

Siddhardhan

Types of Statistical Studies

Math for Machine Learning



Types of Statistical Studies

Statistical Study

```
graph TD; A[Statistical Study] --> B[Sample Study]; A --> C[Observational Study]; A --> D[Experimental Study];
```

Sample Study

*A **sample study** is a study which is carried out on a sample which represents the total population.*

Observational Study

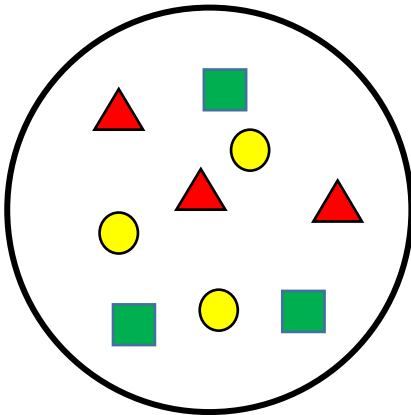
*An **observational study** is a study where we simply collect and analyze data. We won't inject any changes. We just observe the correlation in the data.*

Experimental Study

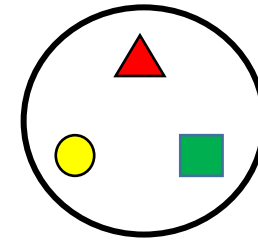
*An **experimental study** is a **study** in which conditions are controlled and manipulated by the experimenter.*

1. Sample Study

A **sample study** is a study which is carried out on a sample which represents the total population.



Population

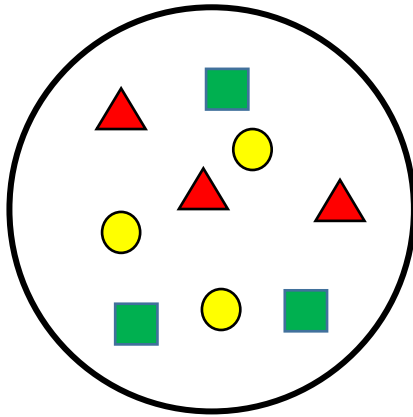


Sample

Average Blood Sugar Level = ?

2. Observational Study

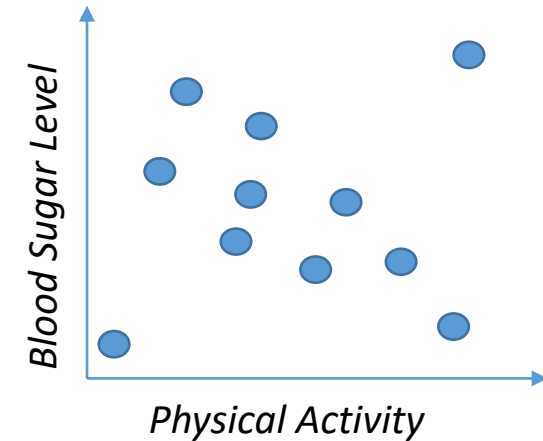
An **observational study** is a study where we simply collect and analyze data. We won't inject any changes. We just observe the correlation in the data.



Population

Relation between:

1. Blood Sugar Level
2. Physical Activity



Inference: Blood Sugar Level & Physical Activity are
Negatively Correlated

3. Experimental Study

*An **experimental study** is a **study** in which conditions are controlled and manipulated by the experimenter.*

