

## **FUTURE FORECAST VALUES FOR INCREASING WOMEN'S ENTREPRENEURIAL ACTIVITY AND ENSURING WOMEN'S EMPLOYMENT IN THE REPUBLIC OF UZBEKISTAN**

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**Annotatsiya:** Ayollar bandligini ta'minlashning istiqboldagi prognoz qiymatlarini ishlab chiqish va Qoraqalpog'iston Respublikasida ayollar egalik qilayotgan kichik biznes subyektlari sonini prognoz qiymatlarini hisoblash uchun ishlab chiqilgan model natijalarini ochib berilgan.

**Kalit so'zlar:** Model natijalari, ayollar bandligi, ijtimoiy-iqtisodiy, faollik, xotin qizlar, tadbirkorlik, prognoz, hisoblash.

**Аннотация:** Представлены результаты модели, разработанной для разработки будущих прогнозных значений обеспечения занятости женщин и расчета прогнозных значений количества малых предприятий, принадлежащих женщинам в Республике Каракалпакстан.

**Ключевые слова:** Результаты модели, женская занятость, социально-экономическая, активность, женщины, предпринимательство, прогноз, расчет.

**Abstract:** The results of the model developed to develop future forecast values for ensuring women's employment and calculate forecast values for the number of small businesses owned by women in the Republic of Karakalpakstan are presented.

**Keywords:** Model results, women's employment, socio-economic, activity, women, entrepreneurship, forecast, calculation.

Our government pays special attention to ensuring women's employment, increasing their socio-economic activity, and creating broad opportunities for women to engage in entrepreneurship. The work being carried out in this area and the changes resulting from them were mentioned in the previous paragraphs of our dissertation work, and this paragraph, using the available information, future forecast values for increasing women's entrepreneurial activity and ensuring women's employment in the Republic of Karakalpakstan were developed.

Ensuring women's employment requires increasing their role not only as workers but also as entrepreneurs and managers. For this reason, wide opportunities have been created for them to engage in entrepreneurship, and work is being carried out intensively in areas such as training them in the profession, and providing preferential loans. As a result, the number of women entrepreneurs is increasing year by year. Taking into account the dynamics of changes in this indicator in the Republic of Karakalpakstan, we will look at the growth rates in recent years.

Since this indicator has a specific growth rate in 2011-2023 and, in addition to the general trend, also includes random changes, the results of a comparative analysis of various models showed that using the ARMAX model is the optimal option. As a result, the following model was selected.

$$X_6 = 1817,0 + 0,67 * \varepsilon_{t-1} - 98,7 * t + 14,8 * t^2$$

*Here:  $X_6$  - Number of small businesses owned by women in the Republic of Karakalpakstan (unit).*

**Table 1**

**Results of a model developed to calculate forecast values for the number of small businesses owned by women in the Republic of Karakalpakstan**

Model 15: ARMAX, using observations 2011-2023 (T = 13)

Dependent variable:  $X_6$

Standard errors based on Hessian

	<i>Coefficient</i>	<i>Std. Error</i>	<i>z</i>	<i>p-value</i>	
Const	1816.96	151.773	11.97	<0.0001	***
theta_1	0.679181	0.266751	2.546	0.0109	**
Time	-98.7066	49.7073	-1.986	0.0471	**
t2	14.7566	3.43095	4.301	<0.0001	***
Mean dependent var	2052.538		S.D. dependent var	446.2530	
Mean of innovations	3.956550		S.D. of innovations	105.7966	
R-squared	0.939246		Adjusted R-squared	0.927096	
Log-likelihood	-79.35522		Akaike criterion	168.7104	
Schwarz criterion	171.5352		Hannan-Quinn	168.1298	
		<i>Real</i>	<i>Imaginary</i>	<i>Modulus</i>	<i>Frequency</i>
MA					
	Root 1	-1.4724	0.0000	1.4724	0.5000

A quadratic model was selected, and an additional factor was introduced to account for random variations. As a result, a positive change was achieved in the reliability level of the model and the adequacy of the coefficients (Table 1).

The z-statistics results obtained for all coefficients are at the required level, their reliability is higher than 95%. The coefficient of determination is 0.94, which indicates that the selected factors cover 94% of the changes in the resulting factor, and the remaining 6% is due to other factors. These results justify the possibility of developing forecast values with high reliability based on the model.

The forecast results indicate a rapid growth in the number of women-owned small businesses in the region over the next year (Table 2).

**Table 2**

**Forecast values for the number of small businesses owned by women in the Republic of Karakalpakstan**

For 95% confidence intervals,  $z(0.025) = 1.96$

Years	X <sub>6</sub>	Growth rate	Standard error	95 percent interval
2024	3449	107,7	105,797	(3241,32, 3656,04)
2025	3657	106,0	127,891	(3405,94, 3907,27)
2026	4015	109,8	127,891	(3764,69, 4266,02)
2027	4404	109,7	127,891	(4152,96, 4654,28)
2028	4821	109,5	127,891	(4570,73, 5072,06)

That is, the growth rate varies between 6.0 and 9.8 percent, and the average growth rate is 8.5 percent. However, during the period under study, the average growth rate was 6.0 percent, and the growth rate varied between 0.9 and 23.4 percent. It is precisely the fact that the maximum growth rate fell in 2023 that caused the growth rate to be higher in subsequent years and ensured an increase in the average growth rate during the forecast period. In general, the number of small business entities owned by women in 2028 will reach 4821 units, an increase of 1.5 times compared to 2023.

Also, the number of women working in small businesses and private entrepreneurship operating in the service sector will reach 78,613 people, an increase of 1.07 times compared to 2023. Namely, the number of small businesses owned by women is expected to reach 4,821 units, an increase of 1.5 times compared to 2023. High and stable growth rates are also provided in the number of active individual female entrepreneurs, with an average growth rate of 6.6 percent. The high growth rates of both of these indicators and their high impact on the number of women in small businesses and private entrepreneurship operating in the service sector justify the promising development of work in these areas.

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