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THE ERROR'S MARGIN DETERMINATION INTRODUCED BY A QUOTA SAMPLING INTO THE LAST STEP OF A SURVEY VERSUS A SYSTEMATIC SAMPLE.
(Case of two value profile surveys of Tirana city's electorate. March-May 2012)
PËRCAKTIMI I MARZHIT TË GABIMIT QË FUT KUOTA NË HALLKËN E FUNDIT TË KAMPIONIMIT TË NJË ANKETIMI KUNDREJT KAMPIONIMIT SISTEMATIK.
(Rasti i dy anketimeve për profilin vleror të elektoratit të qytetit të Tiranës. Mars-Maj 2012)

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PËRMBLEDHJE
Në eksperimentin social zhvilluar në 2010, synohej të përcaktohej marzhi i gabimit që fut kampionimi sistematik në hallkën e fundit të anketimit, si rezultat i mos sigurimit të anonimatit të respondentëve. Krahasimi bëhej ndëmjet dy anketimeve me të njëjtin pyetësor (pyetje delikate), në të njëjtën kohë dhe vend, me ndryshimin se, në hallkën e fundit njëri bazohej në kuotat (gjini, grupmosha), tjetri në sistematik (nga porta në portë). Marzhi i përcaktuar përfshinte edhe atë që sillte përdorimi i kuotës. Për këtë arsye eksperimenti i këtij viti, i zhvilluar dy herë (Mars dhe Maj) bazohej në intervistimin me pyetësor të njëjtë (pyetje jo delikate), në të njëjtin vend e kohë, të dy palë votuese të qytetit të Tiranës. U synua që i vetmi dallim të qëndronte në hallkën e fundit të kampionimit, njeri me kuotë, tjetri sistematik. Pritej që diferencat në përgjigjet (marzhi i kërkuar) të kushtëzoheshin kryesisht nga ky dallim.
Fjalët çelës: Kampionim me kuotë, kampionim sistematik, marzh gabimi, eksperiment.

SUMMARY
The social experiment in 2010 aimed the designing of the error margins induced by systematic sample in the last step of a survey as an effect of non providing respondent's anonymity. Two surveys, providing the same questionnaire (of delicate questions), were held, same place and time. The only difference was the sample's last step: one based on quota (gender, age), the other on systematic schema (door to door). The margin defined this way included also the one produced by the quota use. This was the reason of implementing this year experiment, interviewing two groups of respondents of Tirana's electorate, using the same questionnaire (without delicate questions), same place and time. The principal aim was to provide only one difference in the last step of the sample: first, closed up by quota, second, by the systematic schema. The expectation was the determination of differences between answers by this distinction.
Key words: Quota sampling, systematic sampling, error margin, experiment.

INTRODUCTION

In a social experiment held twice in the period January-March 2012 and April-May 2012 (following a similar experiment held two years ago) were realized measurement related to the margin of error that determine using quota in a sampling. Three years ago the Department of Political Science of the Faculty of Social Sciences, University of Tirana, was aimed to define the margins of error that inserts systematic sampling

in the last step of a survey of delicate problems, as a result of not providing anonymity to the respondents. The comparison was between the two surveys, with the same questionnaire at the same time and place (which had delicate question), with the difference that the first at the last step of it interviews were based on implementing quotas (gender, age group), and the other using systematic selection step (from gate to gate). Of course, the margin of error determined in this case included the statistical margin error introduced by the systematic sampling, also the one that brought the use of quotas in surveys held on the street.

To find out what is the margin of error, which is dedicated only to the first factor (used in the last step of a systematic sampling in a survey, while the questionnaire contains questions defined as sensitive), was thought to measure the specific error that inserts quota itself in last step of a sampling. The difference between them, after removing the statistical error inserted from the systematic sampling, would provide the required margin from last year's experiment. For this reason two years ago and this year it was built an experiment, with the same questionnaires (no delicate question), in same time and place, would be interviewed two party voters of Tirana.

It was intended, the only difference to be in the last step of the sampling in one quota and the other on systematic scheme. Was expected that the only differences in responses would be conditioned mainly from this difference (of course by systematic sampling statistical error, too). From these differences would be discount the statistical error which is associated with the margin size of systematic sampling chain and would be found a number of differences. Their differences, representing the objective of this experimental study, would be the margin that would be diminished from the one determined by experimental study aiming to find the error margin inserted by the systematic sampling (when it is not taken into consideration maintaining respondent's anonymity). This would be the margin of error that the study required.

Study historically has initially held only in Tirana and further expanded in 2010 in about 11 major cities of the country. The idea was to realize a comparative approach to determine the best possible margin of error required, of a «horizontal» panel study (at the same time, in different cities),

To realize the canvass in Tirana this year were the students of the Master of Science and second year students, of Political Science, Social Science Faculty at Tirana University, which in the context of this study panel would implement their obligations under of a course program.

METHODOLOGY OF WORK

A. Conception

The objective of this study was to measure the experimental error that inserts quota systems in the last step of a sampling, when there are made all possible efforts to avoid factors beyond the focus of the study.

Searching the error margin that inserts quota is related to the fact that quotas sampling is accepted to belong to the group of non-probabilistic type sampling. Consequently, it does not allow calculating the error that occurs when extending the conclusions drawn from the study conducted virtually on analysis units included in the sample to all the units of analysis included in the population study. While it is known that probabilistic sampling type, depending on their size (number of units that includes), allows to determine a so called statistical error that occurs when extending the results of the study sample to the entire population in the study.

To determine the differences margins in questionnaires responses realized in the surveys conducted in March and June 2012 ought to determine a measuring instrument for the differences in response. Was judged as more appropriate the use of averages (mean), these can be calculated with the help of SPSS program. On experiment's purposes were needed the average differences of the same questions, with one difference in the final part of the sampling: some using the quota sampling and the others

(homologous questions), the systematic sampling from door to door.

Comparing statistical instrument that SPSS provides, averages could not serve for the purpose of determining the differences in the responses by the two types of sampling, because it serves to control the possible statistical association between a continuous variable and a categorical variable. Moreover, we are not interested in direct statistical association, but the lack of it. This is to show that the differences found do not come from random factors, but is conditioned by the change of the method of sampling in the last step, which is the objective of our study. To show that there is no statistical association between the answers of the analog questions that used two different ways in the last step sampling, we used the instrument of cross tables (crosstabs) when two variables are categorical. In the case where one variable is continues and the other is categorical, would be useful an instrument that compares averages (compare Means). In cases where both variables are continuous as a tool to investigate possible statistical associations is used correlation table.

B. Practical Procedures

As an instrument to provide empirical information needed for experimental study objectives was elected a questionnaire that investigates the value profile of the electorate of the city in the study. In this survey, in accordance to the objectives to avoid unconsidered methodological effects, we avoid questions that could be regarded as sensitive. This is because, in the transition to the last step from the systematic sampling to the quote sampling, their influence should not intervene in bringing change to the responses.

To determine differences between the given analog answers by the two types of sampling in its last step, were meant to be used the opportunity that offered the option of frequencies. This is because this option offered the table where are given the averages of values for each variable. To determine the differences required it just needed to compare the average of responses to analogues questions.

To realize this difference, as well as the controlling the association of analog answers of the questions, ought that each response to be realized as a separate variable in a database, in order to be used the two instruments selected from SPSS. In order to do so, in the database created on an excel page, vertically were placed the variables (in columns) responses received from the survey conducted in families (who had in the last step the systematic sampling type «the door to door in gate '). In addition, horizontally were placed the variables (analogue answers) belonging to the survey conducted on the road (which had in the last step the sampling with quote).

Database created in this way in excel page was the subject to regulatory procedures (which included the creation of reduced variables). Then this database was called by a program of statistical data processing type SPSS.16 and created relevant basis in this program. On this basis performed frequency tables statistical instruments and the ones that investigate the possible associations of statistical correlations between answers to analogue questions. By the use of these instruments have the following results.

From the frequency tables and differences comparisons between the averages of the responses of analogous questions the results are as follows:

• In the survey of March 2012 the results are:

• The interval or the differences margin is -0.512917962264150% to +0.21468019696969%, or [-51.29% +21.47%]. This margin of difference includes too the error of margin inserted from the systematic sampling which can be defined by the error curve. This margin should be "cut" from the found margin of differences. The margin remained would represent the margin of error inserted from quota. In this case the statistical error inserted by the sampling, for a sampling of 130 units is **+/- 8.75%.** So, to the value of -51.29% will diminish the value of -8.75%, while to the value of +21.47% will diminish the value of

+8.75%. Thus, the results of the study on the "determination of the margin of error that inserts quota sampling in the last step of a survey versus systematic sampling'' margin of error are from **-42.54%** to **+12.72%,** or **[-42.54%, +12.72%].**

• In the survey of June 2012 the results are:

• The interval or the differences of margin is from -0.6204765% to +0.427365%, or **[-62.05% to +42.74%].** This margin of difference includes the inserted error determined by the systematic sampling which can be defined by the error curve. The final margin should be "cut" from the found margin of differences. The margin remained would represent the margin of error inserted from quota. In this case the statistical error by a sampling, for a sample of 95 units is **+/- 9.10%.** So to the value of - 62.05% will diminish the value of **-9.10%,** while to the value +42.74% will diminish the value of **+9.10%.** Thus, the results of the study on the "determination of the margin of error that inserts quota sampling in the last step of a survey versus systematic sampling'' margin of error are from -**52.95%** to **+33.64%,** or **[-52.95% +33.64%]**.

CONCLUSIONS

From the examination of the tables that investigate possible associations of statistical correlations between variables that represent answers to analogous questions are the following results:

From 113 table of crosstab types, derived from the processing of the data obtained from the survey of March, 90 (i.e., 84.91%) of the crosstabs show lack of statistical association between variables crucified. This can be interpreted that in general between answers to the analog questions there is no statistical association report, which means that the observed differences between the averages of their responses does not come from the influence of third factors (random) that are not considerate by the experimental study.

This conclusion legitimizes the consideration of the observed differences between the averages of the responses to analogues questions, as conditioned by the factor of the change in the last step of the survey from the systematic sampling (door to door) to the one based on quota (by age and gender).

From 108 table crosstab type, derived from the processing of the data obtained from the survey of June, 94 (i.e. 87.03%) of the crosstabs show lack of statistical association between variables crucified. This can be interpreted that in general, between the answers to the analog questions there is no statistical association report, which means that the observed differences between the averages of their responses does not come from the influence of third factors (random) that are not considerate by the experimental study.

The fact, which in most of the answers to the analog questions there is no statistical association report, means that the observed differences between the averages of their responses are dedicated almost entirely to the quota factor.

The interval **[-52.95% +33.64%]** is the proposal for the required margin of error that introduces quota sampling the last step of a survey, according to the June experiment.

If we would want to give only a margin, in our case it would be reasonable to present a margin that emerges as the average of the two margins given above. In this case, the proposal would be: **[- 57.5% + 23.18].**

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