Population & Samples

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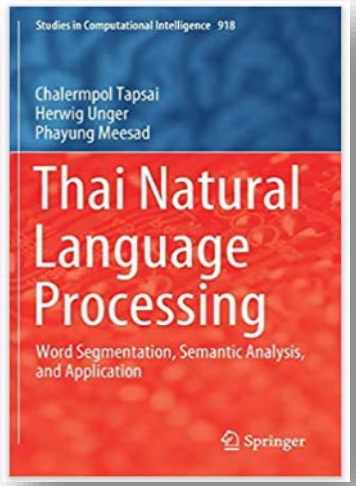

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Population

the entire group that we want to study

Sample

the specific group in population that we will collect data from.
And the sample should be the good representation of the population

Why do we use Sample?

- *save time*
- *save money*
- *reliability*
- *better management*
- *availability*

Population

- *Finite*
- *Infinite*

Characteristics

Sample

How to define amount of sample

Sample size

Sample size

Infinite population

$$N = (Z_c \sigma / e_m)^2$$

$Z_C = 1.96$

$e_M = \sigma / 10$

$\sigma / e_M = 10$

$$N = (Z_C \, \sigma / e_M)^2$$
$$= (1.96 \times 10)^2$$
$$= 19.6^2$$
$$= 384.16$$
$$= 384$$

(Rocoe,1969)

John T. Roscoe. Fundamental Research Statistics for the Behavioral Sciences. New York: Holt, Rinehart and Winston, 1969.

Sample size

Finite population

$$n = \frac{N}{1 + Ne^2}$$

$$= \frac{900}{1 + 900\ (0.05)^2}$$

$$= \frac{900}{1 + 2.25}$$

$$= \frac{900}{3.25}$$

$$= 276.92$$

$$= 277$$

$$n = \frac{N}{1 + Ne^2}$$

(Taro Yamane,1973)

Yamane, Taro. 1973. Statistics: An Introductory Analysis. Third edition. New York: Harper and Row Publication.

Sampling methods

1. *Non-probability sampling*
2. *Probability sampling*

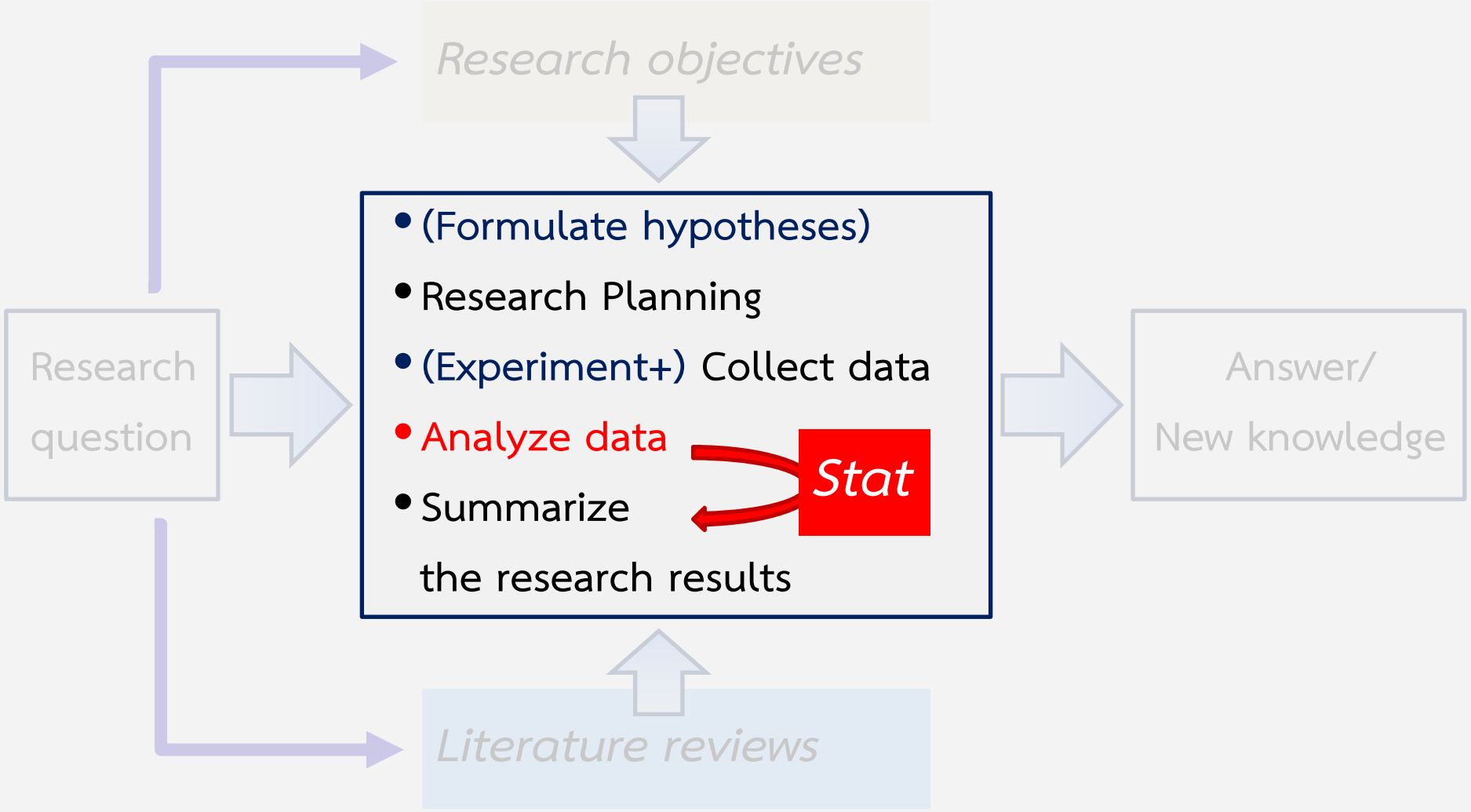
*Non-probability s*ampling methods

- *Accidental sampling > no criteria*
- *Purposive sampling > some specific type of sample*
- *Quota sampling > quota of each subgroup (age, sex, education)*
- *Snow ball sampling > Qualitative research in small size of population*

*Probability s*ampling methods

- *Simple random sampling > each sample has equal probability*
- *Systemic random sampling > Name list + defined range*
- *Stratified sampling > each stratum is in each stratified range value*
- *Cluster/Area sampling*
- *Multi-stage sampling*

การวิจัย (Research)



Reference

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- https://www.scribd.com/document/503362584/Yamane-1973-Statistics-an-Introductory-Analysis