

Biostatistics 4:

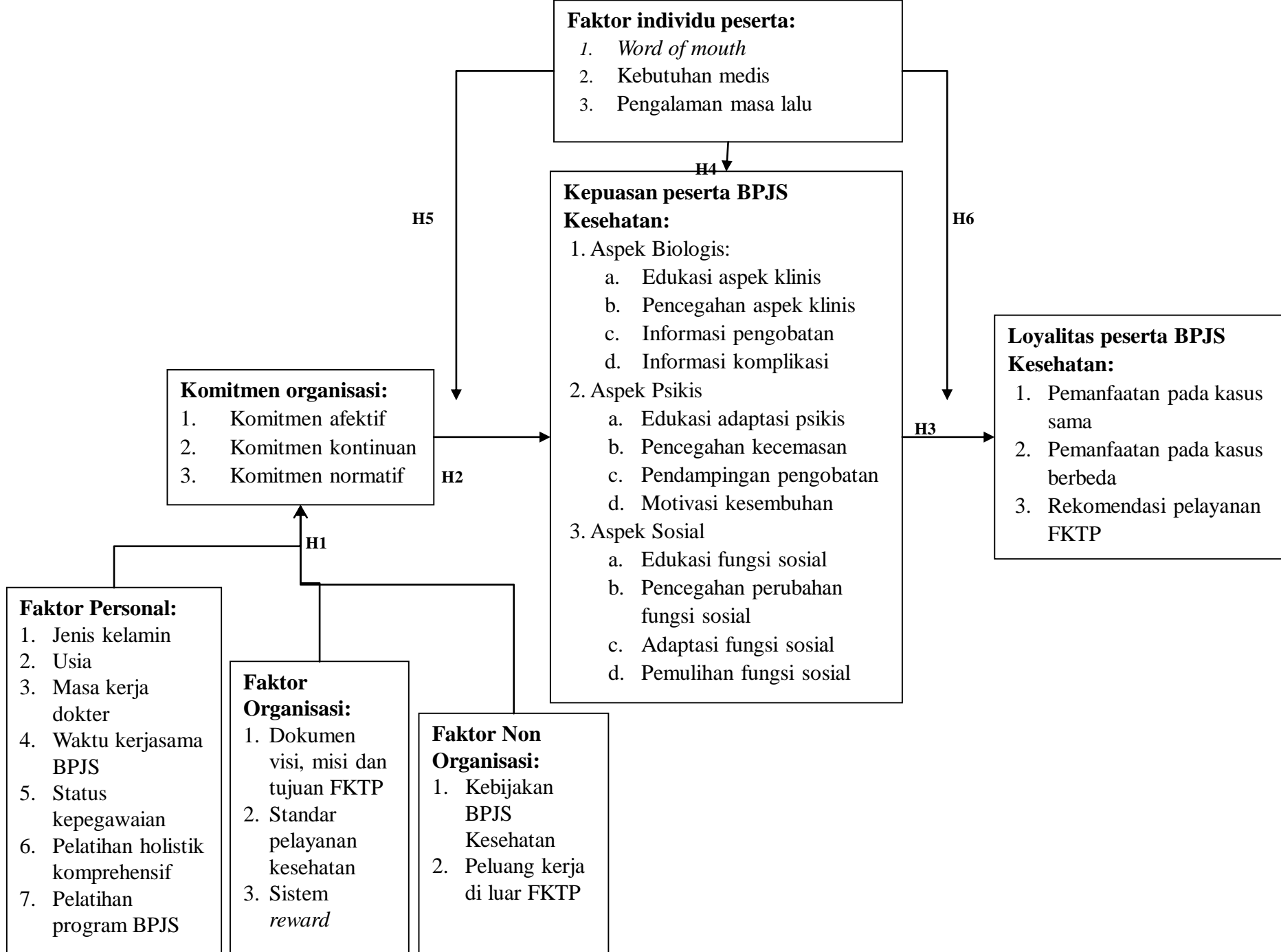
Multivariate Analysis

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Multivariate Analysis

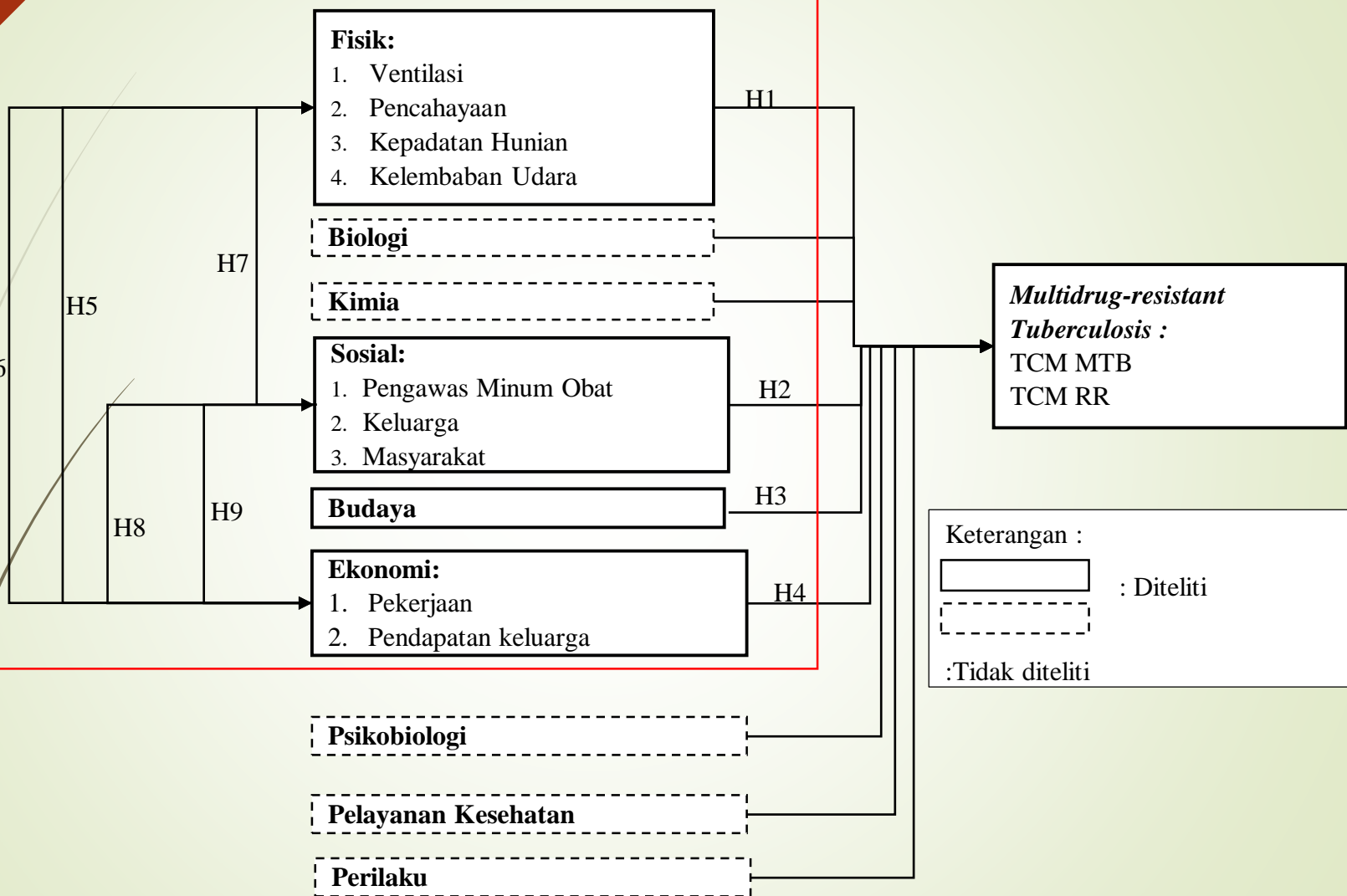
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- Hypothesis analysis of high dimensions, advanced, complex calculations.
- Analysis involving variables in an amount greater than or equal to 3 variables.
- At a minimum, one dependent variable and more than one independent variable, and there is a correlation between one variable with other variables
- The analysis process is done at one time.



Pengaruh Faktor Lingkungan Terhadap Kejadian MDR TB Paru

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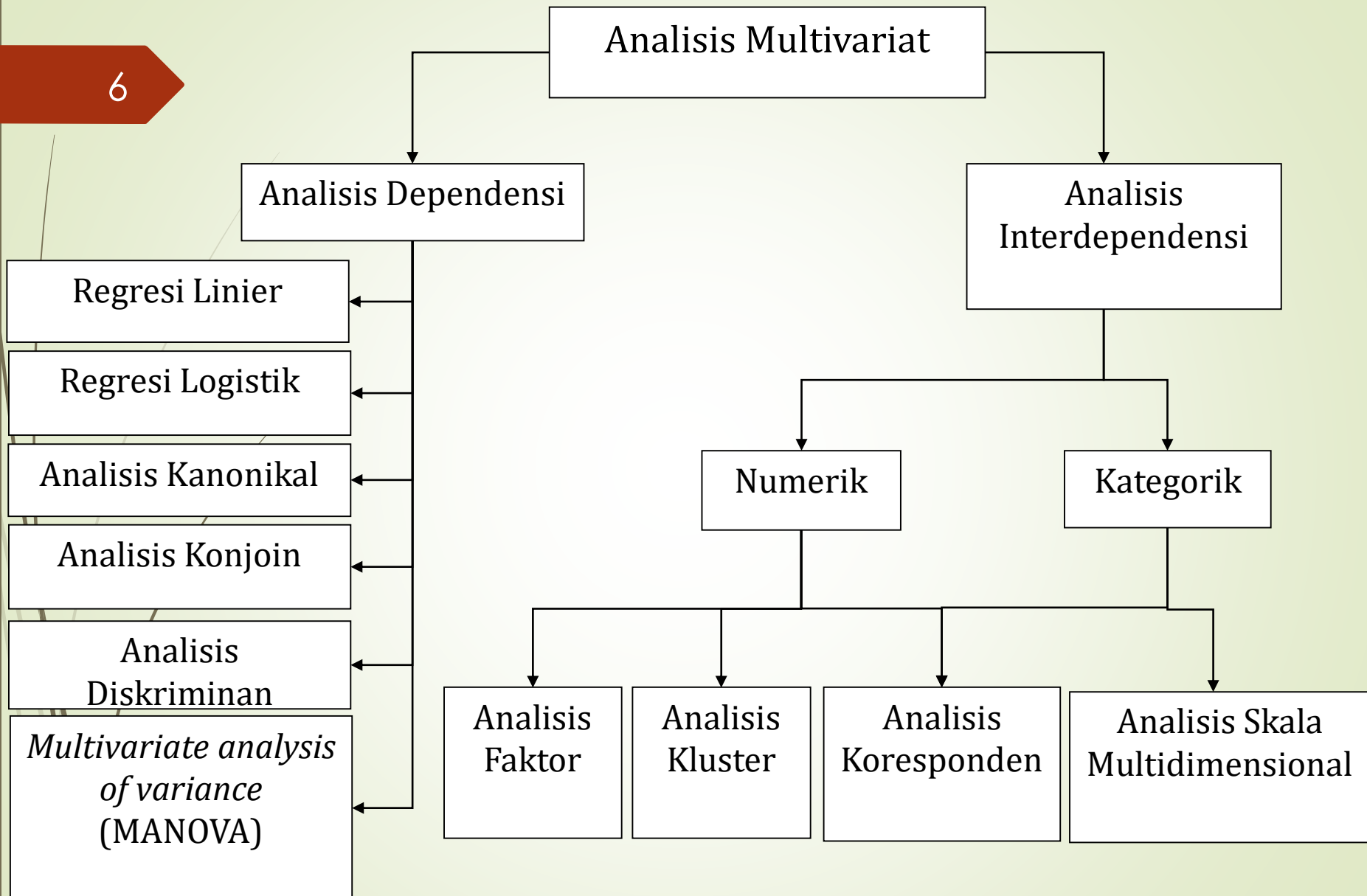
Multivariate Analysis Techniques

Dependency analysis

- The dependent variable is influenced by the independent variable.
- Relationship between two groups of variables.

Interdependence analysis

- The position of each variable is the same.
- The relationship between all variables without regard to the type of variable.



Techniques Analysis	Independent Variable	Dependent Variable	Technique
Dependent Analysis	Categorical	Categorical	Conjoint Analysis
	Categorical/Numeric	Categorical	Logistic Regression
	Categorical	Numeric >1	Multivariate Variant Analysis (MANOVA)
	Categorical/Numeric	Numeric	Linier Regression
	Numeric >1	Categorical	Discriminans Analysis
	Numeric >1	Numeric	Multiple Regression
	Numeric	Numeric >1	Conanical Correlation
Techniques Analysis	Variable 1	Variable 2	Technique
Independent Analysis	Categorical	Categorical	Multidimension Scale Analysis
	Categorical	Numeric	Cluster Analysis

Regression Analysis Step

1. Determine the dependent variable
2. Bivariate analysis of variables dependent-independent →
Test of hypothesis MUST BE RIGHT
3. Multivariate analysis on the variable with $p < 0.25$

Contoh

Penelitian → Analisis faktor pencapaian IPK pada mahasiswa FKUMM angkatan 2016.

Variabel:

- a. Jenis kelamin
- b. Asal sekolah
- c. Tempat tinggal
- d. Kelengkapan sarpras pendukung

► Analisis:

1. Skala data variabel → kategorik
2. Hipotesis → komparasi, tdk berpasangan → Chi Square/Fisher

Variabel	Indikator	IPK ≥ 3.00	IPK < 3.00	p
Jenis Kelamin	L	16	58	0,543
	P	16	60	
Asal sekolah	Jawa	12	18	0,005
	L.Jawa	20	110	
Tempat tinggal	Bersama Ortu	18	34	0,002
	Tdk Bersama	14	94	
Kelengkapan sarpras	Lengkap	15	37	0,231
	Tdk Lkp	17	91	

Structural Model Analysis Multivariat

- ▶ To analyze the simultaneous relationship of dependent and independent variables simultaneously
- ▶ This method can also combine the latent variables → variables whose actual existence cannot be measured directly into the analysis
- ▶ The above conditions do not apply
- ▶ Tools → Lisrel, AMoS (Numeric); Smart PLS (Ordinal)



12 Thesis

Difficult,
confused ??

Own desire, simple,
good process, keep
going, study literature &
the right people

Thank you
Have a good study