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Roles and Regulations for Conducting a Surveys Research in Social Studies

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Abstract

The quality of a survey is of prime importance for accurate, reliable and valid results, Survey teams should implement systematic quality assurance procedures to prevent unacceptable practices and to minimize errors in data collection This paper provides a checklist of good practice in the conduct and reporting of survey research, many researchers seek to publish work that uses questionnaires and surveys. Complexities in the use of surveys and questionnaires and the legal and ethical principles that frame their use are often overlooked, resulting in disappointment for authors who seem unaware of the responsibilities editors and reviewers have in relation to these data collection instruments. meaning a standard at which the results will be regarded as credible. Survey research is sometimes regarded as an easy research approach. However as with any other research approach and method, it is easy to conduct a survey of poor quality rather than one of high quality and real value, its purpose is to assist the novice researcher to produce survey work to a high standard, meaning a standard at which the results will be regarded as credible, and how to calculate sample size and how to select sample. It is not intended to provide a manual of how to conduct a survey, but rather to identify common pitfalls and oversights to be avoided by researchers if their work is to be valid and credible.

Keywords: *Survey; Sampling; Questionnaire; Chi-Square; Reliability*

1. Introduction

Surveys are a research method by which information is typically gathered by asking a subset of people questions on a specific topic and generalizing the results to a larger population. They are an essential component of many types of research including public opinion, politics, health, and others. Surveys are especially important when addressing topics that are difficult to assess using other approaches (e.g., in studies assessing constructs that require individual self-report about beliefs, knowledge, attitudes, opinions, or satisfaction). However, there is substantial literature to show that the methods used in

conducting survey research can significantly affect the reliability, validity, and generalizability of study results. Without clear reporting of the methods used in surveys, it is difficult or impossible to assess these characteristics.

One of the basic features in the design and implementation of a survey is its "quality" (Lyberg et al., 1997). In every data collection initiative, the results depend on the input; as the saying goes: garbage in-garbage out. In addition to the quality of the survey instruments and analytical techniques, quality of the survey results depends mainly on the implementation of the survey including sound sampling methods and proper administration of the questionnaire.

Survey research is common in studies of health and health services, although its roots lie in the social surveys conducted in Victorian Britain by social reformers to collect information on poverty and working class life *(Vernon A. A Quaker Businessman: Biography of Joseph Rowntree (1836– 1925). London: Allen &Unwin, 1958)* and indeed survey research remains most used in applied social research. The term 'survey' is used in a variety of ways, but generally refers to the selection of a relatively large sample of people from a pre-determined population (the 'population of interest'; this is the wider group of people in whom the researcher is interested in a particular study), followed by the collection of a relatively small amount of data from those individuals. The researcher therefore uses information from a sample of individuals to make some inference about the wider population *(Vernon A. A Quaker Businessman: Biography of Joseph Rowntree (1836–1925). London: Allen & Unwin, 1958)*

Survey research is defined as "the collection of information from a sample of individuals through their responses to questions. This type of research allows for a variety of methods to recruit participants, collect data, and utilize various methods of instrumentation. Survey research can use quantitative research strategies (e.g., using questionnaires with numerically rated items), qualitative research strategies (e.g., using open-ended questions), or both strategies (i.e., mixed methods). As it is often used to describe and explore human behavior, surveys are therefore frequently used in social and psychological research *(Check J., Schutt R. K. Survey research. In: J. Check, R. K. Schutt., editors.* Research methods in education. *Thousand Oaks, CA: Sage Publications; 2012. pp. 159–185)*

2. Problem Research

Many researchers face difficulties in conducting survey research through the assumptions necessary to conduct them in determining the population, the sample, the appropriate test and the data collection tool, we will shed light on the problem and how to statistical analysis.

3. Significate Research

The importance of the study lies in survey research is a unique way of gathering information from a large cohort. Advantages of surveys include having a large population and therefore a greater statistical power, the ability to gather large amounts of information and having the availability of validated models.

4. Survey Strengths

Surveys are capable of obtaining information from large samples of the population. They are also well suited to gathering demographic data that describe the composition of the sample (McIntyre, 1999, p. 74). Surveys are inclusive in the types and number of variables that can be studied, require minimal investment to develop and administer, and are relatively easy for making generalizations (Bell, 1996, p. 68). Surveys can also elicit information about attitudes that are otherwise difficult to measure using

observational techniques (McIntyre, 1999, p. 75). It is important to note, however, that surveys only provide estimates for the true population, not exact measurements (Salant & Dillman, 1994, p. 13).

5. Survey Weaknesses

Pinsonnault and Kraemer (1993) noted that surveys are generally unsuitable where an understanding of the historical context of phenomena is required. Bell (1996) observed that biases may occur, either in the lack of response from intended participants or in the nature and accuracy of the responses that are received. Other sources of error include intentional misreporting of behaviors by respondents to confound the survey results or to hide inappropriate behavior. Finally, respondents may have difficulty assessing their own behavior or have poor recall of the circumstances surrounding their behavior.

6. Survey Design

According to Levy and Lemeshow (1999), survey design involves two steps. First, a sampling plan must be developed. The sampling plan is the methodology that will be used to select the sample from the population (p. 6). The sampling plan describes the approach that will be used to select the sample, how an adequate sample size will be determined, and the choice of media through which the survey will be administered. Survey media include telephone and face-to-face interviews, as well as mailed surveys using either postal or electronic mail (Salant & Dillman, 1994, p. 3).

7. The Questionnaire

A questionnaire is a research instrument that consists of a set of questions (or other types of prompts) for the purpose of gathering information from respondents through survey or statistical study. A research questionnaire is typically a mix of close-ended questions and open-ended questions. Open-ended, long-term questions offer the respondent the ability to elaborate on their thoughts. The Research questionnaire was developed by the Statistical Society of London in 1838 (A copy of the instrument was published in the Journal of the Statistical Society, Volume 1, Issue 1, 1838, pages 5–13. Fourth Annual Report of the Council of the Statistical Society of London, JSTOR i315562)

7.1 The Qualities of a Good Questionnaire

A questionnaire is a data collection technique consisting of a series of questions that are structured to be asked of people taking part using different forms of communication whether it's verbal or written. The design of a questionnaire will depend on whether the researcher wishes to collect exploratory information (i.e. qualitative information for the purposes of better understanding or the generation of hypotheses on a subject) or quantitative information (to test specific hypotheses that have.

8. types of Questionnaires:

In a broader sense, there are two types of questionnaires:

8-1 Structured Questionnaire

It is also known as a closed questionnaire where such questions are asked, which can be answered as yes or no. It includes less number of researchers and a large number of respondents, and it has definite and concrete questions. These types of questionnaires are formal and are prepared well in advance.

8-2 Unstructured Questionnaire

It is based on a more open questionnaire. An open questionnaire means recording more data, as the respondents can point out what is more important for them in their own words and methods, as responses can go to any length. This type of questionnaire is quite flexible and can be applied to several areas of study as they do not require much planning and time.

9. Scaling

It is a well-known fact that the parametrical statistical methods, for example, ANOVA (Analysis of Variance), need to have some kinds of standardization at the gathered data to enable the comparable usage and determination of relevant statistical parameters like mean, variance, correlation, and other distribution describing characteristics. A survey about conceptual data gathering strategies and context constrains can be found in [28]. One of the basics thereby is the underlying scale assigned to the gathered data. The main types of numerically (real number) expressed scales are

(i) Nominal scale, for example, gender coding like “male = 0” and “female = 1”,

(ii) Ordinal scale, for example, ranks, its difference to a nominal scale is that the numeric coding implies, respectively, reflects, an (intentional) ordering (≤),

(iii) Interval scale, an ordinal scale with well-defined differences, for example, temperature in ◦C,

(iv) Ratio scale, an interval scale with true zero point, for example, temperature in ◦K,

(v) Absolute scale, a ratio scale with (absolute) prefixed unit size, for example, inhabitants.

Let us first look at the difference between a ratio and an interval scale: the true or absolute zero point enables statements like “20◦K is twice as warm/hot than 10◦K” to make sense while the same statement for 20◦C and 10◦C holds relative to the ◦C-scale only but not “absolute” since 293,15◦K is not twice as “hot” as 283,15◦K. Interval scales allow valid statements like: let temperature on day A = 25◦C, on day B = 15◦C, and on day C = 20◦C. Now the ratio (A−B)/(A−C) = 2 validates “The temperature difference between day A and B is twice as much as between day A and day C”.

As mentioned in the previous sections, nominal scale clustering allows nonparametric methods or already (distribution free) principal component analysis likewise approaches. Examples of nominal and ordinal scaling are provided in [18]. A distinction of ordinal scales into ranks and scores is outlined in [19]. While ranks just provide an ordering relative to the other items under consideration only, scores are enabling a more precise idea of distance and can have an independent meaning. In case that a score in fact has an independent meaning, that is, meaningful usability not only in case of the items observed but by an independently defined difference, then a score provides an interval scale. An ordering is called strict if and only if “

Table (1) Illustrates Questionnaire design

Topic	Continents	Others
The Questionnaire Component	1. The name of supervising the research (or the questionnaire). 2. Confirmation of data confidentiality to ensure correct answers. 3. A summary of the most important research objectives. 4. Praising and asking for cooperation in the answers. 5. The questions	
The Questionnaire Design Rules	1. Keep in mind the objectives when designing the questionnaire 2. Map out the structure of the questionnaire so it reads well 3. Ensure the profile of people you want to interview feed into the screening section 4. Ensure questions are simple as possible (language) 5. Avoid leading questions 6. Questions should be clear and to the point 7. Do not ask two questions in one 8. Split a large topic into multiple questions 9. Ensure the routing has been applied correctly 10. Remember to pre-test the uestionnaire with a small number of people	
The Scales Types	1. Nominal Scale 2. Ordinal Scale 3. Interval Scale 4. Ratio Scale	
The Ordinal Scales Types	1. Binary Scale 2. Triple Scale 3. Quartic Scale 4. Quantic Scale	
The Scale Reliability	1. Test-Retest Method 2. Parallel Forms Method 3. Split-Half Method 4. Internal Consistency 5. Method	A. Test-Retest Method B. Parallel Forms Method C. Split-Half Method
The Scale Validity	1. Assumed Validity 2. Concurrent Validity 3. Face Validity 4. Content Validity 5. Experimental Validity 6. Predictive Validity 7. Factorial Validity 8. Intrinsic Validity	A. Referees Opinion Method B. External Criteria Method C. Tailed Comparative ethod D. Factor Analysis Method E. Validity from Reliability

10. Responsibilities to Respondents

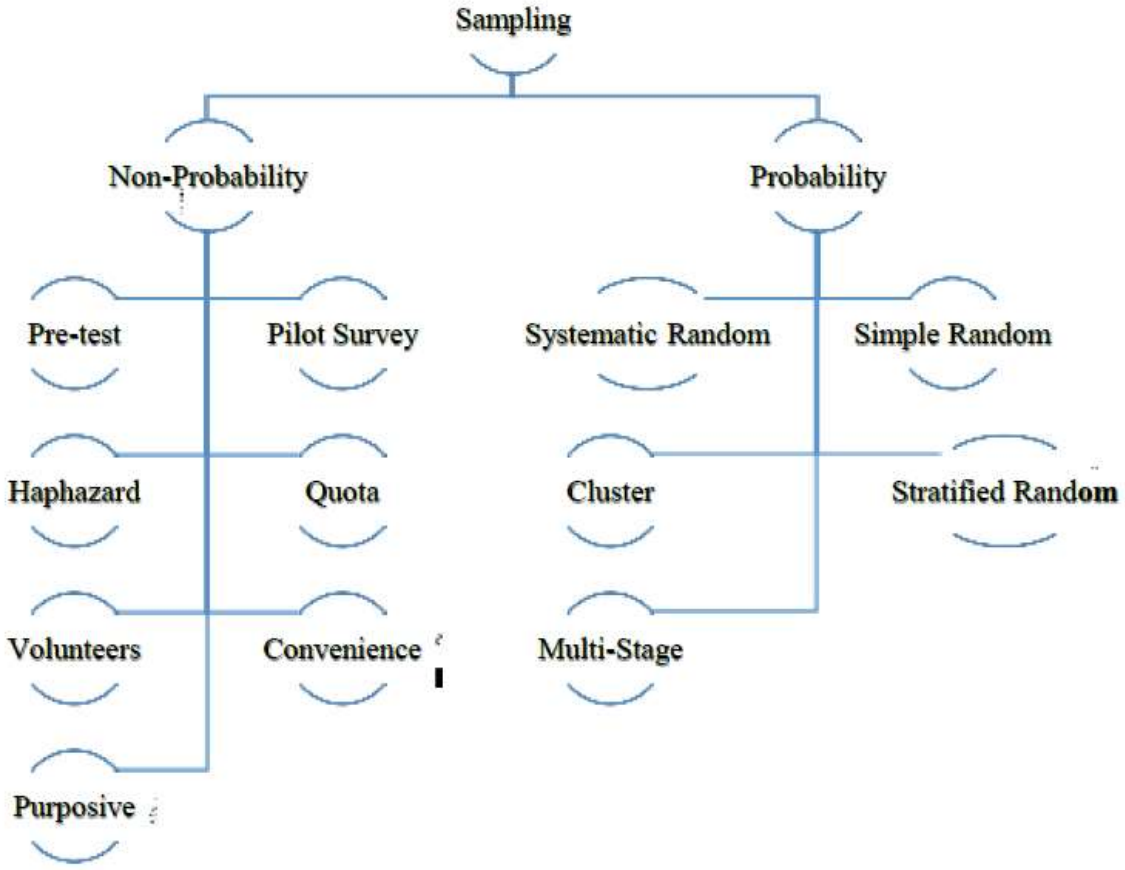
1. Respondents' co-operation is entirely voluntary. They must not be misled when being asked for co-operation.

2. Respondents' anonymity must be strictly preserved.

3. Researchers must take special care when interviewing children, young people and other potentially vulnerable members of society. The informed consent of the parent or responsible adult must first be obtained for interviews with children.

4. Respondents must be told if observation techniques or recording equipment are used.

5. Respondents must be enabled to check without difficulty, the identity and bona fides of the researcher.



Fieger (1) Types of Sampling

We have looked at the different types of sampling methods above and their subtypes. To encapsulate the whole discussion, though, the significant differences between probability sampling methods and non-probability sampling methods are as below:

Table (2) Illustrates Difference between probability sampling and non-probability

Statement	Probability Sampling Methods	Non-Probability Sampling Methods
Definition	Is a sampling technique in which samples from a larger population are chosen using a method based on the theory of probability.	Is a sampling technique in which the researcher selects samples based on the researcher's subjective judgment rather than random selection.
Alternatively Known as	Random sampling method	Non-random sampling method
Population selection	The population is selected randomly.	The population is selected arbitrarily.
Nature	The research is conclusive.	The research is exploratory.
Sample	Since there is a method for deciding the sample, the population demographics are conclusively represented.	Since the sampling method is arbitrary, the population demographics representation is almost always skewed.
Time Taken	Takes longer to conduct since the research design defines the selection parameters before the market research study begins	This type of sampling method is quick since neither the sample nor the selection criteria of the sample are undefined.
Results	This type of sampling is entirely unbiased; hence, the results are also conclusive	This type of sampling is entirely biased, and hence the results are biased, too, rendering the research speculative.
Hypothesis	In probability sampling, there is an underlying hypothesis before the study begins, and this method aims to prove the hypothesis.	The hypothesis is derived after conducting the research study.

Table (3) Illustrates Sample size with different formula

Name	formula	Information
Cochran's Formula	$n_0 = \frac{Z^2_{\alpha/2} p(1-p)}{e^2} \quad n = \frac{n_0}{1+\frac{n_0}{N}}$	Z=1.96, p=0.5, e=0.05
Krejcie & Morgan	$n = \frac{\chi^2 Np(1-p)}{d^2(N-1)+\chi^2 p(1-p)}$	d=0.05, χ^2=3.841, p=0.5
Steven K Thompson	$n = \frac{N \times p(1-p)}{\left[\left[N-1\times\left(d^2 \div z^2\right)\right]+p(1-p)\right]}$	d=0.05, z=1.96, p=the population proportion (assumed to be .50 since this would provide the maximum sample size 0.5)

Robert D. Mason	$n = \frac{M}{\left[\left(S^2 \times (M-1)\right) \div pq\right] + 1}$	$S = \frac{Z=1.96}{e=0.05}$, p=0.5, p =0.5
Jaeger, Richard M	$n = \frac{\left(\frac{z}{d}\right)^2 \times (0.50)^2}{1 + \frac{1}{N}\left[\left(\frac{z}{d}\right)^2 \times (0.50)^2 - 1\right]}$	d=0.05, z=1.96
Herbert Larkin	$n = \frac{p(1-p)}{(SE \div t) + \left[p(1-p) \div N\right]}$	SE=0.05, p=0.5
Stratified sample size	$n_h = \frac{N_h}{N} * \text{n}$	N_h = size of stratified

Table (4) Illustrates Choosing a nonparametric test

Predictor variable	Outcome variable	Use in place of…	
Spearman's *r*	Quantitative	Quantitative	Pearson's *r*
Chi square test of independence	Categorical	Categorical	Pearson's *r*
Sign test	Categorical	Quantitative	One-sample *t*-test
Kruskal–Wallis *H*	Categorical 3 or more groups	Quantitative	ANOVA
ANOSIM	Categorical 3 or more groups	Quantitative 2 or more outcome variables	MANOVA
Wilcoxon Rank-Sum test	Categorical 2 groups	Quantitative groups come from different populations	Independent t-test
Wilcoxon Signed-rank test	Categorical 2 groups	Quantitative groups come from the same population	Paired t-test

Non-parametric tests don't make as many assumptions about the data, and are useful when one or more of the common statistical assumptions are violated. However, the inferences they make aren't as strong as with parametric tests.

11. Data Analysis and Reporting Survey Results

Finally, it is worthwhile to consider the resource requirements of surveys, data analysis, and effective presentation of results as important elements of a credible and successful survey. Isaac and Michael (1997) espoused the use of automated data collection tools to facilitate data tabulation and manipulation (p. 137).

Lucas (1991) urged the use of nonparametric statistics where small sample sizes are involved (p. 278).

Conclusion

Now that we have learned how different sampling methods work and are widely used by researchers so that they don't need to research the entire population to collect actionable insights, let's go over a tool that can help you manage these insights. Survey research demands the same standards in research practice as any other research approach, and journal editors and the broader research community will judge a report of survey research with the same level of rigour as any other research report. This is not to say that survey research need be particularly difficult or complex; the point to emphasize is that researchers should be aware of the steps required in survey research, and should be systematic and thoughtful in the planning, execution, and reporting of the project. Above all, survey research should not be seen as an easy, 'quick and dirty' option; such work may adequately fulfil local needs (e.g. a quick survey of hospital staff satisfaction), but will not stand up to academic scrutiny and will not be regarded as having much value as a contribution to knowledge.

This paper described the survey process, consisting of three phases: (a) survey design, (b) survey instrument development, and (c) survey execution. Data analysis and reporting of results was identified as an important fourth phase of the survey process. This paper provided specific guidance for the design and implementation of survey research. Additional guidance is provided in the Appendix—A Checklist for Survey Assessment.

Future Research The need to evaluate available information and data is increasing permanently in modern times. Thereby more and more qualitative data resources like survey responses are utilized. Therefore, a methodic approach is needed which consistently transforms qualitative contents into a quantitative form and enables the appliance of formal mathematical and statistical methodology to gain reliable interpretations and insights which can be used for sound decisions and which is bridging qualitative and quantitative concepts combined with analysis capability. The desired avoidance of methodic processing gaps requires a continuous and careful embodiment of the influencing variables and underlying examination questions from the mapping of qualitative statements onto numbers to the point of establishing formal aggregation models which allow quantitative based qualitative assertions and insights.

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