QUALITY IN TERMS OF COST EFFICIENCY¹
- comparison between the classical method of data collection and the use of Internet-based method –

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Abstract

The studies based on using selective research are one of the main instruments in the strategy building process at the managing level of academic facilities and collecting the data in the most effective way possible is one of the main problems that this kind of studies can arise.

A way of solving this problem could be collecting the necessary data online, which implies human and financial resources a lot reduced compared to the classical way. Based on selective research, conducted among students, it has been tested the quality of the data collected online, by comparing them to the ones collected by face-to-face interviews.

The studies that use selective research, conducted in the academic environment, in student collectivities, alumni, future possible students, the employers that might need the university’s graduates etc., are quite suitable for using the online collecting method of the data, due to the characteristics of the analyzed collectivities.

Key words: academic environment, selective research, online research, data collection

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The university’s involvement, as an economical agent, on various markets implies a very thorough knowledge of the ladder by the decision factors in the institution’s management. The main method to “know” these markets and the specific conditions of each of them remains still, the selective research of the market. The study developed assigns different roles to the university: the university – a “reservoir” of offers for the highly qualified labor force market, the university – offerer of studies etc. In addition, the study calls for observing the internal environment of the university by defining the collectivity analyzed by the research: the students.

The main objective of the research is a comparison between the results obtained from a survey done in the “classical” way (face-to-face interviews)
and the results obtained from a survey in electronic format - an online survey. Implicitly, depending on the results obtained, we will be able to decide if the advantages brought by the online method of investigating a population deserve to be taken into account.

### Data quality – collected using the classical method vs. assisted Internet collection

The theme of the survey was chosen based on the opinions of a group of 20 people – I and II year’s students from the Medicine and Pharmacy University Carol Davila². After confronting the proposals the questionnaire was entitled: “A doctor (MD) in Romania or abroad? Perspectives of the Medicine students”. The questionnaire consists of 14 actual questions and 5 questions needed for identifying and clustering the units in the sample. The structure of the questionnaire was established considering especially the second method of investigation proposed in this study. The sample size was kept at a lower level by using a value of the guarantee of results likelihood lower than usual, of only 94.5% compared to 95%. The difference being this small it was appreciated that it will not influence in a very high degree the results, and it will not lead to their distortion or to the invalidity of the conclusions. The proportion of those who want to leave Romania to practice their job was also used for sizing the sample. The proportion was of 20%, this figure being obtained by studying the same research group of 20 people who have been requested their opinion about the topic of this study.

For the classic survey, the data collecting method was: the printed questionnaires were randomly distributed among students by interview operators, after previously using the simple random survey with no return as sampling method. For the second data collection method (online), the questionnaire was realized in electronic format and it was uploaded at a given web address, where it could have been easily accessed by potential respondents. The popularization of the research was done by posters (Faculty of Medicine) and also online: e-mail and IM (Messenger).

After completing and obtaining the questionnaires, for both probing methods, individuals-variables tables were prepared in order to perform necessary data and information analysis.

We will further on call the survey for which data was collected in classical way (using printed questionnaires) “classic survey” and the second one (for which data was collected online) “online survey”.

The first difference that can be observed in the analysis done appears for the sample size. In the case of the classic survey the volume was 181

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students, 10.72% from the total population, and for the online survey 150 students (8.88% from the total). For the online survey the chosen method for data collection was placing the questionnaire on a web page, and not sending it by email, which made impossible calculating a non-answer rate.

Next was analyzed the representativeness of the samples for both surveys. The variable used was the weight of male respondents in the total. The T test used for the analysis revealed that both samples are representative for a probability of over 95%.

The questions used in the questionnaire were both closed questions, with answers on the nominal, ordinal and interval scale and semi-open questions. Open-ended questions were not used because the analysis of the answers would have been quite difficult and this type of questions wouldn’t have been adequate for the purpose of this research.

The results obtained in the two processes were analyzed comparatively in order to observe for which questions there are major differences, differences for which the main reason could be the way of collecting the data. The analysis was done by comparing the repartition of answers for each question using the graphic representation and statistical tests. The most used statistical tests were T test for differences between two means, T test for proportions and chi-square test.

The graphic analysis of the results for each question revealed some differences between the two types of surveys but without being high enough to allow us to affirm before using statistical tests that they are significant. After using the statistical tests, the main finding was that there weren’t any significant differences between the results obtained for any of the questions.

Further on we will present other special items that resulted from the analysis of the answers given for some of our questions.

After doing a comparative analysis of the graphs realized for the four questions with answers on the nominal scale, YES or NO answers, an interesting fact was revealed. No matter the weight of YES, this was in three out of four cases over-evaluated (for the online survey). Although that the difference between the two surveys is visible in the case of the graphic representation, it was not confirmed by the statistical tests. The biggest difference, of more than three percent, appeared for the question: “Would you want to live in a studio specially built in a complex that would belong to the hospital that you work during your residency (in-hospital training)?”

The next set of analyzed questions is:
- After finishing the 6 years of study do you want to do your residency in a hospital in: ...
- After graduation would you want to work in: ...
Options for answers were for both questions: Romania, E.U., USA and Another Country. In both cases Romania is the preferred answer by the majority of respondents, followed by the E.U. and U.S.A.. For both questions the statistical tests show that there aren’t any significant differences between our two surveys. Moreover, for this type of questions we cannot identify any rule like the one we found for the question with binary answers, which means that the way of collecting the data doesn’t induce a specific behavior of the respondents.

The comparative analysis of answers to the question: “What is your opinion regarding the faculty endowment?” leads to the identification of a new pattern regarding the difference between the two survey types. The scale for answers used for all three analyzed aspects: books, laboratory materials and classrooms, is one with five steps, the first one being Very bad (opinion) and the last one Very good (opinion). For the first two analyzed aspects we did not notice any significant differences neither between the percentage obtained by the five steps of the scale nor for the order of the five steps. Differences in the order of the steps between the two types of survey appear for the third analyzed aspect (classrooms). If in the case of the classic survey the Bad opinion is second with 23% of the options, while for the online survey, the Very bad opinion is second with 25% of the options. The phenomenon that appears for this kind of question, common to all three aspects examined, is that, when sorting ascending the five steps, considering their percentages, the second step importance-wise (the one that obtains the second percentage, sorted descending) is over-evaluated for the online survey. Still, the differences are not significant, but they exist, showing the existence of a possible behavior of the respondents, induced by the data collection method.

On the question Rank the motives that would make you leave Romania after graduating university: respondent were asked to rank four motives: little wages, lack of opportunities, corrupt system, lack of hospital facilities, when taking a possible decision of leaving the country. In analysis no significant differences are recorded between the two surveys within the first two aspects presented. In the classical survey and also in the online survey over 50 % of the respondents indicate small wages as being the first reason in deciding to leave the country. Also, over 31% of respondents assign the second place (given by most respondents) to the reason, lack of opportunities, in making such a decision. Regarding the two other reasons we can see differences between the two surveys. The online survey respondents have slightly different opinions of those who responded to the survey in classic form. Most respondents (over 36%) of the classic survey consider the reason, lack of hospital facilities, on the last place when deciding to take
such a decision but for the online survey most of the respondents (over 37%) rank this reason as being on the third place when deciding to leave Romania. Differences occur even for the reason: corrupt system in Romania. Over 35% of classic survey respondents rank it as the fourth reason in order of importance and 30% of the online survey respondents consider it the second reason for taking the decision. Again, for this question also, the overrated weight for the first option (the option which is indicated by the most respondents) appears for the first three aspects presented. For the online survey the first option has a greater share than the first option from the classic survey. The difference is not significant again, but the share is always higher for the online survey, indicating the method chosen for data collection as a possible cause.

Also when analysing the responses to the question regarding the environment of origin of the respondents, in the online survey the weight of those residing in urban areas is 5% higher than in the classic survey. The T test analysis based on last year’s grade/admission score of the respondents did not indicate a difference in this regard between the two surveys. The only notable difference in the analysis of this question is between the coefficients of skewness of the two distributions. Both distributions show a negative skew which is more pronounced for the online survey. This difference might find its explanation in the method chosen to collect data also.

Conclusions

The comparative analysis of the responses obtained by the two methods used did not result in significant differences leading to consideration of the second data collection methods as being inadequate. Important to mention is the presence of overrated weights for online survey. The phenomenon deserves more detailed investigation during future studies in order to establish a method to quantify and even eliminate it. It can be argued that for an appropriate community (young, educated people with access to IT&C facilities), the quality of data obtained through an online survey is the same with that obtained through a classic survey, having the important advantage of increased cost efficiency.

Notes:
1. The paper is based on a sampling survey conducted in the high education domain
2. Data collection for the research used in this article was conducted between 1st of May 20th of May, 2007
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