

## **CONCEPTUALIZATION OF A RESEARCH, AND GUIDE TO SOCIAL DATA COLLECTION**

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### **ABSTRACT**

*Researches are conducted to help solve societal issues and/ or advance knowledge. Many research outcomes at undergraduate and graduate levels ends up on the library shelf these days. How do we enhance research outcomes to make them more impactful? This work is aimed to contribute to the conceptualization and execution of good social research especially in the biological, agricultural and environmental fields. This work recommends the mix-approach to social data collection to enhance the quality of a research outcome.*

**Key words: Research Conceptualization, Data Collection, Qualitative Data, Quantitative Data, Sampling**

### **BACKGROUND / INTRODUCTION:**

According to the Oxford and the Cambridge English dictionaries, the word conceptualization means "the action or process of forming a concept or idea of something". Researchers will always start by forming a concept or an idea about what they want to research into. The idea may arise from any, or a combination of more of the followings (Edith Cowan University, Australia ( ECU), 2023; Sequeira, 2014):

- area of personal interest or passion;
- an outcome of a conversation with a colleague or supervisor;
- an outcome of an extensive literature review or reading;
- a quest to solving a problem;
- as a result of some personal experience;
- personal values;
- current topic of discussion in the media

It is important to be reminded that a research need to solve a societal problem or contribute to existing knowledge, fill a knowledge gap, or validate an already existing knowledge. Sequeira (2014) defined research as a "systematic and organized way of collecting data using scientific methods and interpreting the data through analysis". A credible research is dependent on (i) quality of data collected as well as (ii) method employed in such data collection. This is where a clear conceptualization becomes important especially at the onset of the research. A good research is that which was well conceived and delivered. The process will include the topic selection, sampling strategy, data collection, as well as analysis, inference and presentation.

A critical question will be: to achieve the objectives of this research, should the method to collect field data be qualitative, quantitative or mixed?

This write up is an attempt at providing a simple guide to social research conceptualization and quality data collection. Many of the ideas shared here emanate from over 20years experience in

supervising and guiding student research both at undergraduate and graduate levels, as well as personal field experience.

**RESEARCH DESIGN:**

The research design entails a detailed procedure which the researcher intends to use in order to validly provide answers to the research questions in an objective, accurate, and economic manner (Kumar, 2005). To achieve this aim, Robson (2002) suggests that the researcher links the research purpose to theory, and to research questions, and to methods, and to sampling strategy. This implies that the research design encompasses conceptualization of the idea or problem to be solved, up to data collection. If the research design is correct, the outcome should then be correct.

The research purpose describes what the research aim(s) to achieve. The scientific framework(s) which guides the research is the research theory. The research questions seeks satisfactory answers to the research purpose. The data collection techniques as well as analysis to provide reliable results is the research method. The sampling strategy describes where the data is to come from.

Two broad methods of reasoning is known in social research. These are deductive and inductive reasonings (Burney, 2008; Bryman, 1998, 2012). Robson (2002) referred to them as 'fixed' and 'flexible' approaches, respectively.

While the deductive design starts with identifying the theory (general parlance) before going to field (specific) research, the inductive design starts from the field research (specific) and return back to the general or theory (Burney, 2008; Bryman, 2012). The deductive design is top-down approach while the inductive design is bottom-up approach. The deductive design will first identify the theory before carrying out field data collection but the inductive design will finish with field work before identifying what theory it supports (Ezenwaka, 2018).

Burney (2008) and Bryman (2012) links the deductive design to quantitative methods and the inductive design as better suitable for qualitative researches. Quantitative research produces numerical data while qualitative research produces narrative data (Laws et al., 2013). A research (especially social research) may use a combination of both quantitative and qualitative methods so as to maximize the benefits of both; this will be termed the mixed-method design (Bryman, 2012; Jick, 1979; Denzin, 2012). Robson (2002) advises social researchers to be innovative in using the research designs and not fixated on research traditions especially if they do not fit the purpose of the research objective.

The mixed-method is also supported by Campbell and Fiske (1959) where it was termed 'convergent methodology or multi-method/multi-trait' and also by Webb *et al*, (1999) that called it 'convergent validation or triangulation'.

From the foregoing, each of the research designs delivers some level of benefits, and both should be seen as complementing one another and not at cross purposes (Ezenwaka, 2018). Jick (1979) proposes the position of many authors that are in support of the mixed-approach as a way to balance out the inherent weaknesses in adopting a single method approach. Monieson (1981) speaks of a tendency which may lead to lack of academic vision and development as well as resulting in a narrow or one dimensional research output if only one method is relied upon.

Where it becomes possible, social research should use a combination of structured questionnaires as well as semi-structured interviews (Ezenwaka, 2018).

### **RESEARCH PURPOSE:**

From Robson (2002), Neuman (2003), and Marshal and Rossman (2006), depending on the objectives or aim of the research project, the research purpose can be termed as either,

- i. Explanatory, in which case, the research aims to explain a situation or problem. Data are collected to enable the explanation of the specific phenomenon of interest.
- ii. Exploratory, in which case the phenomena is assessed in new light; data are collected to help open up new meanings or new ideas.
- iii. Descriptive, in which case, the interest is to describe the phenomenon of interest

A combination of more than one of the above purposes is also possible; a research can be explanatory, exploratory and descriptive at the same time. In this case, sub-sections or objectives of the research may be any of the three examples given above.

### **RESEARCH STRATEGY:**

This explains the road map in the execution of the research (Marshal & Rossman, 2006). Five possible strategies are proposed by Yin (1994); they include:

- i. Experiments: like those set up in the laboratory or on the farm or on-site
- ii. Surveys: social surveys with questionnaires or semi-structured interviews
- iii. Archival analysis: obtaining data from the archives for analysis
- iv. Histories: obtaining data based on historical timelines
- v. Case studies: data obtained from specific locations where the object of interest of the research is found

Usually, the aim of the research will determine the strategy that will be best suited to achieve its objectives (Ezenwaka, 2018). For example, to examine the effect of 'something' on another thing, an experiment would be most suitable; if the objective is to gather data from humans about their perception or experiences concerning certain phenomenon, surveys will be most suitable; archival and historical strategies would be most appropriate if a researcher was to dig into anything historical, e.g. flooding in the past two decades, migrations of tribes, the extinction of a species, etc., case studies are suited for cases where the object of interest is in a particular location.

These five research strategies are applicable to researches in all fields and would yield useful information for planning and development.

### **SAMPLING (DATA COLLECTION):**

Total enumeration of a population is expensive and not advisable, so the researcher most of the times will work with a sample. Two scenarios can be encountered when sampling is involved:

- a. Where the population size of the object of interest is known, data is collected from a fraction (sample) that have been carefully selected from the population. In this case all the sample units are given an equal opportunity to be selected (Probability sampling technique). There are ways that a representative sample can be obtained:

**Random sampling:** every member of the population is given equal opportunity of being selected. For example, if a sample is to be taken at random of final year agricultural students of the Niger Delta University, names of all final year agricultural students are written out (or tags representing each student) and put in a basket. A dip is made and names picked at random until the required number for the sample size is arrived at.

**Stratified random sampling:** the population is first classified to make each class more homogenous. Samples are then drawn at random from each stratum.

**Cluster sampling:** the population is already naturally classified in various small groups. Sample is therefore taken from each naturally existing group of the main population.

**Systematic sampling:** the interval from which the next member of the sample will be collected is predetermined from the onset.

- b. But when information on the population is not known, it becomes a challenge to decide on a representative sample size. Also the sample units are not given an equal chance to be selected (non-probability). Overton and Diermen (2014) proposes the following non-representative sampling methods:

**Convenience sampling:** participants are chosen because they are *conveniently available*. You want to collect information from palm-wine tappers, and you met one along your way.....he became conveniently available for your purpose.

**Snowball sampling** (also known as chain sampling): you finished interviewing the first palm wine tapper, and he directs you to the next palm wine tapper....this is snow ball

**Purposive sampling:** the choice of where or who to collect data from completely resides with the researcher. Here, the researcher can decide on which community to choose or who to interview especially if the object of his research is found in that particular individual or place.

**Quota sampling:** in this case, a specified number of persons of a particular social grouping is selected and included for data collection.

These non-representative sampling methods are more suited for qualitative researches (Overton & Diermen, 2014; Summer & Tribe, 2008; Bryman, 2004; Laws, et al., 2013). Also note that in exploratory researches, the aim oftentimes is to identify what views are held about specific issues, rather than to identify how many people hold those views (Laws et al, 2013). The semi-structured interviews are conducted up to the point that new interviews no longer yield new information that had not been collected from previous participants (Stewart-Withers et al, 2014). Development of an interview guide or checklist will be useful before embarking on an interview with participants (Stewart-Withers et al, 2014). The questions should be open-ended, allowing the participant to freely give expression to his or her thoughts and using their preferred words to express their feelings (Laws et al, 2013).

#### **DEVELOPING A GOOD QUESTIONNAIRE:**

Data collection can be done directly with the use of a questionnaire. Selecting the appropriate questionnaire is essential for any research project's quality. The purpose of any questionnaire, in the light of Fowler (1992) "In his Improving Survey Questionnaire: Design and Evaluation," is to have a range of responses that represent people's varying opinions on the research issue rather than variations in how they understand the questions. According to Eboh (2009), the following steps and guidelines are required in developing a good questionnaire;

- i. **Review the Relevant Literature about the Questions:** The development of a good questionnaire involves identifying the key questions and how to ask them. Expert consultation, desk research, informal discussions with potential respondents and/or the

target audience, and a review of relevant literature on the research topic are all examples of activities that help the developer understand and appreciate the issue under study.

- ii. **Study the Instrument used in Previous Studies:** the approach and manner past research treated the subject of questions is key component for the researcher in establishing the questions. Worthy of note is to analyze the strengths and weaknesses of questions used in previous studies.
- iii. **Write the Questions to be Included:** This phase of the questionnaire development process is highly important. Three general principles are accuracy, legibility, and relevance. Questions that align with the study's goals and purposes are considered relevant; questions that are accurate and legible are those that gather the necessary data in a trustworthy and legitimate way.
- iv. **Arrange the Questions in Logical Sequence:** the arrangement of the questions is as important as the wording of the questions, the logical sequence of questions is necessary because of the following function;
  - It improves the interview process;
  - it captures and holds the respondent's attention;
  - it removes the doubts the respondent had;
  - it helps the respondent recall information and
  - encourages teamwork.

The questions asked ought to be simple, enjoyable, and interesting. It boosts confidence, encourages involvement and curiosity, and dispels doubts in the responder, and the questions must stay within the limitations of the research's objective to avoid raising worries about the entire process among the respondents.

- v. **Keep Realistic Length and Fine Layout:** The real length of a questionnaire depends on three factors: the length of each individual question, the total number of questions, and the arrangement of the questions. Longer questions require more time, effort, and memory from respondents, which may lead to a higher rate of incorrect responses. Care should also be taken with the questionnaire's physical appearance and layout; frequently, researchers try to fit too much information on a single page in order to save money on paper and printing costs. This should be avoided to prevent difficulties when reading, coding, and recording on the questionnaire.
- vi. **Carry out a Pre-Test:** Pre-testing the questionnaire comes next, following the design of the questions and the layout. This is the survey instrument's practice run. The purpose of the trial is to produce lessons for the instrument's finalization. Regardless of the designer's level of experience, this step should never be skipped. The traditional approach calls for a small number of interviews roughly 10–30 based on the size of the sample. Several design flaws that need to be fixed are found by the researcher.
- vii. **Revise and Finalize the Instrument:** Following the completion of the pre-test, the researcher must revise the questionnaire, accounting for any design flaws found. The completed questionnaire is prepared and ready to be used in the real survey.

In the same vein, Iarossi (2006) proposed that creating a successful questionnaire follows four fundamental guidelines: it must be BOSS (brief, objective, simple, and specific). To create an effective questionnaire, it's crucial to consider the appropriate use of various question types in addition to following key guidelines when creating the questions.

#### **ETHICS CONSIDERATIONS:**

There are ethical standards to be considered when conducting researches that has to involve humans. Check with your organization to comply with laid out ethical standards. Generally, the purpose of the research need to be explained to the respondent or participant, and consent of the participants or respondents must be sought. Their rights to participate and or withdraw from the

exercise at any time need to be told them. Issue of confidentiality of their information need to be agreed. Issue of safety and of security should be considered also, and appropriate strategy developed (Borovnik et al, 2014; Banks & Schevens, 2014; Laws et al., 2013).

### **CONCLUSION:**

Social research should aim more to resolve or propose solutions to real life issues. Social Researchers should increase their interactions with communities so as to be more aware of current issues needing scientific inquiries. A winning research in this current dispensation should be multidisciplinary in nature, involving various research strategies and designs.

### **Author contributions:**

- i. Jasper Ezenwaka: idealization, background, framework, qualitative researching and data collection
- ii. Oyeindoubra Bethel: quantitative data collection, sampling, questionnaire development

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