

## 3. Research Methodology: Data Collection Methods

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**Abstract:**

*Data will be collected in order to analyse and make decisions about a specific business, sales, etc. This data will aid in drawing conclusions about the performance of a specific business. Thus, data collection is critical for analysing a business unit's performance, solving a problem, and making assumptions about specific things as needed. Before we get into the data collection methods, let's define data collection and how it can help in various fields.*

**Keywords:**

*Research Methodology, Data Collection, Primary Data Collection, Secondary Data Collection, Qualitative data Collection, Quantitative data collection.*

### 3.1 Introduction:

As the title suggests, this chapter contains the dissertation's research methodology. In more detail, the author outlines the research strategy, research method, research approach, data collection methods, sample selection, research process, data analysis type, ethical considerations, and project research limitations in this section.

Data is any type of information that has been formatted in a specific way. As a result, data collection is defined as the process of gathering, measuring, and analysing accurate data from a variety of relevant sources in order to find solutions to research problems, answer questions, evaluate outcomes, and forecast trends and probabilities.

To make informed business decisions, ensure quality assurance, and maintain research integrity, accurate data collection is required. During data collection, researchers must identify data types, data sources, and data collection methods. We will soon discover that there are numerous data collection methods. Data collection is heavily used in the research, commercial, and government sectors.

Before an analyst begins collecting data, they must answer three questions first:

- What's the goal or purpose of this research?
- What kinds of data are they planning on gathering?
- What methods and procedures will be used to collect, store, and process the information?

Additionally, we can break up data into qualitative and quantitative types. Qualitative data covers descriptions such as color, size, quality, and appearance. Quantitative data, unsurprisingly, deals with numbers, such as statistics, poll numbers, percentages, etc. In statistics, data collection refers to the process of gathering information from all relevant sources in order to solve a research problem. It aids in assessing the problem's outcome. The data collection methods enable a person to reach a conclusion on the relevant question. The majority of organisations rely on data collection methods to make predictions about future probabilities and trends. Once the data has been collected, the data organisation process must be completed.

"Data" is the primary source of the data collection methods. Data is divided into two categories: primary data and secondary data.

The primary significance of data collection in any research or business process is that it aids in determining many important aspects of the company, particularly its performance. As a result, the data collection process is critical in all streams. The data collection method is divided into two categories based on the type of data, namely,

- Primary Data Collection methods
- Secondary Data Collection methods

### **3.2 Data Collection Methods:**

Data collection is the process of gathering information from all relevant sources in order to solve the research problem, test the hypothesis (if using a deductive approach), and evaluate the results. Data collection methods are classified into two types: secondary data collection methods and primary data collection methods.

#### **3.2.1 Primary Data Collection Methods:**

Primary data is data that has never been seen before. Primary data are your research's original findings. Primary data collection and analysis typically takes more time and effort than secondary data research. There are two types of primary data collection methods: quantitative and qualitative. Methods for collecting quantitative data are based on mathematical calculations in various formats. Questionnaires with closed-ended questions, correlation and regression methods, mean, mode, and median, and others are examples of quantitative data collection and analysis methods.

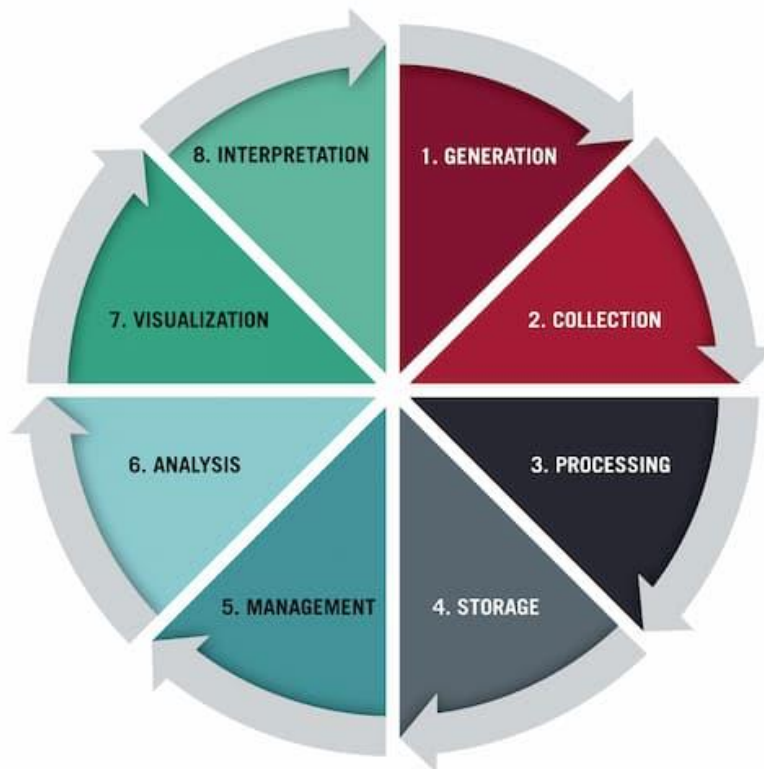
When compared to qualitative methods, quantitative methods are less expensive and can be applied in less time. Furthermore, because quantitative methods are highly standardised, it is simple to compare results. On the contrary, qualitative research methods do not involve numbers or mathematical calculations. Qualitative research is closely associated with words, sounds, feelings, emotions, colours, and other non-quantifiable elements.

Interviews, questionnaires with open-ended questions, focus groups, observation, game or role-playing, case studies, and other qualitative data collection methods are used to ensure greater depth of understanding.

### **3.2.2 Secondary Data Collection Methods:**

Secondary data is information that has previously been published in books, newspapers, magazines, journals, online portals, and so on. Regardless of the nature of your research topic in business studies, there is an abundance of data available in these sources. As a result, using an appropriate set of criteria to select secondary data for use in the study is critical for increasing the levels of research validity and reliability. These criteria include, but are not limited to, the date of publication, the author's credentials, the reliability of the source, the quality of discussions, the depth of analyses, the extent to which the text contributes to the development of the research area, and so on. The chapter on Literature Review goes into greater detail about secondary data collection. Secondary data collection methods have a number of advantages, including the ability to save time, effort, and money.

They do, however, have a significant disadvantage. Secondary research, in particular, does not contribute to the expansion of the literature by producing fresh (new) data. Data can be either qualitative (meaning contextual) or quantitative (meaning numerical). Many data collection methods are applicable to both types, but some are more suited to one than the other. The second step in the data life cycle is data collection. Data must be collected after it is generated in order for it to be useful to your team. It can then be processed, stored, managed, analysed, and visualised to help your organisation make decisions.



**Figure 3.1: Secondary Data Collection Methods**

Before collecting data, there are several factors you need to define:

- The question you aim to answer
- The data subject(s) you need to collect data from
- The collection timeframe
- The data collection method(s) best suited to your needs

The data collection method you select should be based on the question you want to answer, the type of data you need, your timeframe, and your company's budget.

### 3.3 The Importance of Data Collection:

Data collection is an important part of business success because it allows you to ensure the data's accuracy, completeness, and relevance to your organisation and the issue at hand. The data gathered enables organisations to analyse previous strategies and stay informed about what needs to change. Data insights can make you hyperaware of your organization's efforts and provide actionable steps to improve a variety of strategies, from changing marketing strategies to assessing customer complaints. Decisions based on inaccurate data can have far-reaching negative consequences, so it's critical to have confidence in your own data collection procedures and abilities. Business professionals can feel confident in their business decisions if accurate data is collected. Examine the options in the following section to determine which data collection method is best for your business. When there is a problem and no clear solutions exist, as in the case above, qualitative research is frequently used to elicit the following questions: Why are residents upset about rounds? How could we improve the rounds? In this context, gathering "good" information or words (qualitative data) is meant to yield information that will assist you in answering your research questions, capturing the phenomenon of interest, and accounting for context and the rich texture of the human experience. You could also aim to challenge previous assumptions and invite further investigation. *The coherence or alignment of all aspects of the research project is critical. We focus on data collection in this Rip Out, but in qualitative research, the entire project must be considered.*<sup>1,2</sup> Careful design of the data collection phase necessitates the following: determining who will do what, where, when, and how at various stages of the research process; acknowledging the role of the researcher as a data collection instrument; and carefully considering the context studied and the participants and informants involved in the research.

### 3.4 Types of Data Collection Methods:

Data collection methods are important, because how the information collected is used and what explanations it can generate are determined by the methodology and analytical approach applied by the researcher.<sup>1,2</sup> Five key data collection methods are presented here, with their strengths and limitations described in the online supplemental material.

- a. Open-ended, free-text questions are commonly used in surveys to collect qualitative data. Surveys are ideal for documenting perceptions, attitudes, beliefs, or knowledge among a specific, predetermined group of people. "Good" open-ended questions should be specific enough to elicit consistent responses from respondents while also inviting a

range of responses. Examples for this scenario include: What are IPRs used for? According to residents, what is the educational value of IPRs? A variety of techniques can be used to analyse qualitative survey data.

- b. *Individuals are interviewed one-on-one to gather information using a series of predetermined questions or a set of interest areas. Interviews are frequently taped and transcribed. They can be structured or unstructured; they can be inspired by a loose set of questions that invite interviewees to express themselves more freely, or they can follow a tightly written script that mimics a survey. To collect richer data, interviewers must actively listen and question, probe, and prompt further. When used to document participants' accounts, perceptions, or stories about attitudes towards and responses to specific situations or phenomena, interviews are ideal. Data from interviews are frequently used to generate themes, theories, and models. Many research questions that can be answered with surveys can also be answered with interviews, but interviews produce richer, more detailed data than surveys. However, conducting and analysing interviews takes more time and resources. Importantly, because interviewers are the data collection instruments, they should be trained to collect comparable data. The number of interviews needed is determined by the research question and the overall methodology used. These are some examples of questions: How do residents react to IPRs? What can residents' experiences with IPRs teach us about interprofessional care?*
- c. *Focus groups are used to gather information in a group setting, either through predetermined interview questions that the moderator asks of each participant in turn, or through a script to stimulate group discussions. Ideally, they are used when the sum of a group of people's experiences may offer more insight into social phenomena than a single individual's experiences. Focus groups also enable researchers to record participants' reactions to the comments and perspectives shared by other participants, allowing them to identify similarities and differences in viewpoints. The number of focus groups required will vary depending on the questions asked and the number of stakeholders involved, which may include residents, nurses, social workers, chemists, and patients. The optimal number of participants per focus group is 8 to 10 people in order to generate rich discussion while allowing all members to speak.<sup>3</sup> questions to consider include: How would residents, nurses, and chemists redesign or improve IPRs to maximise engagement, participation, and time use? How do recommendations differ across professional groups?*
- d. *Observations are used to collect information in the field by utilising the senses of vision, hearing, touch, and smell. Rather than focusing on their own perceptions or recollections, observations allow us to investigate and document what people do—their everyday behavior—and try to understand why they do it. Observations are ideal for documenting, exploring, and understanding activities, actions, relationships, culture, or routine ways of doing things as they occur. The number of observations required, as with the previous methods, will be determined by the research question and overall research approach used. Some research questions are: How do residents spend their time during IPRs? What is their relationship to other health care providers? During IPRs, what language and body language are used to describe patients and their families?*
- e. *Textual or content analysis is ideal for investigating changes in official, institutional, or organisational views on a specific topic or area, documenting the context of certain practises, or investigating the experiences and perspectives of a group of individuals who have engaged in written reflection, for example. Textual analysis can be used as the primary method in a research project, or it can be used to contextualise findings*

from another method. The selection and quantity of documents must be guided by the research question, but may include newspaper or research articles, governmental reports, organisational policies and protocols, letters, records, films, photographs, art, meeting notes, or checklists. The research question will guide the development of a coding grid or scheme for analysis, which will be applied iteratively to selected documents. For example, how do our local policies and protocols for IPRs reflect or contrast with broader discourses of interprofessional collaboration? In the literature, what are the perceived successful characteristics of IPRs? What characteristics distinguish residents' reflections on their interprofessional experiences during IPRs?

However, the effectiveness of qualitative research is heavily dependent on the skills and abilities of the researchers, and the results may not be perceived as reliable because they are based on the researcher's personal judgements and interpretations. It is risky for the results of qualitative research to be perceived as reflecting the opinions of a larger population because it is more appropriate for small samples (Bell, 2005).

**Table 3.1: Features of Qualitative & Quantitative Research**

Qualitative research	Quantitative Research
The aim is a complete, detailed description.	The aim is to classify features, count them, and construct statistical models in an attempt to explain what is observed.
Researcher may only know roughly in advance what he/she is looking for.	Researcher knows clearly in advance what he/she is looking for.
Recommended during earlier phases of research projects.	Recommended during latter phases of research projects.
The design emerges as the study unfolds.	All aspects of the study are carefully designed before data is collected.
Researcher is the data gathering instrument.	Researcher uses tools, such as questionnaires or equipment to collect numerical data.
Data is in the form of words, pictures or objects.	Data is in the form of numbers and statistics.
Subjective – individuals interpretation of events is important ,e.g., uses participant observation, in-depth interviews etc.	Objective: seeks precise measurement & analysis of target concepts, e.g., uses surveys, questionnaires etc.
Qualitative data is more 'rich', time consuming, and less able to be generalized.	Quantitative data is more efficient, able to test hypotheses, but may miss contextual detail.
Researcher tends to become subjectively immersed in the subject matter.	Researcher tends to remain objectively separated from the subject matter.

Source: Miles & Huberman (1994, p. 40). *Qualitative Data Analysis*, available at <http://wilderdom.com/research/QualitativeVersusQuantitativeResearch.html>

In-depth interviews were conducted for the purposes of this research. In depth interviews are personal, unstructured interviews designed to elicit participants' emotions, feelings, and opinions about a specific research topic. Personal interviews have the advantage of involving personal and direct contact between interviewers and interviewees, as well as eliminating non-response rates; however, interviewers must have developed the necessary skills to successfully conduct an interview (Fisher, 2005; Wilson, 2003).

Furthermore, unstructured interviews allow for greater flexibility in the flow of the interview, allowing for the generation of conclusions about a research subject that were not originally intended to be derived. However, there is a risk that the interview will deviate from the research aims and objectives (Gill & Johnson, 2002). In terms of data collection tools, the research was conducted using a semi-structured questionnaire that served as an interview guide for the researcher. Some specific questions were prepared in order for the researcher to guide the interview towards the achievement of research objectives, but additional questions were encountered during the interviews.

### **3.5 Research Limitations:**

As it is for every study, this dissertation had the following limitations:

- The size of the sample was relatively small - 6 participants. A bigger sample would probably enhance the reliability of the research.
- Qualitative research is not allowing the measurement of the examined problems.
- The analysis of the role of the DMOs in the promotion of Athens as a tourist destination. may be influenced by factors which were not mentioned in this project.
- In some cases participants may refused to speak against their organizations.

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