1. Exploratory Research Design

- Used when **little is known** about a topic or problem.

- Aims to generate **insights, ideas, or hypotheses** for further research.

- **Data Collection Methods:** Literature review, expert interviews, focus groups, case studies.

- **Use Case:**

    - A company wants to explore why customers are leaving their subscription service.

    - Researchers study new trends in artificial intelligence before developing a specific hypothesis.

---

2. Quantitative Research Design

- Focuses on **numerical data, statistical analysis, and structured methods**.

- Used to **measure variables**, establish relationships, or determine causation.

- **Further divided into:**

A. Descriptive Research Design

- **Purpose:** Describes characteristics, trends, or distributions in a population.

- **No cause-effect relationships** are determined.

- **Methods:** Surveys, observations, case studies.

- **Use Case:**

    - Measuring the **average screen time** of teenagers.

    - Studying the **demographics of online shoppers**.

B. Correlational Research Design

- **Purpose:** Examines the **relationship** between two or more variables **without manipulating them**.

- **Does NOT establish causation.**

- **Use Case:**

  - Studying the **relationship between sleep hours and academic performance**.

  - Examining **the link between smoking and lung disease risk**.

C. Causal-Comparative (Ex-Post Facto) Research Design

- **Purpose:** Compares two or more groups based on an existing difference.

- The independent variable **is not manipulated** (happened naturally), but its effect is studied.

- **Use Case:**

  - Comparing **academic performance between public and private school students**.

  - Studying the **impact of gender on job satisfaction**.

D. Experimental Research Design

- **Purpose:** Determines **cause-and-effect** relationships by **manipulating variables**.

- **Use Case:**

  - Testing a new **vaccine's effectiveness** by administering it to one group and a placebo to another.

  - Studying **how caffeine intake affects productivity** in a controlled setting.

Subtypes of Experimental Research

1. **True Experimental Design**

   - Uses **random assignment** to control and experimental groups.

   - Ensures strong **causal conclusions**.

- ○ **Example:** Randomly assigning patients to a **new drug group vs. placebo group**.

2. **Quasi-Experimental Design**

   - ○ Lacks random assignment but still **manipulates an independent variable**.

   - ○ Used when **randomization is not possible**.

   - ○ **Example:** Studying the effect of **a new teaching method in two different schools**, but students are not randomly assigned.

---

3. Qualitative Research Design

- Focuses on **non-numerical data**, exploring meanings, experiences, and social interactions.

- **Use Case:**

  - ○ Understanding **how cancer patients emotionally cope** with their diagnosis.

  - ○ Exploring **customer motivations** behind buying organic food.

Common Methods:

- **Phenomenological Research:** Studies individuals' **lived experiences**.

- **Ethnographic Research:** Observes **cultural or social** groups.

- **Case Study Research:** Analyzes **a single case or entity in depth**.

- **Grounded Theory Research:** Develops theories **from collected data**.

- **Narrative Research:** Examines **personal stories** to construct meaning.

Research Design	Purpose	Use Case Example
Exploratory	Generate insights, explore new topics	Understanding **why people switch jobs frequently**
Descriptive	Describe characteristics or trends	Measuring **average social media usage**
Correlational	Find relationships between variables	Examining the **link between exercise and mental health**
Causal-Comparative	Compare groups based on existing conditions	Studying **how gender affects career choices**
Experimental	Establish cause-and-effect	Testing a **new diet plan on weight loss**
True Experimental	Strong causation with randomization	Evaluating **a new COVID-19 vaccine**
Quasi-Experimental	Cause-effect study without randomization	Studying the effect of **a new teaching method in schools**
Qualitative	Explore meanings, experiences	Understanding **how people cope with stress**