

ONLINE SURVEYS SOFTWARE, INSTRUMENTS FOR RESEARCHES IN VEGETAL AND ANIMAL RESOURCES ENGINEERING FIELD

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Abstract

In those days, there are many survey software used by a great number of students for bachelor, master or doctorate work, as well by researchers activating in different fields. The present paper is intended to emphasize what features has these instruments and which is there scientific value.

Key words: survey software, plant and animal resources engineering, research

INTRODUCTION

STIPQ (Surveys, Tests, Inquiries, Polls or Questionnaires) are experiencing a more widespread use, beyond the political sphere where it devoted; a recently area is the justifications of the absorption of European funds, especially in the economic and social sciences domains; another great area of research are the doctorates and dissertations works.

Scientific research Questionnaire, according to Chelcea (2001:70) is: "survey research is a technique and, accordingly, an investigative tool, consisting of a set of written questions and possibly graphics, ordered logically and psychologically, which by the administration by operators of inquiry, or self-administration, determine from the respondents people answers, to be recorded in writing".

In Lyberg& Cassel (2001: 13475) opinion: "Survey sampling can be defined as the art of selecting a sample of units from a population of units, creating measurement tools for measuring the units with respect to the survey variables and drawing precise conclusions about the characteristics of the population or of the process that generated the values of the units".

Example: We are interested in the extent to which the population of a city or a region, internalized social benefits of selective collection of household garbage and actual practice selective collection; for this, we want to formulate some conclusions about the behavior of a sample population as reported in the entire target population. Other examples: Satisfaction Questionnaires on tourist services; Assessment Questionnaires for knowledge acquired during the trainings (Multiple choice Tests).

MATERIAL AND METHODS

The creation of a survey involving a research

The preamble of STIQ is very important, its purpose is to motivating the person to participate; it may contain:

- Explanatory elements: what is the purpose of the questionnaire, who made it, how respondents were chosen
- Motivating elements: the importance of the topic, the impossibility to collect otherwise the information.

The Classifications of questions (Table 1):

➤ Questions classification by content:

- **Factual questions** (administrative questions), concerning concrete, verifiable data, which in turn, can be, identification questions (demographics), questions on knowledge (what the person knows) or eligibility questions;

Ex. Please indicate your gender (Answer: Male/ Female)

Please indicate your age segment (18-23/ 24-30/ 31-45/ 46-64/ 65+)

Please indicate your current marital status (Single/ Married/ Divorced/ Widowed);

On average, how many times do you visit a fast food restaurant per week? (1/ 1-3/ 3-5/ 5+)

On average, how much per week do you spend at all fast food restaurants? (0-4.99€/ 5-9.99€/ 10-19.99€/ 20€/+ Don't Know)

In order to qualify as a participant for this survey, please answer the following questions: In the last three months have you purchased food from a fast food restaurant? (Yes/ No); Are you 18 years of age or older? (Yes/ No);

- **Opinion questions** (preferences, interests, attitudes, motivations) concerning unverifiable data, which belong to aspects of culture and psychology of the person (what a person thinks); in this case the answers are subjective; are known polls in which the interviewees expressed opinions about topics that not exist, laws or peoples (Chelcea S., 2001:75); the purpose of these questions is "to allow conclusions about the direction, intensity, consistency and centrality of opinion" (Chelcea S., 2001: 76);

Ex. What is your favorite fast food restaurant? (McDonalds/KFC/Other)

On a scale of 1-5 (1= not important, 5= very important) how important are each of these attributes to your purchasing of fast-food? (Circle the answer that best applies to you)

	Not Important		Somewhat Important		Very Important
Price	1	2	3	4	5
Taste	1	2	3	4	5
Speed of Service	1	2	3	4	5

Cleanliness of Restaurant	1	2	3	4	5
Location of Restaurant	1	2	3	4	5

Because of above arguments, are used also:

- **Verification questions** (what a person makes); they are different formulations (possibly in negative form) of the same issues of concern; their purpose is to emphasize the difference between socially desirable response and convictions of the person, or the difference between beliefs and behaviors;

- **Neuralgic questions** require special attention, such as on social taboos about relationships with important people of the respondent (the family or the bosses); in answer to these questions, ego defense mechanisms arise; the work of Coutts & Ben (2011) compared the effectiveness of RRT (Randomized Response Technique) methods and CTU (Count Unmatched Technique) methods, used to collect responses to neuralgic questions;

Obs. Any questionnaire contains factual identification questions, concerning characteristics of the sample, questions which are generally placed at the end;

➤ Questions classification by the scale type (Balaure & V&all, 2005: 106):

- Questions with forced answer (structured questions), also called **closed questions**; they have multiple, pre-coded, mutually exclusive, responses; one example is presented above;

structured questions raises the following issues: grading problem between three (yes, no, I do not know) and 9 responses (... other), standard Likert Scale having 5 steps; the neutral response issue (Chelcea S., 2001:77); the alternatives order issue; suggestibility issue;

the advantages of closed questions: 1) the statistical processing; 2) they are facilitating responses by recognizing the information contained, compared to reproduction required by the open questions;

Ex. What is the most effective method of collecting garbage? (mixed/ sorted/ I do not know);

- **closed cumulative questions**; shows alternatives that are not mutually exclusive;

Ex. Where do you currently get information about fast food restaurants? (Check all that apply): (TV Commercials/ Radio Commercials/ Internet/ Facebook/ Smartphone Commercials/ Billboards/ Newspaper Commercials/ Friends and Family).

- **free or open answer questions**; here the processing problem appear.

Ex. Please explain why this is your favorite restaurant?

Table 1

Questions classification

Classification	Questions			
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criterion					
by content	factual (concrete date, verifiable)		opinions (preferences, attitudes, unverifiable)	verification (what a person makes, the difference between beliefs and behaviors)	neuralgic (social taboos or relationships with important people for the subject)
	eligibility and identification (age, gender, education etc.)	knowledge (related to theme)			
by scale type	closed, exclusive, odd number (3/5/7)		closed, excl., even number (2/ 4/ 6)	closed, cumulative	open
by compulsoriness (online)	compulsory (respondent cannot proceed to the next question without answering)		optional		

Gallup¹ scheme (apud Chelcea 2001:74):

- closed questions of knowledge, for determining the level of respondent in the field of research
- open questions regarding attitudes toward the field
- closed questions regarding the field
- open questions regarding motivation
- closed questions, to measure the intensity of opinions
- [optional the identification questions].

The Surveys (STIPQ) classification (Table 2):

- by the content:
 - STIPQ with one theme (special surveys), which are mostly used in studying the market, or the intention to vote, for highlighting an aspect of the studied phenomenon etc.;
 - omnibus questionnaires, with several themes that naturally bind, which aims to measure and explain the complexity of the studied phenomenon;
- by the questions:
 - with open questions, with close questions and with mixed questions (usually);
 - with/ without verification questions;
- by the application mode:
 - self-administered or administered by an operator; the self-administered are the advantage of anonymity

¹ Gallup Inc., USA, it is one of the most known and credible consulting and marketing company, which offers opinion polls services and social studies at global level

- by the support:
 - paper and pencil in the laboratory, paper and pencil in a controlled environment, paper and pencil by mail, CBT (Computer Based Test) in the laboratory, internet mail, online internet browser
- by the purpose:
 - tests which are used several times and that are validated respectively standardized, ex. in psychology tests, in school evaluations;
 - surveys which are used situational (like in political marketing).

Table 2

Surveys (STIPQ) classification

Classification criterion	Surveys				
by content	one theme (ex. market/ voting intention)	omnibus (measuring a phenomenon)			
by questions	open questions	close questions	mixed (usually)	with/without verif. questions	
by application mode	auto-administered	admin. by an operator			
by support	paper and pencil in the laboratory or in a controlled environment	paper and pencil by mail	CBT in the laboratory (exams)	mail	in browser
by purpose	are reused (validated, standardized)	occasional (marketing, politics)			

The scientific value of the results

The purpose, for which the questionnaires are made and applied, is usually to extrapolate results from a sample to the targeted population, what is named statistical inference. If you could interview each unit (individual) of population, the inference would not be necessary, but this it happens very rarely.

Therefore, in preparing the questionnaire are taken into account a statistical hypothesis for which data are collected to support it; in the example above, assumption is: the city's or region X's population, practice selective collection, and the results (either confirm or not the hypothesis) may or may not reflect, a real trend (they are/are not by chance).

In this situation, appear two aspects:

1. how do we know, that the results are not due to natural variability of the population, that by chance, or it happened to find a sample of people who collect garbage selectively, although the rest of the population does not?

2. what is the probability, with which we can extend to the entire population the results of sample?

To extrapolate the sample results to the population from which the sample was extracted, the following conditions must be met:

- Probabilistic sampling must be done (Cassel& Lyberg, 2001: 13459), (Opariuc Vol. I, pg. 257),
- The sample size must be calculated in dependence on the probability (95% or 99%) wherewith we want to work, namely the margin of error accepted.

Limits of the Surveys (STIPQ)

Questionnaires were much criticized as having the following limits:

- Are affected by social desirability response of the respondent (lie)
- Are affected by differences between opinions stated and actual behavior, statements being related more to aspirations of individual and to self-image that the person wants to cultivate, than what the respondent practice
- The inability of the subject to make assessments required by the question, especially when they involve a segment of time; for example, "In the last 6 months did you collect garbage selectively?" "How many times?", it involves complex evaluations on some behaviors/ activities that people do not intentionally pursue over time
- Mismatch between the level of education of the respondent and the language/ concepts used; for example, the subject could not understand the "selective collection" term;
- Insufficient/ exaggerated gradation of response scale.

RESULTS AND DISCUSSIONS

Creating a survey research in the field of plant and animal resources engineering does not differ or should not differ by nothing, at the level of conception, to the creation of a sociological field survey.

Regarding the application of STIPQ, the online form should bring no significant differences in terms of sampling mode and in terms of number of participants, compared STIPQ applied directly on paper, by mail, or phone. However, the main problem of the online application of surveys, is the random sampling (probabilistic). For example, studies conducted with the same questionnaire through online method and interview face-to-face, show differences in the statistical results, attributed to the fact that the online

environment selects especially respondents between people more informed, "viewpoint-oriented" (Duffy et al., 2005).

After the study of 20 software or Web services (Wright, 2005), looks like STIPQ software available for creating and implementing online surveys, varies considerably across the characteristics, cost and limitations. These software packages have in common the fact, that they offer the usual kinds of scale/questions: Likert scales, Semantic differential scale, cumulative, closed, open, nominal and categorical questions. A particular advantage of the method of applying online is the ability to provide questions in a random order at different visits.

In a recent study, Szolnoki (2013) compared the application face-to-face, telephone and online, of the same questionnaire, to wine consumers, regarding the representativeness of the sample compared to the target population; study results continue to prioritize application online on the last place, while in terms of cost, the same application manner appears as the most favorable.

CONCLUSIONS

Great accessibility of the method, created the framework for the emergence of numerous STIPQ, proposed and implemented by students, graduates, PhD students or researchers, in other fields than sociology, STIPQs which does not meet the deontology requirements of statistic research field. In Bryson et al. (2012) work, we find recommendations for specifying clearly, the following characteristics of studies based on STIPQ:

- 1) research hypotheses, or research subject
- 2) target population and sampling
- 3) methods used for the development of STIPQ, and measurements of validity and fidelity
- 4) the results and the interpretations
- 5) conclusions arising directly from the results.

These recommendations are valid also for researches in vegetal and animal resources engineering.

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