TAX ADVISORY SERVICES AS A FACTOR OF INCREASING THE EFFICIENCY OF SMALL BUSINESS

SERVIÇOS DE ASSESSORIA FISCAL COMO FATOR DE AUMENTO DA EFICIÊNCIA DAS PEQUENAS EMPRESAS

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Abstract. Based on the use of factor analysis methods and principal components, provide a variant of assessing the impact of tax consulting on the efficiency of small businesses in the Republic of Tatarstan. At the initial stage, a correlation analysis was carried out, which made it possible, first of all, to establish the closeness of a linear relationship between different economic indicators, to correctly determine the type of relationship. The authors form 3 main components, including the financial performance of small enterprises and organizations, as well as a number of indicators reflecting the quantitative parameters of their activities and the degree of development of the tax consulting market. An analysis of the results showed that the strongest influence on the resulting "Balanced financial result of small enterprises in the Republic of Tatarstan" has a certain sequence of groups of factors, built according to the strength of their influence on the resulting one. However, all three coefficients of the listed three components fundamentally differ slightly from each other, which indicates a comparable strength of the impact of all three main components on the effective attribute. Increasing the cost of tax advice leads to an increase in the profits of small businesses.

Keywords: tax consulting, performance efficiency of small businesses, correlation analysis, principal component method, impact assessment.

Resumo. Com base no uso de métodos de análise fatorial e componentes principais, forneça uma variante de avaliação do impacto da consultoria tributária na eficiência das pequenas empresas na República do Tartaristão. Numa fase inicial foi efetuada uma análise de correlação, que permitiu, em primeiro lugar, estabelecer a proximidade de uma relação linear entre os diferentes indicadores económicos, para determinar corretamente o tipo de relação. Os autores formam 3 componentes principais, incluindo o desempenho financeiro das pequenas empresas e organizações, bem como uma série de indicadores que refletem os parâmetros quantitativos das suas atividades e o grau de desenvolvimento do mercado de consultoria fiscal. Uma análise dos resultados mostrou que a influência mais forte no resultante "Resultado financeiro equilibrado das pequenas empresas na República do Tartaristão" tem uma certa sequência de grupos de fatores, construídos de acordo com a força de sua influência sobre o resultante. No entanto, todos os três coeficientes dos três componentes listados diferem fundamentalmente ligeiramente entre si, o que indica uma força comparável do impacto de todos os três componentes principais no atributo eficaz. O aumento do custo da consultoria fiscal leva a um aumento nos lucros das pequenas empresas.

Palavras-chave: consultoria tributária, eficiência de desempenho de pequenas empresas, análise de correlação, método de componentes principais, avaliação de impacto.

1. INTRODUCTION

Based on the results of the analysis of methodological approaches to assessing the economic efficiency of tax consulting services, as well as the justification of the application of the correlation approach as a method of factor analysis, a model of the impact of tax consulting services on the efficiency of small business entities in the Republic of Tatarstan was formed.

The aim of the study was to identify the impact of tax consulting on the efficiency of small businesses in the Republic of Tatarstan.

In order to ensure the necessary validity and reliability of the conclusions about the nature and closeness of the relationships between the variables, it was necessary to ensure a sufficient level of representativeness of the statistical data used in the modeling. Therefore, the sample should be sufficiently large to provide the necessary level of reliability of the identified correlation coefficients. As input data for the analysis, we used information about the activities of small businesses in the Republic of Tatarstan, obtained using information resources of the Federal State Statistics Service (Biktimirov et al., 2019; Grosu et al., 2021; Agusmidah & Shalihah, 2023), the Territorial body of the Federal State Statistics Service in the Republic of Tatarstan (Safiullin et al., 2020), the Federal Tax Service (Safiullin et al., 2014), as well as data collected by the author from primary reporting sources of companies in the region.

The efficiency of functioning of small enterprises is evaluated according to various characteristics. However, the most characteristic for the purposes of our study are such indicators as:

- Value of added value created by small businesses in the Republic of Tatarstan, a million rubles;
- The balanced financial result of the activity of small enterprises of the Republic of Tatarstan, a million rubles;
- profitability of sold goods, products (works, services) of small enterprises of the Republic of Tatarstan, %;
- Return on assets of small enterprises in the Republic of Tatarstan, %.

Since tax consultants are experts in the field of accounting and tax law, these experts are also called tax lawyers. The role of tax consultants is very effective in reducing taxes paid to relevant organizations in complex financial cases. These consultants are trained in all specialized fields of tax law.

They prevent wasteful financial resources by providing informed advice on tax laws. Since common people have little knowledge about these laws, they prefer to consult tax advisors so that they do not have to pay heavy taxes in the future. Due to their expertise and mastery of tax laws, tax lawyers can resolve rejected tax cases and returns and prevent clients from paying additional taxes.

An experienced consultant must have a complete and accurate command of tax laws, be aware of new tax laws and accounting standards, in the following you will learn about some important tasks of tax consultants.

- Preparation and submission of corporate tax returns
- Analyze tax laws
- Advise business owners on improving financial conditions
- Do some accounting work
- Advising business owners on financial regulations
- Prepare and adjust financial documents of companies
- Organize the financial affairs of customers

2. MATERIALS AND METHODS

Figure 1 shows the dynamics of indicators of the value of added value created by small enterprises of the Republic of Tatarstan and the value of the balanced financial result of small enterprises of the Republic of Tatarstan. Both indicators show a strong increasing trend, starting immediately after the crisis of 2008-2009 (Popova et al., 2023). And since 2010, the sharp growth of both indices starts for the rest of the analyzed period.

As the data shows, over the past 10 years from 2012 to 2021, the balanced financial result of small businesses in the Republic of Tatarstan has increased 4.4 times with an average growth rate of 121%, and the value of added value created by small businesses in the Republic of Tatarstan has increased 2.6 times with an average growth rate of 115%.

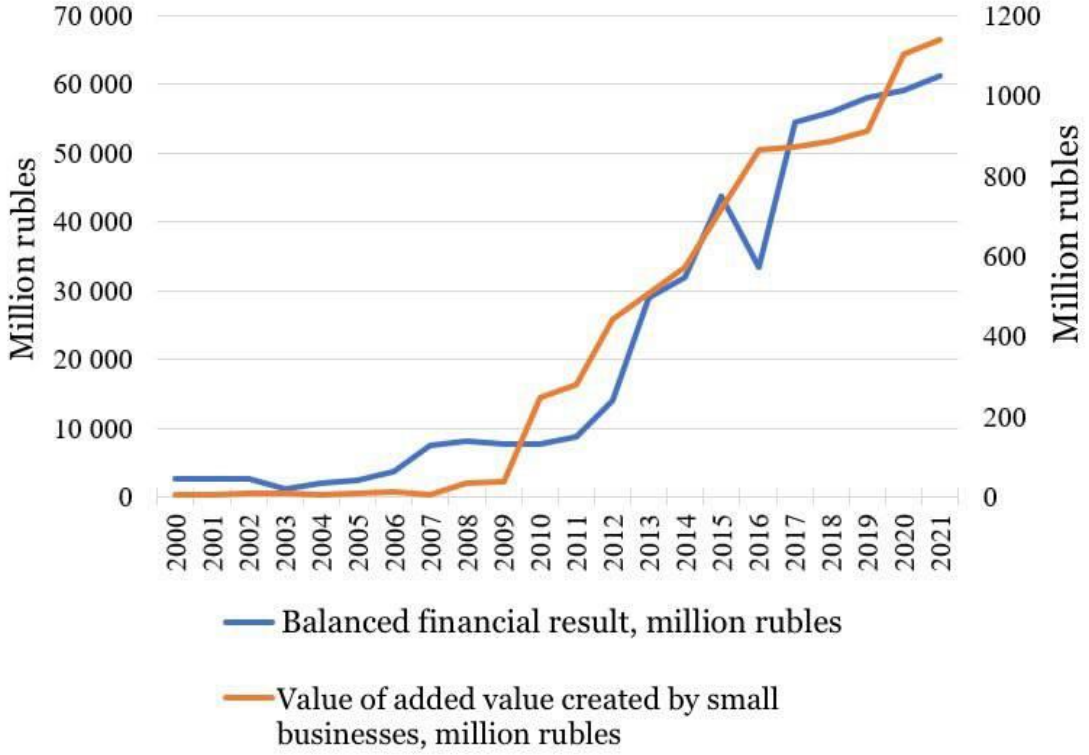


Figure 1. Dynamics of indicators of the balanced financial result and the value of added value created by small businesses (right axis)

Both indicators significantly exceeded inflation, which according to experts (Haque et al., 1996) over the past 10 years has averaged 7.31%.

In addition to the growth of absolute performance indicators of small businesses in the Republic of Tatarstan, it is also worth noting the growth of profitability of their activities, the dynamics of which is shown in Fig. 2.

The profitability of both goods and assets of small enterprises of the Republic of Tatarstan also shows a general upward trend. Moreover, the profitability of sold goods, products (works and services) outstrips the profitability of assets of small enterprises of the Republic of Tatarstan since 2014 by more than 1 %.

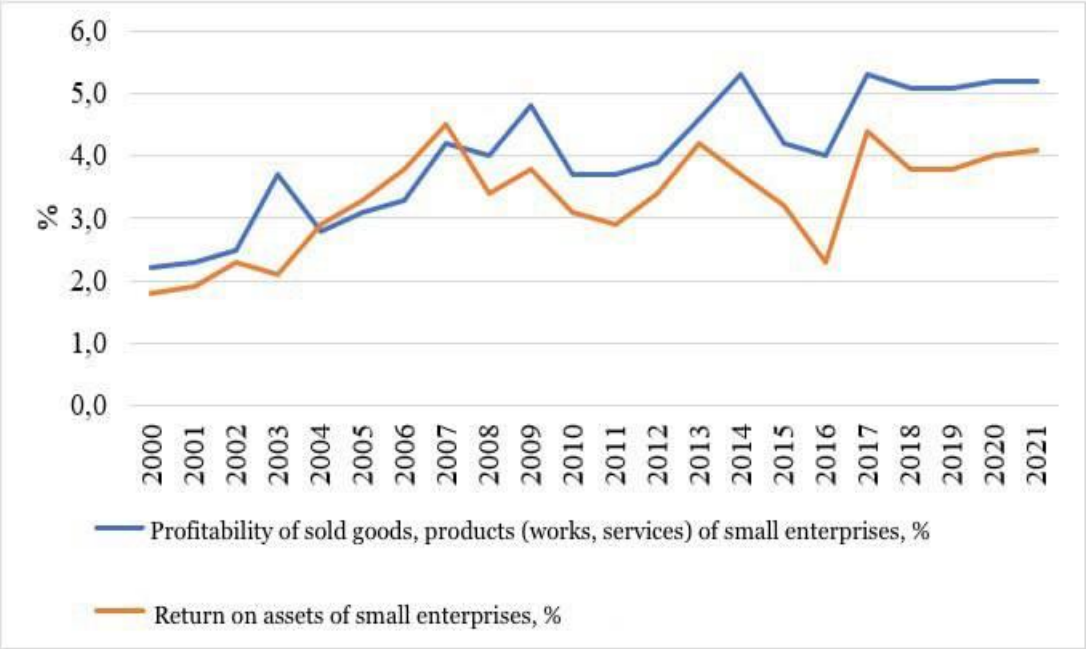


Figure 2. Profitability of sold goods, products (works, services) of small enterprises, and return on assets of small enterprises, %.

As it is known, the efficiency of functioning of small enterprises depends on a large number of factors. In this case, in accordance with the objectives of the study, we identified the following parameters of the activity of small business entities in the Republic of Tatarstan:

- The number of small businesses in the region (since 2009 - small businesses, including microenterprises), units (***x1***);
- The average number of employees of small businesses in the region (since 2009. - Small enterprises, including microenterprises; without external part-time workers), a thousand people (***x2***);
- Volume of the annual turnover of small enterprises in the region, a billion rubles (***x3***);
- Capital and reserves of small enterprises in the region, a million rubles (***x4***);
- Investments in fixed capital of small enterprises in the region, a million rubles (***x5***);
- Share of tax consulting in the total revenue of consulting companies in the region, % (***x6***);
- volume of tax consulting revenue of consulting companies in the region, a billion rubles (***x7***);
- the volume of loans issued to small businesses in the region, a million rubles (***x8***).

As a factor for evaluating the effectiveness of small businesses in the Republic of Tatarstan was chosen indicator of the value of the balanced financial result of small businesses in the region, a million rubles (***y***).

At the initial stage, we conducted a correlation analysis, which allowed, first of all, to establish the tightness of the linear relationship between different economic indicators, correctly determine the type of relationship (direct or inverse), as well as subsequently justify the adoption of adequate management decisions, which are associated with the choice for the analysis of various indicators. The results of the correlation analysis are presented in table 1.

Table 1. Values of Pearson pair correlation coefficients

	y	x_1	x_2	x_3	x_4	x_5	x_6	x_7	x_8
y	1	,858**	,707**	,972**	,976**	,804**	,761**	,810**	,871**
x_1	,858**	1	,844**	,889**	,823**	,642**	,698**	,645**	,633**

x_2	,707**	,844**	1	,798**	,677**	,688**	,546**	,533*	,501*
x_3	,972**	,889**	,798**	1	,978**	,849**	,789**	,849**	,864**
x_4	,976**	,823**	,677**	,978**	1	,831**	,755**	,852**	,928**
x_5	,804**	,642**	,688**	,849**	,831**	1	,649**	,798**	,864**
x_6	,761**	,698**	,546**	,789**	,755**	,649**	1	,927**	,638**
x_7	,810**	,645**	,533*	,849**	,852**	,798**	,927**	1	,811**
x_8	,871**	,633**	,501*	,864**	,928**	,864**	,638**	,811**	1

** Correlation is significant at the 0.01 level (bilateral).
* Correlation is significant at the 0.05 level (bilateral).

As the data in Table 1 show, all of the selected factors have a high significant correlation with the outcome factor $\boldsymbol{y}$ – «Balanced financial result» with values of pair correlation coefficients from 0.707 (for the factor x_2) to 0,976 (for the factor x_4).

At the same time, all the factor attributes have a high degree of correlation between each other, that is, they are multicollinear. The determinant of the matrix of pairwise correlation coefficients was $detR = 4.88 \cdot 10^{-8}$, which confirms the presence of strong multicollinearity of the signs. Therefore, it was decided to go to the generalized factors using the method of principal components, the advantages of which are noted by experts (Aleksandrovskaya, 2017; Jamalpour & Derabi, 2023). The main advantage of the method of principal components is that it allows by linear transformations to go to new orthogonal factors, as well as reduce the dimensionality of the original data.

The calculations were performed in IBM SPSS Statistics 20 and MS Excel. The Kaiser-Meyer-Olkin criterion (KMO) was calculated according to the formula:

$$KMO = \frac{\sum_{j,k\ j\neq k} r_{jk}^2}{\sum_{j,k\ j\neq k} r_{jk}^2 + \sum_{j,k\ j\neq k} p_{jk}^2}, \quad (1)$$

As:
- r_{jk}^2 – Pearson linear correlation coefficients;
- p_{jk}^2 – partial correlation coefficients.

Based on the CMR measure, we can judge the validity of using factor analysis, and in this case the principal component method, to the sample data. The value of KMO>0.6 indicates the validity of factor analysis. Moreover, the closer this value is to 1, the better. The value of KMO (table 2) made up 0,765 that testifies to the admissibility of transition to generalized factors in this case.

Table 2. KMO and Bartlett criterion (Eliseeva, 2023)

Kaiser-Meyer-Olkin (KMO) measure of sample adequacy.		,765
Bartlett's sphericity criterion	Approximate Chi-square	294,407
	Number of degrees of freedom	28
	Significance	,000

Another evidence of the validity of the application of factor analysis in this case to the data of the analyzed sample is the Bartlett sphericity criterion. This criterion tests the orthogonality of the factors (hypothesis H_0). If correlated factors are present, it becomes possible to replace the original set of factors with fewer variables. Thus, if the main hypothesis is disproved, it is necessary to use methods of decreasing the dimensionality. The calculated value of the criterion was $\chi^2 = 294$, which is significant with a significance level of less than 0.001. Consequently, the alternative hypothesis is true and the factors are not orthogonal, i.e. the use of factor analysis is justified.

Turning to the use of the principal component method, it should be noted that when choosing the number of principal components, one should usually ensure at least 80% of the

initial variance of the traits. Table 3 shows the eigenvalues of the principal components, as well as the percentage of variance explained by them. The cumulative variance is shown in the last column of the table.

Even the first principal component explains 79.4% of the total variance of the traits. Using the second principal component increases the explained variance by 9.5%, to a level of 88.9%. The third principal component gives 95.2% of the variance of the initial traits, which is a more than satisfactory result. The inclusion of more generalized factors makes no sense, as they give an insignificant (3.3% of the fourth component and less than 1% of the rest) contribution.

Therefore, in this case, it is advisable to leave 1 to 3 generalized factors instead of the original eight.

Table 3. Eigenvalues of the principal components and the share of the explained variance in the total variance of the initial characteristics.

	Initial eigenvalues		
Component	**Total**	**% of variance**	**Total %**
1	6,354	79,427	79,427
2	,757	9,468	88,895
3	,507	6,335	95,229
4	,266	3,331	98,561
5	,064	,801	99,361
6	,028	,346	99,707
7	,021	,268	99,975
8	,002	,025	100,000

A similar conclusion can be drawn from the graph of the eigenvalues of the principal components shown in Fig. 3. Usually, components with eigenvalues greater than 1 are left and limited to the component corresponding to the inflection point of the graph. We can see from Fig. 3 shows that the recommended number of generalized factors is 2.

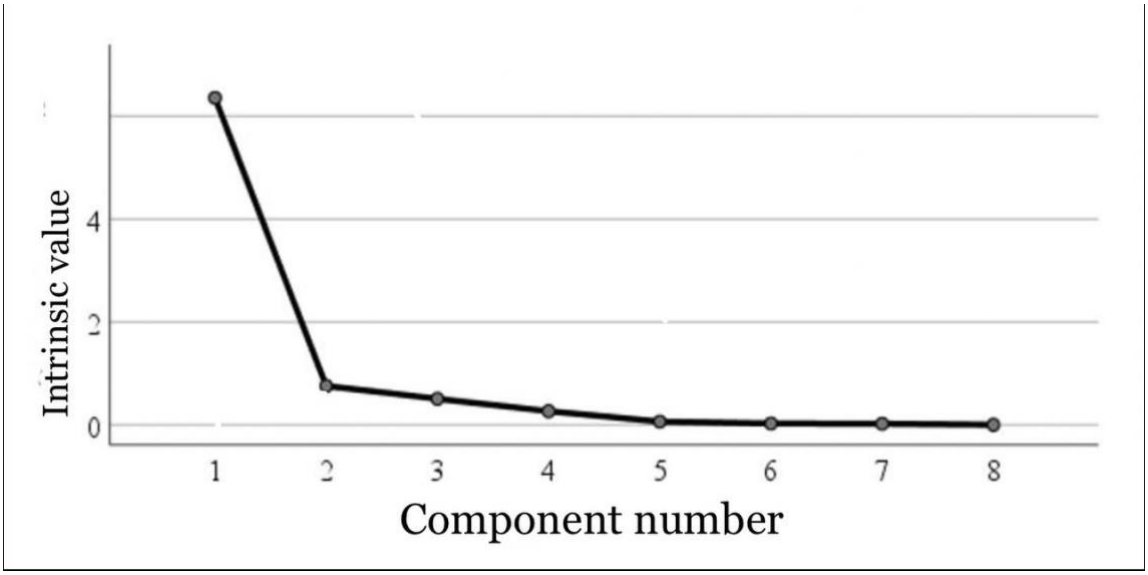


Figure 3. Diagram of eigenvalues

In accordance with the objectives of the study it was advisable to keep 3 main components, as they allowed to most logically combine the initial factors into generalized components.

The varimax rotation method (varimax) was used to obtain the principal components. The varimax orthogonal rotation method consists in such a rotation, which would maximize the

variance of the squares of the factor loadings. This makes it possible to interpret the factors in the best possible way.

Table 4 presents the factor loadings between the initial factors and the three main components.

Table 4. Factor loadings matrix

Original variables	Component		
	f_1	f_2	f_3
The volume of loans to small businesses in the Republic of Tatarstan	,897	,234	,331
Investments in fixed capital of small enterprises in the Republic of Tatarstan	,805	,399	,283
Capital and reserves of small enterprises in the Republic of Tatarstan	,725	,477	,443
Turnover of small enterprises in the Republic of Tatarstan	,631	,614	,455
Average number of employees of small enterprises in the Republic of Tatarstan	,282	,913	,167
Number of small businesses in the Republic of Tatarstan	,316	,824	,385
The share of tax consulting in the total revenue of consulting companies in the Republic of Tatarstan		,331	,887
Volume of tax consulting revenue in the Republic of Tatarstan	,576	,236	,766

Factor extraction method: principal components method.
Rotation method: varimax with Kaiser normalization.

The first component of f_1 combined 4 factors:
- x^8 the volume of loans issued to small businesses in the Republic of Tatarstan;
- x^5 investments in the fixed capital of small enterprises in the Republic of Tatarstan;
- x^3 the volume of annual turnover of small businesses in the Republic of Tatarstan;
- x^4 capital and reserves of small enterprises in the Republic of Tatarstan.

All of these factors are financial indicators of small businesses and organizations, so component f1 can be characterized as "financial".

The values of f_1 can be obtained from the initial factors by the formula:

$$f_1 = -0.281x_1 - 0.202x_2 + 0.110x_3 + 0.282x_4 + 0.519x_5 + \\ +0.660x_8 - 0.009x_7 - 0.442x_6, \quad (2)$$

where the factors x_j were pre-normalized through the mean $\bar{x}_j$ and the standard deviation σ_{x_j} by the formula $x_j = \left(x_j - \bar{x}_j\right)/\sigma_{x_j}$.

The second main component of f2 is formed by two factors:
- x^2 the average number of employees of small businesses in the Republic of Tatarstan;
- x^1 the number of small businesses in the Republic of Tatarstan.

Based on the content characteristics of these factors, this main component f_2 can be designated as "quantitative". The value of f_2 is calculated by the formula:

$$f_2 = 0.53x_1 + 0.701x_2 + 0.17x_3 + 0.002x_4 - 0.057x_5 - \\ -0.27x_8 - 0.269x_7 - 0.098x_6, \quad (3)$$

The third major component of f_3 was formed through a close relationship with the following two factors:

- x^7 the volume of tax consulting revenue of consulting companies in the Republic of Tatarstan;
- x^6 the share of tax consulting in the total revenue of consulting companies in the Republic of Tatarstan.

Based on the content characteristics of these factors, this main component f_3 can be designated as the "tax consulting" factor. The values of f_3 are calculated by the formula:

$$f_3 = 0.041x_1 - 0.264x_2 - 0.02x_3 - 0.059x_4 - 0.312x_5 - \\ -0.259x_8 + 0.57x_7 + 0.903x_6, \quad (4)$$

In order to identify the relationship between the balanced financial result of small enterprises in the Republic of Tatarstan (y) and the generalized factors, the regression equation was constructed. The initial values of the variable y were also reduced to the standardized form by the formula:

$$y = (y - \bar{y})/\sigma_y.$$

The results of the regression analysis are shown in the figure 4.

Regression statistics	
R-Square	0,911
Observations	22

Analysis of variance					
	df	SS	MS	F	The significance of F
Regression	3	19,123	6,374	61,128	0,0000
Remainder	18	1,877	0,104		
Total	21	21			

	Coefficients	*Standard error*	*P-Value*
F1	-0,648	9,189	0,000
F2	-0,543	7,710	0,000
F3	-0,443	6,285	0,000

Figure 4. Results of regression equation construction (in standardized scale)

The regression equation in standardized variables looks like:

$$\hat{y} = 0.648f_1 + 0.543f_2 + 0.443f_3 \quad (5)$$

Determination coefficient R^2=0.91, which indicates a high quality of the model. Value of F-criterion F=61,1 with a P-value P(F)=$1.23 \cdot 10^{-9}$, that is, the equation is significant. All the coefficients of the model are significant with the significance level of less than 0.001.

The analysis of the results of the above methods gives all grounds to say that the following sequence of groups of factors has the strongest impact on the resultant "Balanced financial

result of small enterprises in the Republic of Tatarstan" (***y***) lined up by the strength of their influence on the resultant:

- f_1 "financial" component (b_1=0.648);
- f_2 "quantitative" component of the number (b_2=0.543);
- f_3 "tax consulting" component (b_3=0.443).

However, all three coefficients of the listed three components differ from each other insignificantly in principle, which indicates the comparable strength of the impact of all three main components on the resulting trait.

Regression equation (5) showed that the factor "Tax consulting" f_3 has a direct significant relationship with the resultant y "Balanced financial result of small enterprises in the Republic of Tatarstan".

In turn, the relationship of the component f_3 with the initial factors "The share of tax consulting in total revenue of consulting companies in the Republic of Tatarstan" (x_6) and "The volume of tax consulting revenue in the Republic of Tatarstan" (x_7) is also direct. It is proved by positive values of pair correlation coefficients of the factor loadings matrix (table 4), equal to 0,887 and 0,766 respectively, as well as positive values of the equation (4) transition coefficients to the main component f_3.

Thus, we can confidently assert that the increase in the costs of small businesses for tax consulting in the Republic of Tatarstan quite obviously leads to an increase in the efficiency of small businesses and the growth of their balanced financial result.

However, since the presented initial data are time series, it is also necessary to carry out additional research on the possible presence of false correlation, caused by the dependence of all the initial factors on the time factor.

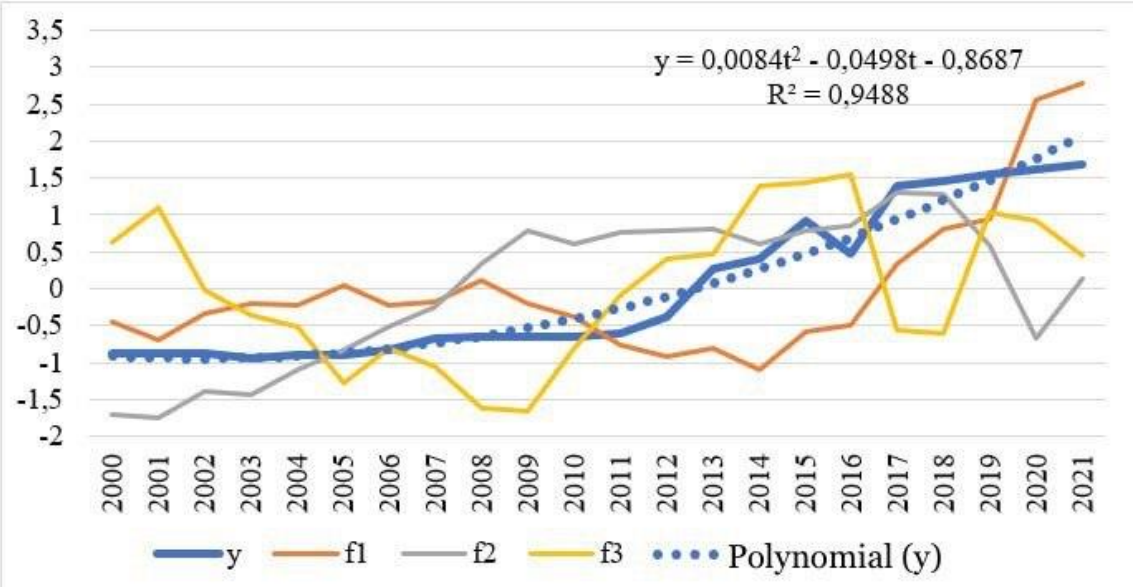


Figure 5. Dynamics of the principal components and the factor y (on a standardized scale)

For this purpose we plotted (Fig. 5) and calculated autocorrelation coefficients of the first order (Table 5) for standardized variables y, f_1, f_2, f_3.

Table 5. Values of autocorrelation coefficients of the first order

Factors	***y***	***f1***	***f2***	***f3***
r_1	0,960	0,901	0,902	0,696

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According to the graphs (Fig. 4) and on the basis of comparison of the values of autocorrelation coefficients with the critical value of the linear correlation coefficient for the sample size n=22 and significance level $= 0{,}01$; $r_{\text{kp}} = 0{,}537$ we can talk about a clear time dependence of all four factors. Consequently, it is necessary to use methods of time factor elimination in the study of dependence between the factors.

In this case it was decided to use the method of including the time factor (Eliseeva, 2023). In this method it is necessary to include in the model of multiple regression in an explicit form the dependence on time. Figure 4 adds a trend line for the series y, which most adequately (from the point of view of R^2) reproduces the dynamics of the indicator. In this case it is a polynomial of the second order, since the variable y has an explicit nonlinear trend.

Thus, the regression equation was built with the main results shown in table 5.

Table 5. Method of including the time factor

	Coefficients	*Standard error*	*T-Statistics*	*P-Value*
F1	-0,749	0,295	-2,537	0,022
F2	-0,464	0,282	-1,644	0,120
F3	-0,416	0,184	-2,253	0,039
T	-0,796	0,416	-1,914	0,074
T2	2,702	0,540	5,000	0,000

Tax consulting has many benefits for businesses, but for more information of people who have not yet come to the conclusion that a tax lawyer should be used, we will tell 10 important reasons for having a tax consultant for business.

- The tax consultant complies with all tax laws.
- They are familiar with the intricacies of tax laws, but you are not.
- Reducing the tax or tax liability by the tax expert as much as possible.
- Planning for tax payment and tax liability with minimum payment.
- Helping businesses in attracting supply and capital for company growth.
- Find laws to reduce and forgive tax crimes legally.
- Optimization and standardization of companies' accounting.
- They try to reduce the tax debt by effective communication with the tax administration.
- Organizing business with clients by tax lawyer.
- They prevent the violation of tax laws.
- Tax services and accounting services

Many companies tend to outsource accounting and tax services, this type of method plays an important role in reducing the company's costs in accounting and tax matters, as a result If you take advantage of a tax consultation or tax service, both will have the desired results for you, because both are done by experts in the field of accounting and taxation.

3. CONCLUSION

Based on the P-value we can conclude that only the main component f_2 was slightly above the threshold of significance with the level of $\alpha = 0{,}1$. The rest of the factors, in particular the component of tax advice f_3, retained their significance with the level of significance $\alpha = 0{,}05$. Consequently, the influence of tax consulting on the balanced financial result is confirmed when taking into account the influence of the time factor.

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The conducted study proved the dependence of efficiency of small enterprises in the Republic of Tatarstan on tax consulting services. Increase of expenses for tax consulting leads to an increase in profit of small enterprises.

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