Information Horizons: AMERICAN Journal of Library And Information Science Innovation
Volume 2, Issue 5, 2024 ISSN (E): 2993-2777

Regression Coefficient and Correlation Coefficient Statistic Practical Assessment of Importance

Raximova Umida Ziyadullayevna
Senior teacher at the Department of Higher Mathematics, Samarkand Institute of Economics and Service

Lochinov Humoyun Lochinovich
Student of the Faculty of Economics, Samarkand Institute of Economics and Service

Abstract. *This article examines the social composition and structure of the labor resources of the population of the Republic of Uzbekistan. At the same time, we will provide scientifically sound proposals and considerations through practical, economic and econometric study and analysis of data such as the level of economic activity of the population, the share of permanent population of working age in relation to the total population, the level of employment and the unemployment rate.*

Keywords: *Economics, labor resources, econometric model, unemployment, employment, regression, correlation.*

Studying the connections between socio-economic processes is one of the important tasks of econometrics. Causal connection plays an important role in many forms of connection of events because it determines all other forms. The essence of causality is that one event causes another event (causes it). In any specific relationship, some signs are involved as factors that affect others and determine their change, and other signs are the result of the influence of these factors. In other words, some signs show the cause, and others show the effect. Symbols describing the effect are called consequential (involuntary) symbols (explanatory variables y), and symbols describing the cause are called causal (independent) symbols (explanatory variables x).

There are two types of relationship between events and their signs: functional, or strictly determined relationship (for example, the relationship between the volume of production per worker and the number of workers) and statistically or stochastically determined (for example, the relationship between labor productivity and the cost of a product unit). A functional relationship is a relationship in which each value of the independent variable x corresponds to a well-defined value of the independent variable.

A statistical relationship is a relationship in which each value of the independent variable x corresponds to many values of the independent variable, and it is not known in advance exactly what value it will take.

Correlation is a relationship in which each outcome of the independent variable x has a certain mathematical expectation (average value) of the independent variable. Correlative connection is an "incomplete" connection, which is manifested not in every single case, but in many cases only in average magnitudes.

In many cases, it is necessary to study the relationship between the random variables X and Y. The relationship between random variables may be functional or statistical, or there may be no relationship at all.

We aimed to study the connection between the statistical data of the Republic of Uzbekistan using

this connection as an example. In doing so, we received the following information:

Y-level of economic activity of the population;

X1-Fertility rate of the population

X2-level of employment;

X3-unemployment rate;

Based on this information, we will study the level of economic activity of the population in 2023 and the dependence of the population's birth rate, employment rate, and unemployment rate on it. In this case, we will have Table 1 through the data of 2023.

Table 1

№	Regions	Y	X1	X2	X3
1	Republic of Karakalpakstan	67,80	21,80	61,60	8,90
2	Andijan	76,50	26,30	69,50	8,90
3	Bukhara	73,70	22,60	67,20	8,60
4	Jizzah	73,00	27,90	66,20	9,00
5	Kashkadarya	68,30	28,50	61,90	9,00
6	Navoi	73,60	25,20	67,70	7,90
7	Namangan	71,20	27,80	64,80	8,80
8	Samarkand	71,40	27,40	64,70	9,10
9	Surkhandaryo	70,80	29,40	64,20	9,00
10	Sirdarya	70,60	26,30	64,00	9,10
11	Tashkent	77,90	24,80	71,00	8,60
12	Ferghana	73,90	25,70	67,10	9,00
13	Khorezm	71,10	23,10	64,70	8,80
14	Tashkent city	88,30	25,40	82,50	6,30

Source: Compiled based on the data of the Institute of Forecasting and Macroeconomic Research under the Cabinet of Ministers of the Republic of Uzbekistan.

As a result of the correlation-regression analysis of these data, we obtained the following linear relationship equation between the characters:

Y=-8.196587979+0.04655013X1+1.097078098X2+0.934663638X3

Using this model, we calculate the model value of the resulting symbol and find the difference between the actual value and the model value:

Table 2

№	Regions	Y	X1	X2	X3	Y	Difference
1	Republic of Karakalpakstan	67,80	21,80	61,60	8,90	67,6	0,199550047
2	Andijan	76,50	26,30	69,50	8,90	76,246	0,253580632
3	Bukhara	73,70	22,60	67,20	8,60	73,46	0,2400358
4	Jizzah	73,00	27,90	66,20	9,00	72,712	0,287920012
5	Kashkadarya	68,30	28,50	61,90	9,00	67,992	0,308148841
6	Navoi	73,60	25,20	67,70	7,90	73,342	0,257864332
7	Namangan	71,20	27,80	64,80	8,80	70,99	0,210296576
8	Samarkand	71,40	27,40	64,70	9,10	71,162	0,237743289
9	Surkhandaryo	70,80	29,40	64,20	9,00	70,511	0,289058728
10	Sirdarya	70,60	26,30	64,00	9,10	70,399	0,200577443
11	Tashkent	77,90	24,80	71,00	8,60	77,619	0,281380057
12	Ferghana	73,90	25,70	67,10	9,00	73,71	0,190308695
13	Khorezm	71,10	23,10	64,70	8,80	70,902	0,198125824

14	Tashkent city	88,30	25,40	82,50	6,30	88,082	0,217501305

Source: author's development based on the data of the Institute of Forecasting and Macroeconomic Research under the Cabinet of Ministers of the Republic of Uzbekistan.

Judging from these tables, we can say that our linear relationship model, which we built using the data of 2023, was able to demonstrate its economic significance. After all, the result of our independent variables X1, X2 and X3 is very close, the difference between the values is on average [-0.5; 0.5]. The difference between the values of the independent variable Y from the expected average [0; 0.5] was different.

REFERENCES:

1. Абдуллаев О.М., Ходиев Б.Ю., Ишназаров А.И. Эконометрика. Учебник. –Т.: ”Fan va texnologiya”. 2007. – 612 с.
2. Абдуллаев О.М., Жамалов М.С. Эконометрическое моделирование. Учебник. –Т.: Fan va texnologiya. 2010. – 612 с.
3. Айвазян С.А. Прикладная статистика и основы эконометрики. Учебник. – М. ЮНИТИ, 2007. – 345 с.
4. Валентинов В.А. Эконометрика: Учебник. –М.: ИТК «Дашков и К˚», 2009. – 367 с.
5. Greene W.H. Econometric Analysis. Prentice Hall. 7th edition, 2011.–1232 p.
6. Christopher Dougherty. Introduction to Econometrics. Oxford University Press, 2011. – 573 p.
7. Gujarati D.N. Basic Econometrics. McGraw-Hill, 5th edition, 2009. – 922 p.
8. Кремер Н.Ш. Эконометрика: Учебник.–М.: ЮНИТИ-ДАНА, 2008. –562с.
9. Nasritdinov G. Ekonometrika. O‘quv qo‘llanma. Toshkent: “IQTISOD-MOLIYA”, 2008. 252 b.
10. Практикум по эконометрике. Учебное пособие/И.И. Елисеева и др. М.: “Финансы и статистика”, 2003. -192.
11. Эконометрика: Учебник/ Под редакцией И.И.Елисеевой. - М.: Финансы и статистика, 2003. – 344 с.
12. Shodiev T.Sh. va boshqalar. Ekonometrika. –T.: TDIU, 2007. – 270 b.
13. Habibullayev I. Iqtisodiy matematik usullar va modellar: o‘quv qo‘llanma / O‘zbekiston Respublikasi Oliy va o‘rta maxsus ta’lim vazirligi. -Toshkent: “Tafakkur-Bo‘stoni”, 2012. 112 b.