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Methodological Planning and Data Collection. Ensuring a Valid and Credible Research of a Questionnaire Survey in Social Work

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Abstract: *The validity and credibility of scientific research are determined by the strictness of planning and elaborating each stage of the research, by correlating the purpose of the research with the chosen research method, by avoiding methodological planning errors, as well as by carrying out each research stage in a manner that excludes errors in data collection, processing and interpretation. In the field of social work, par excellence, the value of an empirical research is conferred, among other things, by the possibility of extrapolating the conclusions of that research to similar situations in the practical activity of social workers, in case work with the beneficiaries of social work services. Due to the close connection between research and practice in this field of social sciences, the methodological design must be transparent and convincing, so as to give practitioners a high degree of confidence in the conclusions of the scientific study, as well as the possibility to capitalize on its informative benefits. So, methodological errors of research projects carried out in the field of social work can have a much wider and more tangible negative impact than in the case of other fields of science, at least from a pragmatic point of view, when theory is translated to practical applicability, and the scientific study is implemented in case work performed with the beneficiaries. This study aims to analyze the questionnaire survey in social work, by highlighting the main methodological errors that can affect the validity of such an empirical study, in order to identify the optimal solutions for a correct planning and methodological development of the scientific study.*

Keywords: *research methodology, research in social work, questionnaire survey, quantitative research.*

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Introduction

The questionnaire survey poses specific features among other empirical techniques of investigation social phenomena, because it is a research technique that does not provide the researcher with raw facts (Miftode, 2011), which can be analyzed directly, but it helps collect mediated data, more precisely the opinions of the people participating in the research about the phenomenon which is being studied, i.e. about the facts that the researcher describes in the questionnaire, with the help of questions. Basically, the data collected through the questionnaire provides clues about the uncertainties in society regarding a certain subject, as well as the debates that a certain action could provoke socially. For this reason, the questionnaire survey has traditionally been viewed by social science methodologists (Kelsall et al., 1972) as a confirmatory research technique.

Specifically, this technique has been recommended (Miftode, 2011) over time to confirm or disprove conclusions drawn by researchers from facts documented through other research methods, such as sociological observation or the experiment. These methods are considered (Przybyłowska, & Kistelski, 1986) to be primary research methods, because they help to collect concrete facts from a relevant target group. The purpose of the questionnaire would therefore be to verify the degree of generality of the conclusions stipulated in such studies, that are based on concrete facts. From this perspective, the questionnaire survey appears as a secondary research method, with a low degree of applicability in exploratory research, which aims to collect information about new social phenomena or emerging social trends.

Traditionally, social sciences methodologists (Călin, 2021) agree on the fact that a questionnaire may be used when the research subjects are asked about their wishes, preferences, estimates, or about the impressions they have on certain hypothetical situations, but the disadvantage of the questionnaire is that it offers little possibility to test the accuracy of such information, the sincerity of the subjects or how they would really react if they were concretely in the hypothetical situations that were previously described to them in the questionnaire. Consequently, traditionalist methodologists (Chelcea, 2022) recommend that the questionnaire survey be used as part of a methodological mix, consisting of main methods (such as the experiment) and secondary methods (such as the questionnaire survey).

Recent opinions (Sandu, 2012) expressed by methodologists in social sciences soften the traditional view, advancing the idea that the questionnaire survey can also be used in exploratory research, especially in research aimed at social values, scientific and professional ethics, the

opportunity of certain social policies, or to test the level of opposition or acceptance of certain social, legislative, financial, etc. solutions or projects.

The choice of the appropriate research method is, therefore, of crucial importance in the design of an empirical research, given that the way data collection is designed influences both the quantity of data and its quality, more precisely the credibility of the data. The purpose of this study is to analyze the questionnaire survey in social work, starting from a series of questions: a) for which categories of studies is the questionnaire survey an optimal research method?; b) what are the main errors that are made in the design of a questionnaire survey and how can such errors be avoided?; c) what are the aspects that must be taken into account in order to obtain data with a high degree of generality and credibility during a questionnaire survey?

Considering these questions, in order to achieve the purpose of this study, we set the following objectives, according to which we will continue our analytical approach: a) analizing the specifics of developing each stage of a questionnaire survey; b) identifying methodological errors that must be avoided, in order to carry out a methodologically valid study; c) establishing the methodological requirements that must be taken into account when designing a questionnaire survey.

Choosing the research method according to the targeted type of research

The chosen research method must be correlated with the type of research being carried out (exploratory or confirmatory), because this approach will determine the structure of the sample, as well as the number, structure and type of questions that will compose the questionnaire. Everything starts with the purpose of the research, and the purpose is determined by the chosen research topic. **Choosing the research topic** is the first step in designing a scientific paper, but by "choosing" we must not only understand "determining" the topic of the study, but also the delimitation of research interests or, better said, channeling them around a central axis, clearly defined and motivated (Karimova, 2024). From an ethical point of view, one of the main considerations that the researcher must have in mind is the usefulness of the research and its degree of necessity for scientific advancement or its practical applicability, as the case may be (Conrad & Schober, 2007).

The main errors that appear at this stage (Song et al., 2015) are generated by choosing a research topic that is too broad, ineffectively directed towards a clearly defined goal, or a research topic that is too narrow, insufficiently correlated with the relevant social phenomena in that

particular field of research. In the first case, the risk is the dissolution of the research into too many axes, which would be explored too vaguely, and in the second case, the risk is the collection of a small set of data, insufficient to draw valid conclusions. Precisely for this reason, the final delimitation of the research topic is done after a comprehensive analysis of the scientific literature, as well as of the empirical studies carried out by other researchers, a methodological stage which is called **documentation**. Depending on the conclusions of the theoretical documentation, the researcher will identify the type of research which is optimal: confirmatory or exploratory.

Confirmatory research involves the confirmation of social trends, that are already known or documented in the specialized literature (De Vaus, 2013). This confirmation can aim at verifying if social trends remane the same at different time intervals (years, decades, etc.) or at determining the causality of a certain phenomenon in a social group, which was not targeted by previous studies, but which presents similarities with social groups that have already been the subject of past research. In general, questionnaires constructed for such research will borrow the structure and variables used in previous surveys. Another type of confirmatory quantitative research (Sjöström & Holst, 2002) is the questionnaire survey that is part of a methodological mix, when the questionnaire is administered to the participants after the researcher has previously completed the analysis of data resulting from a main research method (for example, the experiment). Such a questionnaire will be built starting from the variables extracted from the analysis of the data obtained through the main research method and will aim to verify the degree of generality of the conclusions reached after processing the first set of data.

Exploratory research involves the collection of data or opinions regarding a new social phenomenon, which is beginning to take shape within society, either because it is specific to a minority social group, or because it is due to the scientific and technological advance, which is in the initial stages of implementation (Eaden et al., 1999). In this type of research, the survey can aim to determine the level of knowledge regarding that social phenomenon or the degree of acceptance or rejection that the phenomenon generates among the masses, or even to identify ethical opinions regarding how political and legislative decision-makers should approach the phenomenon from a social policy perspective (Aldridge & Levine, 2001). Such research is likely to gather new information, but is limited to providing data on ideas, attitudes, hypothetical reactions, and is less useful in identifying concrete facts or factual reactions to innovative stimuli. Documentation is an extremely important step, because the researcher must avoid the risk of dissolving the research into too many lines of interest and

must keep a central line of approach to the scientific endeavor. In exploratory research, the choice of variables presents a higher degree of difficulty, because the researcher must sort between hypothetical situations and probable reactions, while at the same time offering a wide enough palette of choice to the subjects, so that their opinions are revealed.

That is precisely why the methodological stage that involves **establishing the research objectives** is of vital importance in designing a research. The structure of the questionnaire will be modulated and the variables will be chosen according to the research objective (Saris & Gallhofer, 2007). Also, the usefulness of the research will be highlighted, once it is completed, by comparing the research results with the research objective. Research objectives can be practical, methodological or theoretical (Blair et al., 2014). Practical objectives are generally aimed at establishing the causality of a certain phenomenon or identifying the features of a certain behavior, factual and concrete reactions to certain stimuli etc. (Taherdoost, 2016). It is considered (Hoffmeyer-Zlotnik & Warner, 2018) that a survey based on practical objectives can be pre-eminently a confirmatory research, because practical research objectives can be achieved through fact-gathering rather than of opinions, and fact gathering is a form of data collection specific to primary research methods (such as the experiment, for example), while questionnaire surveys favor gathering opinions from research participants.

On the other hand, theoretical research objectives favor using the survey as a data collection method in exploratory research, if information about a phenomenon is scarce and disparate, and the existing data cannot yet constitute a reliable starting point for research through primary research methods. So, in order to collect data that indicate clearer and more detailed future research axes, the researcher will theorize possible axes of interest and test the validity of theoretical hypotheses by applying the questionnaire to a statistically relevant number of respondents. This type of research offers the advantage of being the starting point for wider, more thorough research. Theoretical research objectives can be correlated with methodological objectives, if the researcher aims to identify the optimal research methods for studying a social phenomenon (Krosnick, 1999).

The choice of the research topic and the research objectives must correspond to the **determination of the research universe**, i.e. the reference population that will be affected by the research, to which the research refers or within which the analyzed social phenomenon manifests itself (Lietz, 2010). The research universe is established according to certain criteria common to a population category or, on the contrary, it can combine deeply differentiated categories, precisely to test the differences of opinion

between social groups. At this stage, the main risk is to establish a research universe that is too broad, considering groups of people irrelevant to the research topic, or a research universe that is too small, which will lead to the exclusion of views pertaining to certain social actors, and the consequence will be that the social phenomenon will be incompletely analyzed. This stage is extremely important in the design of a research, because the sample of people who will participate in the actual study, therefore who will answer the questionnaire, will be extracted from the research universe.

A final stage in this first phase of designing a survey is **the identification of the material means** necessary for the practical realization of the research. In order to obtain statistical relevance, often surveys involve collecting data from a large number of respondents, who sometimes live in a vast territory. For this reason, the researcher may be faced with the need to co-opt collaborators into the research team. These collaborators are the survey operators, who will actually administer the survey to the research participants. Survey operators must be trained in order to correctly apply the questionnaire in the field, especially in terms of observing the sampling step, research ethics, providing information corresponding to ethical rigors to the research subjects etc. The incorrect application of the questionnaire can generate the collection of insufficient, inaccurate, irrelevant, unreliable data (Bowling, 2005). Other research collaborators may be needed in the raw data processing stage, when research participants' responses are centralized. These database operators must also be closely supervised by the research coordinator, to avoid the risk of errors when answers are centralized.

Establishing hypotheses and drafting the questionnaire

Questionnaire drafting is a key point in constructing a research, and the structure of the questionnaire is influenced by the purpose of the research and the research hypotheses. A poorly drafted questionnaire can lead to the insertion of irrelevant or insufficiently precise or clear questions, inappropriate language or prompting questions, that direct the respondents' opinions. These risks can be avoided by successfully passing the **pre-investigation stage**. This stage does not involve, as one might think, only the development of an initial questionnaire, to be applied to a small number of people, with the aim of identifying those shortcomings or errors in the design of the research instrument. The pre-investigation is a much more complex stage, which involves the sociological observation of the research universe, as well as possible discussions or non-directed interviews with members of the population targeted by the research, and all this must be correlated with the theoretical documentation (Aithal & Aithal, 2020).

This is how the risk of formulating vague, unclear hypotheses can be avoided. Moreover, the stage of **formulating the hypotheses** is crucial for establishing the variables that will be used during the research. The variables, as theoretical concepts, will then be transposed (in other words, they will be "translated") in the questions that will comprise the questionnaire. Hypotheses must circumscribe the objective of the research and help achieve that objective. There is no appropriate number of hypotheses that are recommended (Song et al., 2015) to be formulated for a research. It depends on the type of research, the topic of the research and how broad the purpose of the research is. The purpose of the research can be achieved by fulfilling one or more research objectives, each objective being circumscribed with its own hypotheses. What must be avoided is the overlapping of hypotheses from one objective to another, the formulation of vague hypotheses, which do not clearly indicate the variables considered, or the overlapping of several variables within the same hypothesis, when the variables are not linked by causality.

The actual **drafting of the questionnaire** requires considering two major objectives: the first one is aimed at how the researcher relates to the respondents, and the second one at how the researcher visualizes the analysis of the data. The structure and dimensions of the questionnaire are influenced by the breadth of the research theme, the number of hypotheses and variables, but also by the characteristics of the sample (Lietz, 2010). It is true that a first set of questions targets the socio-demographic characteristics of the participants, but this data should not be collected exhaustively, but only to the extent that it is considered to be of relevance to the research topic. The questions must be clear and simple. By "simple" it will not be understood that a "simplistic" language will be used, but that the terminology must be appropriate to the level of understanding of the participants. Some research, especially regarding the impact of innovative technologies or in fields with a high degree of specialization (such as medicine) (Huidu, 2019), presuppose a rather rigorous specialized language, which the researcher must "translate", in order to make it accessible to the respondents, if they are not specialists in the field. This "translation" needs to be done in such a way as to avoid the excessive specialization of the language, but without scientific errors or ambiguities. The number of questions must be adapted not only according to the number of variables, but also by taking into account the respondents' willingness to participate in the research. In other words, the duration of completing the questionnaire can influence the degree of involvement and concentration of the respondents during data collection, and the fatigue of the respondents, who

are faced with an excessive time to answer, is a factor that often generates withdrawal from the research (after a certain point, the subject refuses to answer) or giving insufficiently mentally processed answers.

As we previously showed, a second aim of the researchers when drafting the questionnaire is to adapt the questions to the way in which they visualise the analysis of the data. From this perspective, researchers can choose from a wide range of options, and it is recommended (Quarm et al., 1988) that they envision from the beginning how they intend to analyze the data and the type of tests they want to perform. The complexity of the statistical tests used to analyze the data is likely to influence the structure and type of questions.

A first classification of the questions that can be used in a questionnaire is into closed-ended, open-ended and semi-open-ended questions (Acharya, 2010). Open-ended questions are recommended (Foddy, 1993) to be used mainly in exploratory research, when the researcher does not have enough data about the social phenomenon, so that they can't predict certain possible answers from the respondents. Closed-ended questions are very often used in confirmatory research, when, from previous research (by the same researcher or identified in the specialized literature), certain statistically relevant reactions clearly emerge, the validity of which is to be tested in the research universe that is targeted by the survey. Semi-open-ended questions include both a series of predetermined answers, from which the respondent can choose, and the option for them to provide their own answers, that are not included in the questionnaire (Karimova, 2024). Each type of question has advantages and disadvantages.

While closed-ended questions help the respondents to clarify their position on a given stimulus and channel it into a precise response, they may make the subject feel that a certain response is being forced upon them or the respondent may not the answer that corresponds to their opinion among the answers provided in the questionnaire. For this reason, it is recommended (Conrad & Schober, 2007) that this type of question also includes non-answer options, such as "none of the above". We should not confuse this option with the " I don't want to answer" option, which is also a non-answer, but which suggests the respondent's unwillingness to reveal their opinion. Open-ended questions have the advantage of exploring the respondents' opinion in more detail, but it can cause problems in the data interpretation stage. If the answers are too vague or are diluted with unnecessary details, or unfortunately expressed, transposing those answers into discursive axes with a degree of generality, in the coding stage, can be difficult. Semi-open-ended questions seem to benefit from the advantages of both previous categories, but they

present another risk, namely that the options offered in the questionnaire can direct and influence the position expressed by the respondent in the open part of the question, even through no fault of the researcher and even without the respondent themselves to realize it.

Because of these advantages and disadvantages of each type of question, the researcher needs to carefully regulate the issue of scaling. Using scales to measure respondents' opinion is an extremely common technique in quantitative research. The researcher can use predefined scales, taken from other researchers, or create their own scale. In the first case, it is necessary that, at the time of writing the study, the researcher explains the reason why they opted for an established scale and the advantages that this option presents for the drafting of the research. If they use their own scale, the methodological process is much more complex, because the validity of that scale must be carefully pre-tested (not only in the pre-testing stage of the questionnaire, but possibly also in previous methodological steps, aimed precisely at developing the respective scale). In methodological research, the notions of pre-scaling and post-scaling are used (De Vaus, 2013). In general, pre-scaling is specific to closed-ended or semi-open-ended questions, while post-scaling is used for open-ended answers, but this is not an absolute rule. Organizing the answers given by the participants in the form of a scale, in the data analysis stage, can generate difficulties and requires the precise explanation of the scaling process. Scaling can be done by using words (for example, "not at all", "partially", "totally"), by using a numbered grid or even in a graphic form, in which case one can use drawings, pictures, graphs that indicate different possible degrees of response (Acharya, 2010). Graphical scaling is recommended (Hoffmeyer-Zlotnik & Warner, 2018) especially when the sample consists of children or people with a low level of education, culture and instruction.

Another option the researcher has is whether or not to use test questions. They are not appropriate for any type of research, but only when the research topic has a high degree of sensitivity, which makes it possible to assume that there is a possibility that some respondents will try to avoid (consciously or unconsciously) giving honest answers to certain questions. Test questions are intended to reveal inconsistencies between subjects' answers and are usually interspersed among the actual questions in the questionnaire in such a way that the test is camouflaged. Thus, the respondents' degree of subjectivity towards certain situations is determined. Test questions are extremely useful especially in researches aimed at socially controversial aspects, ethical issues, as well as in exploratory research. Test questions should not be confused with control questions (Saris & Gallhofer,

2007), which are written for the same content, but in a different form, and are placed in different parts of the questionnaire (basically, the same thing is asked, but in different forms).

Depending on the research topic and the type of research, questions can be knowledge- questions, opinion-questions or intention-questions (Aldridge & Levine, 2001), and a questionnaire can use one or more of these categories. The first category aims to check the level of information that the respondents have regarding a certain subject (Taherdoost, 2016). These questions are usefull especially when the respondents' level of information can influence their opinion on a certain phenomenon. Opinion-questions aim to reveal the respondents' point of view on certain issues, while intention-questions put respondents in certain hypothetical situations, asking them to indicate what they would do if they were in those situations (Blair et al., 2014). In exploratory research, the answers to intention-questions can provide valuable clues, which are the basis for drafting the objectives and hypotheses, that could later be tested by primary research methods, such as the experiment.

Sampling and application of the questionnaire

The subjects who actually participate in the research must be representative of the research universe and in a sufficiently large number relative to the researched population, so that conclusions can be drawn about the statistical relevance of the data from the answers provided. **Sampling** involves extracting, from the larger group of the investigated population, a number of people to participate in the actual research, people who have the relevant characteristics for the researched topic and who can be considered representative of the entire population group (Aithal & Aithal, 2020).

There are two ways to do sampling, and the choice of sampling type is not random. A first method is the probabilistic method, according to which the choice is made by chance (Lietz, 2010), a method that presents the advantage that any category of people from a certain community has the chance to be represented in the sample. This sampling method is recommended (Aithal & Aithal, 2020) for research with a high degree of generality, for an entire society or community, when the research findings could be of interest to any member of society, regardless of the social characteristics of their social group, respectively when the object of the research is of wide interest for the public in general. For research on niche topics, however, in areas where decisions are made only by certain categories of people or that involves minority groups, or when the research topic refers to groups with particular characteristics and the research conclusions cannot

be extended to an entire society or does not interest society as a whole, it is preferable to use the second sampling method, which is called quota sampling. According to this method, the researcher chooses what percentage of the total sample will be dedicated to people with certain characteristics, what percentage to people with other characteristics, and so on (Song et al., 2015). Within this type of sampling, what is relevant is that the sample does not include all the population categories in the investigated society, but only those categories relevant to the research, in a proportion as close as possible to the proportion actually found within the research universe.

Incorrect sampling can lead to the collection of unnecessary data, which distorts the statistical percentages and therefore the conclusions of the research, which is diluted with opinions or reactions of people outside the interests of the research. Starting from this, it is natural that the conclusions of the research will not be valid either. The lack of validity can also be the consequence of the way in which the questionnaire is applied in the field by the operators. While probability sampling involves using what is called a sampling step (each person out of x number of people is asked to participate in the survey) (Karimova, 2024), quota sampling implies that each survey operator will receive a list of the categories of people to whom the questionnaire will apply, according to the quotas assigned by the coordinating researcher (Conrad & Schober, 2007). In this case, two fundamental rules must be respected (De Vaus, 2013): the operator is not allowed to choose subjects in their entourage (it is assumed that they will have similar opinions, due to the personal ties and mutual influence that members of a certain group socially exercise on each other) and not to exceed a certain territorial limit (so as not to overlap with an operator from the neighboring territorial constituency or not to exceed the geographical area where the researched population lives).

Data processing and analysis

The processing of data collected through questionnaires involves three stages: questionnaire validation, coding and data analysis (Saris & Gallhofer, 2007). **The validation of the questionnaires** is done after their completion and involves removing the invalid, inconsistent or incomplete questionnaires from the sample, which are likely to raise doubts about the credibility of the answers (Taherdoost, 2016).

Coding is the stage when the researcher assignes a numerical value to each answer, depending on the variables (Sjöström & Holst, 2002). Thus, each question will correspond to a variable, and each type of answer given by the subjects to each question will receive a code or a predetermined value. The

coding operation is essential for the subsequent performance of a clear analysis, as inaccurate coding can generate an unintelligible or distorted presentation of statistical tests. In the case of closed-ended questions, coding does not raise major problems, since each answer has already been assigned a value, at the time the questionnaire was written. In the case of open-ended questions, however, this value must not only be assigned, but before that, it is necessary to identify the categories according to each answer. These categories are called discursive axes (Saris & Gallhofer, 2007) and will be identified by analyzing and grouping the answers given by the subjects into similar categories, depending on the common elements of some answers, which differentiate them from other types of answers given to the same question. Only after establishing the discursive axes, will it be possible to identify the list of discursive axes, and the coding can be done according to those axes.

Data analysis is done by means of statistical tests, which are of great diversity. A first analysis of the data involves identifying the frequency of certain responses. Special care must be taken to eliminate non-responses (Taherdoost, 2016), in order to obtain valid results, that generate conclusions as close as possible to reality. Afterwards, the analysis can be deepened, by establishing correlations between responses grouped in certain frequencies or by making comparisons between groups. Other statistical tests verify the causal relationship between certain variables and the influence that some factors have on the respondents' opinions, i.e. how it is predictable they will change their opinions depending on the change of premises (replacing one variable with another). In order to apply statistical tests, specialized software can be used.

After data analysis, the final stage of the research is carried out, which involves **the writing of the scientific paper**. This stage is not the subject of the present article, but a mention that needs to be made here, however, is that each scientific paper must reflect, in a specially dedicated section or chapter, the way the research was developed, planned and carried out, by describing all the previouse stages. The clarity in presenting these steps in the scientific paper will not only determine the credibility of the paper, but will help other researchers identify the limits of the research as well as its value, and this will increase the potential of the paper to be considered as a starting point for future studies.

Conclusions

Like any research method, questionnaire survey is only a way to investigate reality and know it, but this knowledge is mediated by the theoretical conceptions and assumptions that are the starting point for

developing the questionnaire, based on sociological observation, previous documentation and epistemological creed of the researcher. If the sampling is done correctly, the conclusions of the questionnaire survey can be extrapolated to the whole research universe, with a margin of error judged to be acceptable and which differs according to the sample size (according to the rule of large numbers).

The advantage of a questionnaire survey is that it allows, based on the direct investigation of a part of a population, to draw conclusions regarding the opinion of the entire population, since, most of the time, we are in a practical impossibility to directly question all the population targeted by the research. However, methodologists warn (Eaden et al., 1999) that the rigors of a statistical research are so demanding, that errors can occur at every stage of the research, and often the opinions expressed by respondents are distorted by elements that the researcher can neither predict, nor prevent. For these reasons, it is recommended (Przybyłowska & Kistelski, 1986) that the conclusions of a quantitative research be correlated, in a methodological mix, with those of some main and direct research methods (such as the experiment), in order to eliminate those elements of uncertainty that could affect the validity of the research conclusions, as well as to complete the picture of the social phenomenon with those nuances that the questionnaire cannot capture, as a result of the predetermined nature of the answers, provided by the closed-ended questions, which usually represent the rule in questionnaire surveys.

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