



Article

Prospects for The Development of Small Business Entities in The Medical Services Market

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Abstract: The article deals with the prospects for the development of small businesses and private entrepreneurship in the market of medical services in Uzbekistan. In analysing the share of the private sector, number of hospitals and trends in new medical specialities, the work uses official statistical data, normative legal acts (laws) and empirical indicators for 2017-2025. The study methodology uses ARIMA model to project the number of enterprise in health care system, percentage distribution share, percentage share of private sector and other important parameters for 2026-2030 thereby generating future projection figures. The findings of the research support the proposition that the private sector of medicine will play a strategic role in advancements and improving the quality of medical aid, increasing competitiveness, as well as easing the burden on state healthcare.

Keywords: Dynamics of the medical services market, development of small and medium-sized businesses, provision of medical services through the private sector, strategies for increasing competitiveness and service quality, econometric forecasting (ARIMA model), healthcare policy

1. Introduction

As a result of the practical realization of the priority tasks outlined in the New Uzbekistan Development Strategy, positive processes are underway now in the medical services market, and similar sectors in our country; development is accelerating private sector, small businesses, private entrepreneurship. This advancement is taking place in a production-ownership mode, both by creating new business entities and expanding the old ones, introduction of new specializations and improvement of their quality and competitiveness of medical care. It says that in 2017 the republic had 3,454 hospitals, compared with a total of 9,200 by 2024. This number has been rising by about 500-600 per year in recent years [1]. Nowadays 225 of the medical specialties are on sale for the private sector, and all is ready to be licensed some or other specialty in non-state hospital. 2,308 private hospitals for outpatient care and 421 inpatient ones have been set up. More than 3,700 of such existing medical firms have developed their business based on further competences. Meanwhile, at present in the entire health sector of the republic 35% of all beds belong to private structures [2].

Due to active work on standardization and quality protection in provision of medical care, the number of specialized medical centers in the republic and their regional branches over a period of 7 years (2010-2016) took place at company level; that is why we now have not only 10 but already 25, and their regional offices - from 2 to 269. In an effort to enhance the efficiency of disease treatment, the number of diagnostics increased from 70 to 547

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and treatments from 60 to 801 between 2017 and 2024. Furthermore, the proportion of high-tech procedures in regions was 61%, with a decline of 24% in patients demand for treatment in capital. The growth of private health doesn't just give the population more choice; it raises standards too. This not only minimises the burden on the state health care system [3]. Due to the conditions that are developed in this field, high-technologic and complicated surgical interventions are now in the position to be performed in 18 fields over 130 medical areas in private medical units of our country. The private sector was allowed to offer specialty medical services including traumatology and orthopedics, obstetrics and gynecology, ophthalmic microsurgery, urology and cardiology under the state budget. In addition, treatment of persons in privileged categories at non-state health care organizations is paid by the State Insurance Fund. In addition, 36 private medical institutions even have their own ambulance services and own 91 vehicles. At present more than 16,365 doctors and approximately 25,500 paramedical staff are working in the private sector of health which helps both their real income as well as protect public health through quality and competitive medical services. Our country will further implement international standards in setting up new medical institutions within the near future in this field [4].

Further increase in the quality of services to the population in medical service providing, realization of "safe medicine" principle;

Higher rate of service reliability indicators are anticipated to be achieved in the sector by fully protecting consumer rights of patients.

2. Materials and Methods

The research methodology was based on the integration of empirical and analytical approaches, utilizing official statistical data, analysis of regulatory legal documents, and econometric modeling methods.

The ARIMA (Autoregressive Integrated Moving Average) model was selected for forecasting the main indicators of the medical services market for 2026-2030. This model is effective in identifying trends and seasonal changes in time series data and takes into account autocorrelation in the time series. The integration (I) component of the model eliminates data instability and brings the series to a stationary state, while the autoregressive (AR) and moving average (MA) components provide forecasts considering past period values and errors. The ARIMA model can more accurately reflect significant changes in long-term forecasts compared to simple regression or exponential average models and allows for minimal forecast error. For this reason, the ARIMA model was chosen as the most suitable method for reliably forecasting the number of enterprises in the region's healthcare sector, the share of the private sector, and other key indicators.

Literature review. The role and importance of small businesses and private entrepreneurship in the medical services market has become a focus of special attention in economic and social research in recent years. Scientific studies conducted in this field substantiate the crucial role of the private sector in improving the efficiency of the healthcare system and ensuring the quality and competitiveness of services. According to research by the World Health Organization (WHO), increased private sector participation in the healthcare system leads to improved service quality, implementation of innovative technologies, and more efficient use of resources [5]. Studies have shown that private medical institutions can quickly and flexibly meet the population's demand for medical services. Additionally, research by McPake and Hanson (2016) emphasizes that non-state medical institutions operating as small businesses in developing countries are an important factor in expanding the geographical coverage of healthcare services as an alternative to the public sector. The authors provide scientific evidence that the private sector creates a competitive environment, helping to reduce service costs and improve quality indicators. Trends in small business development in the healthcare sector within the Uzbek economy were thoroughly analyzed in the scientific works of A. Vahobov and Sh. Tursunov. Their research notes that tax incentives provided by the state, simplification of licensing processes, and introduction of public-private partnership mechanisms have significantly increased private sector activity in the medical services market. Within the

framework of the New Uzbekistan Development Strategy, modernizing the healthcare system and developing the private medical services market are defined as priority areas [6]. These strategic documents identify expanding the population's access to medical services by supporting small businesses as one of the main objectives. Empirical studies conducted by local scientists N. Yuldoshev and M. Ismoilov have established that the increase in the number of non-state medical institutions across regions has led to structural changes in the medical services market, particularly a stable growth trend in the share of small businesses. The research results confirm the strategic importance of the private sector in the healthcare system. Overall, the analysis of existing scientific literature demonstrates that the development of small business entities in the medical services market is a crucial factor in improving the efficiency of the healthcare system and ensuring the quality and competitiveness of services. This study aims to further deepen these scientific perspectives through empirical and econometric analysis using the example of the Republic of Uzbekistan and its regions [7].

3. Results and Discussion

The main directions for ensuring public health, expanding the private sector's share in this field, and developing small businesses were defined in Presidential Decree No. PP-2863 dated 01.04.2017. The implementation of this decree and similar regulatory documents has facilitated the development of the private sector in this area [8]. This table shows the dynamics of the number of enterprises providing healthcare and social services from 2019 to 2023.

Table 1. Dynamics and analysis of medical service market entities in the Republic of Uzbekistan from 2019 to 2025

Indicators	2019	2020	2021	2022	2023	2024	2025*
Total number of enterprises providing healthcare and social services	6778	7903	9145	10391	11597	11753	12280
Growth percentage compared to 2019	x	116.60	134.92	153.30	171.10	173.4	181.17
Number of small business entities providing healthcare and social services	5364	6370	7588	8814	9976	10366	10837
Growth percentage compared to 2019	x	118.75	141.46	164.32	185.98	193.25	202.03
Share of small businesses in relation to the total number of enterprises, in percent	79.14	80.60	82.97	84.82	86.02	88.19	88.25

Additionally, this section presents the changes in the number of small businesses and private entrepreneurship entities operating in this field and their share in the industry over these years. During the period under study, a positive trend was observed in the number of healthcare sector enterprises. However, in 2017-2019, as a result of large-scale reforms in the healthcare sector, many hospitals and clinics were merged and liquidated through re-specialization. This led to a decrease in the number of private healthcare business entities [9-10]. Despite this, a steady increase in the number of small businesses providing medical services has been observed due to a sharp change in the share of small businesses and private entrepreneurship entities. Specifically, in 2023, compared to 2019, the total number of enterprises in the industry increased by 171 percent, with small businesses accounting for 86 percent of this growth, representing an absolute structural

increase of 18 percent. The share of small businesses among private healthcare entities is expected to reach 86% by 2023 and 95% by 2025. These developments are the result of conditions created for the development of the private sector in the industry [11].

For a more in-depth study of the share and development of the non-state medical sector, we consider it expedient to conduct research at the regional level. The fact that, under the initiative of our President Shavkat Mirziyoyev, starting from 2017-2018, emphasis was placed on organizing and developing medical services even in remote areas as a priority goal and task has led to the observation of many positive trends in the field. This task is also being carried out by creating extensive opportunities for the private sector, such as large-scale tax benefits, public-private partnerships, preferential lending, and special investment programs. In our analytical work, forecast indicators for the medical services market for 2026-2030 were developed using the Gretl program. Forecasting in the ARIMA (Autoregressive Integrated Moving Average) model, i.e., "Autoregression integrated into the moving average," has the order (p,d,q), where p represents the autoregression parameter, d represents the integration part, and q represents the moving average parameter [12-13].

Based on the results of calculations using available statistical data, ARIMA models were developed to forecast the main indicators of the region's healthcare sector. The general form of the ARIMA model will be as follows:

$$EY_t = \alpha + \varphi_1 Y_{t-1} + \dots + \varphi_p Y_{t-p} + \epsilon_t + \theta_1 \epsilon_{t-1} + \dots + \theta_q \epsilon_{t-q}$$

Table 2. Results of ARIMA models for forecasting the main indicators of the healthcare sector of the Republic of Uzbekistan

(1 - L) Ln(X₁) Dependent variable:					
	<i>Coefficient</i>	<i>Std. Error</i>	<i>Z</i>	<i>p-value</i>	
<i>const</i>	196.986	61.303	3.2133	0.0106	***
φ_1	0.12694	0.04932	2.5741	0.0300	**
Mean dependent var	206.7273		S.D. dependent var	1119.500	
Mean of innovations	3.620997		S.D. of innovations	1057.432	
R-squared	0.662627		Adjusted R-squared	0.662627	
Log-likelihood	-92.21603		Akaike criterion	190.4321	
Schwarz criterion	191.6258		Hannan-Quinn	189.6796	
(1 - L) Ln(X₂) Dependent variable:					
	<i>Coefficient</i>	<i>Std. Error</i>	<i>Z</i>	<i>p-value</i>	
<i>const</i>	297.378	113.725	2.6149	0.0280	**
φ_1	0.21584	0.08563	2.5205	0.0327	**
Mean dependent var	318.0909		S.D. dependent var	1011.473	
Mean of innovations	7.778201		S.D. of innovations	938.5115	
R-squared	0.804018		Adjusted R-squared	0.804018	
Log-likelihood	-90.91942		Akaike criterion	187.8388	
Schwarz criterion	189.0325		Hannan-Quinn	187.0864	

For forecasting using the ARIMA (Autoregressive Integrated Moving Average) model, it is first necessary to develop an ARIMA model for indicators of the number of

enterprises providing healthcare and social services in the region, as well as the number of small business entities providing healthcare and social services. We introduce the following notation:

X_1 — number of enterprises providing healthcare and social services;

X_2 — number of small business entities providing healthcare and social services;

The coefficient of determination, standard errors, t-Student, Akaike, Schwarz, and Hannan-Quinn criteria indicators in the table above demonstrate the statistical significance and adequacy of the formulated models. Therefore, the calculation results derived from the model developed above substantiate the possibility of its full utilization in forecasting the main indicators of the region's healthcare sector [14].

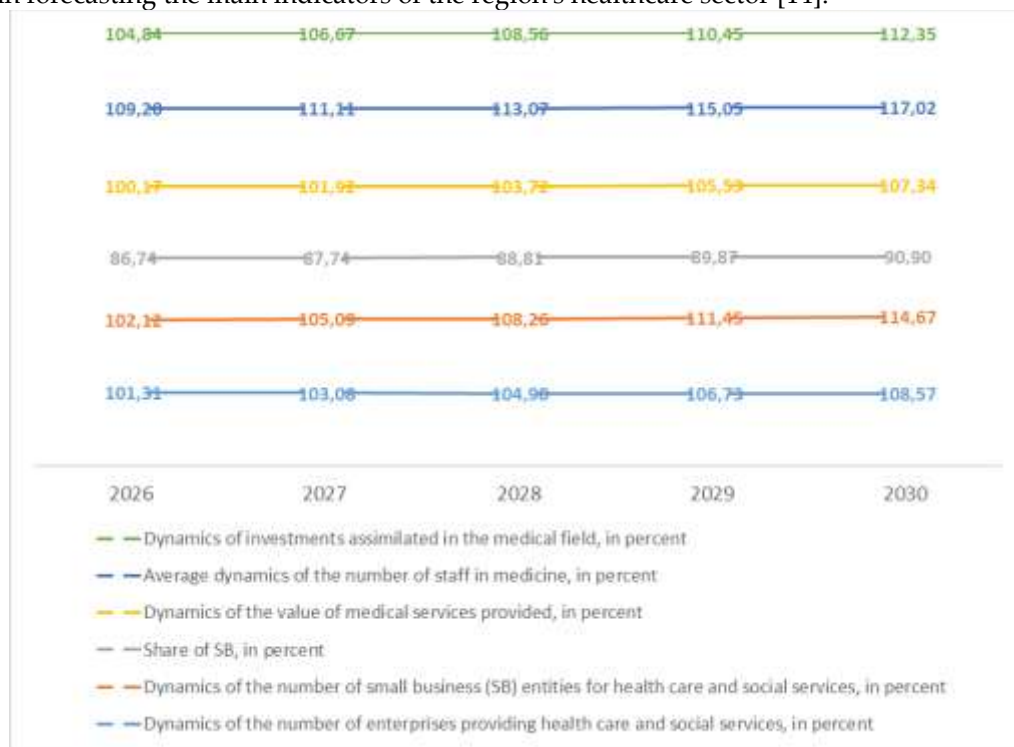


Figure 1. Forecast of the number of enterprises and other key indicators in the Republic's medical sector for 2026-2030

The forecast values of the main indicators of our country's healthcare sector, calculated for 2026-2030 using the "ARIMA" econometric model, are presented in Figure 1. The small standard errors of these values and their placement within confidence intervals substantiate that these forecast values fully correspond to the real process. According to the forecast, the share of small businesses in the healthcare sector is expected to increase from 86% in 2023 to 90.9% in 2030. In the Republic of Uzbekistan, the volume of medical services is projected to grow by 6.97% from 2026 to 2030. Employment in the medical field is expected to rise by 17%, while the volume of investments in the sector will increase by 12.35%, reaching nearly 60 trillion soums. The share of newly acquired medical specialties is forecast to increase 2.17 times. Additionally, an optimistic trend is projected for private medical institutions, with their share in total employment expected to reach 66.2% [15-16].

4. Conclusion

The results of the study confirm high rates of growth in the private sector and medical services market competition in Uzbekistan. Nationally, hospitals increased from 3,454 in 2017 to about 12,280 till 2025 with private sector's share standing at around 35%. Specialties and high-tech services surged. The ARIMA model forecast, the share of small businesses will grow to 90.9% and investments by 2030 will reach 60 trillion soums and new profiles will be created in 2.17 more times. In general, state policy (tax benefits, programs of partnership) effectively promotes the development of private medical care,

ensuring quality services and diversity for citizens. To be more competitive, it is also suggested to attract foreign talent, promote innovation and regional equalization. Reforms in this field should be consistent with the objectives of the Strategy for the New Uzbekistan and guarantee stability of functioning of the healthcare system.

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