

Bagian Metodologi Penelitian (Bab III)

- a) Metode Penelitian
- b) Sampling/Metode Pemilihan Sampel
- c) Metode Pengumpulan Data
- d) Instrumentasi
- e) Teknik Analisis dan Pengujian Data
- f) Langkah – Langkah Penelitian
- g) Jadwal Penelitian

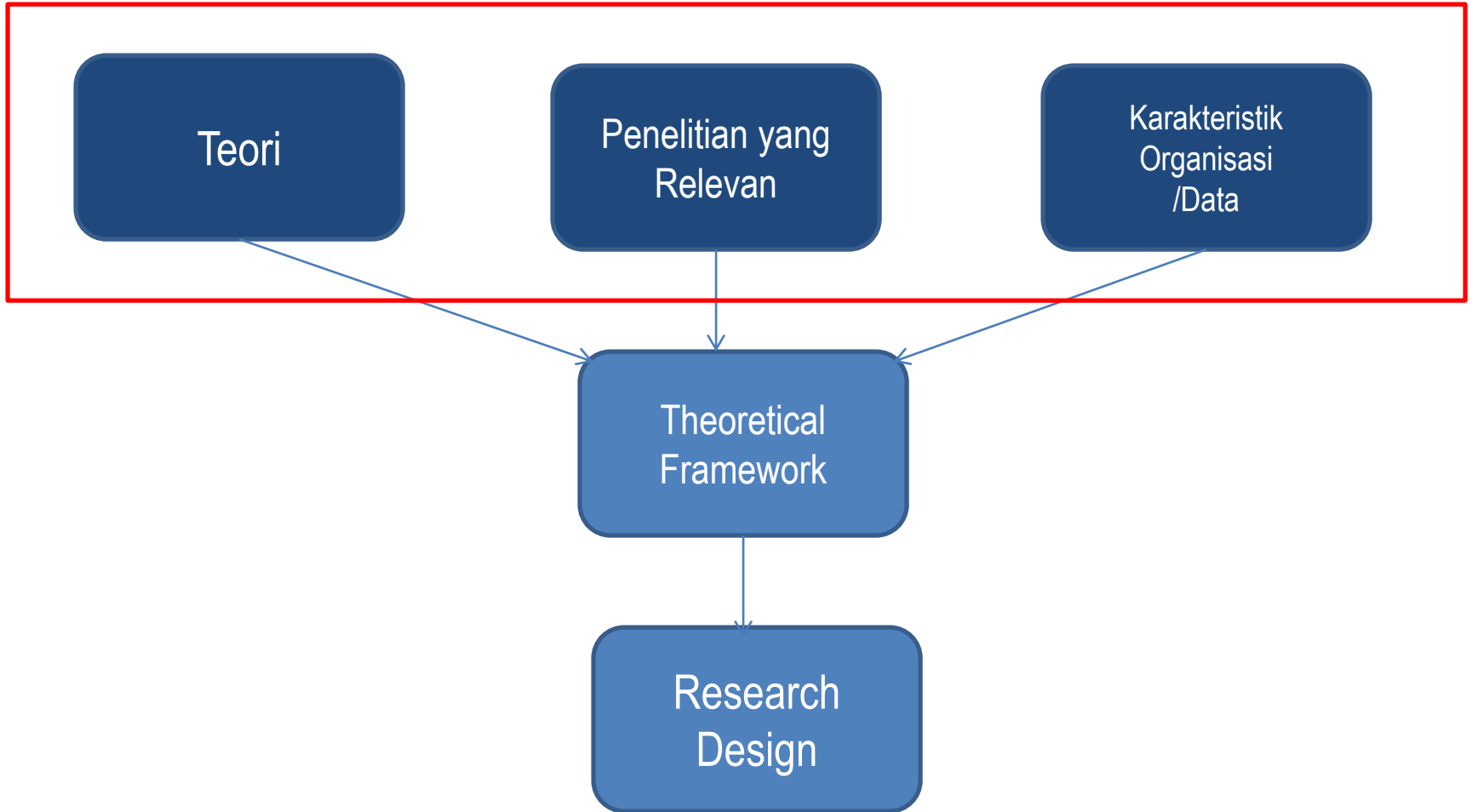
BAB IV PENUTUP

Metodologi Penelitian

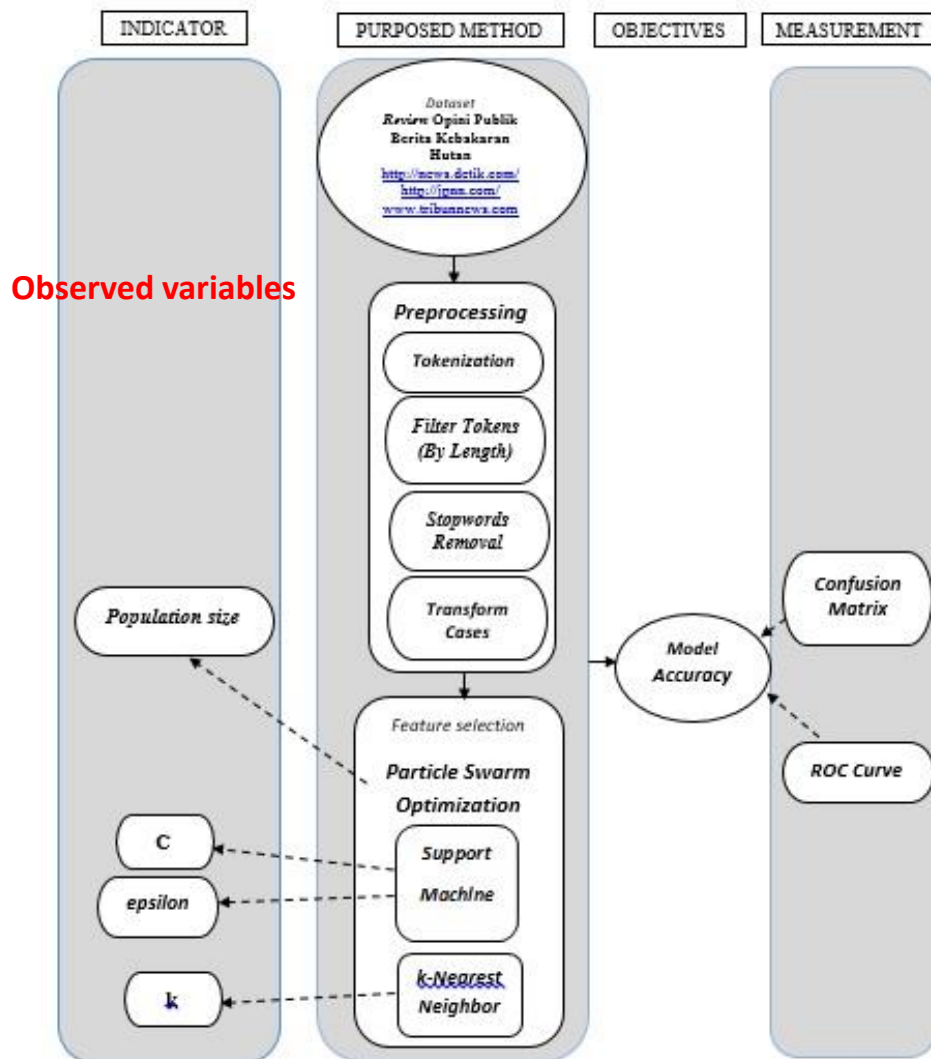
- Hal-hal yang perlu dituliskan di metodologi penelitian:
 - **Participants:** meliputi informasi lokasi demografi (persentase, rerata, standar deviasi, dll.), jumlah responden, alasan pemilihan responden, dll.
 - **Design:** tuliskan desain eksperimen ini (prosedur eksperimen, survei, interview, karakteristik observasi, dll.?)
 - **Measures:** informasi tentang cara mengukur data dan mengukur kinerja keberhasilan
 - **Procedures:** Tuliskan langkah-langkah penelitian secara lengkap

1. Metode Penelitian

- Kuantitatif
- Kualitatif



KERANGKA PIKIR PENELITIAN



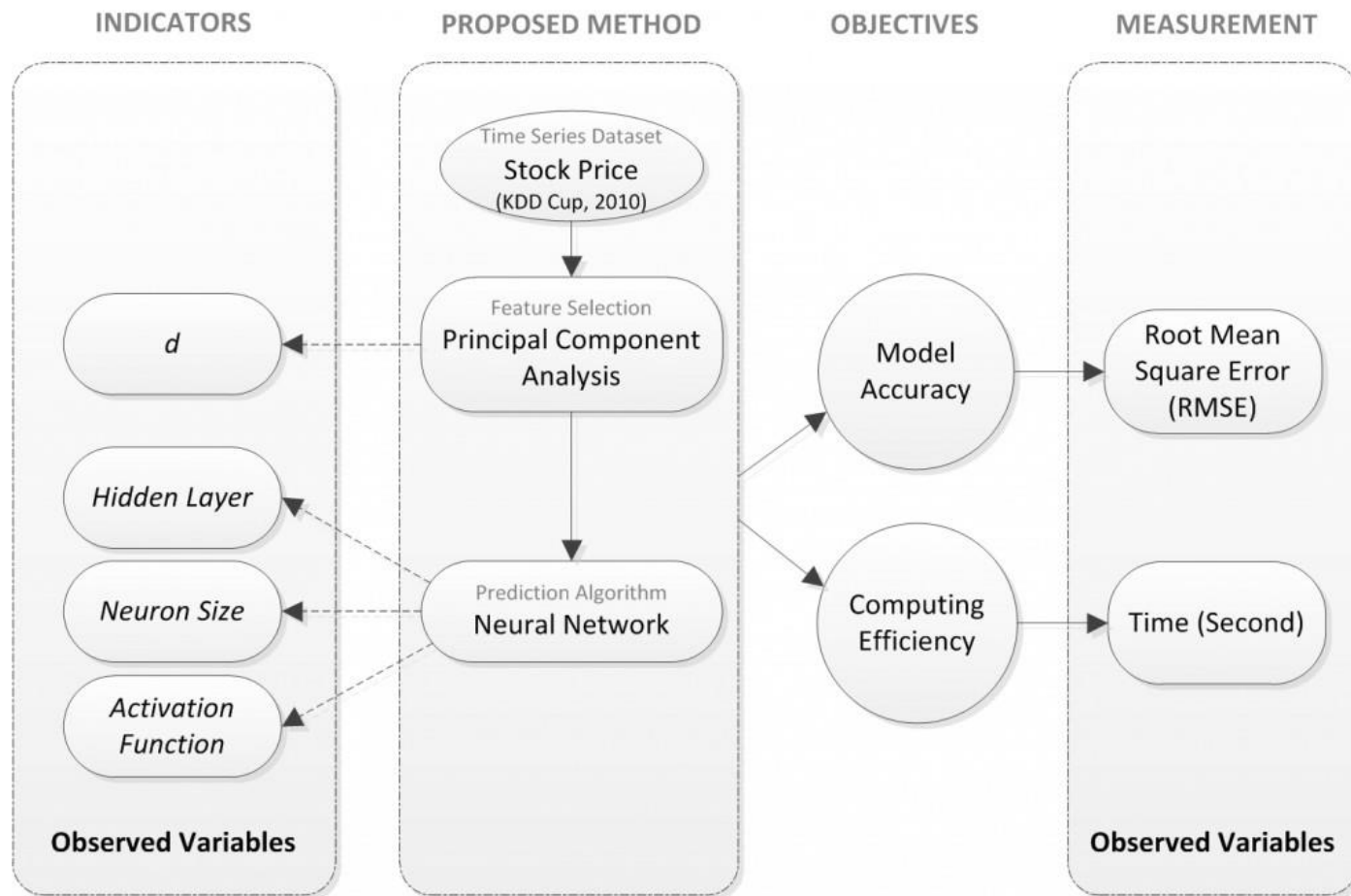
Contoh 1

Komparasi Algoritma
Support Vector Machine
dan *K-Nearest Neighbor*
Berbasis Particle Swarm
Optimization Pada Analisis
Sentimen Opini Publik
Berita Kebakaran Hutan

Jenis metode penelitian apa
ini?

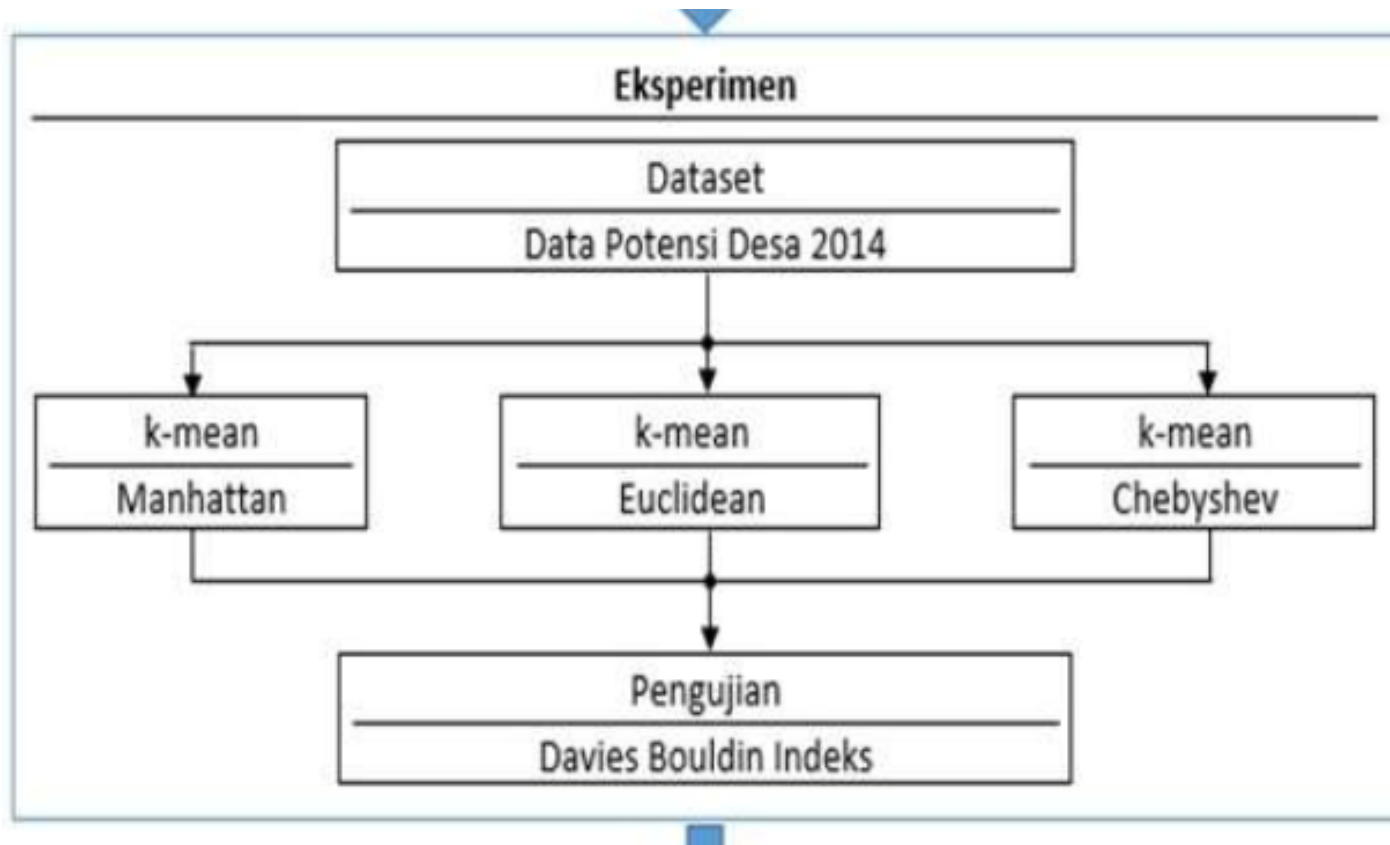
Kerangka Pikir Penelitian

Principal Component Analysis based Neural Network Model for Stock Price Prediction



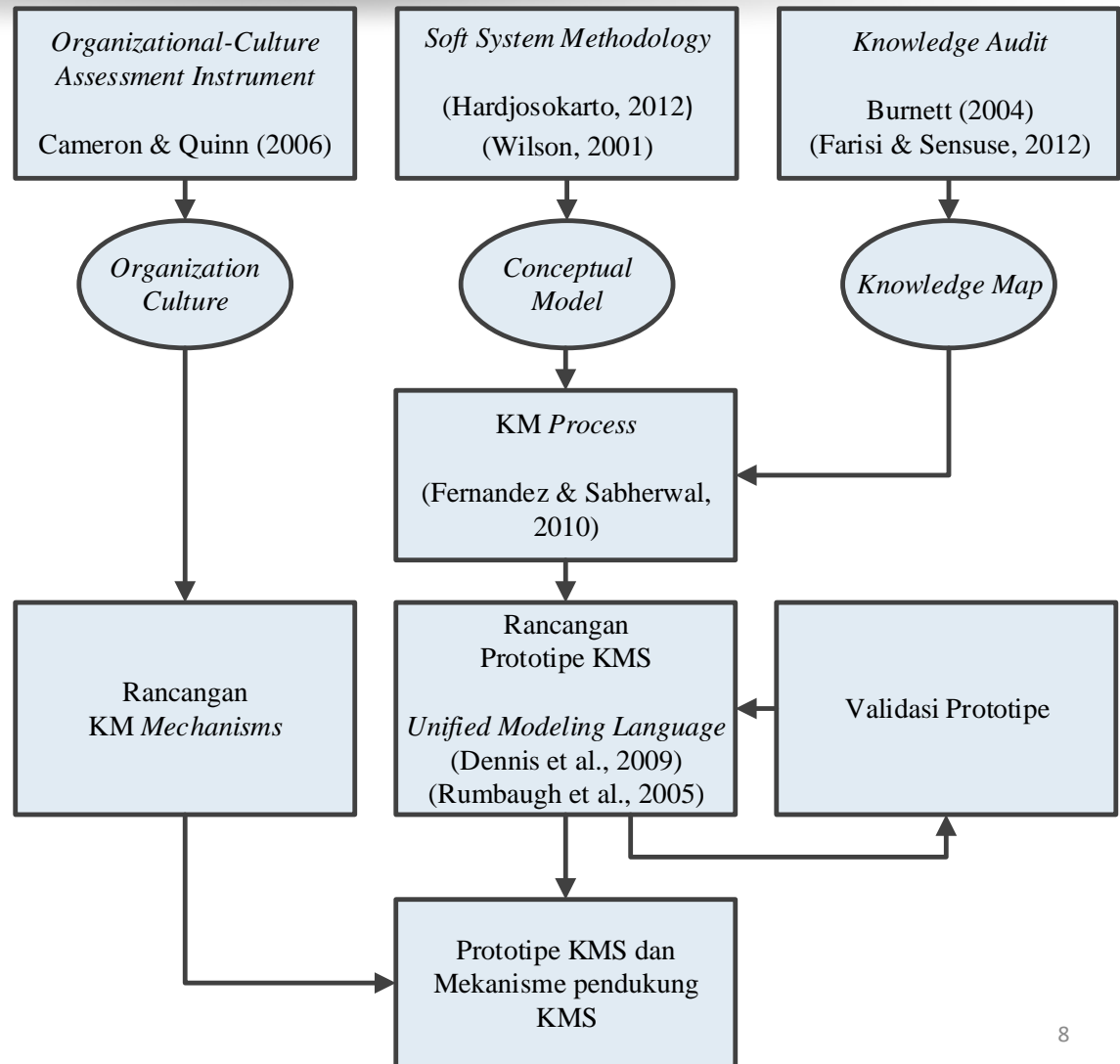
Jenis metode penelitian apa?

PENGELOMPOKAN STATUS DESA DI PROVINSI JAWA BARAT MENGGUNAKAN METODE MANHATTAN, EUCLIDEAN DAN CHEBYSHEV PADA ALGORITMA K-MEAN



Kerangka Pikir Penelitian

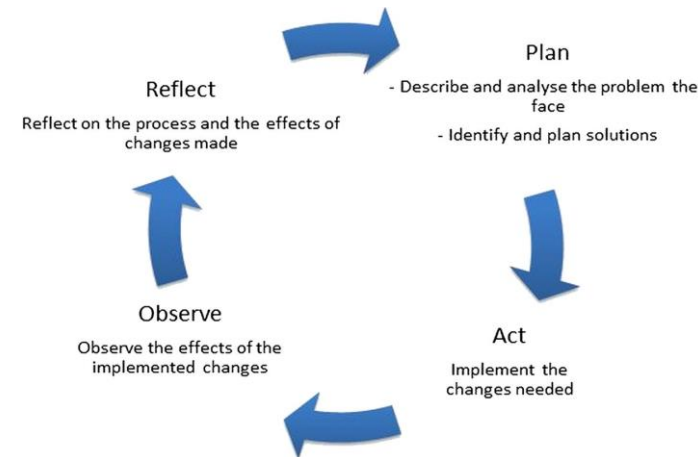
PERANCANGAN
KNOWLEDGE
MANAGEMENT
SYSTEM DENGAN
PENDEKATAN SOFT
SYSTEM
METHODOLOGY
PADA TIM PENJUALAN
PRODUK VALUE ADDED
SERVICE



**Jenis Metode Penelitian
apa?**

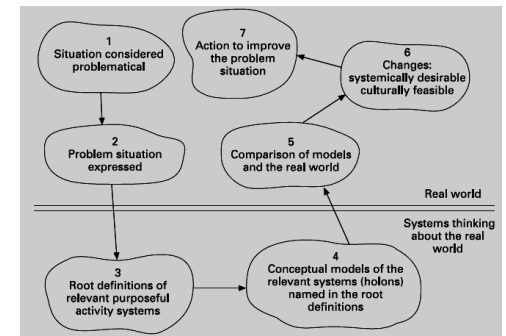
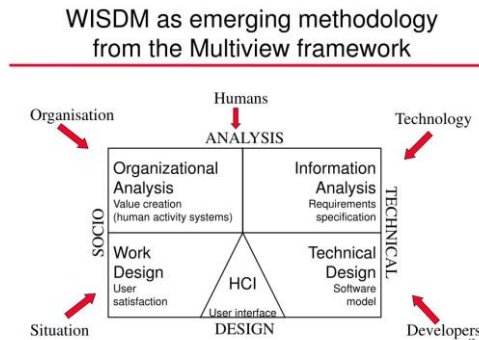
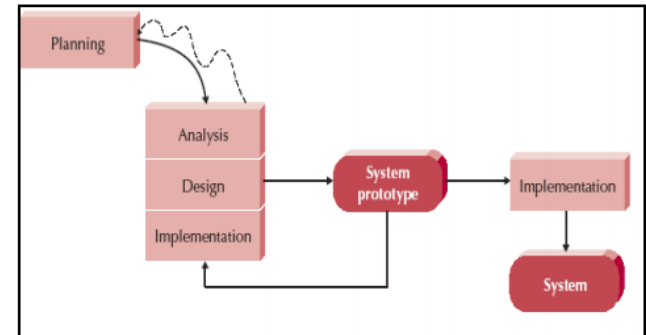
Action Research

- In action research, the researcher works in close collaboration with a group of people to improve a situation in a particular setting.
- The researcher does not 'do' research 'on' people, but instead works with them, acting as a facilitator.
- This type of research is popular in areas such as organizational management, community development, education and agriculture.



Forms of IS Action Research

- IS Prototyping
- Soft Systems Methodology
- ETHICS
- Multiview
- Participant Observation



Design Science Research

- Behavior-science paradigm
 - Roots in natural science research methods
 - It seek to develop and justify theories
 - These theories impact and impacted by design sciences
- Design-science paradigm
 - Roots in engineering and sciences of the artificial (Simon 1996)
 - It seek to create innovations
 - Their creation relies on existing Kernel theories
 - That are applied, tested, modified, and extended through the experience, creativity, intuition, and problem solving capabilities of the research

Design Science Research

- Technology and behavior are not dichotomous in an information system.
- They are inseparable.
- Objective of Design Science Research:
 - Create and evaluate IT artifacts to solve the identified organizational problem
 - Artifacts are represented in a structured form, such as software, formal logic, and rigorous mathematics to informal natural language descriptions

1. Jenis Metode Penelitian

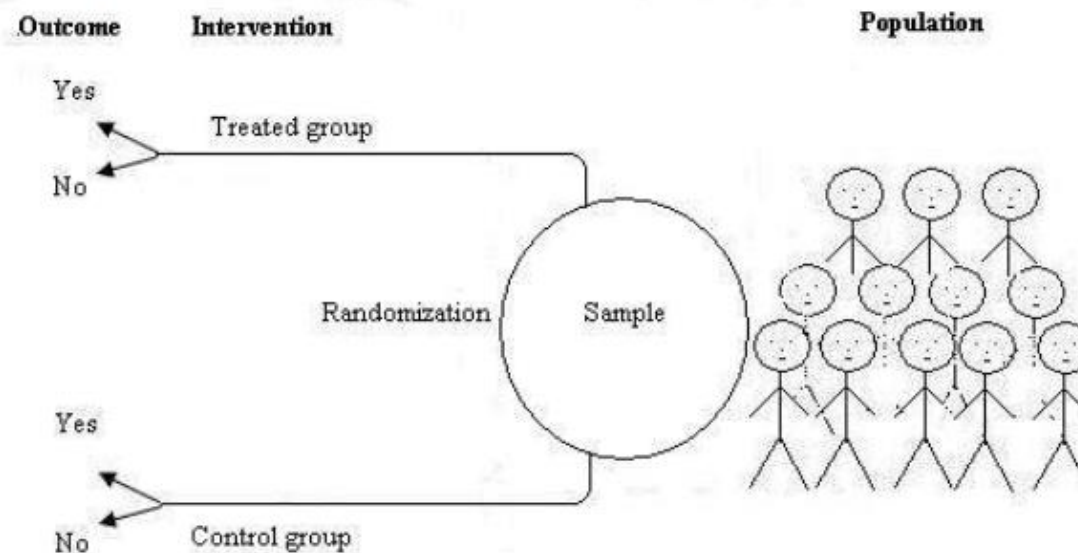
- **Experimental Research**
- **Quasi-experimental Research**
- **Causal-comparative Research**
- **Correlational Research**
- Survey Research
- Action Research
- Historical Research
- Ethnographic Research
- Case Study Research
- **Design Science Research**

1. Experimental Research

- Experimental Research:
 - “Gold Standard”
 - Research that allows for the causes of behaviour to be determined
 - A research design that attempts to discover a cause-effect relationship between two variables.
- Experiment :
 - Using random assignment
 - One or more factors are manipulated (experimental group) and all other factors are held constant (control group)
 - Used in **exploratory and explanatory research** to answer ‘**what**’ and ‘**why**’ questions.
- Example : *Learning effectiveness between with and without e-learning system*

	E-learning	Tanpa E-learning
Eksperimen 1		
Eksperimen 2		
Eksperimen 3		

- Example: Randomized controlled trial (clinical trial)



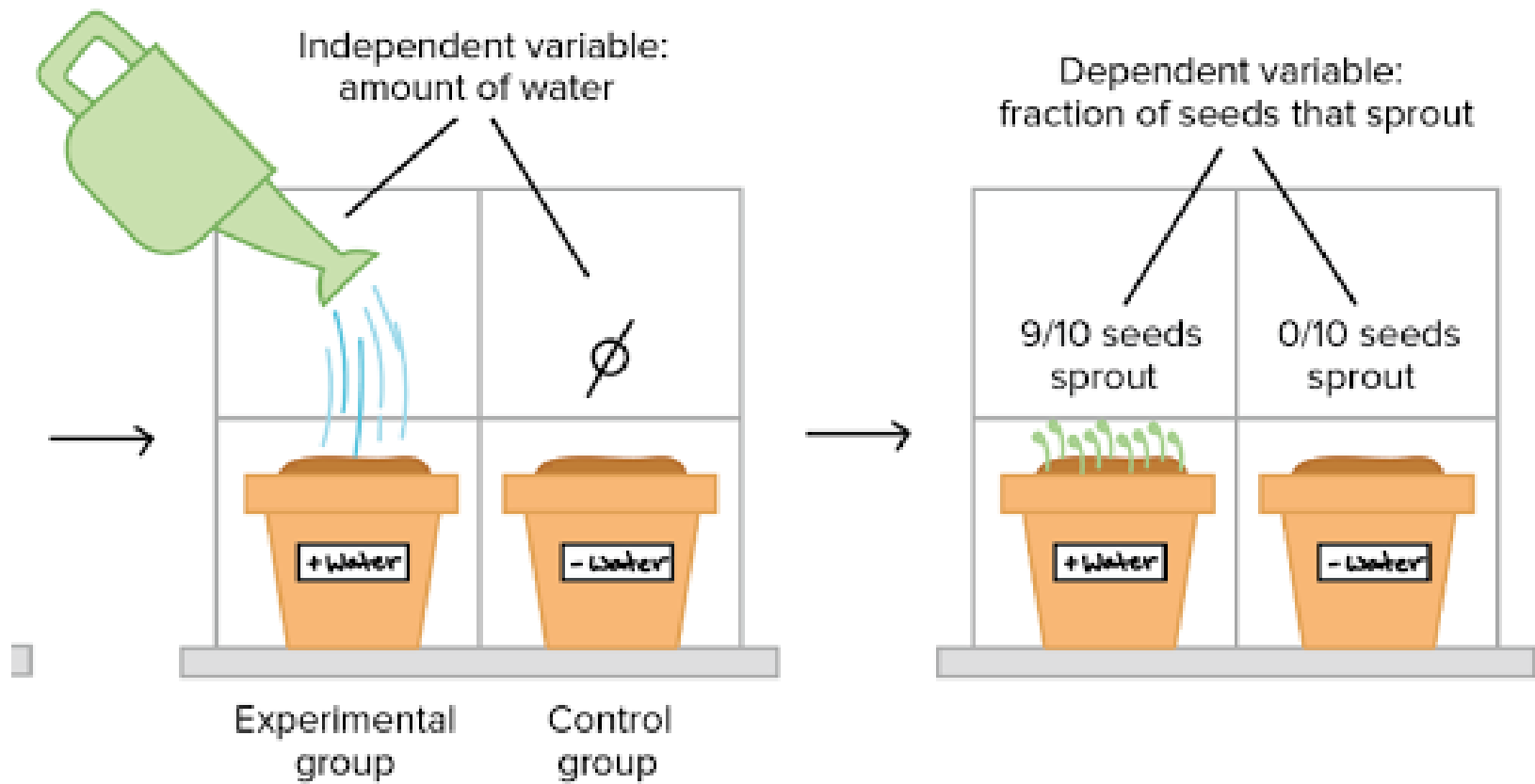


TABLE I
ACCURACY(ACC) AND STANDARD DEVIATION(SD)

Model	Unigrams		Bigrams		Trigrams	
	Acc	SD	Acc	SD	Acc	SD
Logistic Regression	88%	4%	95%	2%	94%	3%
WiSARD 4 bits with bleaching	88	5	93%	3%	95%	2%
WiSARD 8 bits with bleaching	88	5	93%	3%	94%	3%
SVM (kernel linear)	87	4	93%	4%	92	4
WiSARD 16 bits with bleaching	89	6	93%	6%	93	4
WiSARD 16 bits	89	4	92%	5%	93	3
WiSARD 8 bits	90	6	91%	3%	94	3
WiSARD 4 bits	91	4	91%	4%	94	3
GB(estimators=150, learning rate=0.01, depth=5)	83	8	86%	4%	85	5
Bernoulli Naive Bayes	80	5	85%	5%	86	5
WiSARD 32 bits with bleaching	83	6	84%	4%	93	3
WiSARD 32 bits	82	6	82%	6%	93	4

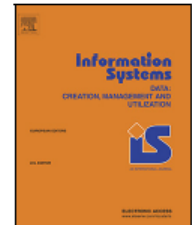
Experimental Research



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Information Systems

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Comparing traditional conceptual modeling with ontology-driven conceptual modeling: An empirical study



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Quasi-Experiment

Participant (total sebanyak 100 orang):

1. University of Ghent (Belgium), peserta memodelkan dengan TCM
2. Technical University of Prague, peserta memodelkan dengan ODCM

Tahapan eksperimen

1. **Assessment of subject knowledge:** multiple choice untuk menyamakan pemahaman dan pengetahuan terkait TCM dan ODCM
2. **Modelling assignment:** peserta akan diberikan case mengenai sebuah perusahaan yang ingin mengembangkan software system
3. **Usage belief and perception:** setelah memodelkan model, peserta diminta menjawab 8 pertanyaan dengan 5 point skala likert untuk mengukur efisiensi model

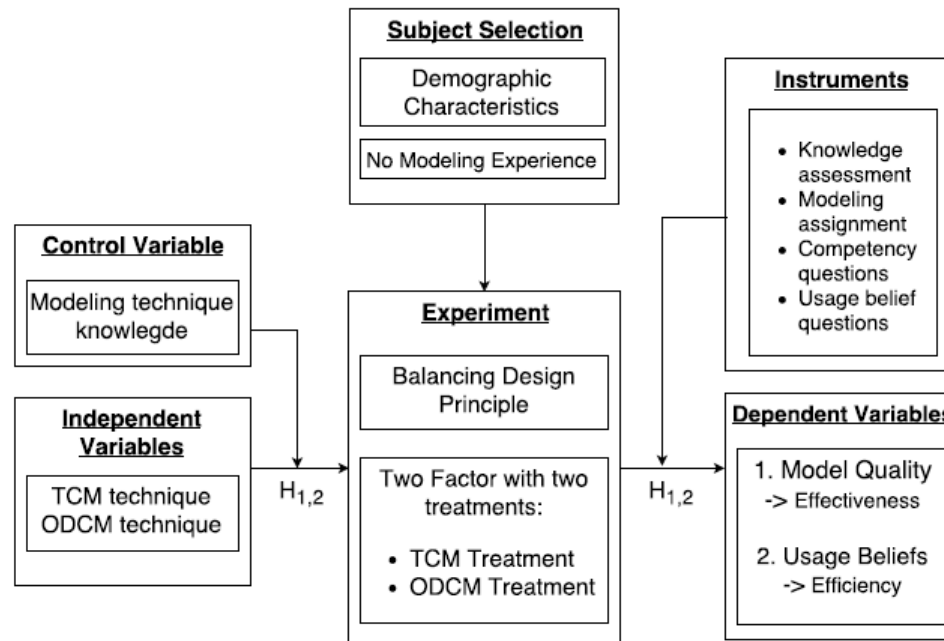
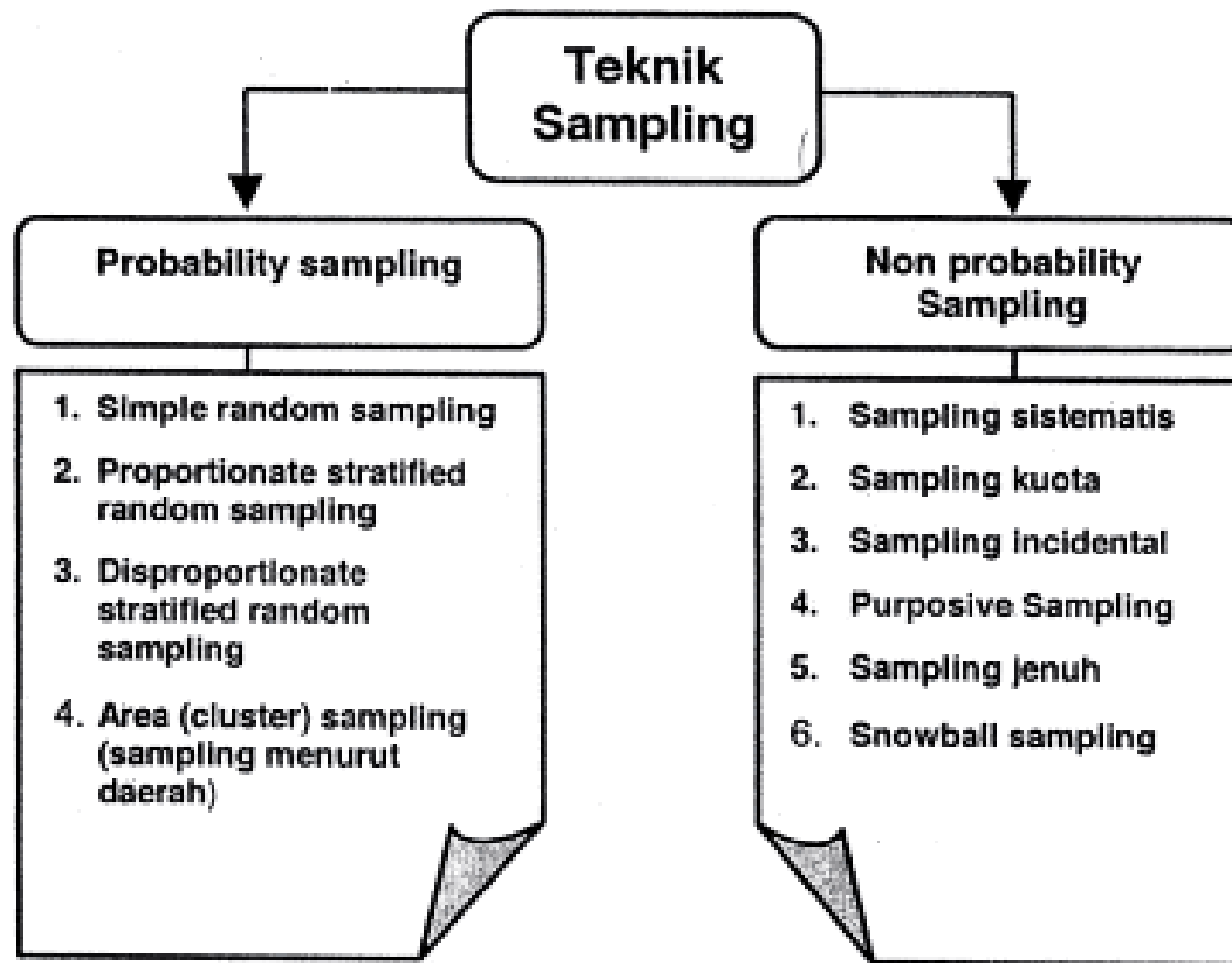


Fig. 1. Overview of experimental design.

2. Sampling



3. Metode Pengumpulan Data

METODE DAN INSTRUMEN PENGUMPULAN DATA

No	Metode	Instrumen	Sumber Data
1	Kuesioner/Angket	Kuesioner/Angket	Responden (mhs, petani, pejabat, dsb)
2	Interview / Wawancara	Pedoman Wawancara	Responden (mhs, petani, pejabat, dsb)
3	Observasi	Panduan Observasi	Benda, kondisi, situasi, proses, perilaku
4	Studi Dokumen	Form Pencatat Dokumen	Catatan resmi, dokumen, UU, Putusan hakim, buku, jurnal, dsb

4. Instrumentasi

	Metode Kuantitatif	Metode Kualitatif
TEKNIK PENELITIAN	<ul style="list-style-type: none">▪ Eksperimen▪ Survey▪ Kuisioner	<ul style="list-style-type: none">▪ Observasi▪ Wawancara▪ Dokumentasi
INSTRUMEN PENELITIAN	<ul style="list-style-type: none">▪ Instrumen-instrumen penelitian untuk mengumpulkan data kuantitatif (test, angket, dll)	<ul style="list-style-type: none">▪ Peneliti sebagai instrumen kunci▪ Catatan, voice recorder, kamera, handycam, dll
DATA	<ul style="list-style-type: none">▪ Kuantitatif (data dalam bentuk angka)▪ Hasil pengukuran dari variabel yang dioperasionalkan dengan menggunakan instrumen penelitian	<ul style="list-style-type: none">▪ Deskriptif (data berupa kata, kalimat, skema, gambar, dll)▪ Dokumen pribadi, catatan lapangan, ucapan dan tindakan responden, dll



Jenis Instrumen Penelitian Kualitatif

Instrumen Tes

Instrumen tes berupa lembaran yang berisi butir-butir soal. Pertanyaan tersebut mewakili dari variabel penelitian yang diukur.

Instrumen Interview

linstrumen interview berupa pedoman interview/wawancara.

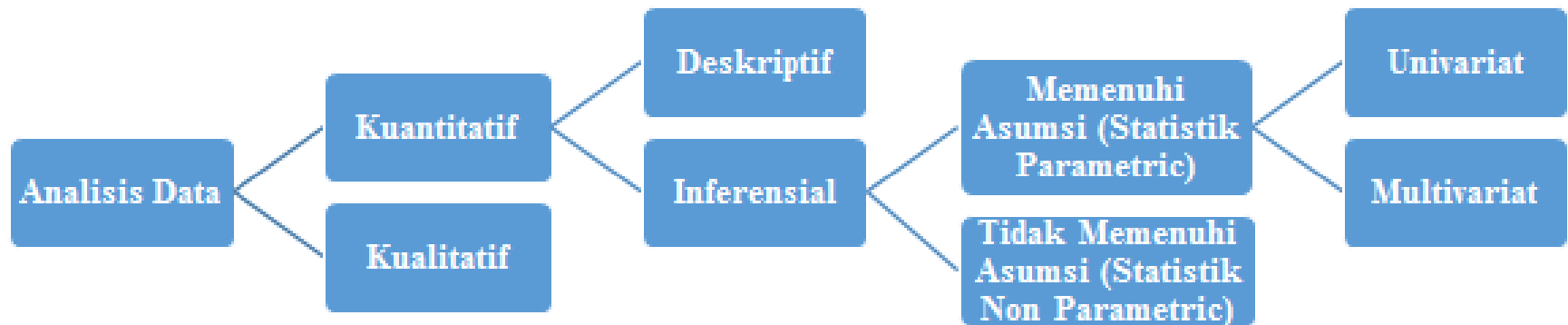
Instrumen Observasi

Instrumen yang digunakan dalam observasi diantaranya:
Pedoman pengamatan, Rekaman suara dan gambar, Kuisisioner & Tes

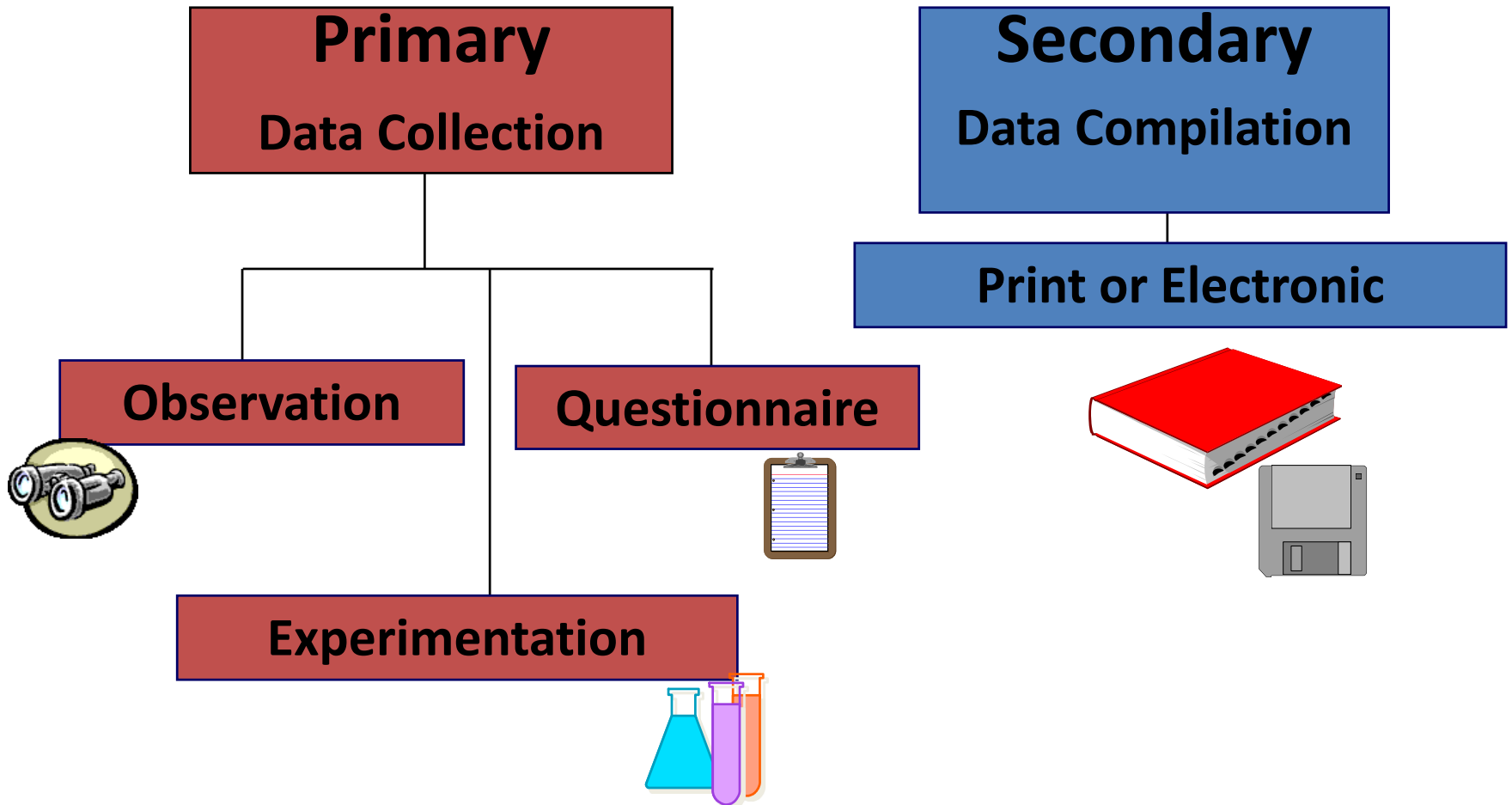
Instrumen Dokumentasi

Instrumen dokumentasi digunakan untuk penelitian yang mengungkapkan sejarah, mencari landasan hukum dan aturan-aturan yang berlaku.

5. Teknik Analisis dan Pengujian Hipotesis

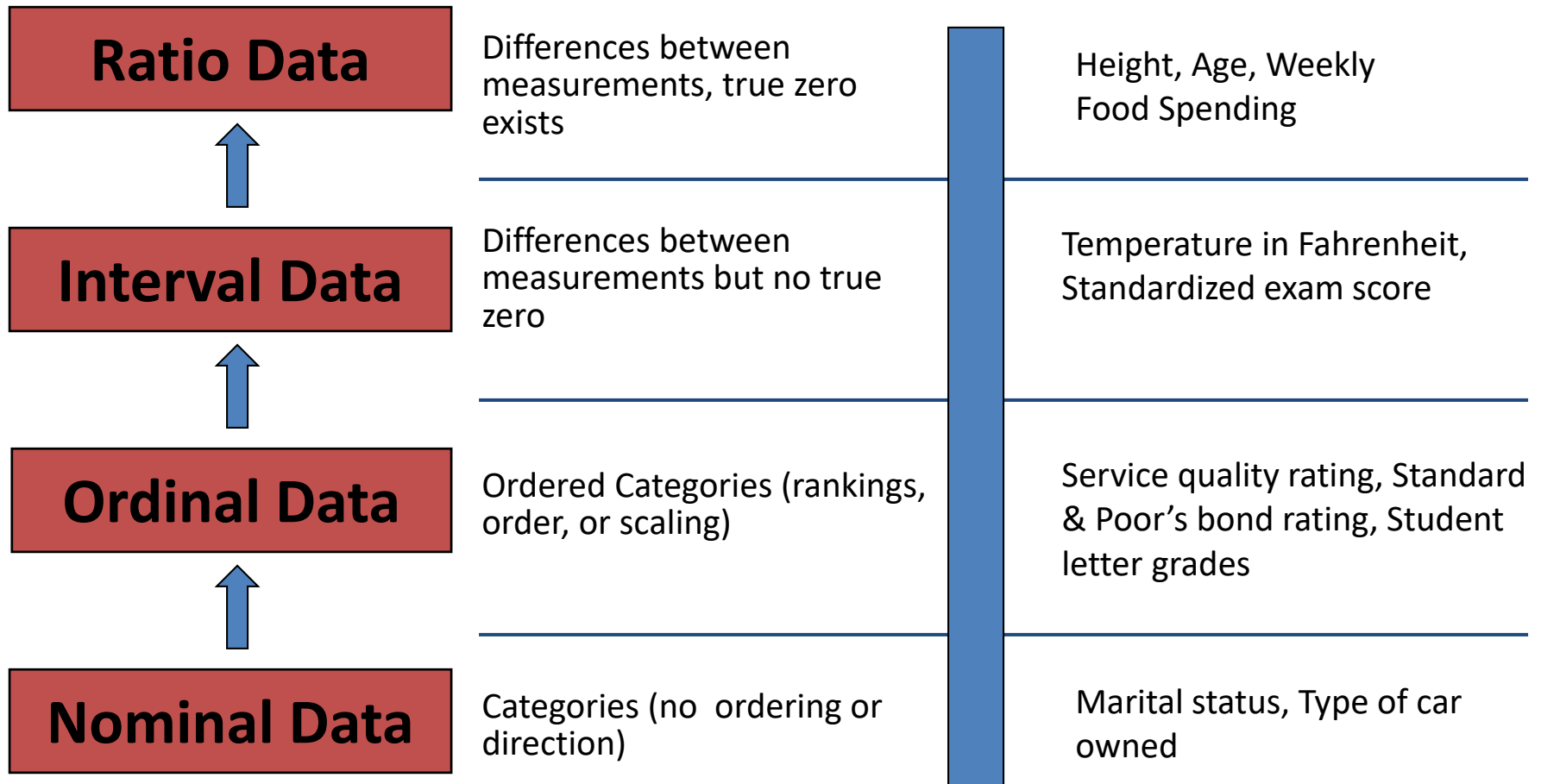


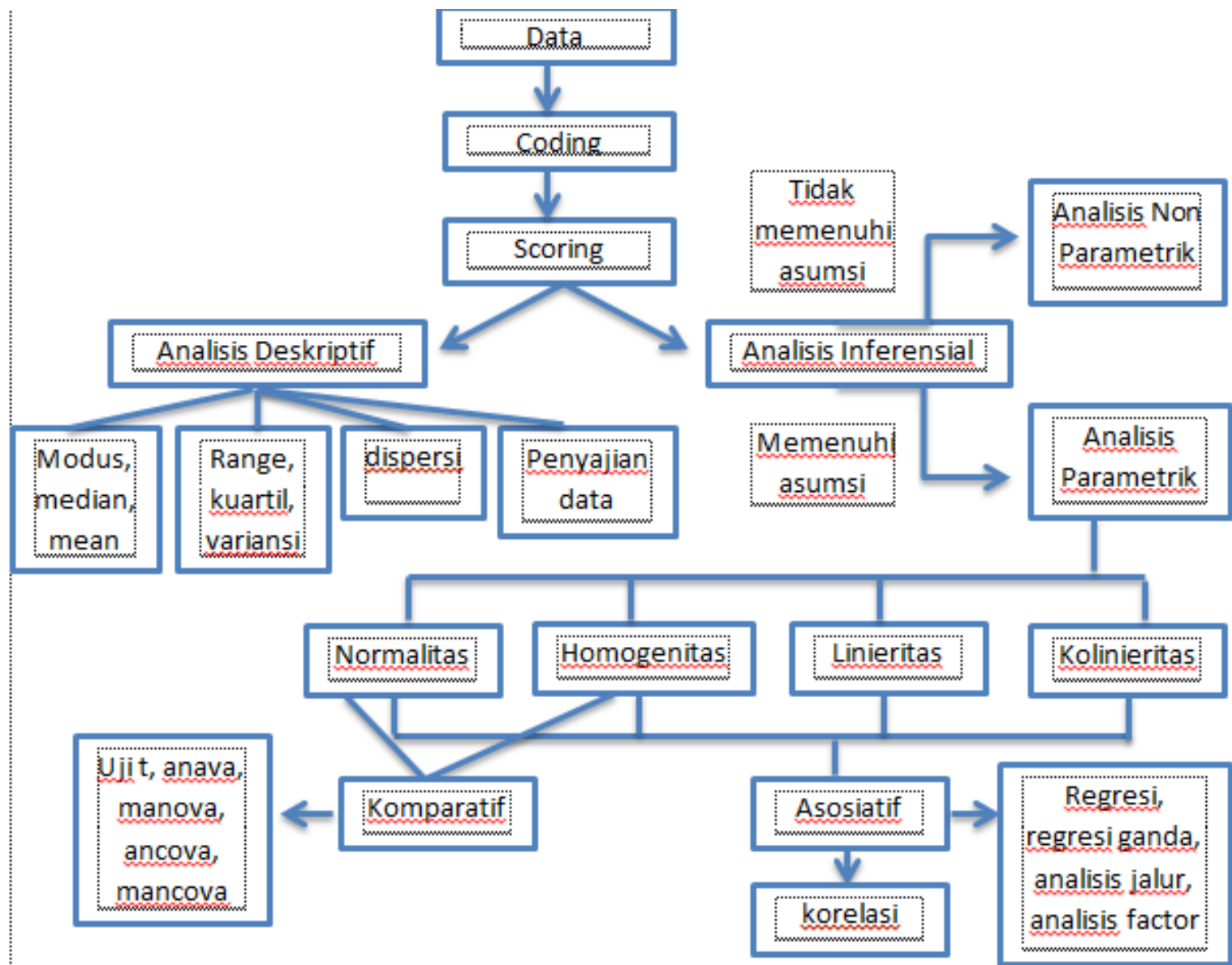
Type Data



Categorical Data

Sampai disini minggu lalu





Teknik Pengujian Data

MACAM DATA	BENTUK HIPOTESIS					
	Deskriptif (Satu Variabel)	Komparatif (dua sampel)		Komparatif (lebih dari dua sampel)		Korelasional (Hubungan)
		Related	Independen	Related	Independen	
Nominal	Binomial χ^2 One Sample	Mc Nemar	Fisher Exact Probability χ^2 Two sample	χ^2 for k sample Cochran Q	χ^2 for k sample	Contingency Coefficient C
Ordinal	Run Test	Wilcoxon matched pairs	Mann-Whitney U test	Friedman	Kruskal-Wallis	Spearman Rank Correlation
Interval Rasio	One sample t-test*	Paired sample t-test*	Independent sample t-test*	One-Way Anova* Two-Way Anova*	Repeated measure Anova*	- Pearson Product Moment*

* Statistik Parametrik

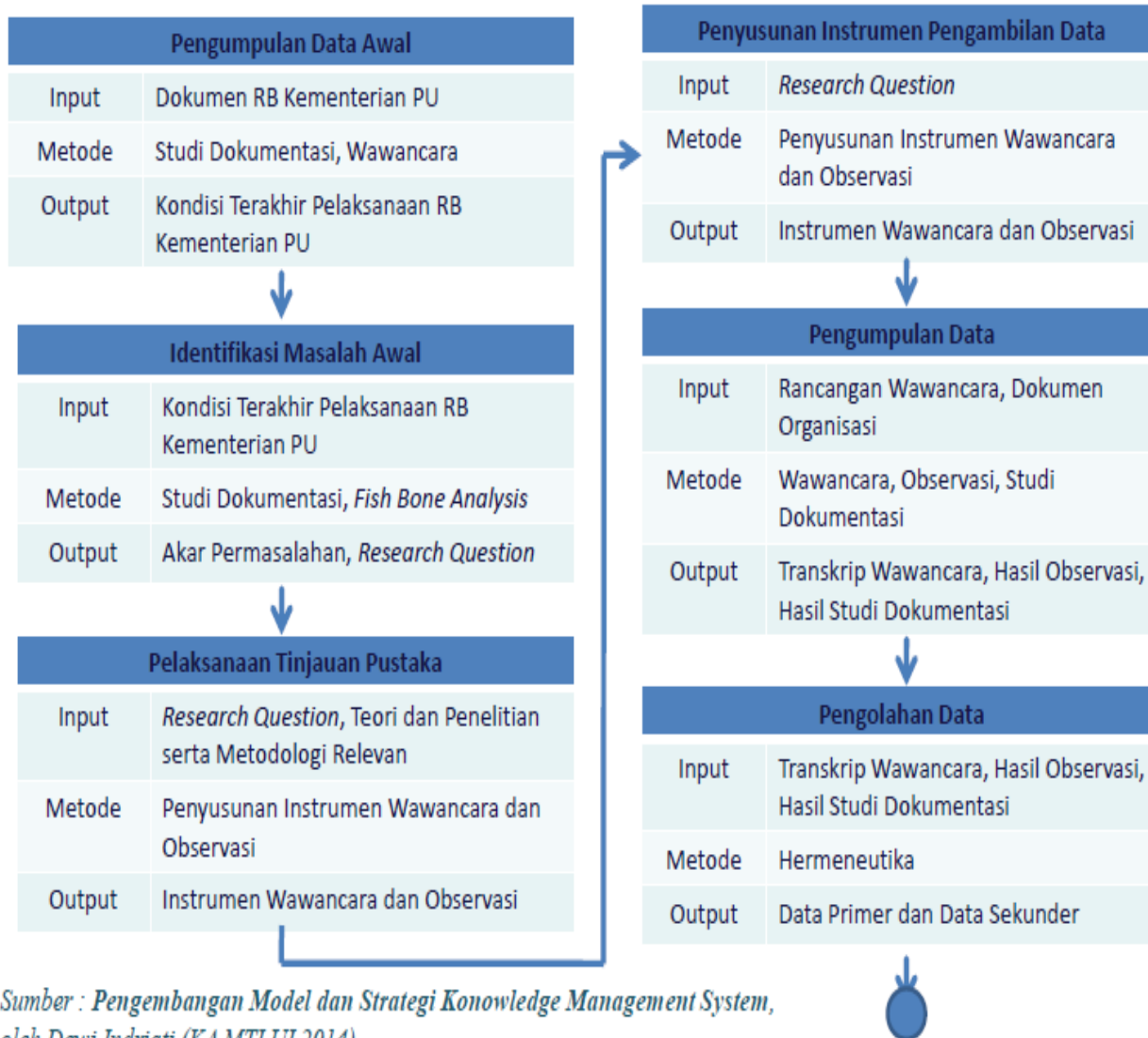
6. Langkah-Langkah Penelitian

- Uraikan **Tahapan Penelitian** yang akan digunakan
 - Langkah-2 tersebut harus mengacu kepada pemecahan permasalahan penelitian pada Bab 1
- Uraikan teknik, metode, proses, prosedur dll., yang digunakan pada **setiap Tahapan**
- Lampirkan instrumen yang digunakan dalam setiap langkah
- Pastikan teknik, metode, proses, dan prosedur yang digunakan sudah terlebih dahulu di bahas pada bagian tinjauan pustaka
- Uraikan hasil yang diharapkan dari setiap langkah

Langkah-Langkah Penelitian

- Setiap tahapan penelitian dijelaskan IPO (Input-Proses-Output).

Metodologi Penelitian



Metodologi Penelitian (lanjutan)

