APPLICATION OF "NULL OF HYPOTHESIS" IN RESEARCH OF AGE RELATIONS AND LEVELS OF EDUCATION OF EMPLOYEES

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SUMMARY:*The selected methodological concept of conducting the research after the presentation of crude scores of the obtained data on phenomena related to dependent and independent variables follows their mutual crossings in order to check the hypotheses. The check was carried out using the battery of statistical techniques in which the key site had statistical indicators of their statistical significance. The technical-methodological procedure of "zero hypothesis" is applied. It is assumed that there are no correlation between the tested phenomena. This further means that the individual characteristics of the respondents do not affect the way perceiving the emergence and development of human errors in business decision-making and their harmful consequences. Such a procedure is common, although it does not fit into a selected theoretical mile that imposes the assumption that between these phenomena there is a cause-and-effect relationship.*

Key words:*age, zero hypothesis, education, variables, professional qualifications*

1. INTRODUCTION

The research, whose function to support the theoretical concept of the Doctoral Dissertation, has resulted in a number of significant results, some of which confirmed hypotheses, and some did not. Data were collected on a sample of 823 respondents selected from the general population of Serbia. In the actual research, the sample included a number of business and business organizations, different in size, performance and sectoral (ownership) affiliations. The research plan envisaged a sample of about a thousand respondents selected from the production and service working collectives of the private and public sector.
The survey involved the population of employed in Serbia, and in the sample were mostly employees from the regions of Uzice. Respondents belong to different educational, life and status categories.
The survey sample found the respondents from the following work organizations:
1. "ImpolSeval Finalization", Užice, settlement Krčagovo
2. "ImpolSeval Aluminum Roller", Uzice, Sevojno
3. "Copper Mill, Ist Point", Užice, Sevojno
4. "Kadinjača" ready-made clothes, Uzice, Krčagovo

In the long-term data collection process, which was carried out in the period January-May 2016, a total of 894 questionnaires were applied. Due to the usual omissions, mistakes or non-motivation of the respondents, as much as 107 questionnaires were excluded from the technical control from the procedures for further processing. Finally, in the process of statistical data processing, there were 823 questionnaires, which despite a large data loss pattern, allows reliable statistical conclusions.
In the research, the method of testing was applied as the basic method of research, that is, the collection of data, and within its techniques, a questionnaire with a standardized questionnaire in which the closed type of the word is prevalent. The obtained raw data was checked by technical and logical control, and then processed by appropriate statistical models (parameters) of descriptive statistics and statistics of conclusion. The final statistical data processing is done by a multiplicative correlation analysis and analysis of the significance of the differences.
The survey was conducted on a special occasion, especially for this occasion, with a questionnaire with the usual procedure for data collection. The questionnaire asked questions for defining the individual and organizational characteristics of employees (9 questions) and questions pertaining to perceptions and attitudes of respondents to human error in business decision-making. This type of question is given in the form of the so-called. closed-type questions with a five-point selection, or a five-step scale of responses offered. Characteristic for type of so-called.

"Liker type" scale (questionnaire given in the attachments). The instrument itself is efficient and easy to understand, which has been shown in its application.
The data processing process was performed using adequate statistical procedures and parameters of descriptive statistical methods and methods of statistical conclusion. All this was done with the intent to check the hypotheses set by analyzing the significance of the obtained statistical indicators and their differences.
In the conceptual approach of displaying, interpreting and interpreting the obtained data, the usual procedure is selected. This means that the results are interpreted in the context of the verification function of the hypotheses or their variables. The descriptive interpretation of the obtained research results begins with the systematisation of essential data on phenomena treated as independent and dependent variables. Their interconnection in the sense of detecting cause-effect relationships was done by correlation analysis and analysis of their statistical significance. The usual procedure of so-called. "Zero hypothesis".
Data collection, ie surveying, has been carried out by a standard procedure. Depending on the current situation, the questionnaires were applied individually or in groups, with a smaller (2 - 4) or greater (10-15) number of respondents. All respondents were standardly instructed with special information that the results of the research will be used exclusively for scientific purposes and implemented within the project of the doctoral dissertation at the Faculty of Organizational Sciences in Belgrade. Due to the sensitivity of some questions in the survey, it was performed as anonymous about which the respondents were obliged to be notified in the course of the instruction. Only direct technical control of the possible skipping of the issue was carried out.
In this section, we wanted to check whether there is some interdependence between certain issues, or whether certain issues involve some other and similar in themselves. For this purpose we used the Hi-square test of independence.

2. AGE AND PROFESSIONAL QUALIFICATION

In the statistical processing of the obtained data, a large number of correlation relations between the events that are classified in dependent and independent variables have been tested. In the presentation of the obtained data, we mainly included those who are talking about the presence of a correlation link, that is, in those correlates where the zero hypothesis has not been confirmed.
For illustration purposes, within the correlation of age and vocational qualifications, the following hypotheses are set:

H_0 : "Professional qualification does not depend on age".

H_1 : "Professional qualification depends on age".

The mathematical expression of the correlation coefficient used to test the set zero hypothesis or to test the presence of correlation between variables has the following form:

$$\chi^2 = \sum_{i=1}^{r}\sum_{j=1}^{c} \frac{\left(n_{ij} - \frac{n_{i\bullet}\cdot n_{\bullet j}}{n}\right)^2}{\frac{n_{i\bullet}\cdot n_{\bullet j}}{n}} = \sum_{i=1}^{r}\sum_{j=1}^{c} \frac{\left(n_{ij} - n_{ij}^{*}\right)^2}{n_{ij}^{*}}; \chi^2_{(r-1)(k-1)}$$

where n_{ij} experimental (obtained) frequencies are, n_{ij}^{*} and are theoretical frequencies.
For example, the expected frequency for the first cell of the continuity table is statistically processed (calculated) as follows:

$$, n_{11}^{*} = \frac{n_{1\bullet} n_{\bullet 1}}{n} = \frac{179 \cdot 508}{823} = 110.5$$

The obtained index of mutual variation indicates that in the case of independence, these two variables are expected to have 110 students and have an upper age of up to 30 years, and 105 are obtained. In the same way, the other cells

in the contagion tables are also interpreted in the same way. The obtained indicators indicate that there is a difference between the expected and received frequencies. By applying the hi-square test of independence, we can examine the significance of the difference in these frequencies.

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	11,551[a]	4	,021
Likelihood Ratio	10,682	4	,030
Linear-by-Linear Association	,004	1	,951
N of Valid Cases	823		

a. 0 cells (,0%) have expected count less than 5. The minimum expected count is 23,05.

The previous table shows the results of test statistics. The concrete realization of the statistical analysis is 11.551 (the values for the concave pattern in the second is the second). The resulting p-value is 0.021 (less than 0.05), which means it can reject the set zero hypothesis, or that the statistic indicators have not been confirmed.

Symmetric Measures

		Value	Approx. Sig.
Nominal by Nominal	Contingency Coefficient	.118	.021
N of Valid Cases		823	

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

In the tested correlate, the obtained C test value shows a certain degree of dependence between the two analyzed variables. In particular, in the case of statistical analysis of the interrelationship between professional qualification and lifetime, the value C = 0.118 was found.

3. CONCLUSION

Based on the calculation of a set of statistical parameters we obtained data that in some relations confirm the set (zero) hypothesis, and in some there are no such confirmations. In cases where no zero hypothesis has been confirmed, it is concluded that there is a significant, positive or negative correlation between statistically analyzed

phenomena. This methodological link transferred to the research content means that some of the personality traits of employees have an impact on their perception and attitude towards human error in business decision-making.

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