 год, и его особенность в том, что это исследование ориентировано на общую сеть сферы услуг. Мы использовали корреляционно-регрессионный эконометрический анализ, чтобы определить общую взаимосвязь между переменными. Результат эконометрического анализа показал, что существуют сильные корреляционные связи между основным фактором и факторами, влияющими на него. Результаты коэффициента парной корреляции в исследовании имеют очень сильную корреляцию. Поэтому данное исследование ориентировано на определение общего влияния изменений в сфере услуг на рост экономики страны. Поскольку сфера услуг играет важную и решающую роль в росте экономики Узбекистана, в исследовании анализируется роль услуг в современной экономике, причины роста услуг в Узбекистане и изменения в этой сфере. Подробно рассмотрены основные проблемы, с которыми сталкиваются сервисные предприятия, и предложены пути их решения.

Ключевые слова: Валовой внутренний продукт, Сфера услуг, Коэффициент корреляции, Регрессионная модель, Критерий Фишера, Коэффициент эластичности, Аппроксимация, Дарбин Уотсон, Доход, Стоимость, Предприятие.

Introduction

The service sector is the largest and fastest growing sector in the world economy, accounting for the largest share of total output and employment in most developed countries. The share of the service sector in the GDP is 47 percent in low-income countries, 53 percent in middle-income countries, and 73 percent in high-income countries. In 2022, the share of services in Uzbekistan's GDP will be 41.5%.

Today, Uzbekistan is a successfully developing country and is on the way to becoming a developed country in its own way. Uzbekistan is demonstrating effective

management for successful development and economic development. Year after year, fundamental reforms are being implemented in every field. Changes are being made especially in the service sector. Today, the service sector is the most profitable industry. Along with this, special attention is being paid to the further development of this direction in our country, to all-round support of entrepreneurs operating in the service sector. Especially in the following years, financial institutions play an important role in providing loans to entrepreneurs who want to start business activities in this direction.

We know that currently the service sector is one of the most promising and rapidly developing sectors of the economy, which covers many different types of activities. Almost all organizations provide services at one level or another, so this topic is relevant today.

The service sector plays an important role in the country's economic growth, creating cheap jobs, ensuring employment and reducing poverty. According to the calculations of the International Labor Organization, a 1% increase in the service sector will reduce poverty by 1.5% on average. In our country, 41.5% of the gross domestic product and 60% of the total enterprises belong to the service sector. More than 50 percent of the total employed population in the republic is employed in the services sector: wholesale and retail trade (10 percent), education (13 percent), transport (6 percent), public administration (5.5 percent), health and social services (7 percent) has been operating in the fields.

In particular, it was noted that in 2021, 29,000 projects worth 18 trillion soums were implemented in the service sector, and the service sector grew by 20%. At the same time, there are still many unexploited opportunities in this area, and their implementation will provide an opportunity to reduce unemployment, increase the income of the population, and sharply reduce poverty.

Therefore, in 2022, important legal, financial and organizational decisions were made to ensure the growth of the service sector in Uzbekistan by at least 50%. Also, the head of our state, Shavkat Mirziyoyev, introduced the following decision in order

to further support business entities in this direction, to encourage their ideas and initiatives:

"To increase the share of the services sector in the economy of our country, to fully utilize the existing opportunities in the field of services, to expand the types of services and to improve the quality of services, to advance the solution of the problematic issues that are waiting for their solution."¹

In particular, 1.5 thousand people can be provided with work due to the reconstruction of 16 sanatoriums in the Yangikurgan district of Namangan region alone. It is possible to provide employment to about 8,000 citizens by establishing tourist bases using light constructions in the Bostonliq district of the Tashkent region. Thousands of jobs can be created due to the development of mineral water industry in Khanabad city of Andijan region within the framework of health tourism.

In addition, the high income of the population in cities and large districts increases the demand for education, medicine, art, tourism, housing and transport services. For example, it is no secret that most public schools in cities are overworked and there is a shortage of kindergarten places.

For this purpose, expanding the scope of private education services will create great opportunities and relief for the population. In order to develop these types of services, taking into account the needs of the population, 100 suitable plots of land are allocated to entrepreneurs through an auction, with the condition of building a school and a kindergarten.

The President also emphasized the need to develop high-income services in the largest cities of our country, Tashkent, Samarkand and Namangan, on the basis of a separate program. As a clear example of this, we can say that in 2022, the head of our state created 750,000 jobs in the service sector in the cities of Tashkent, Namangan and Samarkand, and allocated 500 million dollars for the implementation of projects in the service sector across the country.

In short, private entrepreneurship, especially entities in the service sector, is one of the main factors that ensure social and economic stability in all aspects of

¹Resolution No. PQ-5113 of the President of the Republic of Uzbekistan dated May 11, 2021

society's development. The development of this sector leads to the enrichment of the country's population, economic development and an increase in state budget revenues.

The purpose of this article is to analyze the importance of the service sector in the economy and to better understand the service sector. The study also examines the relative performance of the service sector and its contribution to economic growth, trade and employment.

Literature analysis

The analysis of scientific sources shows that the theoretical and practical aspects of the application of the service sector related to the selected research topics are thoroughly covered in the research. As part of the research, we will consider several studies.

The service sector will strengthen our economy by increasing the share of GDP in the service sector and providing employment, providing a variety of services, creating competition by dividing the market into different segments and ultimately satisfying customer needs. The huge demand is increasing day by day. In this regard, Lovelock (1983) presents a series of classifications, which together represent and represent the full nature of services. Along these lines, Schmennet (1986) recognizes that some services may be more customized and involve higher levels of labor intensity, and helps the reader understand the strategic and tactical options available. In particular, Vandermerwe and Chadwick (1989) recognize the importance and role of components in the field of good service.

Also, many studies of foreign scientists and economists, for example, Z.I. Belikina, D. Bell, T.D. Burmenko, F. Kotler, K. Lovelock, V.D. Markova, B.A. Let's look at the theories created by Reisberg and others in the field of service. At the same time, most of them considered the concept of "service" through the prism of special signs or characteristics characteristic of this type of activity.

In the Great Economic Encyclopedia, services are considered "as a product of labor, a useful result of specific live labor, in contrast to the material product of labor,

which does not have a material form, the use value of which is different."² In another socio-economic dictionary, B.A. According to Reisberg, services are valued "not as things, but as benefits provided in the form of activities."³

In recent years, the number of literature describing the service sector has been increasing in all countries. As an example, we will consider this with the help of Malaysian studies. Multiple discriminant analysis (MDA) has been used to predict the financial distress of companies in the service sector in Malaysia (Chin, 2005; Karbhari and Zulkarnain, 2004).

In general, the results of previous studies in Malaysia have shown that their models can be used to predict companies facing bankruptcy or financial distress. However, except for all studies in Malaysia, only Mohmad Isa (2004) used financial ratios in his research. Mohmad Isa (2004) also examines macroeconomic variables in his research and he found that gross domestic product (GDP) is important.

In addition, the service industry in the United States and other countries has been widely analyzed in the literature. For example, Mulder et al. (2014) examined the service sectors of 18 OECD countries in the context of energy intensity. These authors conclude that a growing service sector leads to lower energy consumption in these countries. June and Mahmoud (2011) examined the performance of employees in the service industry. According to their results, there is a statistically significant interaction between role ambiguity, competence, and person-job fit.

In particular, Cheng (2013) analyzes the elements necessary for the development and growth of the service industry. The author identifies these components as specialized division of labor, innovation, and demand-driven mechanisms. Das and Raut (2014) discussed the importance of the service sector in terms of its contribution to the creation of human capital, which is crucial for sustainable economic development. Buera and Kaboski (2012) emphasized the role of high-skilled labor in the asymmetric growth of companies in the service sector. These authors empirically study how demand shifts to relatively skill-intensive

² The great economic encyclopedia. - M.: Eksmo, 2007. - 816 p.

³ Raisberg B.A. Modern socio-economic dictionary. /B.A. Reisberg. - M.: INFRA-M, 2009. - 629 p.

production. Jimenez-Zarco et al. (2011) studied the importance of market orientation in tourism. Their results show that the use of information and communication technologies has a direct and indirect effect on innovative services.

Ebling and Janz (1999) analyzed the German service industry in the context of export and innovation relations. Their results show that the level of export does not have a statistically significant effect on the innovation performance of German service companies. More specifically, research on the impact of the service sector on economic growth provides consistent results. Rudenko et al. (2015) noted that small business in the service sector has made a significant contribution to the economic development of Russia. Castillo et al. (2014) examined the explanatory power of the service sector on the growth of the Mexican economy. Their cointegration analysis shows that GDP and secondary and tertiary sectors have a common trend. Asian economies are usually export-oriented production centers. Park and Shin (2012) found empirical results that show that the service sector has made a significant contribution to Asian economic growth. Lee and McKibbin (2014) also provide evidence from Asian economies. These authors claim that productivity growth in the service sector ensures sustainable economic development in Asian countries. The impact of financial crises and social changes on the service sector is examined in several studies. Romao et al. (2016) investigated the impact of the GFC on tourism in the Algarve, Portugal, through Bayesian vector auto-regression analysis. Similarly, Dibeh et al. (2020) studied the impact of the Syrian crisis on the tourism-growth nexus in Lebanon. According to their results, the Lebanese economy is quite resistant to the political changes caused by the Syrian crisis. Dwyer et al (2006) discuss the impact of the Iraq War and SARS on the Australian economy. Fenichel (2013) compares different social distancing incentives.

The impact of social distancing measures in the USA was considered. Their results show that government-imposed social distancing measures reduced the number of COVID-19 cases by about 9.1 percent after 16 to 20 days. Greenstone and Nigam (2020) introduced a method for measuring the effect of social distancing on the number of deaths from a pandemic. According to the results, implementing

moderate social distancing in March could save 1.7 million lives in the United States by October 1. Ahmed et al (2018) conducted electronic searches of various databases and found that social distancing in the workplace reduced the overall number of influenza cases. Mongey et al (2020) found that economic risk was higher among workers who worked less at home or in jobs with physical proximity during the pandemic. Tucker and Yu (2020) studied the impact of the pandemic on US retail sales using visitor data obtained through mobile phone tracking. In addition, these authors note that financial difficulties may arise in the health sector. For example, 150 hospitals in the US had to ask doctors and medical staff to take pay cuts or leave during the pandemic.

Shin and Kang (2020) reported that the US hotel industry was expected to lose 50% of its revenue due to the lowest occupancy rate (38%) since the Great Depression. Martinez Dy and Jayawarna (2020) examine the impact of the pandemic on self-employed women and women-owned businesses in the UK. Their empirical analysis takes into account race, class, and gender. The results show that there is growing distrust among marginal entrepreneurs in the UK. Atkeson (2020) presents a simple SIR model to investigate the spread of pandemics considering different population categories. This author studied various scenarios regarding the health system's staffing and financial capabilities. Elavarasan et al. (2020) examined changes in electricity demand during a pandemic. These authors note that residential, commercial and industrial demand loads have changed significantly due to the pandemic to understand the economic impact of social distancing measures. Chetty et al. (2020) developed a public database of consumer spending, unemployment rates, and business income that is updated daily. The results show that in March 2020, spending by high-income individuals fell sharply due to health problems and social distancing, and unemployment statistics rose.

Rupani et al (2020) Widespread flight cancellations and traffic restrictions, as well as lockdowns around the world, have had a positive impact on the natural environment. According to these authors, changes in carbon emissions, air quality and water pollution statistics are evident. Bonaccorsi et al. (2020) analyzed the economic

impact of the pandemic on Italian citizens. The results showed a more severe impact of the lockdown on municipalities with high financial capacity and a significant negative impact of the pandemic on the budgetary revenues of national and local governments.

Of course, the scientists of our country also contribute to the study of this field. Of these, Z.G. In his works, Gudratov substantiated the significant contribution of the service sector to ensuring the stable growth of the country's economy and identified reserves for the development of the service sector. In addition, D.M. In Karimova's studies, the development of the service sector and its regulation were thoroughly studied, and priority directions for sustainable development of this sector and increase of export potential were determined. Also, in the study of Otaboyev Sherzod Khudoyberganovich (2017), the stages of development of the service sector in Uzbekistan and their results, the analysis of legal documents related to the development of this sector are described, suggestions and recommendations are given for the development of the service sector in our republic. So, the results showed that the steady growth of the service sector in Uzbekistan, in turn, has a great impact on the level of employment of the population. Today, the service sector covers about 45-48% of the population employed in the economy. The structural analysis of employment in the service sector showed that the largest share goes to socially important sectors such as education, culture, art and science, trade and catering, health care, etc. will come.

A wide range of measures have been implemented to ensure the more rapid development of the service sector in Uzbekistan, to create a modern service market, to form a rational structure of production and consumption of services, and to ensure the implementation of the tasks set within its scope today. is increasing. The strict implementation of these programs serves to increase the competitiveness and quality of the services provided by them, along with the proportional development and diversification of the activities of the enterprises of this sector.

In general, the results of all researches show that foreign and Uzbek scientists in their researches consider the importance of service and the service sector, the work activity and skills of employees, the elements necessary for the growth of the service sector, also analyzed through almost all branches of the service industry, including tourism, education, household services, trade, catering, but being another branch of the service industry, health the impact of the storage sector on the growth of the country's economy is neglected. That is, the extent of the effect or not was not taken into account. My research aims to fill this gap.

Methodology

One of the advantages of econometric methods in managing the national economy is that with their help, it is possible to show the influence of factors on the modeling object, and the mutual relations of resources on the result indicator. This allows for scientific forecasting and management of production results and national economy in dozens of sectors and thousands of enterprises.⁴

Therefore, in the previous chapter, an analysis of the literature related to the service sector was carried out. From the analysis of the literature, we can see that the service sector is one of the most profitable sectors throughout the country. In this chapter, we will develop the methodological part of our research and determine the strategies to fill the existing gaps in the literature analysis, as well as analyze the general network of the service sector in the economy of our country along with the literature.

In this study, six years of variables were selected in order to determine the impact of the service sector on the growth of the country's economy. These are data sets for 2017-2022. Among the selected variables, we chose GDP as y , and service sector as x .

We select the variable in relation to the correlation coefficient. Factors y and x were selected for the study, and in order to choose them from each other, we conducted a correlation analysis. Based on the result of the correlation analysis, the

⁴ Sabirov, K. N. (2019). Empirical analysis of the regional location of the food industry in Uzbekistan. *Economics and Innovative Technologies*, 2019(6), 12.

factors that have a strong influence on our main factor were left. Because the remaining influencing factors have too weak correlation or overlap each other, i.e., autocorrelated influencing factors were excluded, and based on the remaining influencing factors, the model was adjusted to forecast. was carried out.

The purpose of our study to show the number of admissions in the departments is to show how strong the need is for the service, and through the need, the increase in additional income through the number of patient admissions, and also through the additional income, and the service We will see and analyze which of these sections have the strongest impact so that we can offer further improvements and expansions.

In the study, correlation analysis was performed to quantitatively determine the density of the relationship between variables. The correlation coefficient is found using the following formula:

$$r_{x/y} = \frac{\overline{xy} - \bar{x} * \bar{y}}{\sigma_x * \sigma_y}$$

Also, in this study, a multifactor regression model is used. In this, the effect of several influencing factors on the resulting factor is expressed. That is, if the influencing factor changes by one unit, it is determined how much the resulting factor changes. The multifactor regression model is expressed as follows:

$$Y = \alpha_0 + \alpha_1 * x + \alpha_2 * x_2 + \alpha_3 + x_3 + \varepsilon$$

Thus, the model written is linear in form and is therefore a linear regression model.

In this context, the coefficient of determination (R^2) is considered in the study and the quality of the model is evaluated using the coefficient of determination. Its formula is as follows:

$$R^2 = 1 - \frac{\varepsilon(y - \hat{y})^2}{\varepsilon(y - \bar{y})^2}$$

The Darbin-Watson test (DW) and Fisher criterion (F-distribution) are also considered in the research. The residual autocorrelation in the rows is evaluated by the Darbin-Watson test (DW), and the statistical significance of the models is

evaluated using the Fisher criterion (F-distribution) and is found by the following formulas:

$$DW = \frac{\varepsilon(e_i - e_{i-1})^2}{\varepsilon e_i^2}$$

va

$$F = \frac{R^2}{1 - R^2} * \frac{n - k - 1}{k}$$

Thus, in this study, the linear regression model of dependence of services on GDP, empirical probability of determination (R^2), correlation coefficients ($r_{y/x}$), Darbin-Watson test (DW) and Fisher's criterion (F-distribution) estimates are correct. information about ' will be considered.

Analysis and results

In the study, a table was created using the data of the GDP of the Republic of Uzbekistan and the services sector for 2017-2022. Based on the data, the relationship between the factors was checked. The following results were obtained:

№	GDP	Service
1	282684.4	116901.5
2	381065.2	151512.6
3	487449.8	192929.1
4	561153.4	223049.8
5	686432.4	272109.1
6	828054.2	343374.3

Table 1. 2017-2022 data on the GDP of the Republic of Uzbekistan and the services sector

	<i>GDP</i>	<i>Services</i>
GDP	1	
Services	0,998043696	1

Figure 1. Correlation analysis results.⁵

The correlation between the main factor y and the influencing factor x is equal to 99.8%. There is a strong relationship between the main factor and the influencing factor. That is, the results of the private correlation coefficient should have a strong connection. But the connection between the influencing factors, that is, the results of

⁵ Author's calculation using Stata software.

the pair correlation coefficient, should have a weak connection. In the study, the result of the pair correlation coefficient has a very strong connection, and the probability of the existence of autocorrelation between the factors appears.

Source	SS	df	MS			
Model	1.9829e+11	1	1.9829e+11	Number of obs =	6	
Residual	778118182	4	194529545	F(1, 4) =	1019.34	
Total	1.9907e+11	5	3.9814e+10	Prob > F =	0.0000	
				R-squared =	0.9961	
				Adj R-squared =	0.9951	
				Root MSE =	13947	

Y	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
X	2.417426	.0757171	31.93	0.000	2.207201	2.62765
_cons	14080.78	17363.95	0.81	0.463	-34129.29	62290.84

Figure 2. Regression analysis result ⁶

Based on the result of the above regression analysis, a positive result was achieved through the factor affecting the reliability coefficients of the parameters. Based on this result, an increase in x (service) by 1 unit in the direct two-factor regression model leads to an increase in GDP, and

$$Y = 14080.78 + 2.42x$$

was forecast according to the model. Conditionally 356.854 billion soums were forecast for x, and y was 876.748 billion soums.

Also, the coefficient of determination (R^2) explains the variance of the resulting sign of the chosen linear function or constructed model. The determination value of the above table is equal to 0.9961, that is, the variance of the resulting sign determined in the selected regression equation was 99.61%.

⁶ Author's calculation using Stata software.

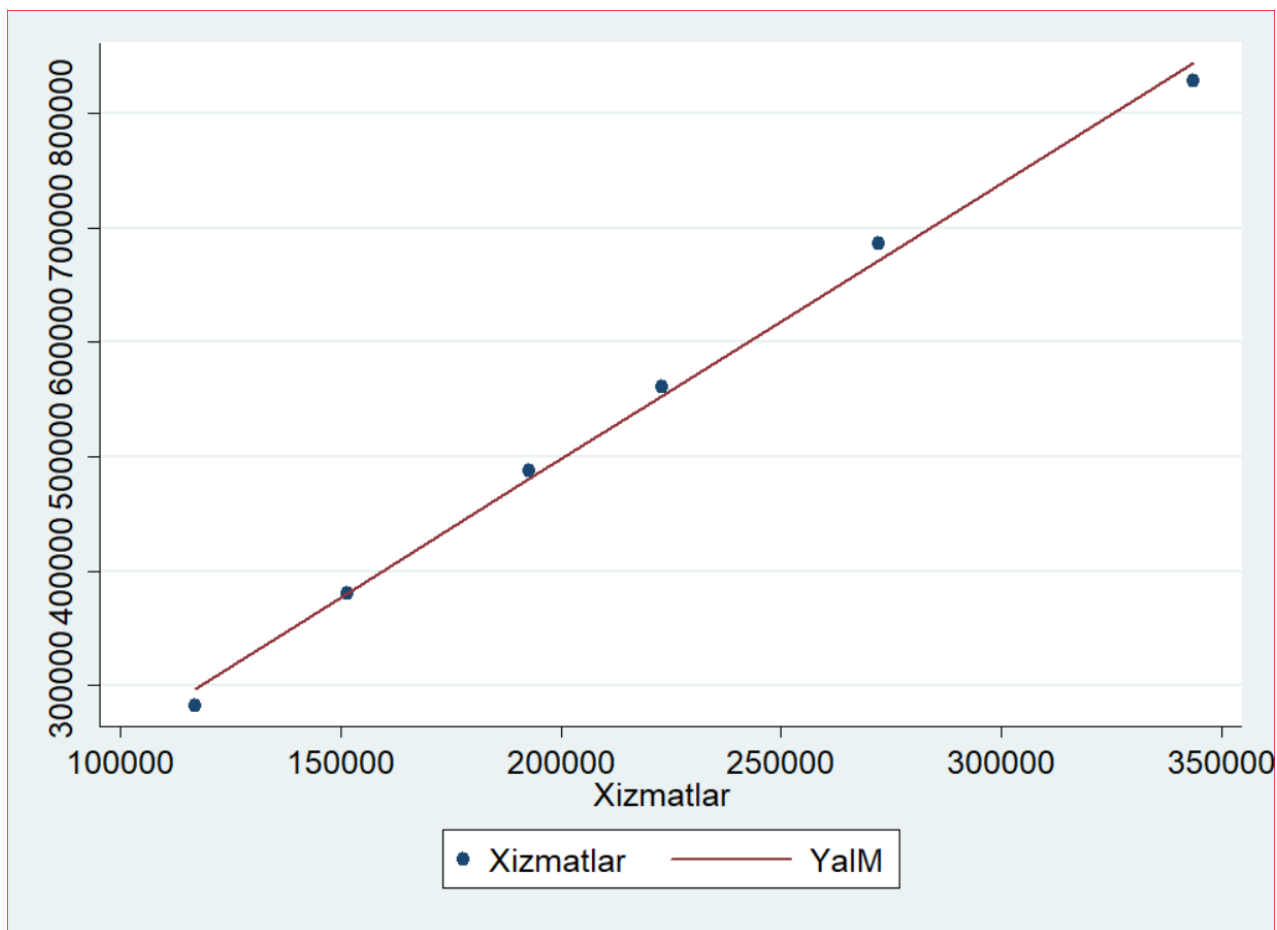


Figure 4. The result of the graphic display⁷

Through the graphical representation of the data, it is possible to see how dependent the service sector is on the GDP. Here, the line represents (GDP) and the dots represent the (Services) sector. The gross domestic product and the services sector turned out to be highly interrelated.

Thus, the autocorrelation in the residuals of the equation is determined and it is calculated according to the widely used Darbin-Watson (DW) criterion, and it was $dw = 1.03867$. Therefore, the calculated value for this equation is equal to 1.03867, which means that there is no clear conclusion about the presence or absence of autocorrelation.

Conclusion and Suggestion

In this study, a correlation-regression analysis was conducted on the share of the service sector in GDP. We analyzed the need for further development and

⁷ Author's graph from Stata.

expansion of the service sector and felt that it should be further expanded. Direct costs may also increase.

The research shows that the development of services in our country not only develops this sector, but also affects other sectors of the economy. For example, an increase in the demand for services by 356,854 billion soums creates an additional value of 876,748 billion soums in the economy. Sectors with a similar impact include consulting services, accommodation and catering, tourism, education, healthcare and utilities.

Therefore, at the current stage of our country's development, the development of the service sector, turning it into the main part of our economy, creates a great basis for further increasing GDP and joining our country from the ranks of middle-ranking countries to the ranks of high-ranking countries.

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