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SELECTION OF DEPENDENT AND UNRELATED VARIABLES

Mullabayev Baxtiyarjon Bulturbayevich
Namangan Engineering Construction Institute
Associate Professor, Doctor of Philosophy in Economics (Phd),
Namangan, Republic of Uzbekistan
Ismoilov Abdulkholik
Student, Namangan Engineering Construction Institute. 160103, Uzbekistan, Namangan, st. Islam Karimov-12

Annotation: This article presents ideas and considerations on the selection of related and unrelated variables.

Keywords: Interrelationship, one free variable, the other involuntary variable, consumer.

The study of the interrelationships between events is an important task of the science of the fundamentals of econometrics. Two different characters or indicators are involved in this process, one is an arbitrary variable and the other is an involuntary variable. Characters of the first category affect others, causing them to change. so they are called factor characters, while the second category is called result characters. For example, water, mineral fertilizers and processing of cotton or wheat increase their productivity. In this connection, productivity is the resultant sign, the factors influencing it (water, fertilizer, tillage, etc.) are the sign of the factor.

Or, as a consumer's income increases, his or her demand for goods and services increases. In this connection, an increase in demand is a resultant sign, a factor influencing it, i.e., income is a factor sign. The relationship that corresponds to different values of the resulting sign for each value of the factors under different conditions is called a correlation relationship or relationship. A characteristic feature of the correlation is that the exact number of factors is unknown. Therefore, such connections are incomplete and can only be approximated by formulas. We can also say that dependent variables are types of variables that are completely dependent on an independent variable (s). Another name for a related variable is the Predicted Variable (s).

Dependent variables are so named because they are values that are predicted or accepted by predictive / independent variables. For example, a student's score may vary depending on a number of factors, such as how much he or she studied, how much he or she slept the night before the exam, or even how hungry he or she was when he or she passed. Usually when looking for a relationship between two things, the addict tries to figure out what is causing the variable to change.

Let us define independent and dependent variables in the following cases: In a linear model $Y = a_0 + a_1X$ we have a general equation in the form. Here Yni is a variable dependent on X, so X is an independent variable.

Similarly, we have regression model cases. In general, a free variable in a correlation relationship X to each value of the symbol $(x_i \quad i = \overline{1...k})$ involuntary variable Y of the character $(y_j \quad j = \overline{1..s})$ distribution is consistent. Obviously, this is the second case Y each value of the symbol (y_j) also the first X of the character (x_i) characterized by the distribution of If the package size is large, the character X and Y even values x_i and y_j there are many, and some of them can be repeated frequently. in this case the correlation link is described in the form of a combination table (correlation network).

Here are a few examples to help the listener understand the dependent and unrelated variables. This, in turn, may emphasize the importance and use of dependent and independent variables in a broader sense within this topic.

1. If you want to measure the effect of consuming different amounts of nutrients on a baby's growth, the amount of nutrients consumed can be an independent variable, depending on the variable height, weight, or other factors measured by the baby's growth. (s) in accordance with the requirements of the experiment.

2. If one wants to estimate the cost of living of an individual, then factors such as salary, age, marital status, etc. are independent variables, and the cost of living of a person is highly dependent on such factors. They are therefore defined as dependent variables.

3. In the analysis of time series, the prediction of the price value of a particular commodity again depends on various factors according to the research. Let's say we want to predict the value of gold, for example. In this case, the seasonal factor may be an independent variable on which the price of gold depends.

4. If a student achieves poor results in an exam, the independent variables may be factors such as the student's regular absence from classes, poor memory, etc., and these reflect the student's assessment. Here the dependent variable is the student's test score.

It should be noted that the connections will be straight and curved. Factor symbols in the equation of a connection $(X_1, X_2, \ldots, X_K)$ that is, by participating only with the first level, and not participating in their higher levels and mixed multiplications $y_x = a_0 + \sum_{i=1}^{K} a_i X_i$ apparently, a linear connection or, in particular, when the factor is single $y = a_0 + a_1 x$ is called a straight line connection. A connection whose expression is not a straight-line equation is called a curvilinear connection. In particular,

parabola $\quad y = a_0 + a_1 x + a_2 x^2 \qquad\qquad (1)$

hyperbola $\qquad y_x = a_0 + \dfrac{a_1}{x} \qquad\qquad (2)$

degree $\quad y_x = a_0 x^a \qquad\qquad (3)$

and the connections represented in other views can be an example of a curvilinear connection.

It should be noted that depending on the units of measurement of the factors selected in the process of modeling the socio-economic spheres, the resulting model can be divided into linear or nonlinear equations. It should be noted that the model obtained is nonlinear if the selected factors are expressed in different units of measurement, and linear if they are expressed in the same units of measurement. It is also advisable to obtain a nonlinear view of the model to be obtained, even in some cases when there are factors with the same units of measurement (when the difference between the values of the factors is very large).

A prerequisite for the demand for research results by the international scientific community is the high quality of statistical analysis. It also avoids typical errors that occur in the process of creating statistical software packages and analyzing research results. Before applying parametric methods of statistics, the researcher should make sure that the distribution of the data available to him does not differ from the usual.

It should be noted that non-parametric statistical methods can also be used when there is a normal distribution of the quantitative sign, but in this case they have less power than the parametric methods, i.e. they cannot capture existing differences between groups where differences actually exist. In general, the correct selection of variables ensures that the current situation is correctly expressed and that the model being defined is adequate. This, of course, can only be done if the requirements for the economic data involved in the development of econometric models are met.

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