Mohamed Khider University, Biskra, Faculty of Architecture, Civil Engineering, Hydraulics
Department of Architecture

Master 2 in **Construction Projects Management**
Course: **Data Analysis**

05 04 03 02 01 About course

CHAPTER 02

Data Collection

Part 01



Dr. Bendjedidi Souhaila

2025/2026

Chapter Objectives

At the end of the lesson, the learner will be able to:

- Understand what data collection is and why it is important for research and decision-making.
- Differentiate between data collection methods (Primary and secondary data collection)
- Learn about the tools used to gather data and how to select the best ones for specific data needs.
- Become familiar with the steps involved in collecting data properly.







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1. **Definition of Data Collection**
2. **Objectives of Data Collection**
3. **Data Collection methods**
   - 3.1 Primary Data Collection Methods
   - 3.2 Secondary Data collection methods
   - 3.3 Difference between primary and secondary data collection
4. **Most common primary data collection methods**
   - 3.1 Questionnaire
   - 3.2 Interview
   - 3.3Focus groups
   - 3.4 observation
5. **Data Collection Tools**
   - Survey Tools
   - Interview and Focus Group Tools
   - Observation and Field Data Collection tools
   - Mobile Data Collection tools
6. **Data Collection Process**



About course

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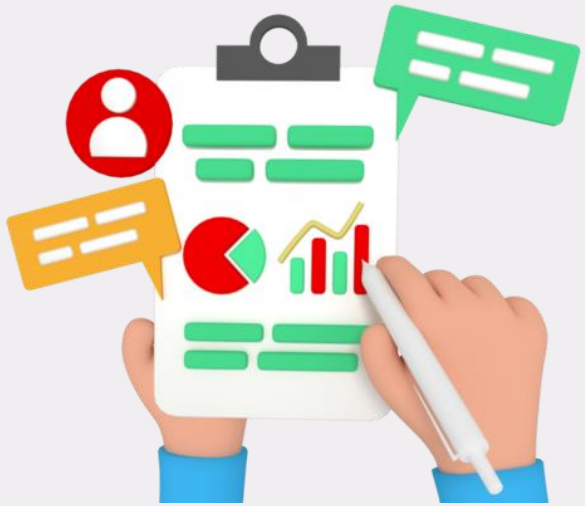






1.Definition of Data Collection

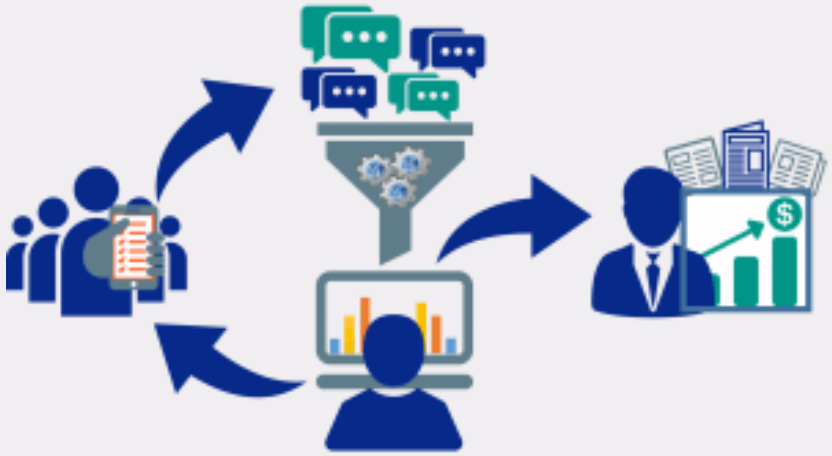
Data collection is the process of **gathering and measuring information on variables** of interest, that enables the researcher to find answers to research questions, test hypotheses, and evaluate outcomes.



Data collection is one of the most important stages in conducting a research. « **You can have the best research design in the world but if you cannot collect the required data you will be not be able to complete your project**» (Kabir, 2016, p202).

2. Objectives of Data Collection

- Provides factual information to make informed choices and strategic decisions.
- Creates a record of information that can be referenced or used in future research
- Helps predict future scenarios and plan accordingly
- provides the necessary information to test hypotheses, validate research findings, and conduct thorough analysis.



03 Data Collection methods

Generally, data collection methods are divided to two main categories:

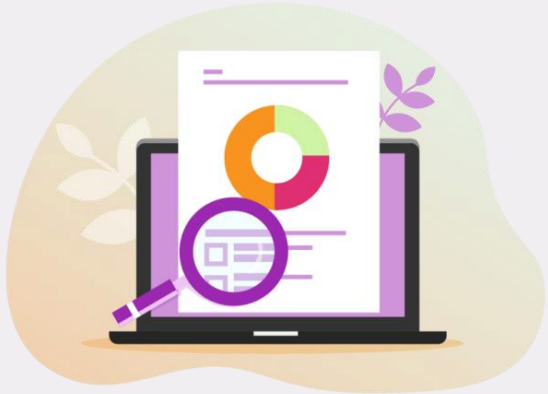
01

Primary Data Collection Methods



02

Secondary data collection methods



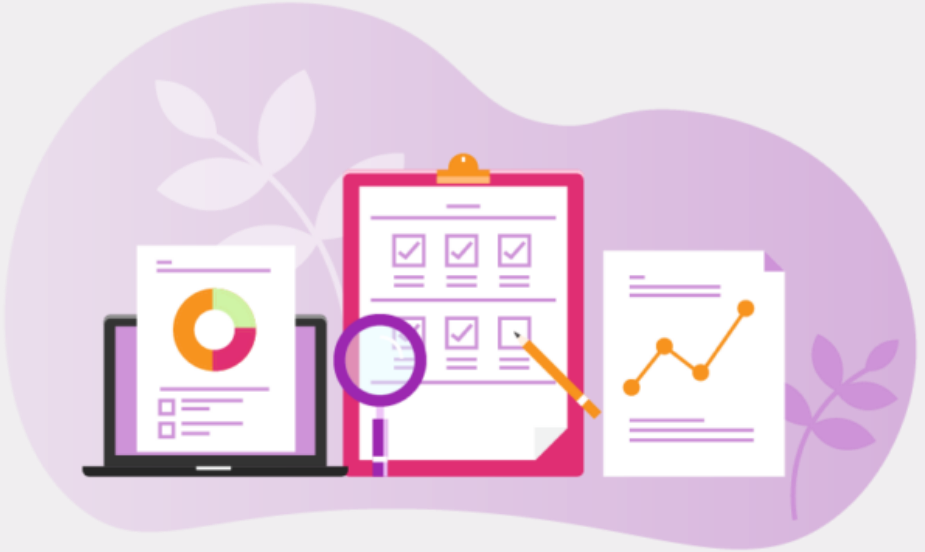
03 Data Collection methods

01 Primary Data Collection Methods

Primary data collection is based on the processes by which you **gather data yourself** for your purpose of study and no one has access to use this data until it is published and both qualitative and quantitative approaches are used for this purpose.

Primary Data is not published yet and is **the first-hand information** which is not changed by any individual. In other words, researchers use different approaches to gather and collect primary data for a specific purpose



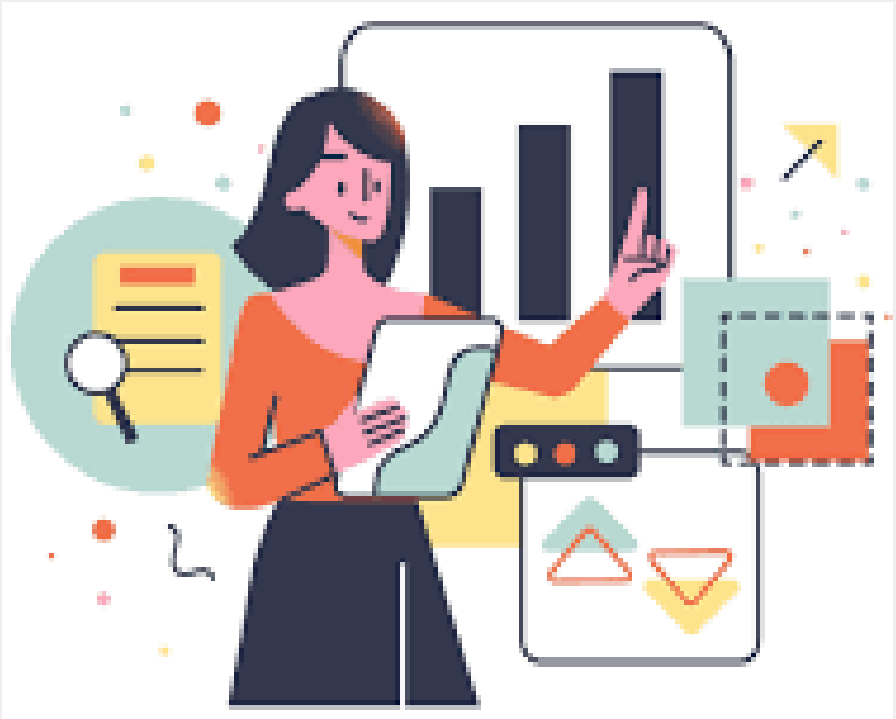


03 Data Collection methods

01 Primary Data Collection Methods

There are many methods of collecting primary data. The main methods include:

- Questionnaires
- Interviews
- Focus Group Interviews
- Observation
- Survey
- Case-studies
- Experimental Method
- Statistical Method etc.



03 Data Collection methods

02 Secondary Data Collection Methods

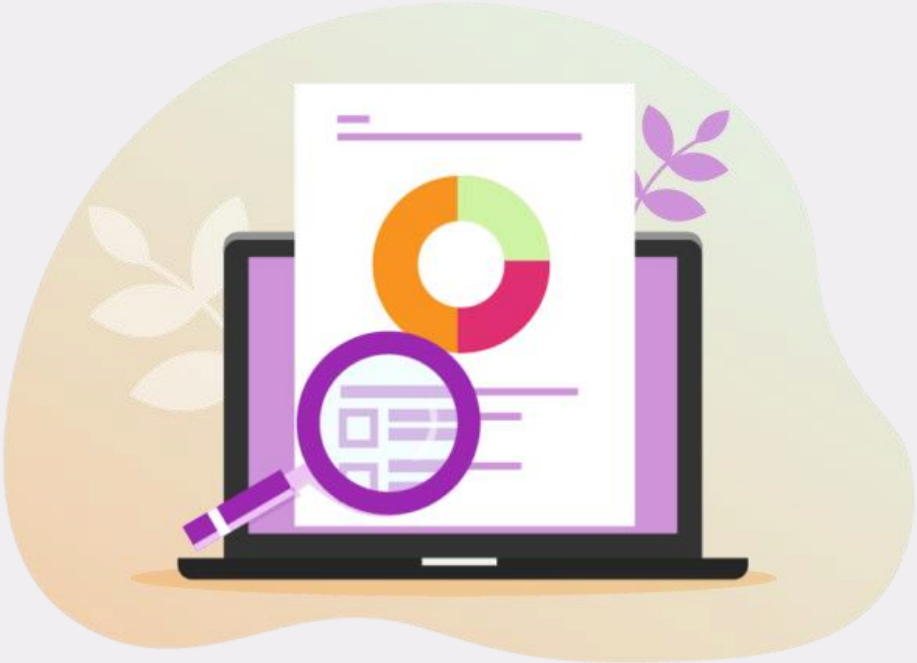
Secondary data is the data gathered from **published sources** meaning that **the data is already gathered by someone else for another reason** and can be used for other purposes in a research as well. In all papers, **the literature review section is based on secondary data sources.**

Thus, secondary data is an essential part of research that can help to get information **from past studies** as basis conduction for implementing a research or as the required background information. It can also help to design a study and provide a baseline to compare primary results. However, it should be noted that researchers need to re-examine the validity and reliability of these backgrounds to gain authentic results.

03 Data Collection methods

02 Secondary Data Collection Methods

This gathered data can be from both **qualitative sources** such as interview reports and **quantitative sources** data such as the census.
The secondary data collection methods, generally, can be categorized as Figure (01).



03 Data Collection methods

Secondary Data Collection Methods	Description and Credibility Points
1 Published Printed Sources	In these types, the writer, publication, and publishing time are important.
Books	The most authentic ones among the secondary sources.
Journals/Periodicals	The most important methods as they are up-to-date and provide data and information about very specific subjects.
Magazines/Newspapers	Not highly reliable but can be effective in your research as well.
2 Published Electronic Sources	Very fast and accessible.
E-Journals	Very available compared to the printed ones. Nowadays these types are very credible as well
General Websites	Not very reliable.
Weblogs	Commonly used methods and provide reliable diaries.
3 Unpublished Personal Records	Useful in some cases.
Diaries	Useful in descriptive methods, although they can be not very accessible.
Letters	Must be checked in terms of reliability before using.
Government Records	Very useful in different subjects such as human research, social sciences, etc.
Census Data/Population Statistics	Include educational and health records.

Figure (1): Types Of Secondary Data Collection Methods. Source : Hamed Taherdoost, 2021, P33

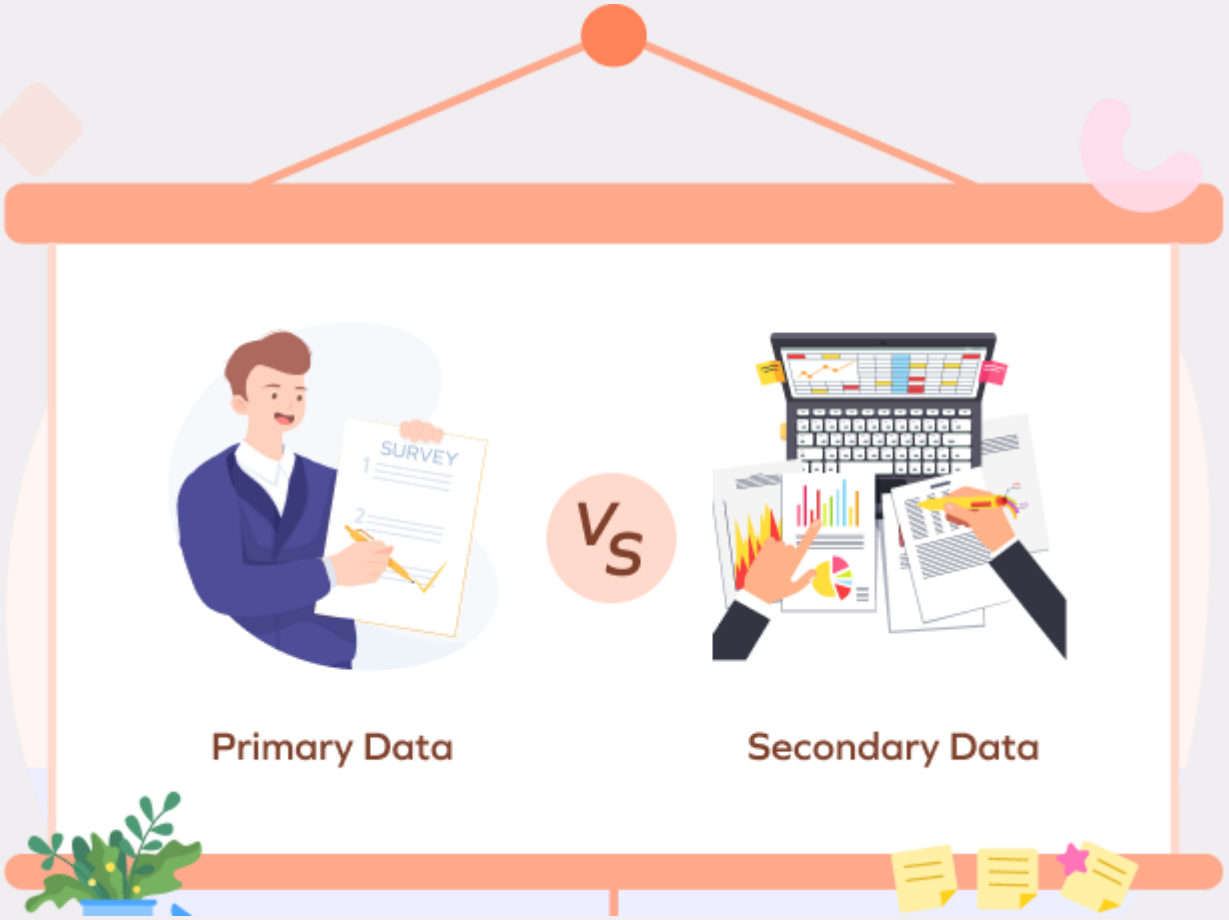
03 Data Collection methods



Figure 02 :Data Collection Methods . Source : Hamed Taherdoost, 2021, P13

03 Data Collection methods

Difference between primary and secondary collection data



03 Data Collection methods

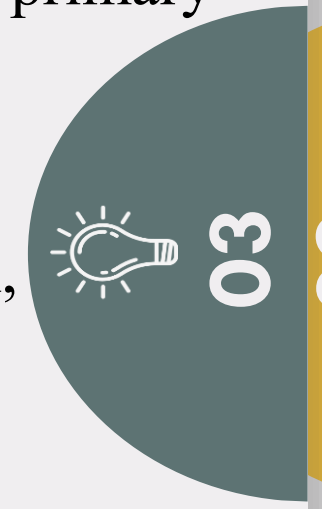
Difference between primary and secondary collection data

Aspect	Primary Data Collection	Secondary Data Collection
Definition	Data collected directly from original sources by the researcher.	Data that has already been collected and recorded by others.
Source	First-hand sources such as surveys, interviews, observations, and experiments.	Existing sources such as books, articles, reports, and databases.
Purpose	To gather specific, original data tailored to the research objectives.	To use previously collected data for new analyses or comparisons.
Data Collection Methods	Surveys, interviews, focus groups, observations, experiments.	Literature reviews, archival research, reports, databases.
Time and Cost	Often time-consuming and expensive as it involves direct engagement with subjects.	Generally quicker and less costly as data is already available.
Control Over Data	High control over the design, methodology, and quality of the data collected.	Less control over how the data was collected, its quality, and its relevance.
Examples	• Conducting a new questionnaire to assess current safety practices on a construction site • Performing interviews with project managers about challenges in project scheduling.	• Analyzing historical project performance data from a construction management database, • Reviewing existing research studies on construction site safety trends,

03 Data Collection methods

How Primary and Secondary Data Complement Each Other?

- Secondary data provides background and identifies gaps, while primary data fills those gaps with specific information.
- Secondary data reduces the need for extensive primary research, saving time and costs.
- Secondary data offers broad trends, while primary data delivers detailed, specific insights.



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Thank You!