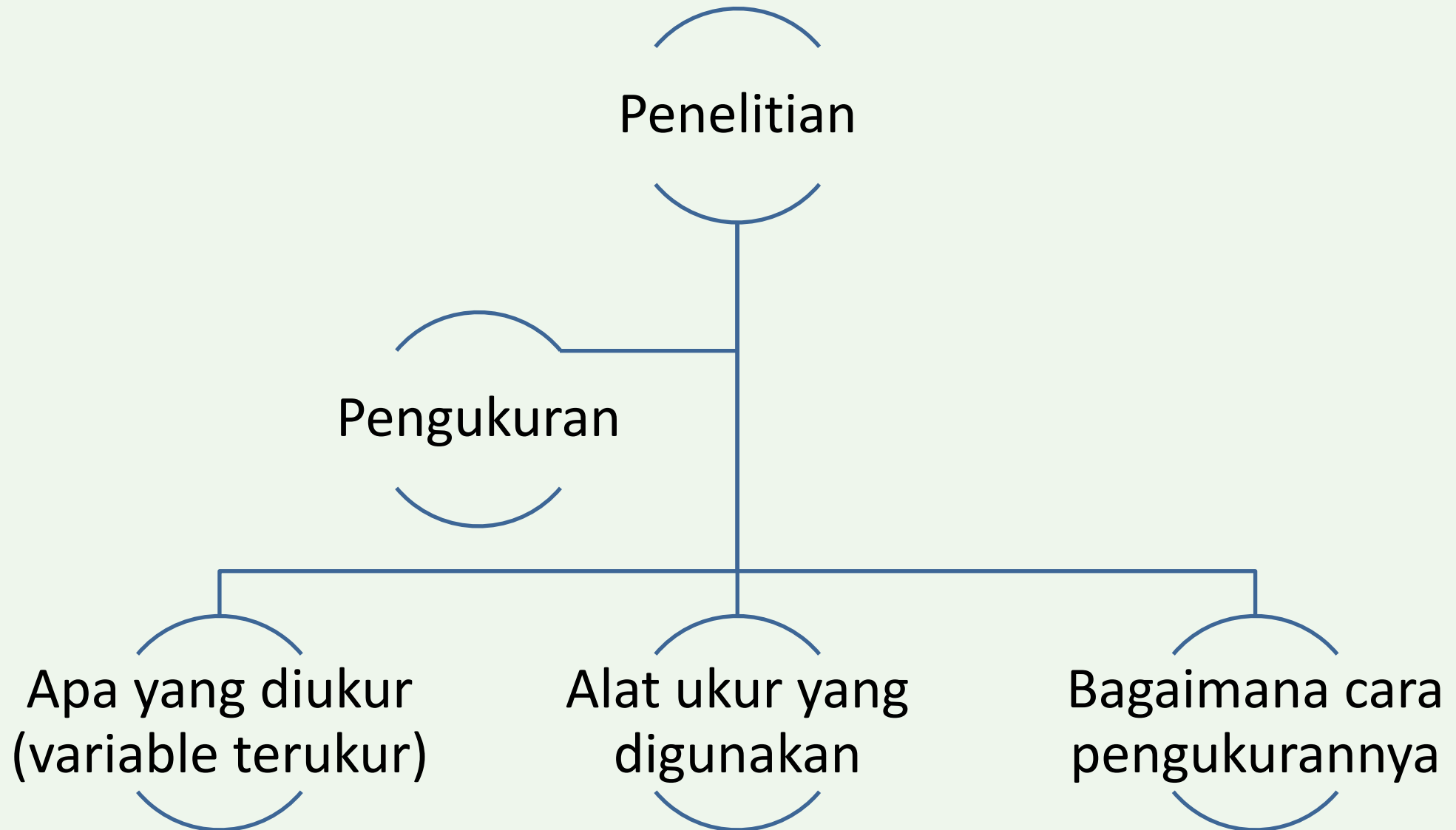




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# UJI VALIDITAS DAN RELIABILITAS

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# Alat Ukur

- **Valid dan reliabel**
- **Objektif**
- **Kemudahan digunakan**
- **Petunjuk-petunjuk khusus → mencatat,  
Menyusun dan menafsirkan hasil**

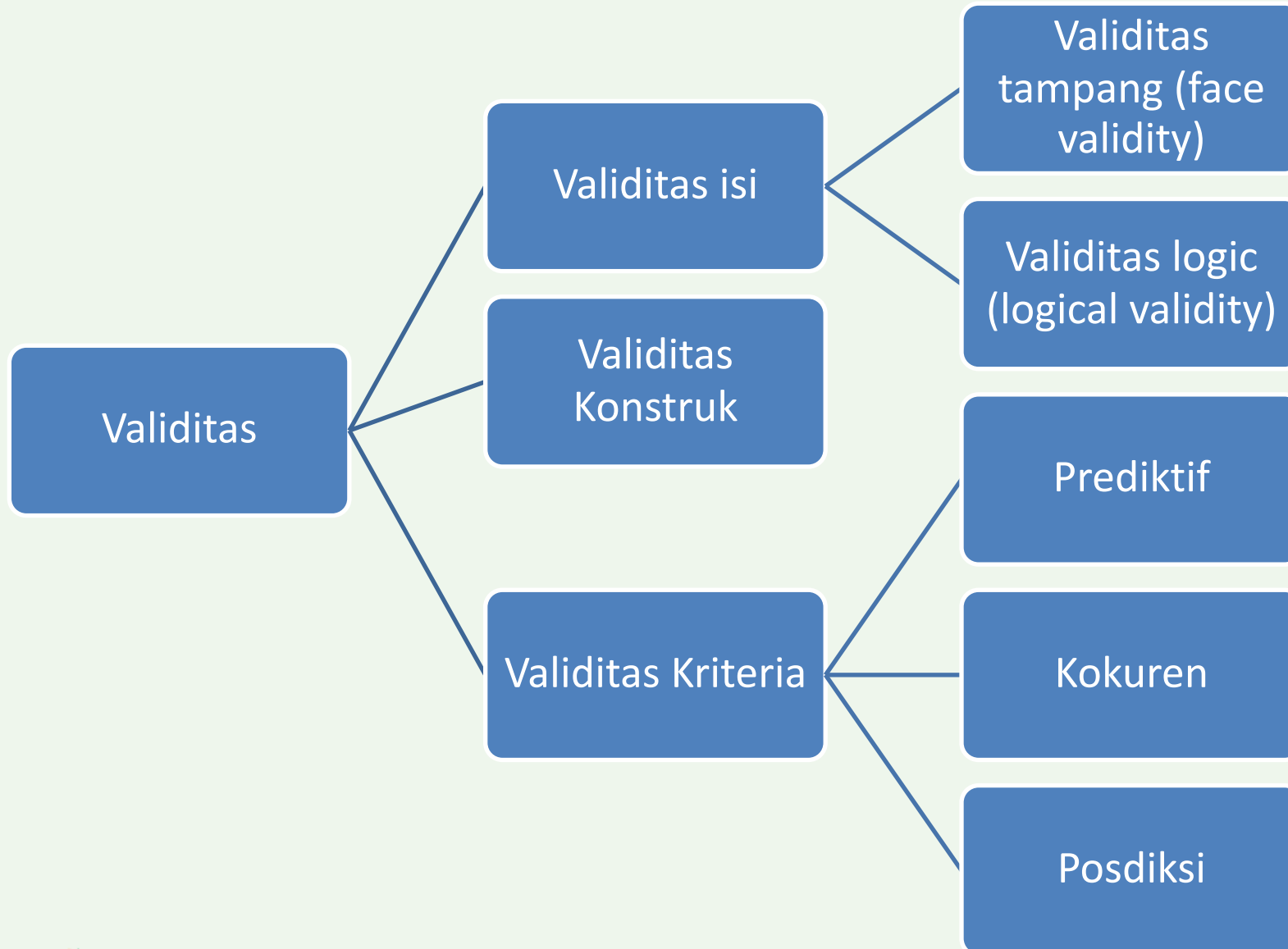


# Validitas

- **Penyesuaian alat pengukur dengan tujuan / fungsi alat pengukur tsb**
- **Indeks yang menunjukkan sejauh mana alat ukur betul-betul mengukur apa yang seharusnya diukur**



# Macam Validitas





# Validitas Isi

- Se jauh mana setiap elemen dalam suatu instrument ukur benar-benar relevan dan merupakan representasi dari konstruk sesuai dengan tujuan pengukuran
- Se jauh mana kelayakan suatu tes sebagai sampel dari domain item yang hendak diukur



# Validitas Isi

## Face Validity

- Bukti validitas, paling rendah signifikansinya
- Penilaian terhadap format penampilan (appearance)
- Penilaian terhadap kesesuaian konteks item dengan tujuan ukur tes

## Validitas logis

- Disebut sebagai validitas sampling
- Sejauh mana item tes merupakan representasi dari ciri-ciri atribut yang hendak diukur
- Validitas logis yang tinggi → suatu tes / alat ukur harus dirancang → hanya berisi item yang relevan dari keseluruhan tes



## Validitas Kontrak

- Validitas kontrak → item-item tes berkorelasi dengan kontrak teoritik yang mendasari penyusunan tes tersebut.
- Prosedur:
  - Hasil komputasi interkorelasi antara berbagai hasil tes dan kemudian diikuti analisis thd matrik korelasi yang diperoleh melalui berbagai metode.
  - Pendekatan *multitrait-multimethod* dan pendekatan *factor analysis*.





# Validitas Kriteria

Menghendaki adanya kriteria eksternal → dijadikan dasar pengujian skor tes

Suatu kriteria → variable perilaku yang akan diprediksikan oleh skor tes atau berupa suatu ukuran lain yang relevan

Dilakukan komputasi koefisien korelasi antara skor tes dengan skor kriteria

$r_{xy}$  → x: skor tes, y: skor kriteria



- **Validitas Prediktif**

1. Penting → tes dimaksudkan untuk berfungsi sebagai prediktor bagi performances di waktu yang akan datang.
2. Contoh → suatu tes untuk seleksi masuk ke perguruan tinggi yg bertujuan untuk menjanging para calon mahasiswa yg mempunyai performance tinggi. Skor tes: skor test sewaktu seleksi masuk. Kriteria validitasi: performance belajar mahasiswa tersebut (Mis: IPK)



- **Validitas Konkuren**

1. Tidak berfungsi sebagai prediktor → ukuran lain yang relevan dengan tujuan tes.
2. Kriteria: setiap hasil ukur yang relevan dengan tujuan.
3. Koefisien korelasi konkuren → korelasi antara skor tes yang divalidasi dengan ukuran kriteria tersebut.
4. Contoh: ketika kita menyusun skala ketrampilan sosial yang baru di uji validitasnya dengan skala ukur ketrampilan sosial yang lain (Social Competence Scale/SCS).



# LANGKAH UJI VALIDITAS ISI

- Lakukan uji penilaian dari panel expert
- Beberapa expert → item dari segi sejauh mana item tersebut mewakili konstruk yang diukur.
- Hasil penilaian expert → formula Aiken's V Dan rasio validitas isi (Lawshe's CVR/content validity ratio).



- Dikembangkan oleh Aiken (1985).
- Menghitung content validity coefficient → hasil penilaian dari panel ahli sebanyak n orang.
- Rentang V: 0 sampai dengan 1
- Rumus
  - $V = \frac{\sum s}{n(c-1)}$ .
  - $s = r - l_o$
  - $l_o$  = angka penilaian validitas yang terendah (misalnya 1)
  - $C$  = angka penilaian validitas tertinggi (misal 5)
  - $r$  = angka yang diberikan oleh peneliti



## Contoh Validitas Isi menggunakan Aiken's V

- Seorang peneliti ingin menguji sebuah kuesioner pendidikan seksual dari 5 item yang dinilai oleh 7 expert.
- Rentang nilai yang diberikan 1 (teredah) dan 5 (tertinggi), sehingga  $n = 7$ ,  $l_0 = 1$  dan  $c = 5$ .



## LANGKAH-LANGKAH

| Expert | Item 1 |   | Item 2 |   | Item 3 |   | Item 4 |   | Item 5 |   |
|--------|--------|---|--------|---|--------|---|--------|---|--------|---|
|        | skor   | s | skor   | s | skor   | s | skor   | s | skor   | s |
| A      | 4      | 3 | 2      | 1 | 4      | 3 | 4      | 3 | 4      | 3 |
| B      | 3      | 2 | 4      | 3 | 4      | 3 | 4      | 3 | 4      | 3 |
| C      | 4      | 3 | 4      | 3 | 2      | 1 | 4      | 3 | 2      | 1 |
| D      | 3      | 2 | 3      | 2 | 4      | 3 | 3      | 2 | 4      | 3 |
| E      | 2      | 1 | 2      | 1 | 2      | 1 | 2      | 1 | 2      | 1 |
| F      | 4      | 3 | 4      | 3 | 4      | 3 | 4      | 3 | 4      | 3 |
| G      | 2      | 1 | 4      | 3 | 4      | 3 | 4      | 3 | 4      | 3 |
| ΣS     | 15     |   | 16     |   | 17     |   | 18     |   | 17     |   |
| V      | 0.536  |   | 0.571  |   | 0.607  |   | 0.643  |   | 0.607  |   |

- Koefisien sebesar 0,536; 0,571; 0,607; 0,6 dan 0,6 → memiliki validitas isi baik dan mendukung isi tes secara keseluruhan



## Validitas Isi : Lawshe's CVR

- Nilai CVR: antara -1 sampai dengan +1
- $CVR > 0,00$  berarti bahwa 50% lebih dari SME dalam panel menyatakan item tersebut esensial.
- Semakin lebih besar CVR dari angka 0 → semakin esensial dan semakin tinggi validitas isinya.
- Rumus:
  - $CVR = (2n_e/n) - 1$
  - CVR= content validity ratio
  - $N_e$  = banyaknya SME yang menilai suatu items “esensial”
  - n = jumlah SME yang melakukan penilaian.





## Contoh CVR:

- Seorang penelitian ingin menguji validitas isi dari 1 item pertanyaan dari kuesioner pendidikan seksual. Jumlah SME : 12, dan 8 SME menilai item esensial.
  - n: 12, ne: 8
  - CVR:  $(2(8)/12)-1$
  - CVR: 0.33
    - CVR 0.33 → lebih dari 0.00 → 50% lebih dari SME menyatakan item esensial dan memiliki validitas isi yang baik.



## Contoh Uji CVR yang dilanjutkan uji CVI

- Menguji rata-rata dari CVR semua item → CVI (content validity index).
- Komputasi CVI → dilakukan pada item-item yang dinyatakan memiliki CVR yang memuaskan.
- Interpretasi laporan: nilai CVI dan rentang nilai CVR item-item yang terpilih.
- Rumus;
  - CVI:  $(\sum \text{CVR})/k$
  - K: banyaknya item.



## Uji Validitas menggunakan SPSS

- Pearson Product Moment → mengkorelasikan masing-masing item dengan total skor.
- Dasar pengambilan keputusan
  - $R_{hitung} > R_{tabel} \rightarrow$  valid
  - $R_{hitung} < R_{tabel} \rightarrow$  tidak valid



## Uji Validitas: Skor efikasi diri pasien kanker

- Jumlah item instrument penelitian : 38
- Jumlah sampel: 114



# Langkah 1

The screenshot shows the SPSS Statistics Data Editor window in Variable View. The window title is "Untitled1 [DataSet0] - IBM SPSS Statistics Data Editor". The menu bar includes: Apple icon, SPSS Statistics, File, Edit, View, Data, Transform, Analyze, Direct Marketing, Graphs, Utilities, Add-ons, and Wind. The toolbar contains icons for file operations, navigation, and analysis. The main area is a table with the following columns: Name, Type, Width, Decimals, Label, Values, Missing, Columns, Align, Measure, and Role. The data is as follows:

|    | Name       | Type    | Width | Decimals | Label | Values | Missing | Columns | Align | Measure | Role  |
|----|------------|---------|-------|----------|-------|--------|---------|---------|-------|---------|-------|
| 1  | item_1     | Numeric | 8     | 0        |       | None   | None    |         | Right | Scale   | Input |
| 2  | item_2     | Numeric | 8     | 0        |       | None   | None    | 8       | Right | Scale   | Input |
| 3  | item_3     | Numeric | 8     | 0        |       | None   | None    | 8       | Right | Scale   | Input |
| 4  | item_4     | Numeric | 8     | 0        |       | None   | None    | 8       | Right | Scale   | Input |
| 5  | item_5     | Numeric | 8     | 0        |       | None   | None    | 8       | Right | Scale   | Input |
| 6  | item_38    | Numeric | 8     | 0        |       | None   | None    | 8       | Right | Scale   | Input |
| 7  | totalscore | Numeric | 8     | 0        |       | None   | None    | 8       | Right | Scale   | Input |
| 8  | VAR00003   | Numeric | 8     | 0        |       | None   | None    | 8       | Right | Unknown | Input |
| 9  |            |         |       |          |       |        |         |         |       |         |       |
| 10 |            |         |       |          |       |        |         |         |       |         |       |
| 11 |            |         |       |          |       |        |         |         |       |         |       |
| 12 |            |         |       |          |       |        |         |         |       |         |       |
| 13 |            |         |       |          |       |        |         |         |       |         |       |
| 14 |            |         |       |          |       |        |         |         |       |         |       |
| 15 |            |         |       |          |       |        |         |         |       |         |       |
| 16 |            |         |       |          |       |        |         |         |       |         |       |
| 17 |            |         |       |          |       |        |         |         |       |         |       |
| 18 |            |         |       |          |       |        |         |         |       |         |       |
| 19 |            |         |       |          |       |        |         |         |       |         |       |
| 20 |            |         |       |          |       |        |         |         |       |         |       |
| 21 |            |         |       |          |       |        |         |         |       |         |       |
| 22 |            |         |       |          |       |        |         |         |       |         |       |
| 23 |            |         |       |          |       |        |         |         |       |         |       |

At the bottom of the window, there are two tabs: "Data View" and "Variable View", with "Variable View" currently selected.



## Langkah 2

The screenshot shows the SPSS Statistics interface with a data table. The table has 21 rows and 10 columns. The columns are labeled: item\_1, item\_2, item\_3, item\_4, item\_5, item\_38, totalscore, VAR00003, var, and var. The data is as follows:

|    | item_1 | item_2 | item_3 | item_4 | item_5 | item_38 | totalscore | VAR00003 | var | var |
|----|--------|--------|--------|--------|--------|---------|------------|----------|-----|-----|
| 1  | 2      | 3      | 2      | 1      | 3      | 2       | 3          | 0        |     |     |
| 2  | 4      | 2      | 2      | 0      | 2      | 2       | 2          | 0        |     |     |
| 3  | 3      | 3      | 3      | 1      | 3      | 3       | 1          | 0        |     |     |
| 4  | 3      | 3      | 2      | 1      | 3      | 2       | 3          | 0        |     |     |
| 5  | 3      | 2      | 1      | 2      | 1      | 1       | 1          | 0        |     |     |
| 6  | 4      | 3      | 3      | 2      | 4      | 2       | 1          | 0        |     |     |
| 7  | 0      | 4      | 2      | 3      | 4      | 0       | 0          | 0        |     |     |
| 8  | 2      | 3      | 2      | 1      | 3      | 2       | 3          | 2        |     |     |
| 9  | 3      | 3      | 3      | 3      | 2      | 2       | 2          | 1        |     |     |
| 10 | 3      | 1      | 2      | 0      | 3      | 2       | 2          | 2        |     |     |
| 11 | 3      | 3      | 2      | 1      | 2      | 1       | 2          | 1        |     |     |
| 12 | 3      | 3      | 2      | 1      | 2      | 0       | 2          | 1        |     |     |
| 13 | 4      | 3      | 2      | 1      | 1      | 0       | 1          | 3        |     |     |
| 14 | 4      | 3      | 2      | 2      | 3      | 2       | 2          | 1        |     |     |
| 15 | 3      | 4      | 3      | 2      | 2      | 1       | 3          | 2        |     |     |
| 16 | 4      | 2      | 2      | 3      | 4      | 3       | 2          | 2        |     |     |
| 17 | 4      | 1      | 2      | 2      | 3      | 2       | 0          | 0        |     |     |
| 18 | 3      | 3      | 2      | 0      | 1      | 2       | 3          | 2        |     |     |
| 19 | 3      | 3      | 2      | 2      | 2      | 2       | 2          | 0        |     |     |
| 20 | 3      | 3      | 2      | 0      | 3      | 2       | 2          | 3        |     |     |
| 21 | 2      | 3      | 3      | 3      | 3      | 1       | 2          | 2        |     |     |

At the bottom of the window, there are two tabs: "Data View" (selected) and "Variable View".



## Langkah 3

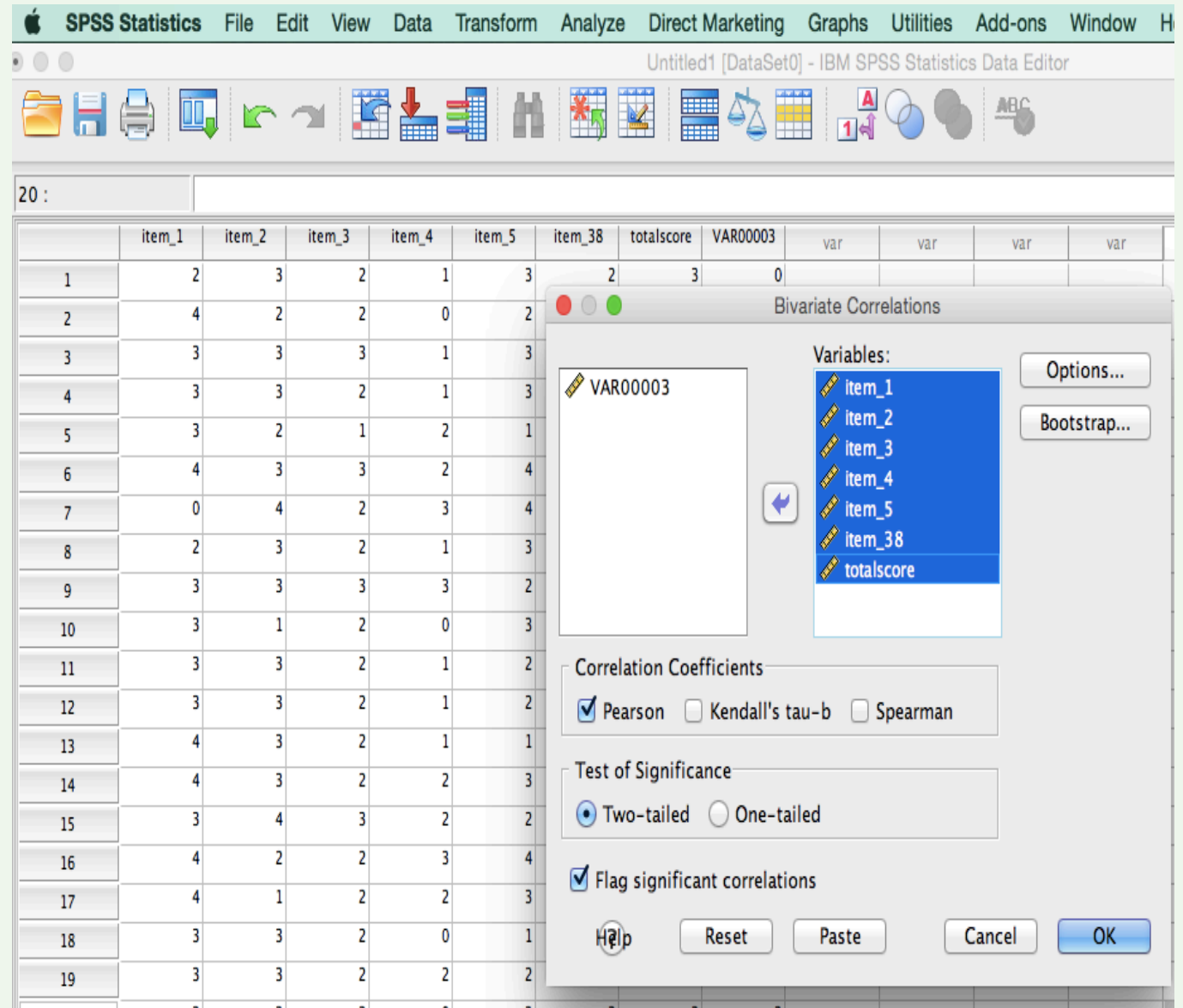
The screenshot shows the SPSS Statistics interface. The 'Analyze' menu is open, and the 'Correlate' option is selected. The data table below shows 21 rows and 6 columns.

|    | item_1 | item_2 | item_3 | item_4 | item_5 |   |   |   |
|----|--------|--------|--------|--------|--------|---|---|---|
| 1  | 2      | 3      | 2      | 1      | 3      |   |   |   |
| 2  | 4      | 2      | 2      | 0      | 2      |   |   |   |
| 3  | 3      | 3      | 3      | 1      | 3      |   |   |   |
| 4  | 3      | 3      | 2      | 1      | 3      |   |   |   |
| 5  | 3      | 2      | 1      | 2      | 1      |   |   |   |
| 6  | 4      | 3      | 3      | 2      | 4      |   |   |   |
| 7  | 0      | 4      | 2      | 3      | 4      |   |   |   |
| 8  | 2      | 3      | 2      | 1      | 3      |   |   |   |
| 9  | 3      | 3      | 3      | 3      | 2      |   |   |   |
| 10 | 3      | 1      | 2      | 0      | 3      |   |   |   |
| 11 | 3      | 3      | 2      | 1      | 2      |   |   |   |
| 12 | 3      | 3      | 2      | 1      | 2      |   |   |   |
| 13 | 4      | 3      | 2      | 1      | 1      |   |   |   |
| 14 | 4      | 3      | 2      | 2      | 3      |   |   |   |
| 15 | 3      | 4      | 3      | 2      | 2      | 1 | 3 | 2 |
| 16 | 4      | 2      | 2      | 3      | 4      | 3 | 2 | 2 |
| 17 | 4      | 1      | 2      | 2      | 3      | 2 | 0 | 0 |
| 18 | 3      | 3      | 2      | 0      | 1      | 2 | 3 | 2 |
| 19 | 3      | 3      | 2      | 2      | 2      | 2 | 2 | 0 |
| 20 | 3      | 3      | 2      | 0      | 3      | 2 | 2 | 3 |
| 21 | 2      | 3      | 3      | 3      | 3      | 1 | 2 | 2 |

## Langkah 4

### Dialog bivariate correlation

- Masukkan semua item/variabel → kotak variabel.
- Centang Pearson pd correlation coefficient.
- Centang two-tail → test of significance
- Centang Flag significant correlation.
- Klik → OK



SPSS Statistics File Edit View Data Transform Analyze Direct Marketing Graphs Utilities Add-ons Window H

Untitled1 [DataSet0] - IBM SPSS Statistics Data Editor

|    | item_1 | item_2 | item_3 | item_4 | item_5 | item_38 | totalscore | VAR00003 | var | var | var | var |
|----|--------|--------|--------|--------|--------|---------|------------|----------|-----|-----|-----|-----|
| 1  | 2      | 3      | 2      | 1      | 3      | 2       | 3          | 0        |     |     |     |     |
| 2  | 4      | 2      | 2      | 0      | 2      |         |            |          |     |     |     |     |
| 3  | 3      | 3      | 3      | 1      | 3      |         |            |          |     |     |     |     |
| 4  | 3      | 3      | 2      | 1      | 3      |         |            |          |     |     |     |     |
| 5  | 3      | 2      | 1      | 2      | 1      |         |            |          |     |     |     |     |
| 6  | 4      | 3      | 3      | 2      | 4      |         |            |          |     |     |     |     |
| 7  | 0      | 4      | 2      | 3      | 4      |         |            |          |     |     |     |     |
| 8  | 2      | 3      | 2      | 1      | 3      |         |            |          |     |     |     |     |
| 9  | 3      | 3      | 3      | 3      | 2      |         |            |          |     |     |     |     |
| 10 | 3      | 1      | 2      | 0      | 3      |         |            |          |     |     |     |     |
| 11 | 3      | 3      | 2      | 1      | 2      |         |            |          |     |     |     |     |
| 12 | 3      | 3      | 2      | 1      | 2      |         |            |          |     |     |     |     |
| 13 | 4      | 3      | 2      | 1      | 1      |         |            |          |     |     |     |     |
| 14 | 4      | 3      | 2      | 2      | 3      |         |            |          |     |     |     |     |
| 15 | 3      | 4      | 3      | 2      | 2      |         |            |          |     |     |     |     |
| 16 | 4      | 2      | 2      | 3      | 4      |         |            |          |     |     |     |     |
| 17 | 4      | 1      | 2      | 2      | 3      |         |            |          |     |     |     |     |
| 18 | 3      | 3      | 2      | 0      | 1      |         |            |          |     |     |     |     |
| 19 | 3      | 3      | 2      | 2      | 2      |         |            |          |     |     |     |     |

Bivariate Correlations

Variables:

- VAR00003
- item\_1
- item\_2
- item\_3
- item\_4
- item\_5
- item\_38
- totalscore

Options...

Bootstrap...

Correlation Coefficients

Pearson  Kendall's tau-b  Spearman

Test of Significance

Two-tailed  One-tailed

Flag significant correlations

Help Reset Paste Cancel OK



# Output

SPSS Statistics File Edit View Data Transform Insert Format Analyze Direct Marketing Graphs Utilities Add-ons Wi

Output2 [Document2] - IBM SPSS Statistics Viewer

Output

- Log
- Correlations
  - Title
  - Notes
  - Active Dataset
  - Correlations

[DataSet0]

**Correlations**

|            |                     | item_1 | item_2  | item_3 | item_4  | item_5 | item_6  | item_7  | totalscore |
|------------|---------------------|--------|---------|--------|---------|--------|---------|---------|------------|
| item_1     | Pearson Correlation | 1      | .102    | .240** | -.140   | .129   | .037    | .118    | .288*      |
|            | Sig. (2-tailed)     |        | .278    | .010   | .140    | .171   | .697    | .211    | .002       |
|            | N                   | 114    | 114     | 114    | 113     | 114    | 114     | 114     | 114        |
| item_2     | Pearson Correlation | .102   | 1       | .441** | .010    | .256** | -.241** | .154    | .349**     |
|            | Sig. (2-tailed)     | .278   |         | .000   | .917    | .006   | .010    | .102    | .000       |
|            | N                   | 114    | 114     | 114    | 113     | 114    | 114     | 114     | 114        |
| item_3     | Pearson Correlation | .240** | .441**  | 1      | .084    | .212*  | -.091   | .094    | .467**     |
|            | Sig. (2-tailed)     | .010   | .000    |        | .376    | .024   | .333    | .318    | .000       |
|            | N                   | 114    | 114     | 114    | 113     | 114    | 114     | 114     | 114        |
| item_4     | Pearson Correlation | -.140  | .010    | .084   | 1       | -.204  | .292**  | -.272** | .426**     |
|            | Sig. (2-tailed)     | .140   | .917    | .376   |         | .030   | .002    | .004    | .000       |
|            | N                   | 113    | 113     | 113    | 113     | 113    | 113     | 113     | 113        |
| item_5     | Pearson Correlation | .129   | .256**  | .212*  | -.204   | 1      | -.024   | .248**  | .352**     |
|            | Sig. (2-tailed)     | .171   | .006    | .024   | .030    |        | .799    | .008    | .000       |
|            | N                   | 114    | 114     | 114    | 113     | 114    | 114     | 114     | 114        |
| item_6     | Pearson Correlation | .037   | -.241** | -.091  | .292**  | -.024  | 1       | -.066   | .426**     |
|            | Sig. (2-tailed)     | .697   | .010    | .333   | .002    | .799   |         | .487    | .000       |
|            | N                   | 114    | 114     | 114    | 113     | 114    | 114     | 114     | 114        |
| item_7     | Pearson Correlation | .118   | .154    | .094   | -.272** | .248** | -.066   | 1       | .331**     |
|            | Sig. (2-tailed)     | .211   | .102    | .318   | .004    | .008   | .487    |         | .000       |
|            | N                   | 114    | 114     | 114    | 113     | 114    | 114     | 114     | 114        |
| totalscore | Pearson Correlation | .288** | .349**  | .467** | .426**  | .352** | .426**  | .331**  | 1          |
|            | Sig. (2-tailed)     | .002   | .000    | .000   | .000    | .000   | .000    | .000    |            |
|            | N                   | 114    | 114     | 114    | 113     | 114    | 114     | 114     | 114        |

\*\* . Correlation is significant at the 0.01 level (2-tailed).  
\* . Correlation is significant at the 0.05 level (2-tailed).



## Membaca Hasil

- Cari  $R_{\text{tabel}}$
- $N = 114$  dengan signifikan 5%  $\rightarrow$  adalah 0,2
- Bandingkan  $R_{\text{hitung}}$  (dari spss) dengan  $R_{\text{tabel}}$

| No item | rx <sub>y</sub> | rtabel | Ket   |
|---------|-----------------|--------|-------|
| 1       | 0.288           | 0.2    | valid |
| 2       | 0.349           | 0.2    | valid |
| 3       | 0.467           | 0.2    | valid |
| 4       | 0.426           | 0.2    | valid |
| 5       | 0.352           | 0.2    | valid |
| 6       | 0.426           | 0.2    | valid |
| 7       | 0.331           | 0.2    | valid |



# UJI RELIABILITAS CARA MELAKUKAN DI SPSS



- **Alpha Cronbach** → merupakan uji reliabilitas yang digunakan untuk konsistensi alat ukur sehingga bisa digunakan berulang kali dengan alat ukur yang sama
- Dasar Pengambilan Keputusan:
  1. Nilai  $\alpha > R_{\text{tabel}}$  → item reliabel dan konsisten
  2. Nilai  $\alpha < R_{\text{tabel}}$  → item tidak reliabel dan konsisten



## Cara Uji Reliabilitas dengan SPSS

- Menguji reliabilitas efikasi diri 100 anak dengan jumlah item dalam instrument penelitian : 7
- Langkah 1-2 sama dengan validitas.
  - Isi variabel view
  - Masukkan data ke kotak data



# Langkah - langkah

The screenshot displays the SPSS Statistics interface. The 'Analyze' menu is open, showing various statistical options. The 'Scale' option is highlighted in blue. The background window shows a data editor with the following data:

|     | item_1 | item_2 | item_3 | item_4 | item_5 |
|-----|--------|--------|--------|--------|--------|
| 111 | 3      | 3      | 3      | 0      | 3      |
| 112 | 3      | 3      | 2      | 1      | 3      |
| 113 | 3      | 3      | 3      | 0      | 3      |
| 114 | 3      | 3      | 2      | 2      | 3      |
| 115 | .      | .      | .      | .      | .      |
| 116 |        |        |        |        |        |
| 117 |        |        |        |        |        |
| 118 |        |        |        |        |        |
| 119 |        |        |        |        |        |
| 120 |        |        |        |        |        |
| 121 |        |        |        |        |        |
| 122 |        |        |        |        |        |
| 123 |        |        |        |        |        |
| 124 |        |        |        |        |        |
| 125 |        |        |        |        |        |

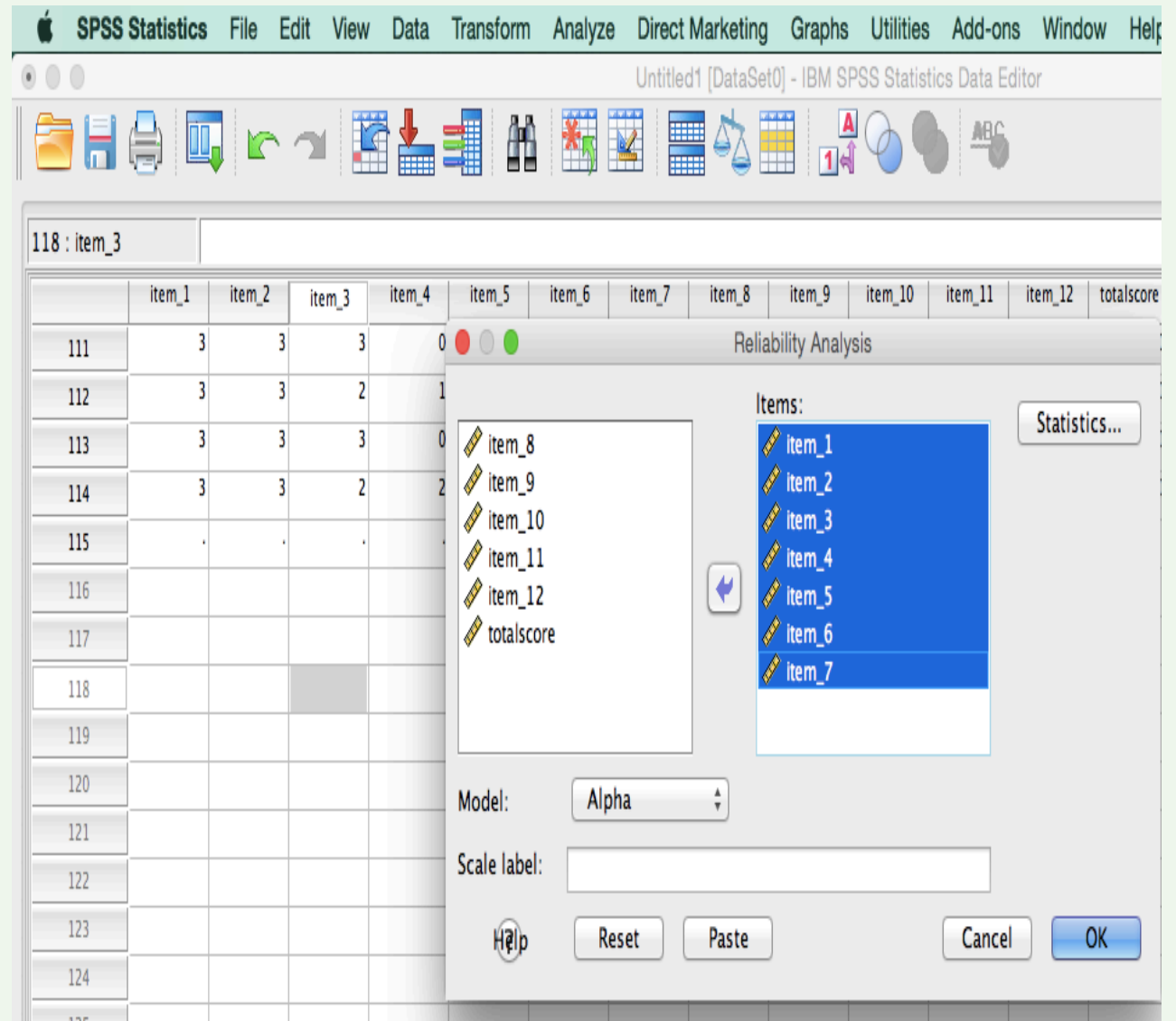
The 'Analyze' menu options are:

- Reports
- Descriptive Statistics
- Tables
- Compare Means
- General Linear Model
- Generalized Linear Models
- Mixed Models
- Correlate
- Regression
- Loglinear
- Neural Networks
- Classify
- Dimension Reduction
- Scale**
- Nonparametric Tests
- Forecasting
- Survival
- Multiple Response
- Missing Value Analysis...
- Multiple Imputation
- Complex Samples
- Quality Control
- ROC Curve...

The 'Scale' submenu options are:

- Reliability Analysis...
- Multidimensional Unfolding (PREFSCAL)...
- Multidimensional Scaling (PROXSCAL)...
- Multidimensional Scaling (ALSCAL)...

- Masukkan variabel  
→ kotak item.
- Klik alpha pada  
kotak model
- Klik → Ok



SPSS Statistics File Edit View Data Transform Analyze Direct Marketing Graphs Utilities Add-ons Window Help

Untitled1 [DataSet0] - IBM SPSS Statistics Data Editor

118 : item\_3

|     | item_1 | item_2 | item_3 | item_4 | item_5 | item_6 | item_7 | item_8 | item_9 | item_10 | item_11 | item_12 | totalscore |
|-----|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|------------|
| 111 | 3      | 3      | 3      | 0      |        |        |        |        |        |         |         |         |            |
| 112 | 3      | 3      | 2      | 1      |        |        |        |        |        |         |         |         |            |
| 113 | 3      | 3      | 3      | 0      |        |        |        |        |        |         |         |         |            |
| 114 | 3      | 3      | 2      | 2      |        |        |        |        |        |         |         |         |            |
| 115 | .      | .      | .      |        |        |        |        |        |        |         |         |         |            |
| 116 |        |        |        |        |        |        |        |        |        |         |         |         |            |
| 117 |        |        |        |        |        |        |        |        |        |         |         |         |            |
| 118 |        |        |        |        |        |        |        |        |        |         |         |         |            |
| 119 |        |        |        |        |        |        |        |        |        |         |         |         |            |
| 120 |        |        |        |        |        |        |        |        |        |         |         |         |            |
| 121 |        |        |        |        |        |        |        |        |        |         |         |         |            |
| 122 |        |        |        |        |        |        |        |        |        |         |         |         |            |
| 123 |        |        |        |        |        |        |        |        |        |         |         |         |            |
| 124 |        |        |        |        |        |        |        |        |        |         |         |         |            |
| 125 |        |        |        |        |        |        |        |        |        |         |         |         |            |

Reliability Analysis

Items:

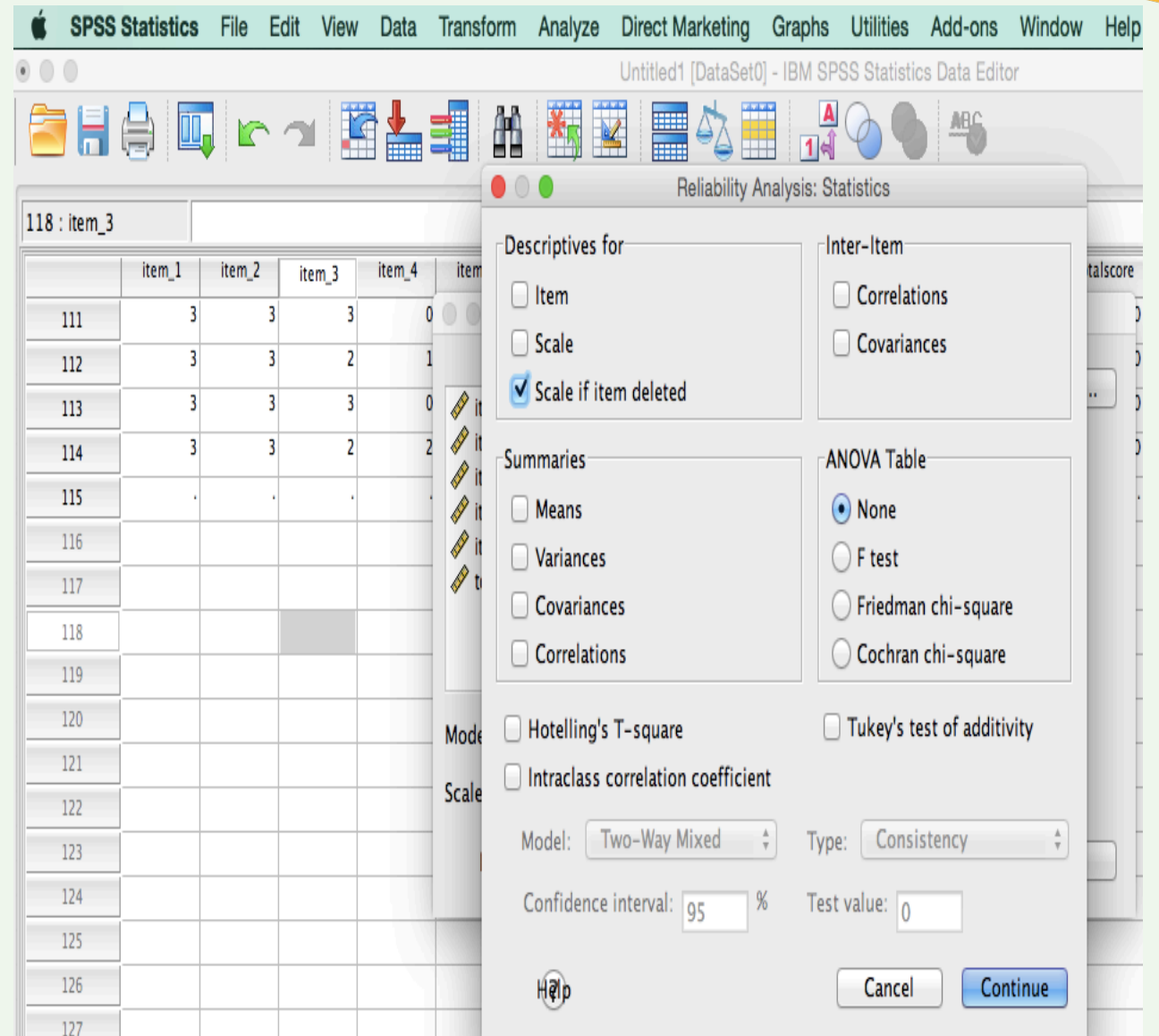
- item\_1
- item\_2
- item\_3
- item\_4
- item\_5
- item\_6
- item\_7

Model: Alpha

Scale label:

Help Reset Paste Cancel OK

- Klik kotak statistic
- Centang Scale if item delete → pada kotak descriptif for
- Klik continou
- Untuk mengakhiri → klik Ok → output



SPSS Statistics File Edit View Data Transform Analyze Direct Marketing Graphs Utilities Add-ons Window Help

Untitled1 [DataSet0] - IBM SPSS Statistics Data Editor

118 : item\_3

|     | item_1 | item_2 | item_3 | item_4 | item_5 |
|-----|--------|--------|--------|--------|--------|
| 111 | 3      | 3      | 3      | 0      | 0      |
| 112 | 3      | 3      | 2      | 1      | 1      |
| 113 | 3      | 3      | 3      | 0      | 0      |
| 114 | 3      | 3      | 2      | 2      | 2      |
| 115 | .      | .      | .      | .      | .      |
| 116 |        |        |        |        |        |
| 117 |        |        |        |        |        |
| 118 |        |        |        |        |        |
| 119 |        |        |        |        |        |
| 120 |        |        |        |        |        |
| 121 |        |        |        |        |        |
| 122 |        |        |        |        |        |
| 123 |        |        |        |        |        |
| 124 |        |        |        |        |        |
| 125 |        |        |        |        |        |
| 126 |        |        |        |        |        |
| 127 |        |        |        |        |        |

Reliability Analysis: Statistics

Descriptives for

- Item
- Scale
- Scale if item deleted

Inter-Item

- Correlations
- Covariances

Summaries

- Means
- Variances
- Covariances
- Correlations

ANOVA Table

- None
- F test
- Friedman chi-square
- Cochran chi-square

Hotelling's T-square

Tukey's test of additivity

Intraclass correlation coefficient

Model: Two-Way Mixed

Type: Consistency

Confidence interval: 95 %

Test value: 0

Help Cancel Continue





## OUTPUT

- Nilai alpha : 0.57
- Cari  $R_{tabel}$  → jumlah sampel 100 pd sig: 5% → Mis : 0.3.
- Nilai alpha:
  - 0.577 → > dari  $R_{tabel}$  → alat ukur reliabel.
  - Ada referensi lain → nilai alpha > 0,6 → reliabel.

### Reliability

[DataSet0]

#### Scale: ALL VARIABLES

##### Case Processing Summary

|       |                       | N   | %     |
|-------|-----------------------|-----|-------|
| Cases | Valid                 | 113 | 98.3  |
|       | Excluded <sup>a</sup> | 2   | 1.7   |
|       | Total                 | 115 | 100.0 |

a. Listwise deletion based on all variables in the procedure.

##### Reliability Statistics

| Cronbach's Alpha | N of Items |
|------------------|------------|
| .577             | 8          |



- Semua item 1 – 7 :  $> 0.53$ .
- Nilai alpha min 0.53 lebih besar dari  $R_{\text{tabel}}$  (0.3)  $\rightarrow$  item reliabel.

Item-Total Statistics

|            | Scale Mean if Item Deleted | Scale Variance if Item Deleted | Corrected Item-Total Correlation | Cronbach's Alpha if Item Deleted |
|------------|----------------------------|--------------------------------|----------------------------------|----------------------------------|
| item_1     | 30.7876                    | 23.115                         | .225                             | .564                             |
| item_2     | 30.9823                    | 22.857                         | .292                             | .554                             |
| item_3     | 31.5310                    | 22.537                         | .427                             | .539                             |
| item_4     | 32.4248                    | 22.247                         | .223                             | .561                             |
| item_5     | 31.0000                    | 22.411                         | .281                             | .551                             |
| item_6     | 32.0885                    | 21.849                         | .291                             | .546                             |
| item_7     | 31.3363                    | 22.618                         | .221                             | .562                             |
| totalscore | 15.9912                    | 5.330                          | .871                             | .248                             |



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# ESTIMASI DAN UJI HIPOTESIS

**Dzakiyatul Fahmi Mumtaz, M.Kep**  
**Disampaikan pada Kuliah MK Biostatistika**  
**Februari 2021**



# CONTOH RUMUSAN HIPOTESIS PENELITIAN

## Judul Penelitian:

Pengaruh terapi otot progresif terhadap Status ASA pasien post operasi laparatomi di RSUD Sleman Yogyakarta

## Hipotesis Null ( $H_0$ ):

Pemberian terapi otot progresif tidak mempengaruhi status ASA pasien pos operasi laparatomi di RSUD Sleman Yograkarta

## Hipotesis Alternatif ( $H_a$ ):

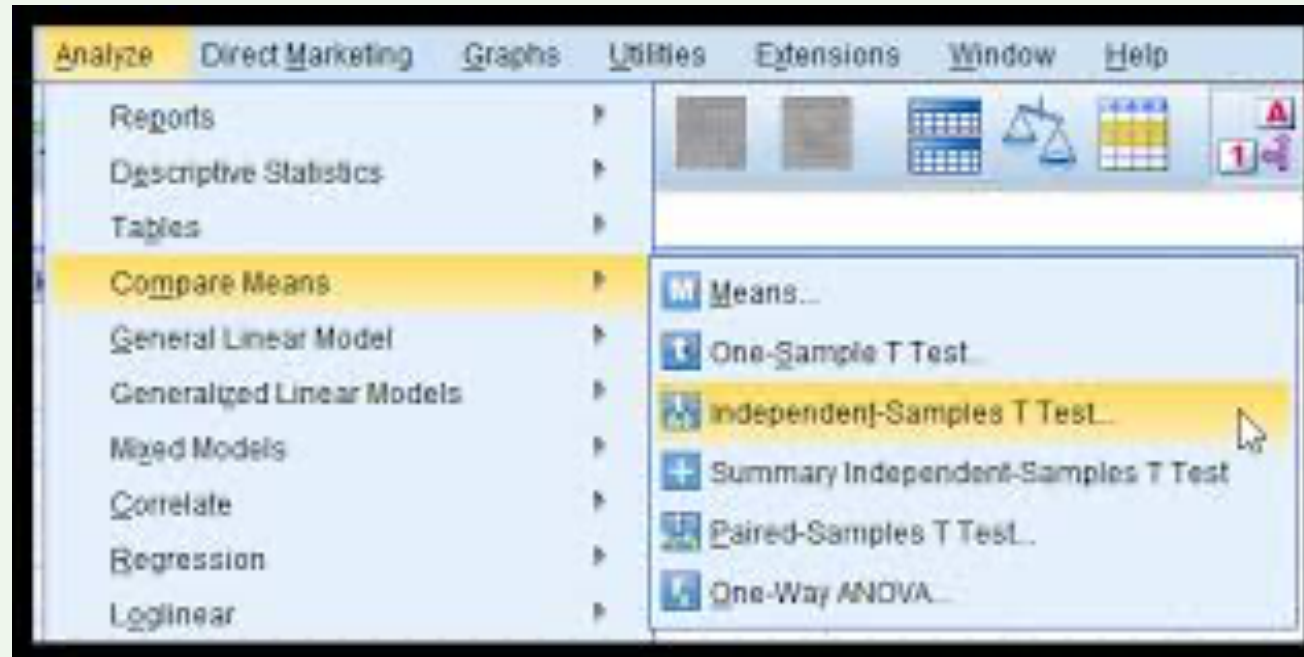
Pemberian terapi otot progresif mempengaruhi status ASA pasien post operasi laparatomi di RSUD Sleman Yogyakarta.

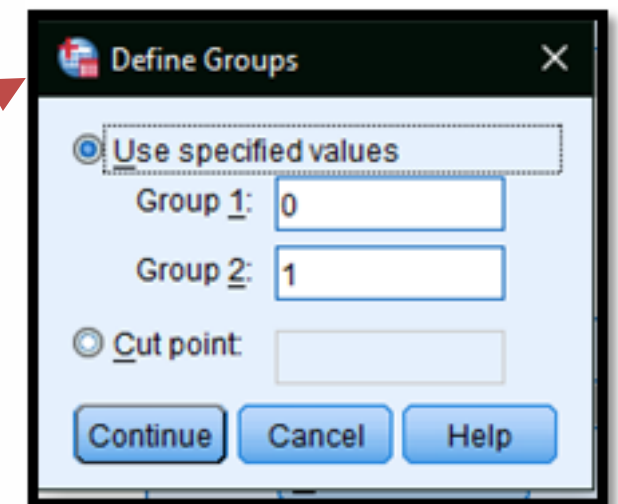
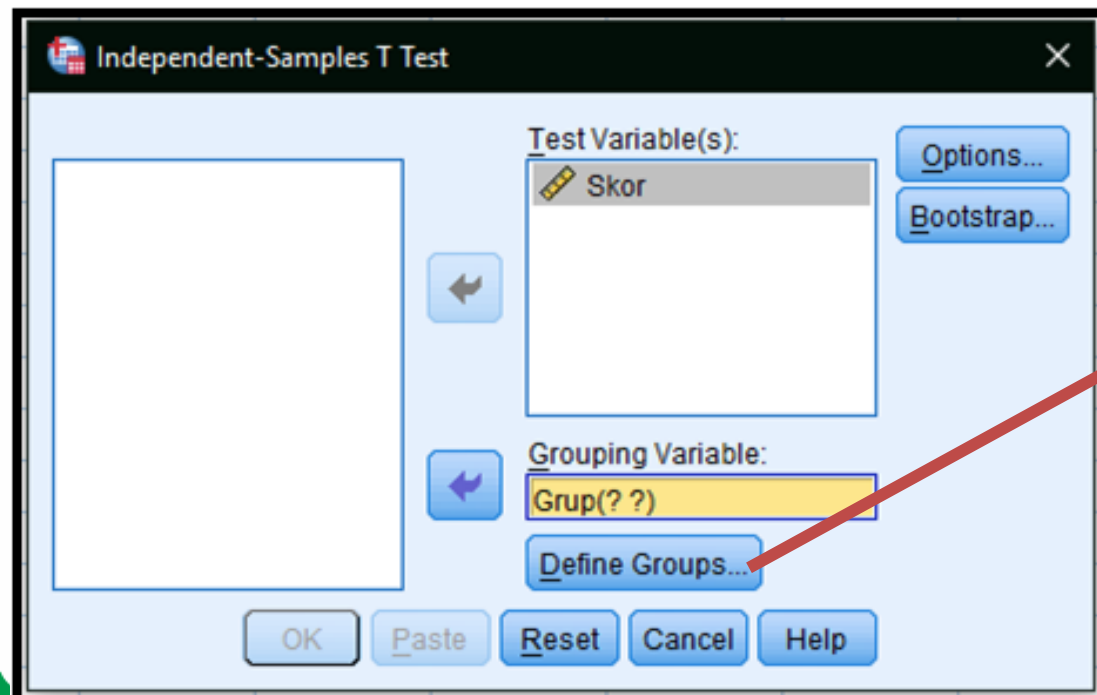
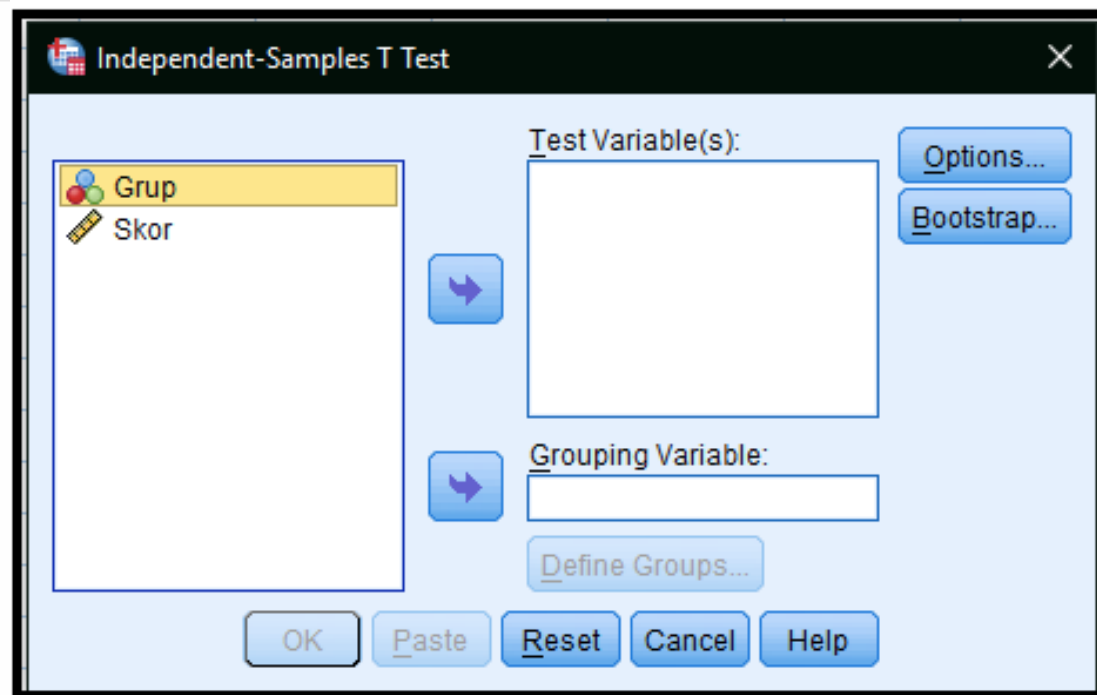


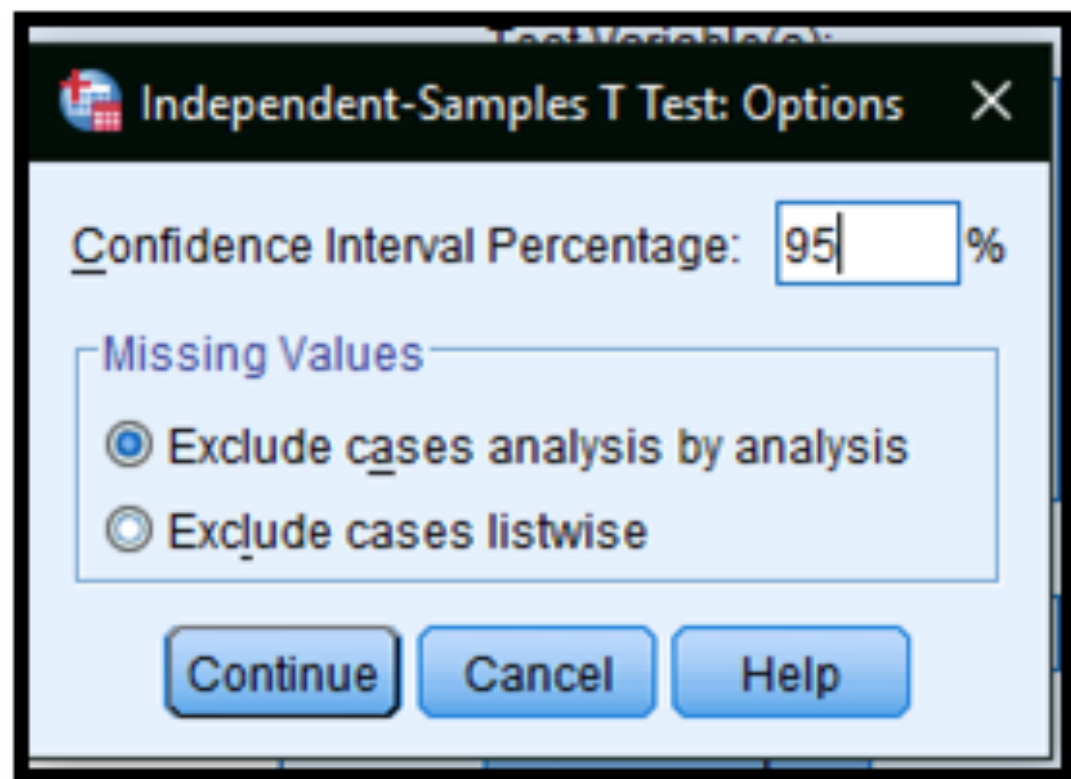
# HIPOTESIS 1 MEAN

Jika penelitian tersebut hanya ada 1 kelompok yang diteliti, dengan diteliti pada saat post tindakan terapi otot progresif

Menggunakan → **Independent sampel T test**









# INDEPENDENT SAMPLES T TEST

Group Statistics

|                  | jenis obat | N  | Mean    | Std. Deviation | Std. Error Mean |
|------------------|------------|----|---------|----------------|-----------------|
| kecepatan_sembuh | Baru       | 30 | 35.9000 | 5.04018        | .92021          |
|                  | Standar    | 40 | 39.0750 | 4.79523        | .75819          |

Independent Samples Test

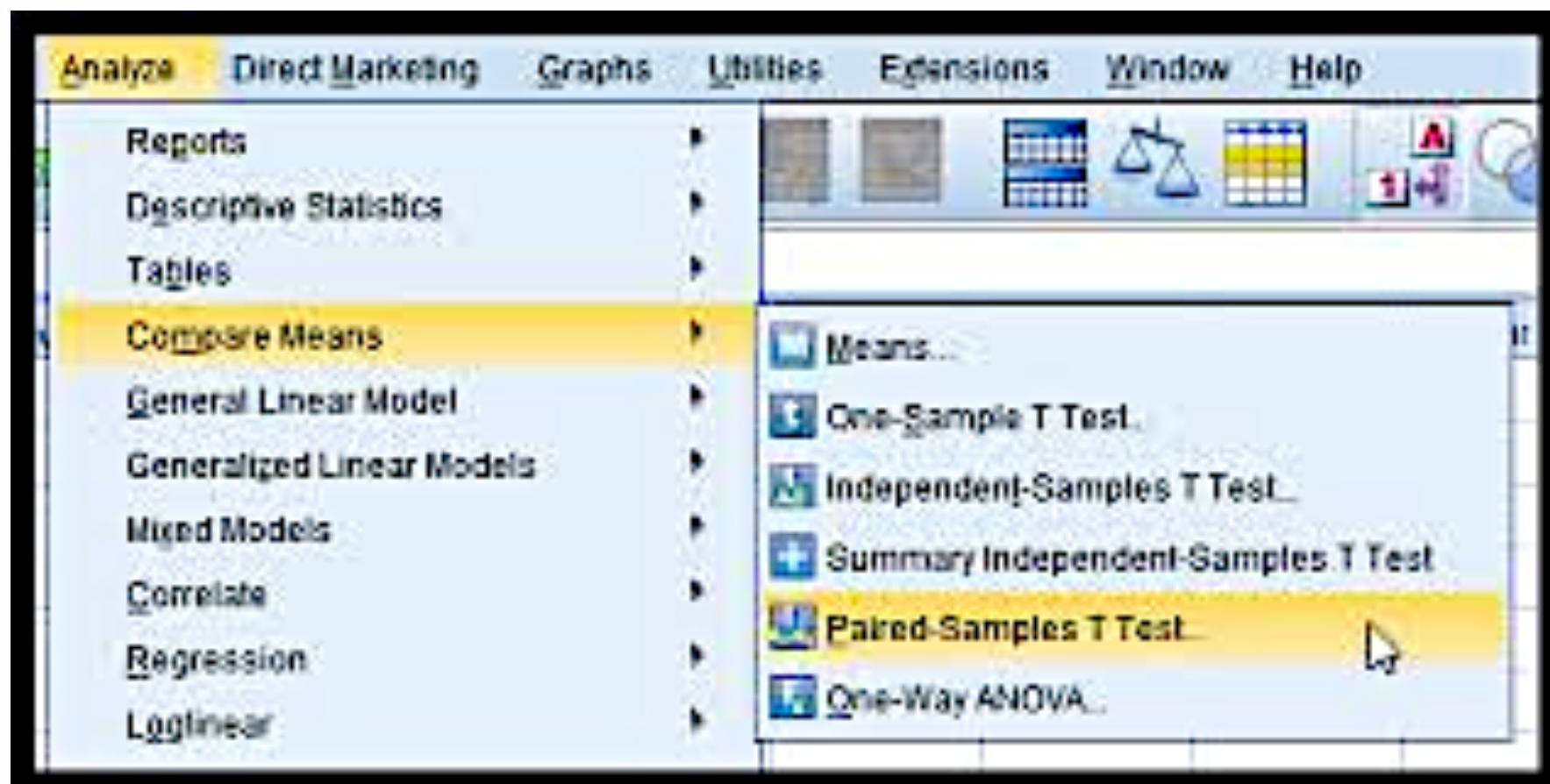
|                  |                             | Levene's Test for Equality of Variances |      | t-test for Equality of Means |        |                 |                 |                       |   |         |
|------------------|-----------------------------|---|------|------------------------------|--------|-----------------|-----------------|-----------------------|---|---------|
|                  |                             | F                                       | Sig. | t                            | df     | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference |         |
|                  |                             |   |      |                              |        |                 |                 |                       | Lower                                     | Upper   |
| kecepatan_sembuh | Equal variances assumed     | .336                                    | .564 | -2.682                       | 68     | .009            | -3.17500        | 1.18375               | -5.53714                                  | -.81286 |
|                  | Equal variances not assumed |   |      | -2.683                       | 60.877 | .010            | -3.17500        | 1.19232               | -5.55930                                  | -.79070 |

Jika hasil Levene Test  $>0,05$  maka data homogen atau sama. Sehingga jika homogen maka kita melihat "equal variances assume" (kotak biru) jika nilai sig  $>0,05$  maka  $H_0$  diterima dan  $H_a$  ditolak

# UJI HIPOTESIS 2 MEAN

- Jika dari judul tadi, kita membuat penelitian kita menjadi 2 kelompok: 1 kelompok diberikan usual care dan 1 kelompok diberikan usual care + terapi otot progresif →

**Paired sample T Test**



# PAIRED SAMPLES T TEST

Paired Samples Statistics

|        |  | Mean     | N  | Std. Deviation | Std. Error Mean |
|--------|--|----------|----|----------------|-----------------|
| Pair 1 | serum kolesterol sebelum diberi perlakuan      | 250.9333 | 15 | 32.71187       | 8.44617         |
|        | serum kolesterol sesudah mengikuti program dit | 233.1333 | 15 | 32.05769       | 8.27726         |

Paired Samples Test

|        |  | Paired Differences |                |                 |   | t        | df    | Sig. (2-tailed) |       |
|--------|--|--------------------|----------------|-----------------|---|----------|-------|-----------------|-------|
|        |  | Mean               | Std. Deviation | Std. Error Mean | 95% Confidence Interval of the Difference |          |       |                 |       |
|        |  |                    |                |                 | Lower                                     |          |       |                 | Upper |
| Pair 1 | serum kolesterol sebelum diberi perlakuan - serum kolesterol sesudah mengikuti program dit | 17.80000           | 18.65169       | 4.81585         | 7.47104                                   | 28.12896 | 3.696 | 14              | .002  |

Jika nilai Sig < 0,05 maka  $H_0$  ditolak dan  $H_a$  diterima