

Penulisan Skripsi dan Penelitian

Zulkarnain Lubis

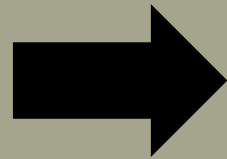
Disampaikan pada FGD di hadapan Dosen Fakultas Ekonomi dan Bisnis
Universitas Medan Area, 30 Maret 2022





Bagian dari Karya Tulis Ilmiah

- **Skripsi**
- Tesis
- Disertasi



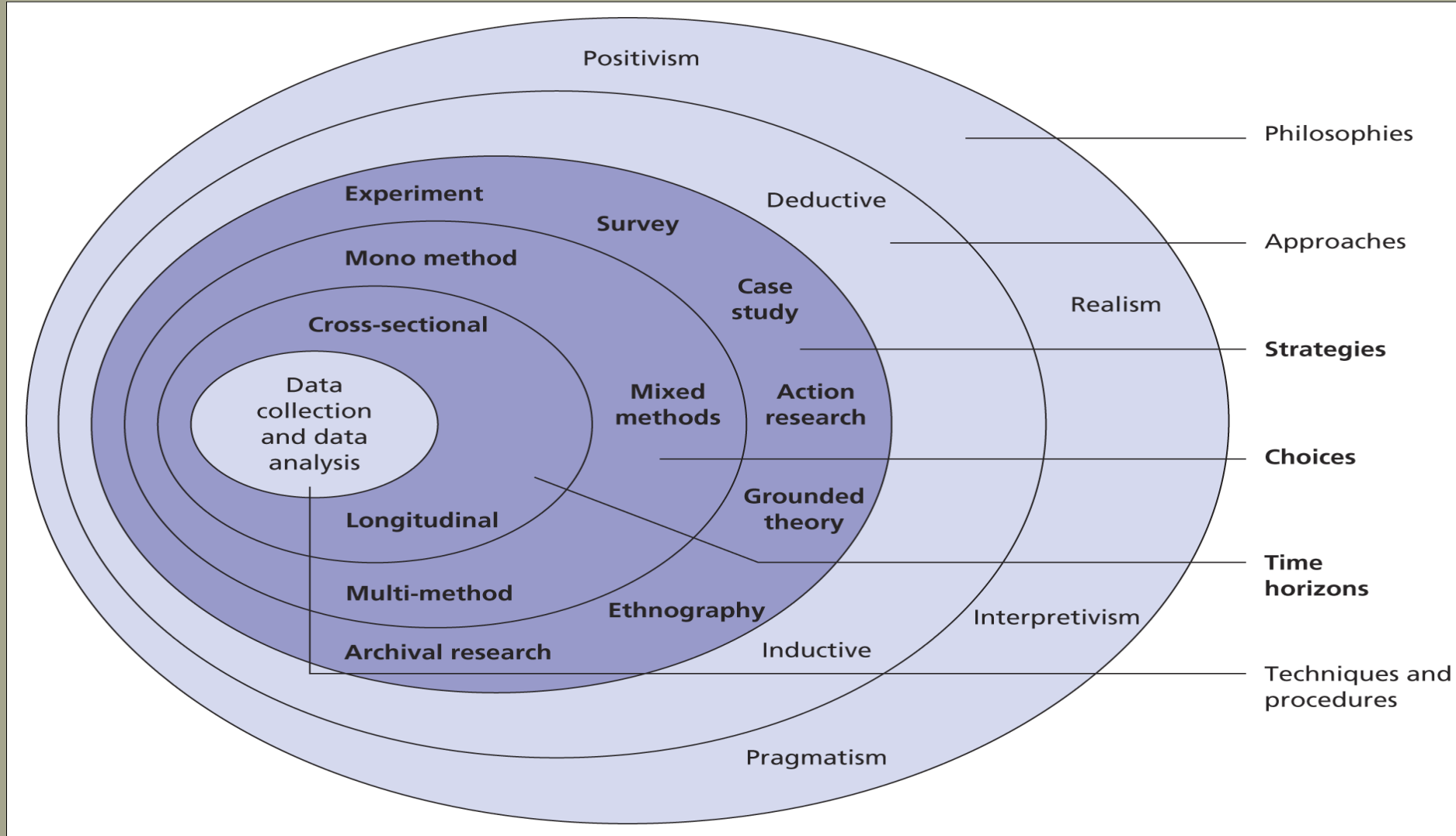
Tulisan yang dipublikasikan ataupun dipaparkan dari **hasil pengkajian ataupun penelitian** yang telah dilakukan, dimana penulisannya dilakukan dengan memperhatikan **kaidah dan etika keilmuan yang berlaku di masyarakat keilmuan**.

Perbedaan ketiganya terletak pada kedalaman, keluasan, analisis skop penelitian, originalitas, kebaruan, dan kemandirian dalam penulisan

- Skripsi yang ditulis haruslah merupakan hasil **penelitian**, penulisannya dilakukan dengan memperhatikan kaidah dan etika keilmuan yang berlaku di masyarakat keilmuan
- **Kunci utama dari penelitian adalah metode ilmiah**
- **Tiga karakter utama metode ilmiah: rasional, empiris, sistematis**



The Research Onion



DESIGN OF RESEARCH



Type of Research:

- Exploratory research
- Descriptive studies
- Explanatory (causal) studies

Research Strategies :

- Experiment
- Survey
- Case study
- Action research
- Grounded theory
- Ethnography
- Archival research

Time Horizons:

- Cross-sectional studies
- Longitudinal studies

Qualitative vs Quantitative Research

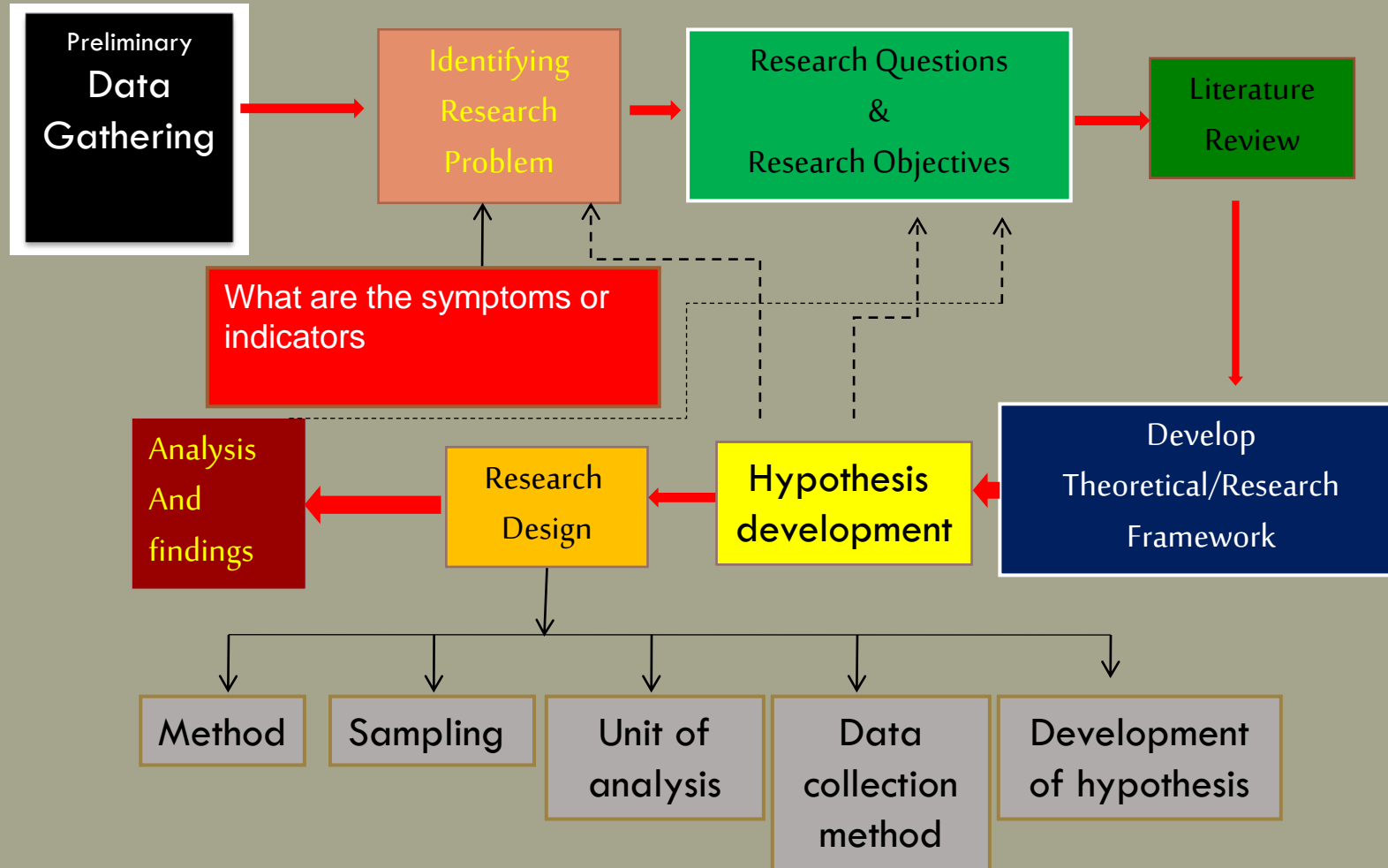
Data Collection and Data Analysis

- Skripsi harus merupakan hasil penelitian dengan proses, sistematika, dan disain yang benar dan terinci dengan baik
 - Tidak masalah apakah **eksploratif**, deskriptif, kausalitas; tidak masalah apakah kuantitatif atau kualitatif atau mix
 - Tidak masalah strategi penelitian apa yang digunakan
 - Tidak masalah metode pengumpulan data yang bagaimana yang digunakan
 - Tidak masalah jenis data apa yang digunakan

**TETAPI PROSES DAN
PROSEDURNYA HARUS BENAR**



OVERVIEW OF RESEARCH PROCESS



Proses Penelitian

- **Merumuskan dan mengidentifikasi masalah**
- **Mengadakan studi kepustakaan**
- **Memformulasikan konsep, hipotesis, dan variabel**
- **Menentukan model & pengujian hipotesis**
- **Mempersiapkan pengumpulan data**
- **Mengumpulkan data**
- **Menyusun, menganalisis, dan menafsirkan data**
- **Membuat generalisasi & kesimpulan**
- **Membuat laporan penelitian**



Tiga Hal yang Dijawab dalam Merencanakan Penelitian

- *what to do* (apa yang akan dilakukan)

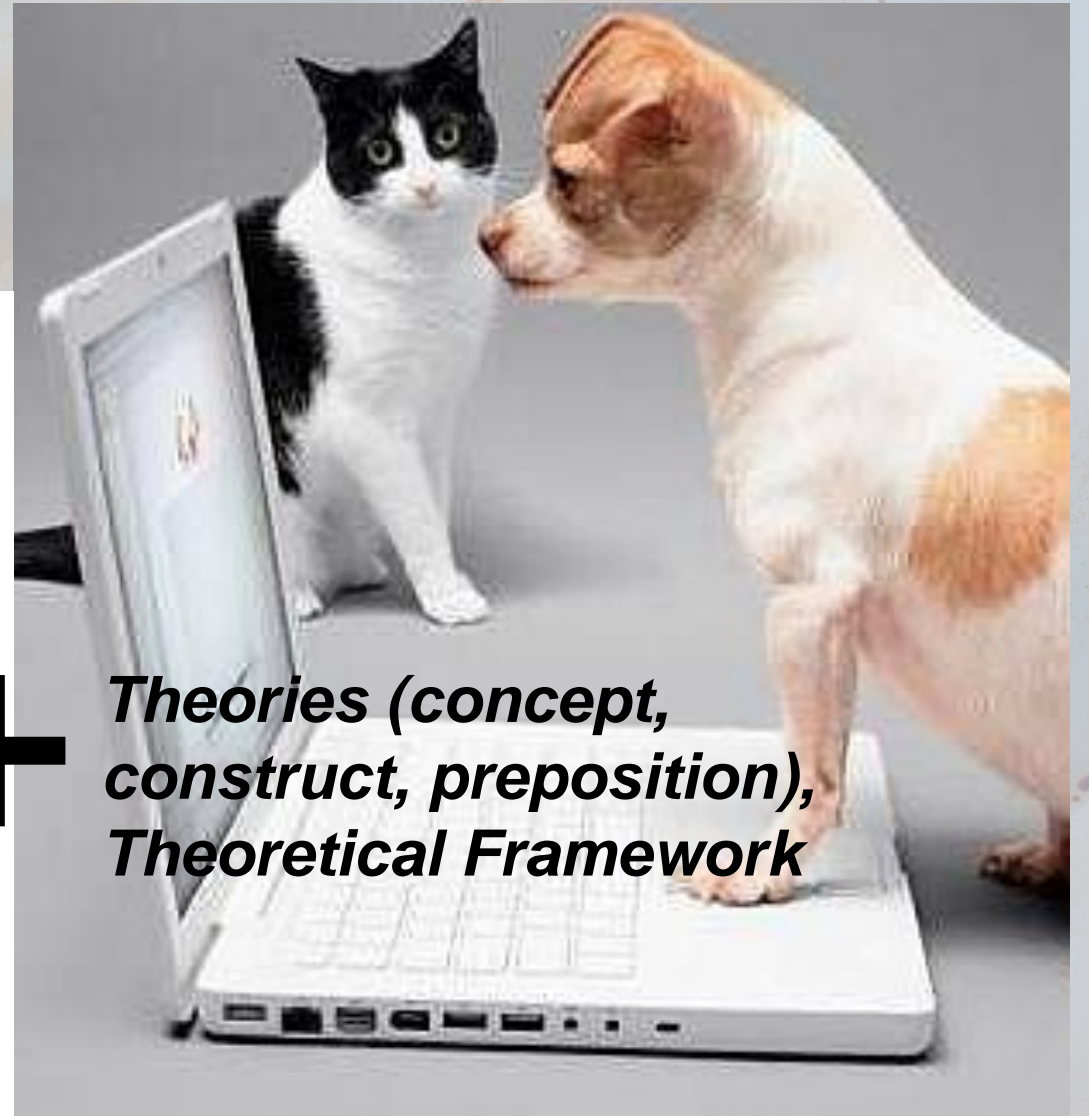
PS, RO, RQ, Scope

- *why to do* (kenapa dilakukan),
Background, Significance, Contribution

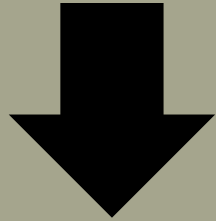
- *how to do* (bagaimana melakukannya)
Research Design



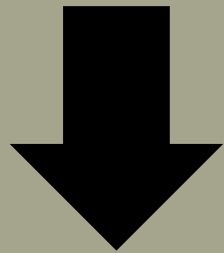
***Theories (concept, construct, preposition),
Theoretical Framework***



(Research) Problem



Research Questions



Research Objectives



(Research) Problem

- The problem is **the gap** between what should be and what is in reality, or between what is necessary and what is available, or between the expectation and the reality, or between what theoretically should be and what happens in practice, or between the rule and the reality
- A problem requires research to find a solution, although not all problems require research, however, a research conducted due to the problem.
- **So, someone who will conduct the research must first determine what the problem is**





The research problem should be:

- **Useful** to be disclosed
 - **Relevant** to the ability or expertise of researchers.
 - **Attracting** attention to be disclosed
 - **Possibly Producing** something new
 - Ensured that data could be collected **completely and objectively**
 - **Not too wide, but not too narrow**
-

Research Question

- Express the research objectives in terms of questions that can be addressed by research
- Help to develop well-formulated, specific hypotheses that can be empirically tested
- Help the researcher design a study that will produce useful results

Research Question

- ❑ A research Question is clear, focused and arguable question around which you plan to center your research
- ❑ A research question is associated with the problem statement and can be answered directly through the analysis of data
- ❑ A research question has not yet been answered satisfactorily (literature review !!)
- ❑ The answer would contribute to science and/or society



Research Objectives

- ▶ Research objectives are the deliverables of the research project
- ▶ Research Questions and Research Objectives
 - ▶ RQ: Identify the questions whose answers will guide solving the problem.
 - ▶ RO: Identify the goals associated with each of the research questions.
- ▶ Research Objectives should be clear and achievable



Research Objectives



- Research objectives outline the specific goals the study plans to achieve when completed.
- The research objectives are usually divided into:
 - General objective/broad objective or overall objective
 - Specific objectives
- ❖ The general (broad) objective or goal and specific objectives are not the same and should be dealt with separately
- ❖ The general objective is a goal that the project hopes to achieve
- ❖ The specific objective is a specific result that the project aims to achieve within a given time frame

Research Objectives usually started with the words:



- mengidentifikasi (to identify),
- mengetahui (to find out),
- memastikan (to ensure),
- menentukan (to determine),
- membangun (to establish)
- mengklarifikasi (to clarify),
- melakukan verifikasi (to verify),
- mengkonfirmasi (to confirm),
- menjelaskan (to explain, to describe),

- membandingkan (to compare),
- menentukan (to define), memprediksi (to predict),
- menduga (to estimate),
- menganalisis (to analyze), menilai (to assess),
- menghitung (to calculate),
- mengumpulkan (to collect),
- mengembangkan (to develop),
- mengeksplorasi (to explore),
- menghubungkan (to connect, to relate) dan berbagai perkataan sejenis lainnya.

Masalah Penelitian

- Apa yang melatarbelakangi topik tersebut
- Mana data pendukungnya, siapa yang bilang demikian, darimana sumbernya
- Apa masalahnya
- Merupakan gap yang akan diisi melalui penelitian

Pertanyaan Penelitian

- Apa pertanyaan yang muncul dari masalah tersebut yang perlu dijawab melalui penelitian
- Pertanyaannya bisa saja apa, apakah, apa saja, kenapa, bagaimana, seberapa, seberapa banyak, seberapa besar, sejauh apa dan sebagainya
- Pertanyaan inilah yang akan dijawab melalui penelitian
- Dalam bentuk kalimat pernyataan

Tujuan Penelitian

- Apa yang ingin dicapai dan dituju
- Nanti yang akan menjadi kesimpulan penelitian dan menjadi dasar rekomendasi atau saran
- Merupakan kalimat pernyataan



Literature Review

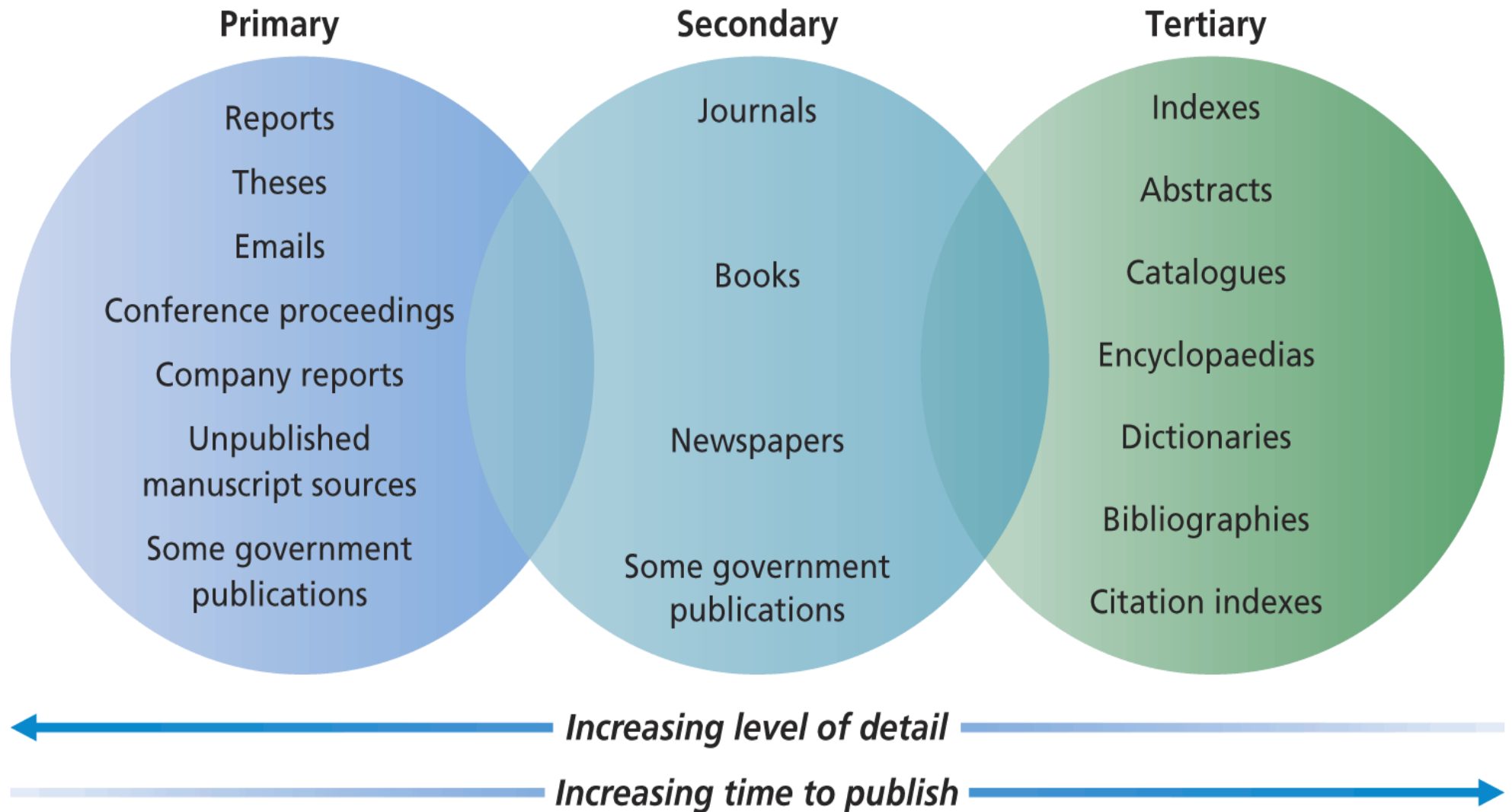
A photograph of a desk with a notebook, glasses, and photos. The notebook is open, and a pencil is resting on it. A pair of black-rimmed glasses is on the left. Three small, square, black-and-white photographs are scattered in the upper left. The desk surface has a patterned, aged appearance.

- **What is the Literature?**

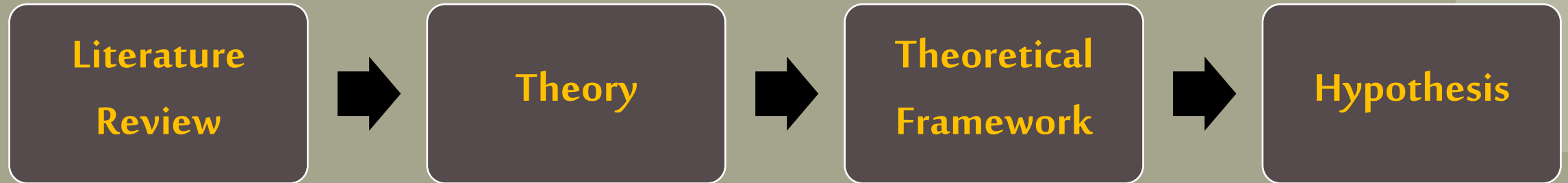
The "literature" should be written by scientists and researchers for scientists and researchers

They may include: academic, scholarly journal articles, books, conference proceedings, dissertations, patents, standards, technical reports, websites and other internet resources

Literature Sources Available



Theoretical Framework and Hypothesis



- Concept
- Construct
- Proposition

- Variables



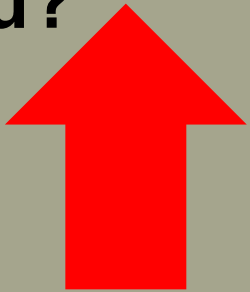
- **Hipotesis: dalil atau jawaban sementara yang akan dibuktikan kebenarannya secara empiris**
- **Hipotesis memuat pernyataan singkat yang merupakan jawaban/simpulan sementara terhadap akar masalah penelitian**
- **Penyusunan hipotesis didasarkan atas hasil kajian teori yang telah ada/pengetahuan relevan sehingga bukan sekedar perkiraan/dugaan simpulan penelitian semata yang tidak didasarkan pada pengetahuan yang telah ada.**



How Do We Derive Hypotheses?

Therefore :

Ideally you should expect that the hypotheses to be accepted not rejected... aren't you?



- From own dreams?
- From own observations?
- From other research?
- From other hypothesis?
- From literature review?
- From theoretical framework?

If it is from own observation, supported by other research, supported by other hypothesis, supported by other literature review, and supported by **YOUR OWN** theoretical framework.

Types of Data

● Quantitative vs Qualitative

- Discrete: Nominal

- Continuum; Ordinal, Interval, ratio

● The level of mathematical Operations

- Nominal :

= and \neq

- Ordinal :

= , \neq , $>$, $<$

- Interval :

= , \neq , $>$, $<$, + , -

- Ratio :

= , \neq , $>$, $<$, + , - , \times , \div

● Primary Data vs Secondary Data

- **Primary data:** directly collected by researcher and his/her team
- **Secondary:** data collected by others

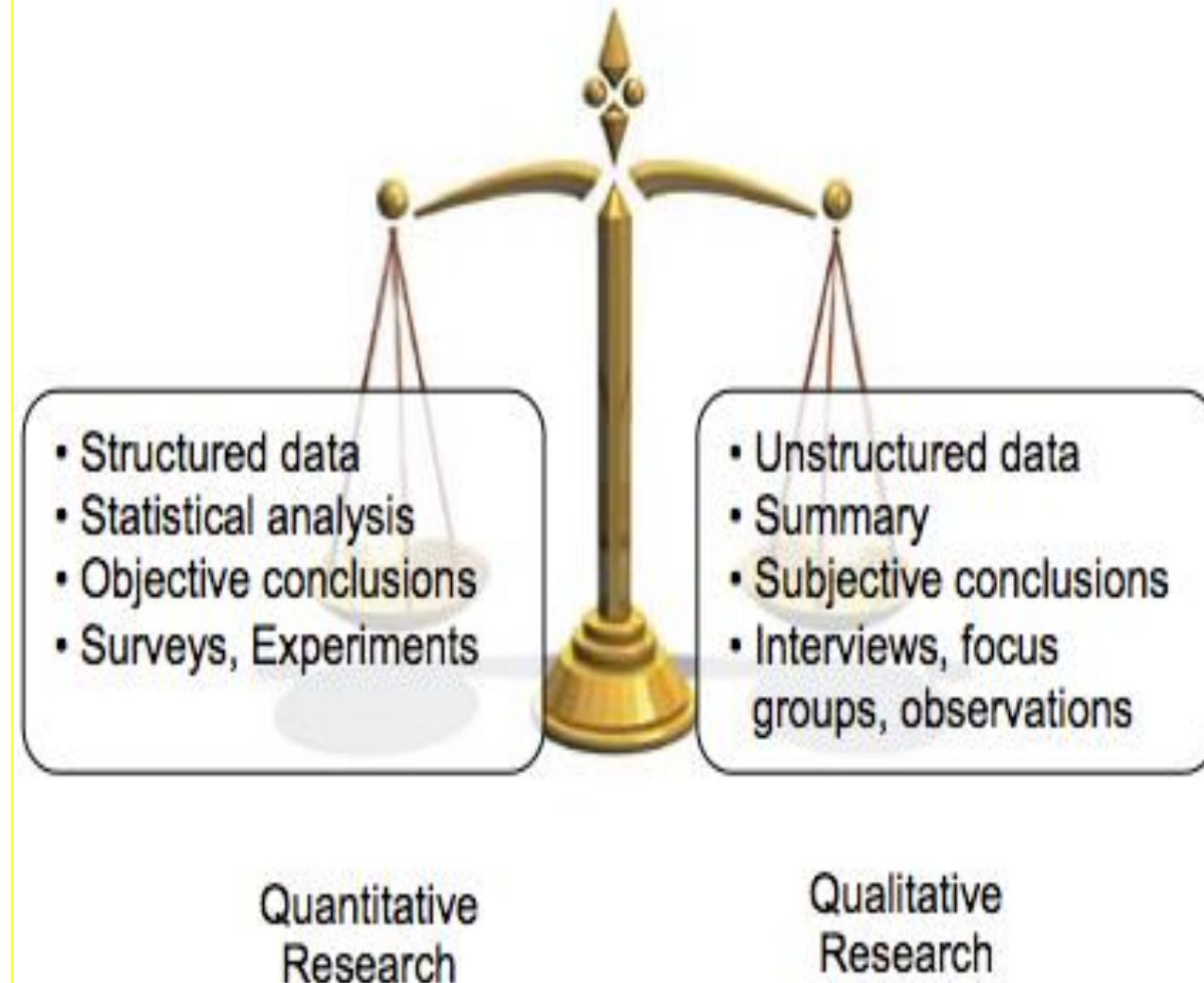
● *cross section vs time series/longitudinal*

- ***cross section:*** the study of a phenomenon at a particular time
- ***longitudinal:*** It has the capacity to study change and development

Time Horizons

- **Cross-sectional studies** the study of a phenomenon at a particular time.
Because of time restrictions
- **Longitudinal studies** it has the capacity to study change and development

Comparing Qualitative and Quantitative Research

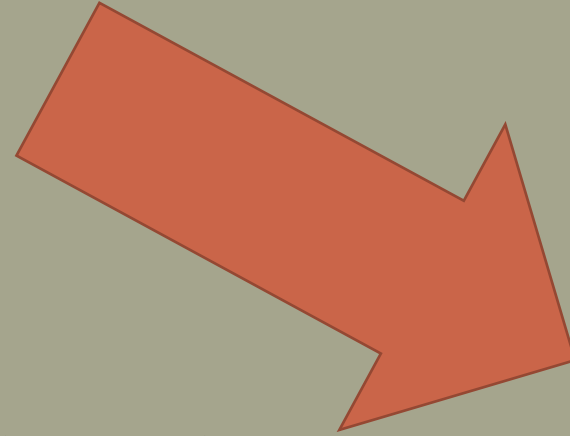


Qualitative and Quantitative Data

- **Qualitative data**
 - Data that are not characterized by numbers but rather are textual, visual, or oral.
 - Focus is on stories, visual portrayals, meaningful characterizations, interpretations, and other expressive descriptions.
- **Quantitative data**
 - Represent phenomena by assigning numbers in an ordered and meaningful way.

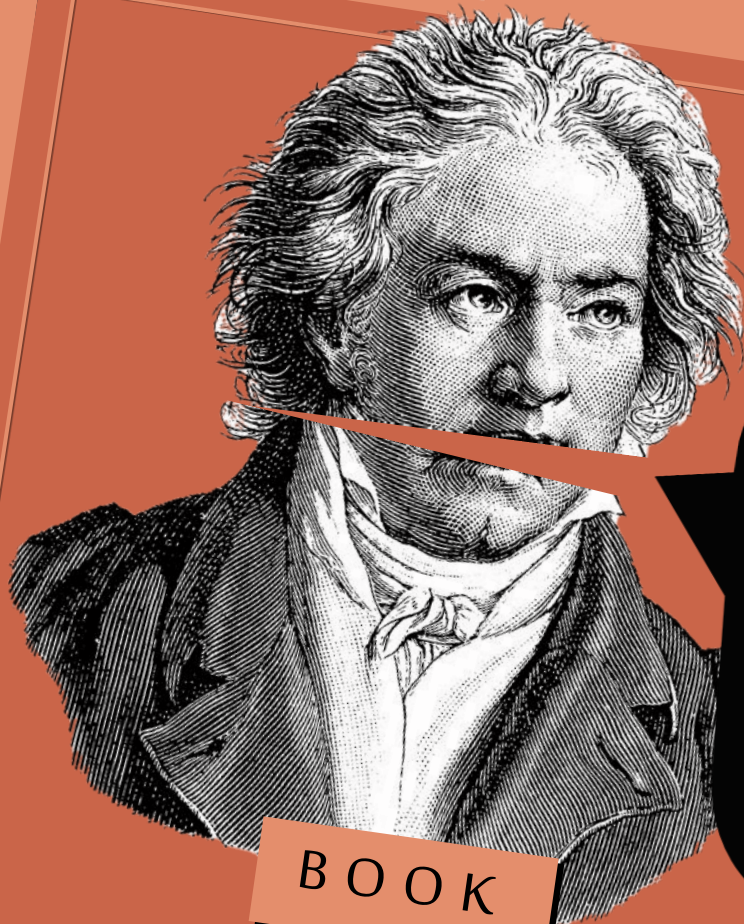
Data Sources

- Secondary data
 - Documentary, survey, or an amalgam of both
 - Times series for longitudinal studies
 - Cohort studies (compiling for the same population over time using a series of “snap-shots”)
 - Area-based data sets
- Primary data
 - Experiments and observational study
 - Questionnaires/tests
 - Interviews
 - Focus groups



Data used for analyzing in order to reach the objectives, to answer the questions, to have a solution to the problems

RP, RQ, RO



BOOK

REVIEW

Primary Data

data you collect

- Questionnaires
- Interviews
- Focus groups
- Experiments and observational study



Data Analysis

- QUALITATIVE ANALYSIS
- STATISTICAL ANALYSIS
- QUANTITATIVE ANALYSIS
BESIDES STATISTICS

Qualitative Data Analysis

- Qualitative data result from the collection of non-standardised data that require classification and are analysed through use of conceptualisation
- Qualitative analysis can involve summarising, categorising and structuring data
- The process of data analysis and collection are necessarily interactive





STATISTICAL ANALYSIS

Descriptive Statistics: Part of statistics which is specifically used to describe data; describing visually and measurement

Inductive Statistics: Part of Statistics for taking formal conclusions and generalizing to population based on data sample; classified on Parametric Statistics and Non-Parametric Statistics

Descriptive Statistics

Visually

- **Table:** Cross Tabulation, Frequency Tables, etc.
- **Figure/Picture/ Chart/Graph:** Histogram, Bar Chart, Plot Diagram, Box-Plot Diagram, Pie Chart, Run Chart, Control Chart, Time Series graph, Stem and Leaf Diagram

By measurement

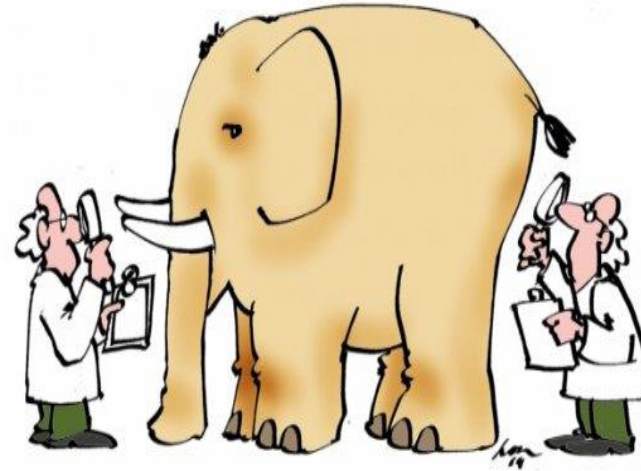
- **Measures of central tendency or measure of location:** mean, median, modus, midrange, midhinge
- **Measures of dispersion:** range, variance, standard deviation, standard deviation, absolute deviation, inter-quartile range
- **Other measures:** proportion, percentages, ratio



Choosing the Appropriate Statistical Technique

Choosing the correct statistical technique requires considering:

- Type of question to be answered
- Number of variables involved
- Level of scale measurement



"Statistics: The only science that enables different experts using the same figures to draw different conclusions."

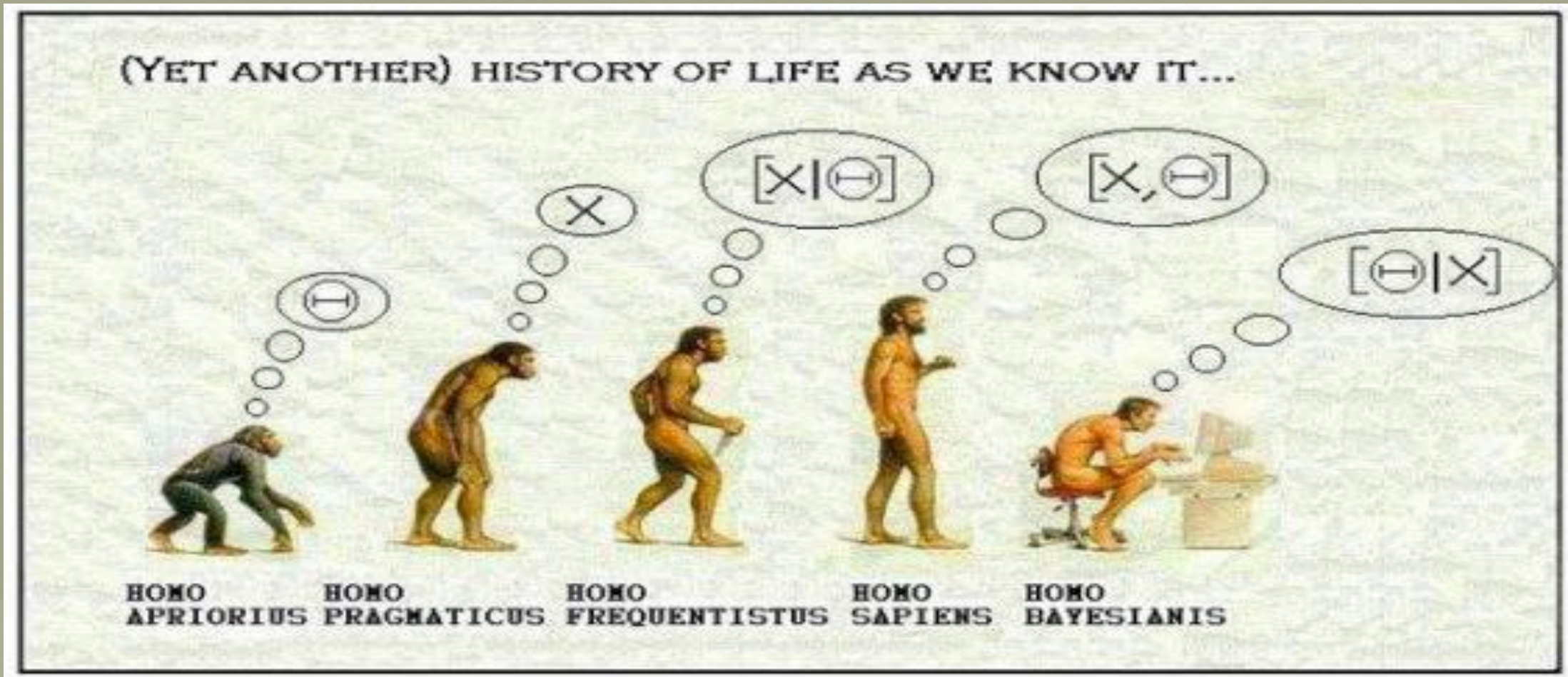
Evan Esar



Ingat: Statistika hanyalah alat, alat untuk menganalisis dan menyajikan data, bukan tujuan

Inductive Statistics

- Parametric Statistics
- Non-Parametric Statistics



Inductive Statistics

Parametric Statistics

- **Parametric Statistics:** based on strict assumptions relating to the characteristics of the population from which data were obtained
- Such assumptions: normal distribution, independent, homogenous variance
- Usually used interval and ratio scale of measurement
- Suitable for natural science

Non-Parametric Statistics

- **Non-Parametric Statistics:** The assumptions are not so strict, the assumption is usually required only symmetry
- Can be used for an ordinal, interval, and ratio scale of measurement
- Suitable social sciences which are sometimes the data are difficult to be quantified

Hypothesis Test

- Testing the magnitude of a population mean using Z -test
- Testing the magnitude of a population mean using t -test
- Testing the magnitude of the difference of two population mean using Z -test
- Testing the magnitude of the difference of two population means using t -test
- Testing the magnitude of a population variance using χ^2 test
- Testing the magnitude of the ratio of two population variances using F -test
- Testing the differences of several population means using F -test (Analysis of Variances)



ESTIMATING RELATIONSHIP AMONG VARIABLES

Simple correlation

Simple linear regression

- **Population:** $\mu_{Yi} = \beta_0 + \beta_1 X_i$, $Y_i = \beta_0 + \beta_1 X_i + \epsilon_i$, $Y_i = \mu_{Yi} + \epsilon_i$
- **Sample :** $Y = b_0 + b_1 X_i + e$, $\hat{Y} = b_0 + b_1 X$, $e = Y - \hat{Y}$

Multiple linear regression

- **Population:** $Y_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \dots + \beta_k X_{ki} + \epsilon_i$
- **Sample :** $Y = b_0 + b_1 X_1 + b_2 X_2 + \dots + b_k X_k + e$

Non-linear regression



MORE ON ESTIMATING RELATIONSHIP AMONG VARIABLES

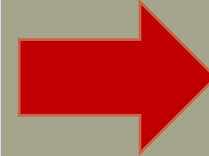
- Logistic Regression
- Path Analysis
- Structural Equation Modeling
- Partial Least Square

Types of Tests

Test for the
measurement



Test for the
statistical tools



Test for the
hypothesis

Pay attention, which one is related to RP, RQ, RO



POKOK-POKOK PENELITIAN dan LAPORAN

**Lima pilar utama metode ilmiah
dalam penelitian**

What is the Problem?

**Jawabannya ada dalam
Bab Pendahuluan**

How do you study the Problem?

**Jawabannya ada dalam
Bab Metode Penelitian**

What do you find ?

**Jawabannya ada dalam
Bab Hasil Penelitian**

What do these findings mean ?

**Jawabannya ada dalam
Bab Pembahasan**

How do you communicate these findings?

Jawabannya ada dalam Artikel Jurnal Ilmiah hasil penelitian

Pada umumnya setiap karya tulis ilmiah memiliki rumus

IMRAD + C

INTRODUCTION

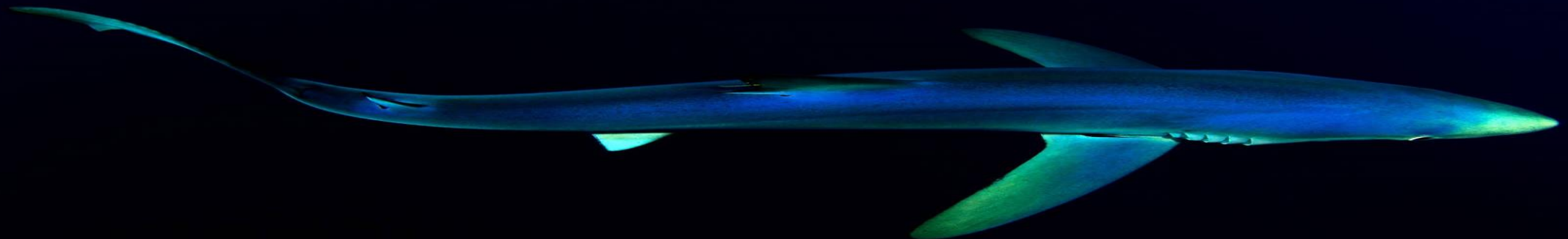
MATERIALS and
METHODS

RESULT AND DISCUSSION

CONCLUSION



- *Menyadari ketidaktahuan kita adalah bagian terbaik pengetahuan*
- *Tuhan Yang Maha Tahu, Manusia tidak maha tahu, namun kalau ia terlalu sering mengatakan tidak tahupun salah juga karena yang tidak tahu semuanya hanyalah orang yang bodoh*
- *Tuhan tidak memberi tahu tetapi hanya memberi alat untuk mencari tahu, yaitu otak yang paling sempurna untuk digunakan merenung dan bernalar*



- Tuhan Maha Mengetahui, Manusia Ingin Tahu
- Belajar tanpa berfikir adalah pekerjaan sia-sia, berfikir tanpa belajar adalah berbahaya





CONCLUSION

- Bagian ini terdiri dari simpulan dan rekomendasi
 - Simpulan berisi capaian penelitian yang disampaikan dalam bentuk pernyataan-pernyataan yang jelas, singkat, kritis dan argumentatif yang mengacu pada butir-butir tujuan penelitian
 - Rekomendasi berisi tindak lanjut dari hasil atau temuan yang dinyatakan dalam simpulan.
 - Rekomendasi berisi hal yang perlu dimanfaatkan dari hasil penelitian yang diperoleh dan kemungkinan penelitian berikutnya yang perlu dilakukan

- **A conclusion section is** the place where the author restates the contribution of the research, with a particular emphasis on what it allows others to do; **and proposes new research directions to prevent duplication of effort or to encourage collaboration.**





A conclusion should present:

- a succinct summary of implications of the findings,
- general implications of the study, and
- suggestions for further research

Thank you

