



WAYS OF USING ECONOMIC-MATHEMATICAL METHODS USED IN ECONOMIC ANALYSIS

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Abstract: These words were written on Plato's gate of ancient and ancient Greece: "There is no need for anyone who does not know mathematics to enter the gate of the academy. Mathematics is it sciences is the queen. Mathematics is mental and the mind exercise to do is a tool ". Economic - mathematical methods economic in the analysis apply of the following come came out

Keywords: economic of indicators, mathematical calculation, analysis.

1. Number of enterprises by day increased from going .
2. Work to be released of products nomenclature 10 mln. kind of increased gone and their assortment and 1 billion the kind organize from reaching
3. The economy is very good complex hierarchy (subordination) system from possession .
4. People of the farm all networks are very high in the parameters since it is being used , that is work released product assortment and of the composition because of the rapid pace of change .

Economic -mathematical methods in the analysis of application advantages of the following consists of :

First , analysis reach term accelerates ;

secondly , economic of indicators to change effect doer of factors share (weight) is clear is

thirdly , estimate or uncertain calculations place sure number and the facts occupies

Economical in the analysis economic mathematical methods apply the following stages includes .

- the condition of the matter is determined ;
- impact doer factors is determined ;
- mathematical calculation method is determined ;
- the experiment model is created ;
- directly calculations will be done ;
- sure solutions is found .

Economical of indicators to change effect doer factors integral method in determining apply

Economical of pointers to change effect doer factors and the facts sure measured and calculated to be a must This is the integral method apply through reach can



For example : commodity product of size growth or to decrease main tools value and from him efficient use effect the following integral method in the example through let's find out .

1 - Table

Commodity product to change separately factors calculating the effect by the integral method

Indicators	Conditional character	The truth is past in year (o)	In fact current year (1)	Change (+ , -)
1. Product , thousand soum	N	5254	5224	-30
2. Basic of means yearly medium value , thousand soum	F	4430	5844	+1414
3. Basic of the tool efficiency [1q. x 2q], soum	N F	1,1860	0.8939	-0.2921

From the table apparently , in fact report product of the year size in reality past per year 30 thousand compared to to soum decreased . To this the following factors effect showed .

1. Basic of means yearly average of value change (extensive factor). It is through the following formula defined as :

$$\Delta N_F = NF_0 \cdot \Delta F + \frac{\Delta NF \cdot \Delta F}{2}$$

$$\Delta N_F = 1.1860 \times 1414 + \frac{(-0.2921) \times 1414}{2} = +1470 \text{ thousand soum}$$

2. Basic tools efficiency change . It is through the following formula is determined .

$$\Delta N_{NF} = F_0 \cdot \Delta NF + \frac{\Delta NF_0 \cdot \Delta F}{2}$$

$$\Delta N_{NF} = 4430 \times (-0.2921) + (-0.2921) \times 1414 = -1500 \text{ thousand soum}$$

3. Both of the factor sum :

$$\Delta N = \Delta N_F + \Delta N_{NF} = 1470 + (-1500) = -30 \text{ thousand soum}$$

So , it is a commodity product work 30 thousand of the output to soum decrease main from tools to use deterioration because of happened was , of this product under the influence work release



1500 thousand to soum decreased , but main tools of value growth as a result product size is 1470 thousand to soum increased .

Economical of correlation and regression methods in analysis application

Correlation and regression methods two and from him more than of indicators change how much with each other that it is connected in the calculation is used . Correlation in this The coefficient ranges from 0 to 1 expression is enough If the correlation coefficient is equal to 0 if , then to be studied indicators between never how dependence that there is no shows . If the correlation coefficient is equal to 1 if , then to be studied indicators between dependence complete will be , i.e. will be functional .

2 – Table

Main armed with a tool and work
productivity between dependence

Order number	Arming with basic equipment (thousands soum) (x)	one worker right coming work productivity , (thousand soum) (U)	Average from the line difference $\Delta X = X - \bar{X}$	the average U line the difference $\Delta U = \bar{U} - U$	of difference s multiple $\Delta X \times \Delta U$	squared difference of the x series ΔX^2	U is the squared difference of the series ΔU^2
A	1	2	3	4	5	6	7
1	0.10	2.5	0.45	1.35	0.6075	0.2025	1.8225
2	0.20	2.8	0.35	1.05	0.3655	0.1225	1.1025
3	0.30	2.9	0.25	0.95	0.2375	0.0625	0.9025
4	0.40	3.7	0.15	0.15	0.225	0.0225	0.0225
5	0.50	3.9	0.05	-0.05	-0.0025	0.0025	0.0025
6	0.60	4.3	-0.05	-0.45	0.0225	0.0025	0.2025
7	0.70	3.8	-0.15	0.05	-0.0075	0.0225	0.0025
8	0.80	4.5	-0.25	0.65	0.1625	0.0625	0.4225
9	0.90	4.9	-0.35	-1.05	0.3675	0.1225	1.1025
10	1.00	5.2	-0.45	-1.35	0.6075	0.2025	1.8225
Amount	5.50	38.5	0.00	0.00	2.3850	0.8250	7.4050
Average quantity	-0.55	3.85	-	-	-	-	-



The following table information based on correlational regression from the method using , of workers main arming with tools and one to the worker right coming work productivity between to connect let's see can

Workers main arming with tools and one to the worker right coming work productivity level correlation coefficient between by the following formula expression will be :

$$R_{xy} = \frac{\sum(\Delta X \cdot \Delta Y)}{\sqrt{\sum \Delta X^2 \cdot \sum \Delta Y^2}} = \frac{2,385}{0,8250 \cdot 7,405} = 0.97$$

So , the main one arming with tools and work productivity between dependence from being full (functional). proof gives

Factors system determinized in the models reflection carry on

Factors system in modeling economic of indicators to change effect doer all factors model to the system input need For example , advanced of means profitability level price to the amount , price to change , the main tools and circulation of funds to changes in net profit change , product assortment and of the composition to change and another a lot to factors depend

Advanced of means profitability level of net profit main tools and circulation of funds yearly medium to the value of ratio as identified and it by the following formula expression we reach can :

$$R = \frac{\Phi^e}{F + E} = \frac{X_1}{X_2 + X_3}$$

Here: F^e - net profit ;

F is basic tools ;

E is rotation funds .

3 – Table

Factors with the result between of dependence calculation

Indicators	Measureme nt unit	Conditional character	Base year (0)	Year of Christ (1)	The change is (+ , -)
A	B	C	1	2	3
1. Net profit	A thousand souns	$F^e = X_1$	714	902	+188



2. Basic of means yearly average value	A thousand soums	$F^e = X_2$	4430	5844	+ 1414
3. Circulation of funds yearly average value	A thousand soums	$E = X_3$	2120	2396	+ 276
4. Net income	A thousand soums	N_p	6432	7240	+ 908
5. One soum sold out product at the expense of net profit earned	A thousand soums	$\frac{X_1}{N_p} = X_4$	1.217	1.229	+ 0.012
6. Basic of means capacity	A thousand soums	$\frac{X_2}{N_p} = X_5$	0.6987	0.7962	+ 0.0975
7. Circulation of funds capacity	A thousand soums	$\frac{X_3}{N_p} = X_6$	0.3296	0.3264	-0.0032
8. Circulation of funds rotation coefficient	times	$\frac{N_p}{X_3} = X_7$	3,034	3,063	+ 0.029
9. General tools in the composition circulation of funds share	Coef .	$\frac{X_3}{X_2 + X_3} = X_8$	0.3237	0.2908	-0.0329
10. Profitability level	Coef .	$R_\kappa = \frac{X_1}{X_2 + X_3}$	1.1090	1.1095	+0.0005

this table apparently as the result indicator one how much interaction with factors in dependence . For example , profitability indicator let's take :

$$R_0 = \frac{X1_0}{X2_0 + X3_0} = \frac{714}{4430 + 2120} = 1,1090$$

$$R_1 = \frac{X1_1}{X2_1 + X3_1} = \frac{902}{5844 + 2396} = 1,1095$$

$$\Delta R = 1.1095 - 1.1090 = + 0.0005$$

Chained replacement with this method to the difference effect of all three factors the amount to determine can This formula expand too can :



$$R_0 = \frac{X_1 / N_p}{X_2 / N_p + X_3 / N_p} = \frac{1,217}{0,6987 + 0,3296} = 1,1090$$

$$R_1 = \frac{1,229}{0,7962 + 0,3264} = 1,1095$$



It's a dependency too factors with the result between of dependence functionality shows .

Apparently as it is economic in the analysis too economic analysis like economic in the analysis applied almost all of methods use possible.

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