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# Academia Open



*By Universitas Muhammadiyah Sidoarjo*

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# Academia Open

Vol. 11 No. 1 (2026): June  
DOI: 10.21070/acopen.11.2026.14817

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## Prospects for the Development of Small Business in Densely Populated Areas

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### Abstract

**General Background:** Small businesses play a crucial role in promoting economic growth, employment generation, income expansion, and regional development, particularly in densely populated areas. **Specific Background:** In Uzbekistan, increasing population concentration and labor market pressures have intensified the need to strengthen small business activities as a driver of sustainable regional development. **Knowledge Gap:** Despite extensive studies on entrepreneurship and regional development, limited attention has been given to the organizational and economic mechanisms supporting small business development in densely populated areas while considering regional differences and demographic characteristics. **Aims:** This study aims to analyze the current state, key determinants, and future prospects of small business development in densely populated areas, focusing on Andijan Region. **Results:** The findings reveal strong relationships between small business output and investment attraction, employment, and export performance. Econometric analysis indicates that investment and employment are among the most significant factors associated with production growth. Forecast results suggest continued increases in production volume, investment, employment, and exports through 2030. **Novelty:** The study integrates correlation analysis, econometric modeling, and regional forecasting to develop differentiated development strategies tailored to densely populated regions. **Implications:** The results provide practical guidance for policymakers to strengthen infrastructure, promote innovation, improve investment conditions, and support region-specific entrepreneurship strategies to achieve sustainable economic growth and regional competitiveness.

**Keywords:** Small Business, Regional Development, Entrepreneurship, Employment, Economic Growth

### Key Findings Highlights

Investment attraction and labor participation show strong associations with business output growth.

Forecast projections indicate continuous expansion of production, employment, and exports through 2030.

Region-specific development strategies support sustainable entrepreneurship and competitiveness.

Published date: 2026-06-21

## I. Introduction

In the context of accelerating globalization and urbanization processes in the world economy, the role of small businesses in ensuring economic growth, employment, and social stability in densely populated areas is becoming increasingly significant. According to the International Labour Organization (ILO), more than 90 percent of enterprises worldwide belong to the small and medium-sized business sector, and these enterprises account for nearly 70 percent of total employment [1]. In the European Union, small and medium-sized enterprises (SMEs) constitute more than 99 percent of all enterprises and generate approximately 52–55 percent of gross value added, while in the United States small businesses contribute nearly half of the country's Gross Domestic Product (GDP) [2].

The experience of developed countries confirms that small businesses have a substantial share in GDP and play a crucial role in ensuring employment. In this regard, the organizational and economic aspects of small business development in densely populated areas, their specific characteristics, criteria for evaluating business efficiency, the potential of small business entities, the development of regional strategies based on a differentiated approach, and the determination of promising development parameters are considered among the priority areas of scientific research.

In New Uzbekistan, population growth and the uneven distribution of population across regions, particularly the increasing employment challenges in densely populated cities and districts, have made the effective employment of the growing labor force a priority task. To address these challenges, strategic objectives have been established to improve the business environment in the regions, support new business initiatives, and increase the share of small and medium-sized businesses to 55 percent of GDP, 34 percent of industrial output, 34 percent of exports, and 75 percent of total employment [3].

The development of small businesses in densely populated areas is one of the key factors for achieving sustainable economic growth and socio-economic balance across regions. These areas possess significant opportunities for maximizing the use of available resources, increasing employment, strengthening local production, and meeting domestic market demand. However, achieving these objectives requires a systematic and strategic approach to organizing and supporting entrepreneurial activities.

## II. Literature Review

The development of small businesses in densely populated areas is considered one of the important research directions in economic science. Studies conducted in this field primarily focus on examining the impact of entrepreneurial activity on economic growth, employment, and regional development.

One of the founders of entrepreneurship theory, **J. Schumpeter**, regarded entrepreneurship as the main driver of economic development and emphasized that innovations contribute to the modernization of economic systems and the improvement of production efficiency [4]. According to his view, the establishment of new enterprises and the implementation of innovative ideas stimulate economic activity and foster sustainable development.

**M. Porter** developed the theory of regional competitiveness and industrial clusters, demonstrating that when enterprises are concentrated within a particular geographical area, production efficiency and innovative activity tend to increase [5]. This approach provides a theoretical foundation for the development of small businesses in densely populated regions, where the concentration of enterprises can generate synergistic effects and enhance regional competitiveness.

In studies conducted by **D. Birch**, it was demonstrated that small business entities play a significant role in creating new jobs [6]. According to the scholar, small enterprises are particularly important in maintaining the balance between labor supply and demand in the labor market.

Among local researchers, **Q.X. Abdurahmonov** investigated the role of entrepreneurship in ensuring employment and substantiated that small business is an important factor contributing to economic growth and social stability [7]. The scientific works of **S.S. G'ulomov** and **B.Yu. Xodiyev** highlight the role of small business and private entrepreneurship in the national economy, their impact on regional development, and the mechanisms of state support for entrepreneurial activities [8].

Recent studies published by the **World Bank**, the **OECD**, and the **United Nations Development Programme (UNDP)** indicate that the contribution of small and medium-sized enterprises (SMEs) to economic development has been steadily increasing. These studies emphasize that improving the business environment, particularly in highly urbanized and densely populated regions, is a crucial factor for achieving sustainable economic growth [9]. Furthermore, the rapid development of digital technologies, e-commerce, and innovative entrepreneurship is creating new opportunities and prospects for small business development.

The review of existing studies reveals that although the significance of small businesses in economic development has been extensively examined, insufficient attention has been paid to improving the organizational and economic mechanisms of small business development while considering the demographic characteristics, infrastructure provision, and regional disparities of densely populated areas. Therefore, further research in this field remains highly relevant and necessary.

## III. Methodology

This study employed both general and specialized scientific research methods to assess the prospects for small business development in densely populated areas and to determine its economic efficiency. During the research process, a systematic approach, comparative analysis, economic-statistical analysis, grouping methods, time-series analysis, index methods, and economic forecasting techniques were extensively utilized [10].

The analysis was based on data obtained from the National Statistics Committee of the Republic of Uzbekistan, reports of regional statistical departments, and official statistical indicators related to economic development and poverty reduction. Comparative analyses across different regions were conducted to identify the specific characteristics of small business development in densely populated areas.

The study examined key indicators of small business activity, including the number of enterprises, employment levels, the volume of goods and services produced, investment volumes, and regional economic growth indicators. The relationships among these indicators were analyzed using economic-statistical methods, enabling an assessment of the correlation between population density and small business development [11].

In addition, the research applied the methods of scientific abstraction, induction, and deduction to identify promising directions for the development of small businesses in densely populated areas. Based on the findings, practical proposals and recommendations were developed to improve the effectiveness and sustainability of small business activities in such regions.

## IV. Result and Discussion

**Table 1.**  
**Main Economic Indicators of Small Business Activity in Andijan Region (2015–2024)**

Year	Output Produced by Small Businesses,	Investment Attracted to Small	Employment in Small Businesses,	Exports of Goods and Services by
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	bln UZS (Y)	Businesses, bln UZS (X <sub>1</sub> )	thousand persons (X <sub>2</sub> )	Small Businesses, mln USD (X <sub>3</sub> )
2015	9745,2	1273,3	610	120,7
2016	11784,3	1963,5	762	152,3
2017	16234,2	2479,1	823	174,9
2018	19473,2	3647,2	897	189,5
2019	23281,4	4632,7	920	231,4
2020	26577,5	5750	989,9	260,2
2021	31286,1	6269,6	1020	367,6
2022	36545,3	8466,9	1040	477,7
2023	53053,8	12901,1	1071,9	347,5
2024	62912,9	20011	1143,7	432,8

During the period 2015–2024, the small business sector in Andijan region developed into one of the most dynamic sectors of the economy, playing a significant role in determining economic growth rates. The data presented in Table 1 demonstrate positive growth trends in key indicators of small business development, including production volume, attracted investments, employment levels, and export potential.

According to the correlation analysis results presented in Table 2, the production volume of small business enterprises in the region has a strong relationship with the amount of investment attracted to small businesses (0.986), employment in the small business sector (0.965), and the volume of products and services exported by small businesses (0.749). These findings indicate that the selected factors have a significant influence on production volume. The correlation relationships among these variables were further examined and verified.

Trend models were developed to assess and forecast the factors affecting the production volume of small business enterprises.

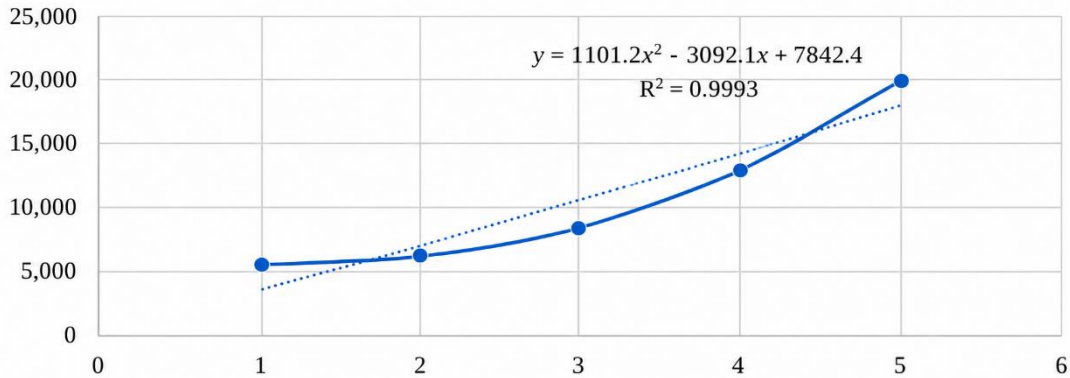
Indicators	Production Volume of Small Businesses (billion UZS) Y	Volume of Investments Attracted to Small Businesses (billion UZS) X <sub>1</sub>	Employment in Small Businesses (thousand persons) X <sub>2</sub>	Volume of Products and Services Exported by Small Businesses (million USD) X <sub>3</sub>
Production Volume of Small Businesses (billion UZS) Y	1			
Volume of Investments Attracted to Small Businesses (billion UZS) X <sub>1</sub>	0,986113136	1		
Employment in Small Businesses (thousand persons) X <sub>2</sub>	0,964778799	0,981959831	1	
Volume of Products and Services Exported by Small Businesses (million USD) X <sub>3</sub>	0,521918251	0,509178882	0,595858957	1

**Source:** Calculated by the author based on the statistical data of Andijan region for 2015–2024.

**Note:**

- Y – Production volume of small businesses (billion UZS);
- X<sub>1</sub> – Volume of investments attracted to small businesses (billion UZS);
- X<sub>2</sub> – Employment in small businesses (thousand persons);
- X<sub>3</sub> – Volume of products and services exported by small businesses (million USD).

## Investment Volume Attracted to Small Businesses (Billion UZS) ( $X_1$ )

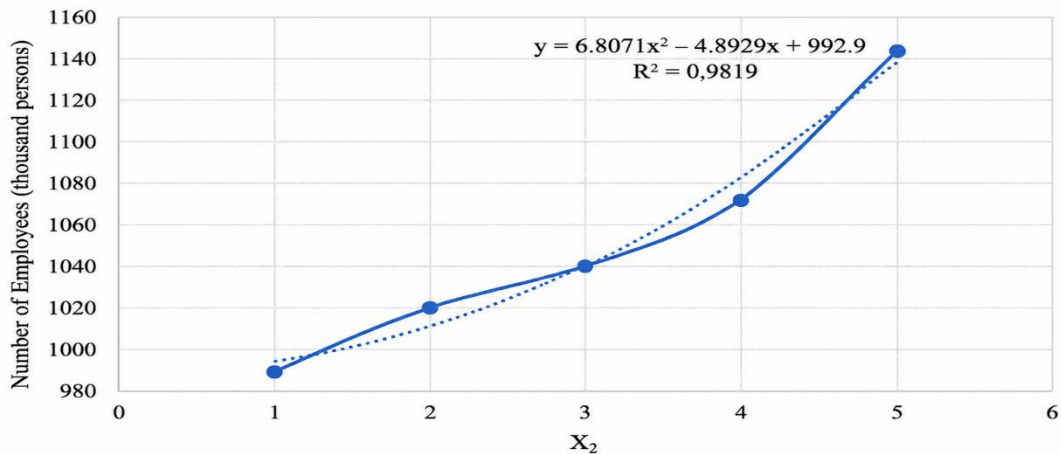


**Figure 1.**

### Second-Degree Polynomial Model of the Volume of Investments Attracted to Small Businesses in Andijan Region<sup>[1]</sup>.

When we analyzed the impact of changes in the volume of investment attracted to small businesses in the Andijan region on changes in the volume of output in small businesses based on econometric models, the 2nd-degree polynomial model represented the most effective relationship. Its coefficient of determination was . A trend model was developed for time series.

## Number of Employees in Small Business (thousand persons) $X_2$



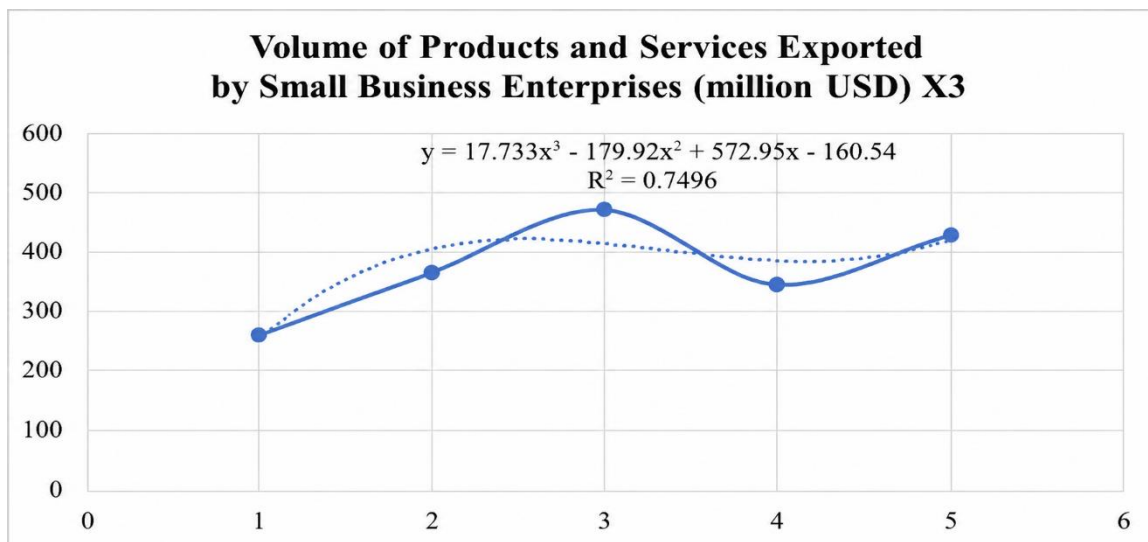
**Figure 2.**

### Second-Order Polynomial Model of Small Business Employment in Andijan Region.

An econometric analysis of the impact of changes in the number of employees in small businesses on the volume of output in Andijan Region showed that a second-degree polynomial model provided the best fit. The estimated model is expressed as follows:

$$y = 6.8071x^2 - 4.8929x + 992.9$$

The coefficient of determination for this model was  $R^2 = 0.9819$ , indicating that 98.19% of the variation in the dependent variable is explained by the independent variable. This demonstrates a high level of explanatory power and confirms a strong relationship between the number of employees in small businesses and the volume of output produced. Furthermore, a trend model was developed based on time-series data, providing a basis for forecasting future development trends of these indicators.



**Figure 3.**

**Third-degree polynomial model of the volume of products and services exported by small business enterprises in Andijan Region.**

When we analyzed the impact of changes in the value of products and services exported by small business enterprises in Andijan Region on the changes in the production volume of small business enterprises using econometric models, the third-degree polynomial model was found to represent the most effective relationship[11]. The coefficient of determination ( $R^2$ ) was found to be  $R^2 = 0,749$ . Furthermore, a trend model was developed based on the time-series data.

A regression analysis was also conducted to identify the three main factors influencing the growth of production volume in small business enterprises of Andijan Region. The results demonstrated that the coefficient of determination of the model was equal to  $R^2 = 0,972$ . In addition, the future production volume of the enterprise was estimated using the production function approach[12].

$$\ln(y) = 14,2 + 0,83 \ln(x_1) - 1,7 \ln(x_2) + 0,09 \ln(x_3)$$

We simplify the equation by raising both sides to a power transformation

$$y = e^{14,2} * x_1^{0,83} * x_2^{-1,7} * x_3^{0,09}$$

Forecasted using the following formula.

Where: y – volume of manufactured goods.

$a_0, a_1, a_2, a_3$  – parameters of the production function (fixed quantities, constants).

$x_1$  – Volume of investments attracted to small businesses, (billion soums).

$x_2$  – Number of employment in small businesses, (thousands, people).

$x_3$  – Volume of products and services exported by small businesses, (million US dollars).

It can be seen that  $e^{14,2}$  – is a constant representing the base level of the model, which gives the initial value of Y when all independent variables are at unity. The coefficients represent elasticity indicators in exponential form. In particular, the elasticity of  $x_1$  is 0.83, and an increase in the volume of investment attracted to small businesses by 1 unit increases the volume of production by approximately 0.83 units. Based on the results of the research, we have forecasted the value of factors based on the above factors using trend models until 2030 based on an econometric model.

**Table 3.**  
**Forecast parameters of the volume of products produced by small businesses in Andijan region and the factors affecting it until 2030**

Years	Volume of products developed by small businesses, billions of soums Y	Volume of investments attracted to small businesses, (billion soums) $X_1$	Number of employment in small businesses, (thousands, people) $X_2$	Volume of goods and services exported by small businesses, (million US dollars) $X_3$
<b>2025</b>	83923,3	28925,6	1208,6	630,3
<b>2026</b>	103940,9	40146,5	1292,1	1116,4
<b>2027</b>	123408,2	53569,4	1389,4	1987,4
<b>2028</b>	140832,2	69194,3	1500,2	3349,8
<b>2029</b>	155467,9	87021,2	1624,6	5309,9
<b>2030</b>	167086,5	107050,1	1762,7	7974,2

Among the main economic and social factors influencing the increase in the output of small businesses, such important indicators as the volume of investments attracted to small businesses, the number of people employed in the sector, and the volume of products produced and exported by small businesses have been identified. The interrelationships and interactions between these factors have been analyzed, and on this basis, accurate and scientifically based forecast indicators have been developed, taking into account the stimulating economic conditions for the

period up to 2030. These forecasts are of great importance in determining the strategy for the development of small business and entrepreneurship in the region, rationally distributing resources, and increasing the competitiveness of the sector.

Regional analyses show that, although the activity of small businesses in the domestic market is increasing, their export potential is relatively limited. Therefore, in the future, there is a need for small businesses to develop financial, logistics and marketing infrastructure to organize export-oriented production.

The prospects for the development of small businesses in densely populated areas will be further expanded through the integrated use of existing resources and demographic potential, cross-sectoral integration and improvement of organizational and economic mechanisms. In this regard, the implementation of a policy of supporting small businesses based on a differentiated and scientifically based strategic approach for each region is a guarantee of long-term sustainable regional development.

A differential approach to the development of small businesses in densely populated areas - identifying regional specialization, taking into account the demographic, economic, social and resource potential of each region, and developing a strategy for its development, which is appropriate for the development of small businesses, were developed and recommended. During our research, analyses were conducted and proposals were made for four densely populated areas of Andijan region - Andijan city, Khanabad city, Asaka district and Shahrikhan district.

## V. Conclusion

Andijan city is the economic, financial and innovation center of the region, the most densely populated and labor-rich city. It has a solid infrastructure for the development of small businesses in such areas as services, information technologies, small-scale production, social services and e-commerce. According to the results of the analysis, Andijan city is expected to achieve the following prospects in 2025-2030:

- Development of small businesses through IT clusters, startup zones, e-services.
- Support for youth entrepreneurship through digital trading platforms.
- Attracting small businesses to the service industry (healthcare, education, logistics).

The city of Khanabad is a promising area for tourism and craft clusters. Khanabad is a small town, distinguished by its natural landscape, historical monuments and transport proximity. Since there is a high possibility to specialize in ecotourism, family businesses, and the creation of local brands, in 2025-2030, KBRI will achieve great results in this area if the scale of small businesses based on ecological tourism, women's entrepreneurship, and national handicrafts is expanded, and clustering of family hotels, ceramics, and textiles is accelerated.

As we mentioned above, Asaka district is a center of industrial cooperation and service services. Asaka district is famous for machine-building industry (GM Uzbekistan), industrial infrastructure and transport-logistics opportunities are developed. In this area, there is an opportunity to integrate small business entities into industrial sectors. In this district, it is possible to achieve high results if the production of spare parts, repair services, organization of activities of logistics companies in the form of small business, and the introduction of the model of clusters based on cooperation (large enterprise + small subcontractors) are left alone.

Shahrikhan is rich in agricultural resources, specializing in the cultivation of vegetables, melons, fruits and vegetables, and livestock. Agroclusters, processing and packaging are priorities for small businesses.

Therefore, it is necessary to organize agroclusters, cold storage facilities, greenhouses and agrologistics services in this region, increase the number of small enterprises focused on packaging, branding and export, and increase attention to the digitization of marketing and trade through digital agroplatforms.

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