

Pengolahan Statistik secara Praktis  
dengan *jamovi*

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# Short Bio



**DR. Adi Wijaya, MKom**

[CAPTJ, PMEC, SFC, ISO/IEC 27001 ISA]

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I am a **lecturer** and **research fellow** at the Universitas Indonesia Maju (UIMA) Jakarta. Apart from that, I am also involved in **data science**, **data governance**, and **software development**. Received a **Doctorate in Electrical Engineering** (2021) at the *Dept. of Electrical and Information Engineering*, Universitas Gadjah Mada. My research topics are: **information processing**, **data mining and machine learning**, and **health-related informatics** including **brain-computer interface**.

## Expertise:



App. & Use Case Pro & Master  
Machine Learning Pro & Master  
Data Engineering Pro



R Programming  
Data Mining  
Data Scientist  
Project Management  
Software Testing  
SDLC



Data Governance Foundation



Certified ATLAS.ti Prof. Trainer Junior



Project Management Essentials Certified



Scrum Fundamentals Certified



ISO/IEC 27001 Information Security Associate



# Outline

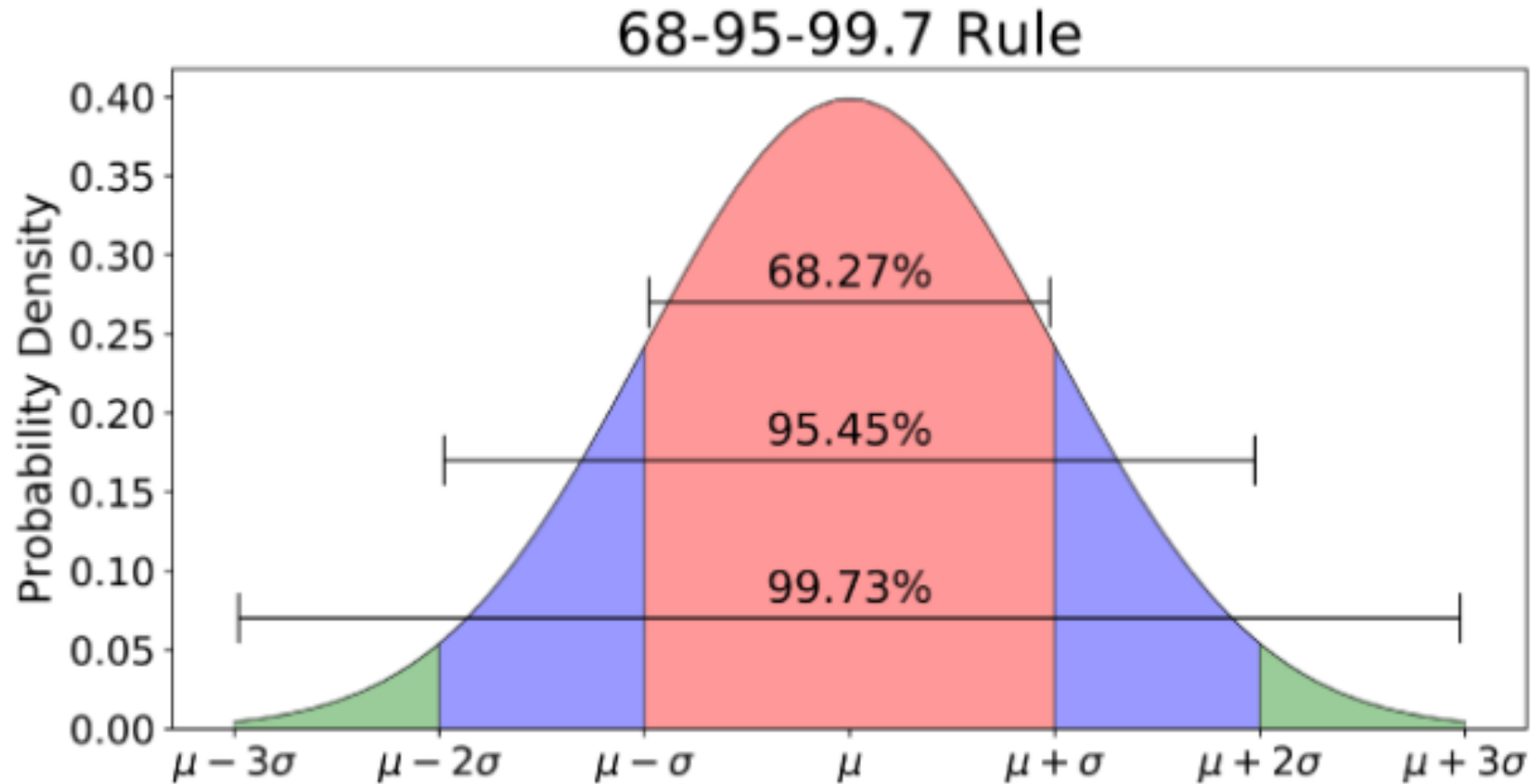


- ▶ Statistic at glance
- ▶ Why *jamovi*
- ▶ Statistical test in *jamovi*
- ▶ *jamovi* in Action



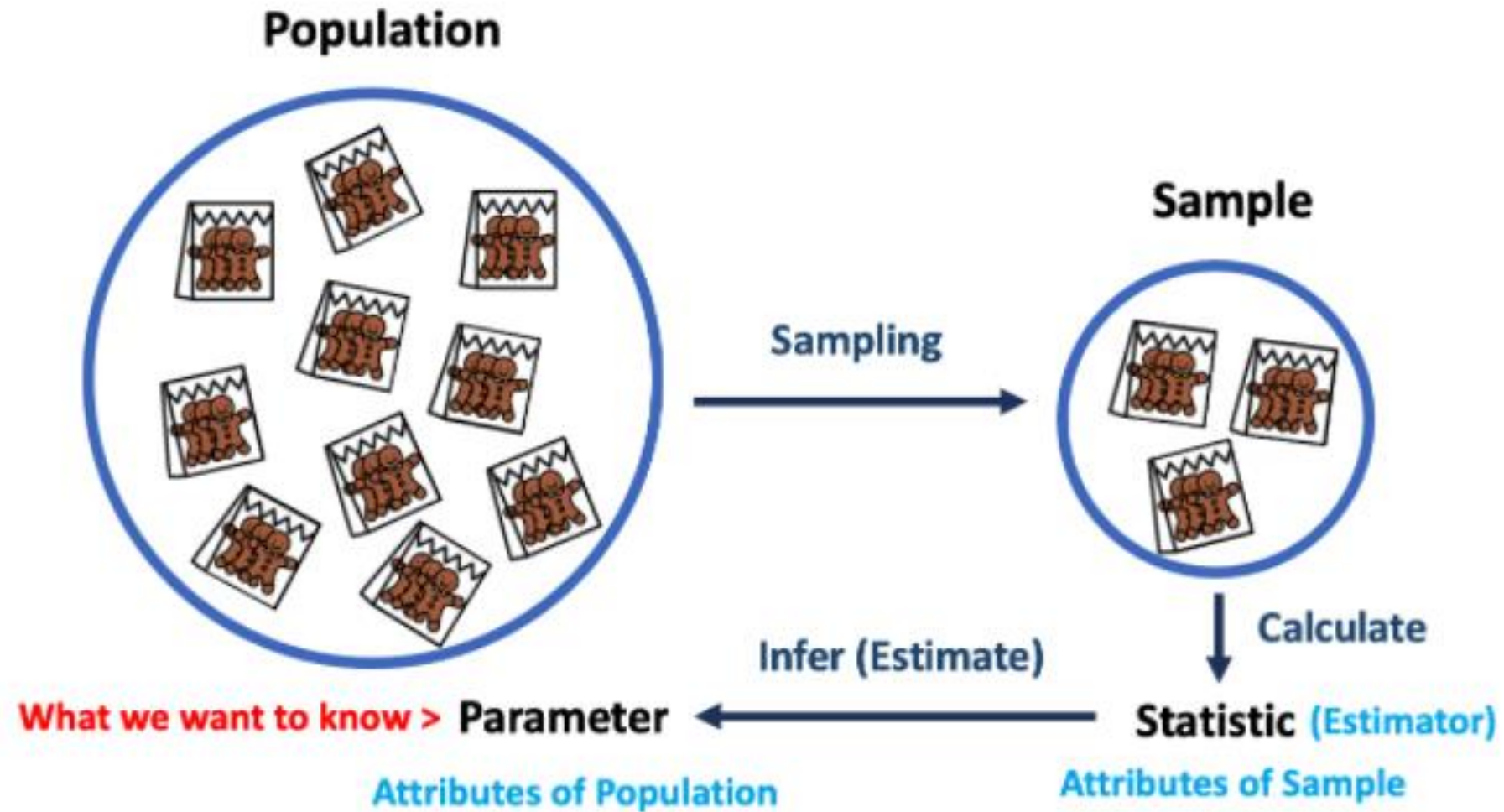
# *Statistic at glance*

# Normal Distribution



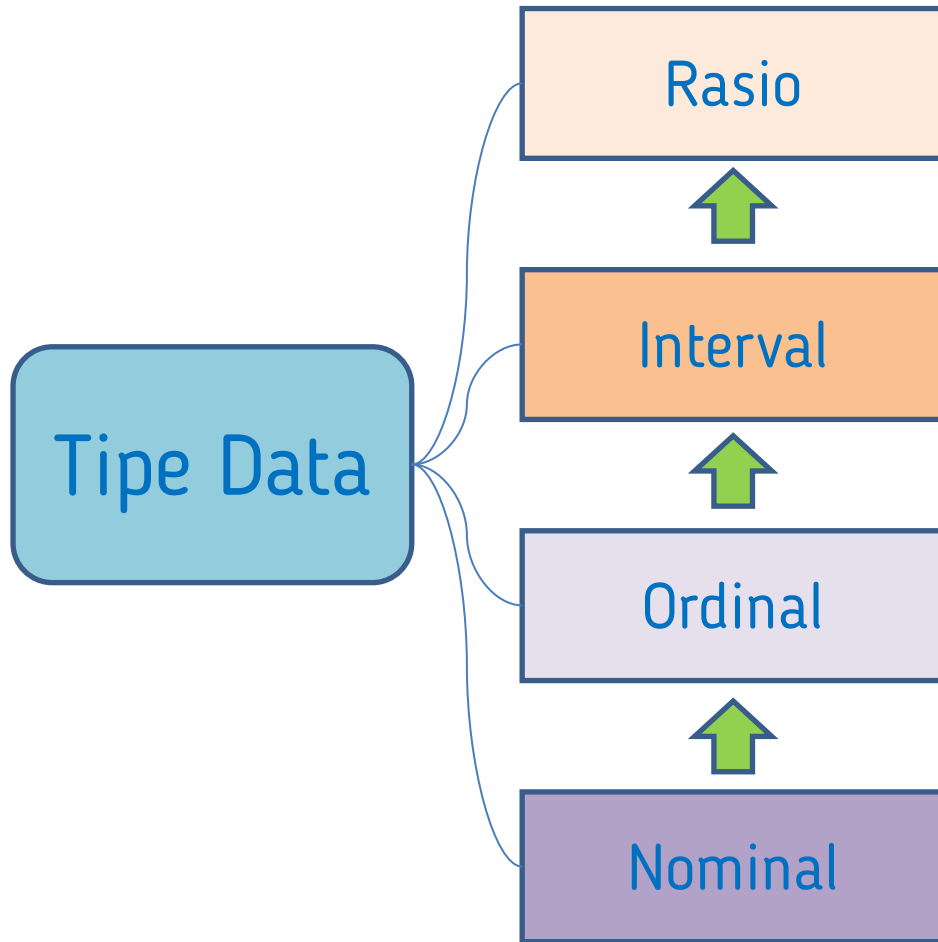
Source: <https://towardsdatascience.com/understanding-the-68-95-99-7-rule-for-a-normal-distribution-b7b7cbf760c2>

# Parameter vs. Statistic



Source: <https://towardsdatascience.com/what-is-p-value-370056b8244d>

# Tipe Data

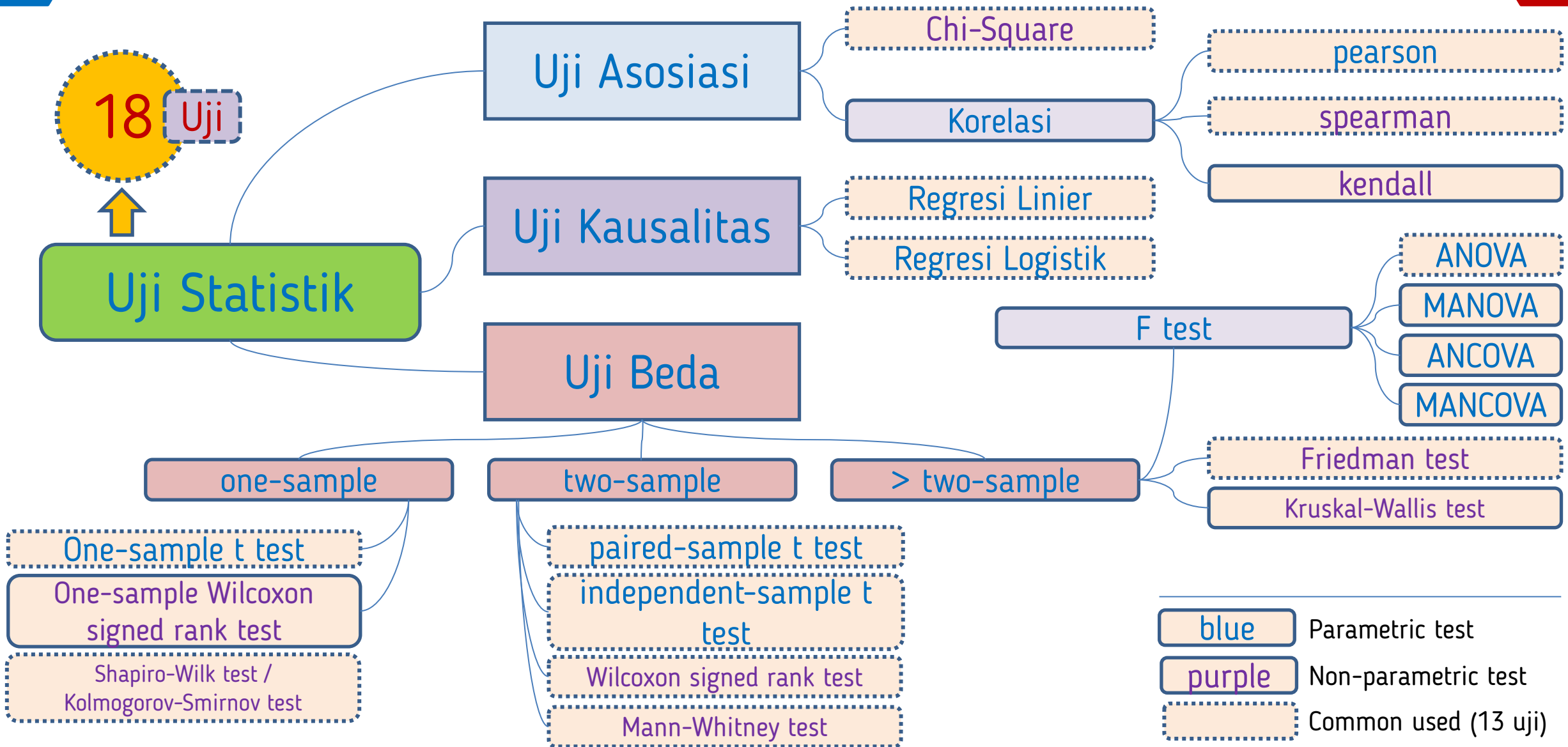


Aspek	Nominal	Ordinal	Interval	Rasio
Kategori/Label	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Urutan/Ranking		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Jarak yang sama			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Nol mutlak				<input checked="" type="checkbox"/>

## Note:

- Nominal → level tipe data terendah, Rasio → level tipe data tertinggi
- Interval dan Rasio memiliki skala pengukuran yang sama (Scale atau continuous)
- Dalam pengumpulan data, diusahakan level tipe data setinggi-tingginya yang bisa dicapai (usahakan minimal interval)

# Peta Uji Statistik (yg umum dipakai)







# *Why jamovi*

# Tool untuk Olah/Uji Statistik



# Why *jamovi*

- ▶ Free
- ▶ User friendly
- ▶ Community support for library/package
- ▶ Under R programming
- ▶ etc...

Ref:

Abbasnasab Sardareh, S., Brown, G. T., & Denny, P. (2021). *Comparing four contemporary statistical software tools for introductory data science and statistics in the social sciences*. **Teaching Statistics**, 43, S157-S172.

TABLE 2 Usage properties

Usage property	Universal?	Specific systems
Simple input design	No	jamovi
Minimalist, easy to read, and ready to publish output displayed in APA manuscript formatting	No	jamovi
Quick to learn	No	SPSS, R Commander, jamovi
Limited comprehensibility of error messages	No	RStudio, R Commander
Confusing menu structure/dialog boxes	No	SPSS, R Commander
“Run” command is not required to access results	No	jamovi
Immediate bidirectional responsiveness	No	jamovi
Fully reusable GUI	No	jamovi
Real-time generation of results	No	jamovi
A low number of actions to encode analysis	No	R Commander, jamovi
Easy access viewing of output viewer	No	jamovi
Reproducible analysis without the need for syntax command	No	jamovi
Integrated display of plots	No	SPSS, jamovi

# Fitur jamovi



## ANALYSES

jamovi provides a complete suite of analyses for (not just) the social sciences; t-tests, ANOVAs, correlation and regression, non-parametric tests, contingency tables, reliability and factor analysis. Need more analyses? then see [the jamovi library](#) – a library of additional analyses contributed by experts in their field.



## STATISTICAL SPREADSHEET

jamovi is a fully functional spreadsheet, immediately familiar to anyone. Enter, copy/paste data, filter rows, compute new values, perform transforms across many columns at once – jamovi provides a streamlined spreadsheet experience, optimised for statistical data.



## R SYNTAX

Love R? Check out jamovi's "syntax mode", where the underlying R syntax for each analysis is made available. Just copy and paste this into R for a seamless transition. Alternatively, run R code directly inside jamovi with [the Rj Editor](#).



## REPRODUCIBILITY

Reproducibility shouldn't be complicated, that's why jamovi saves your data, your analyses, their options, and the results all in the one file. This file can be backed up, shared with colleagues, and at any time loaded back into jamovi – it's like you never left.

# *jamovi* Bisa Uji Statistik Apa Saja?

- ▶ Uji Hubungan: *Chi-square, Pearson's correlation, Spearman correlation*
- ▶ Uji Pengaruh: *Linear Regression, GLM*
- ▶ Uji Beda: *t-test, F-test, z-test*
- ▶ Advanced Statistical test
  - *Meta-analysis*
  - *Path Analysis*
  - *Factor Analysis*
  - *SEM*
  - .... and many more

# Tampilan Menu *jamovi*

The image displays three overlapping screenshots of the Jamovi software interface, illustrating the menu structure. The top-left screenshot shows the 'Variables' menu with options: Edit, Compute, Transform Variables, Add, Delete, and Filters Rows. Below the menu is a search bar labeled 'Search variables' and a list of variables with columns for 'Name' and 'Description'. Variable 'A' is selected with a checkmark and has the description 'Enter description'. The top-right screenshot shows the 'Data' menu with options: Paste Clipboard, Edit, Setup, Compute, Transform Variables, Add, Delete, Filters, and Delete Rows. Below the menu is a data grid with columns labeled 'A', 'B', and 'C', and rows numbered 1 and 2. The bottom screenshot shows the 'Analyses' menu with options: Exploration, T-Tests, ANOVA, Regression, Frequencies, Factor, MAJOR, meddecide, and SEM. Below the menu is a data grid with columns labeled 'A', 'B', and 'C', and rows numbered 1 through 7. On the right side of the data grid, there are labels 'Result' and 'Refer'.

# *Statistical Test in jamovi*

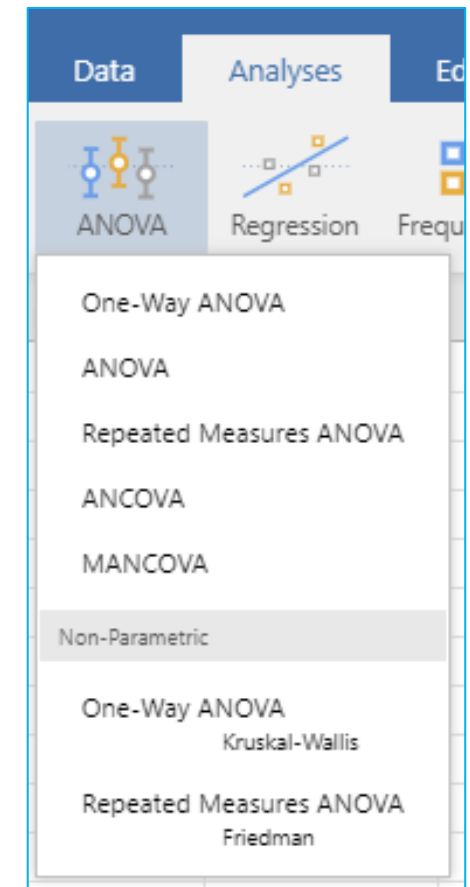
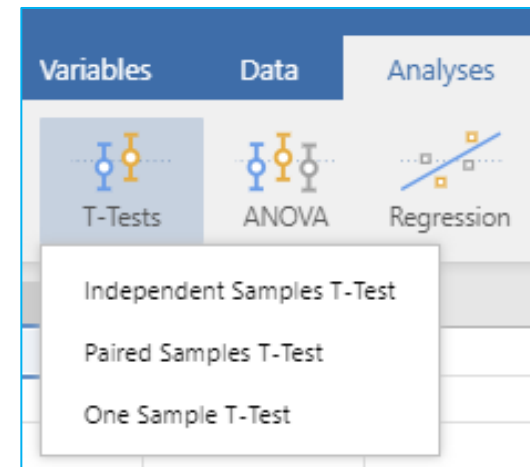
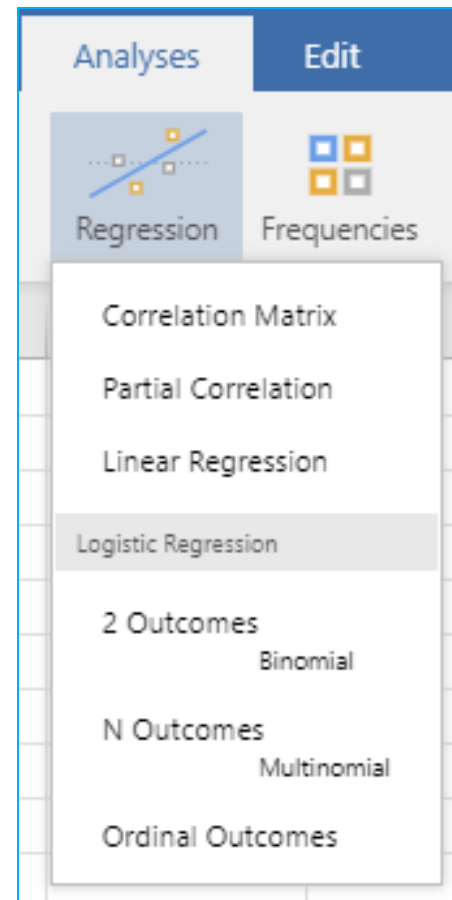
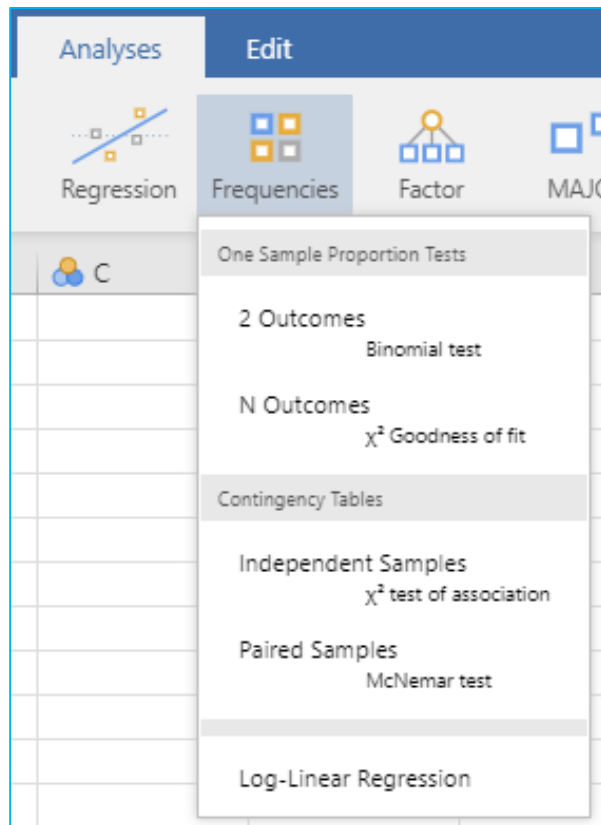
The screenshot shows the top part of the Jamovi software interface. The menu bar includes 'Variables', 'Data', 'Analyses', and 'Edit'. The 'Analyses' menu is open, showing options for 'Exploration', 'T-Tests', 'ANOVA', 'Regression', 'Frequencies', and 'Factor'. A dashed yellow box highlights the hamburger menu icon (three horizontal lines) in the top left corner. Below the menu bar, there are three variable columns labeled 'A', 'B', and 'C', and a data grid with rows numbered 1 to 4.

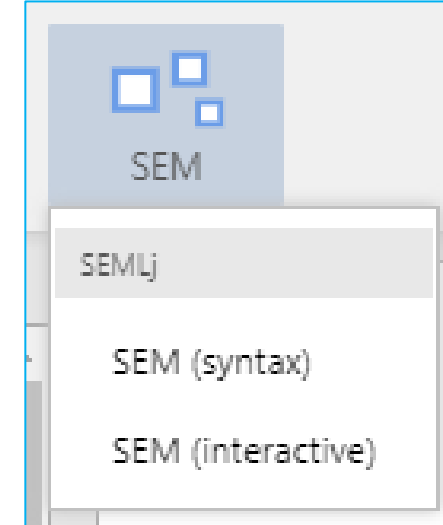
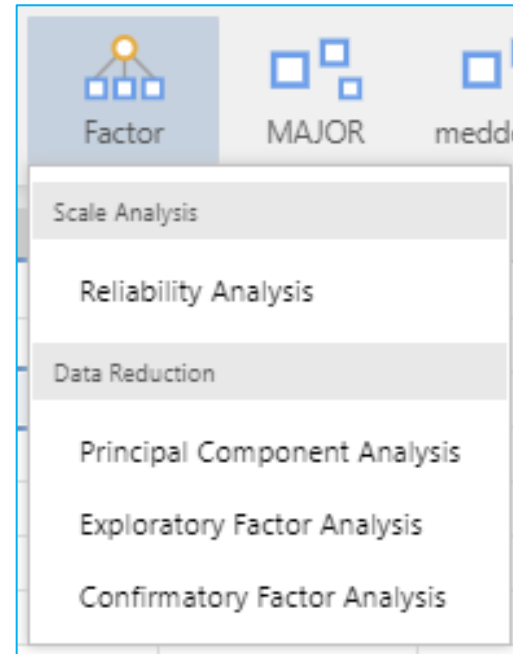
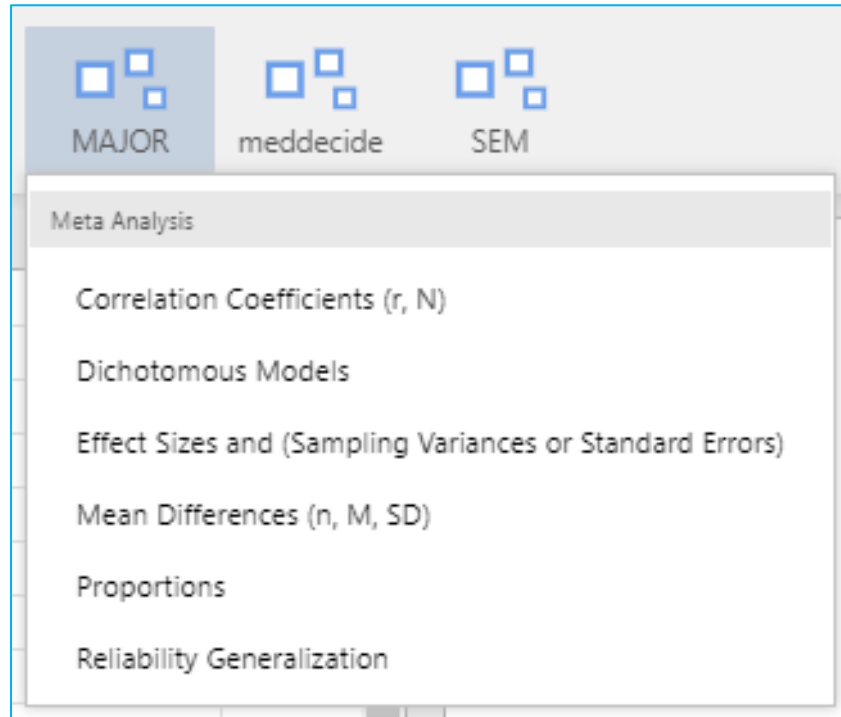
The screenshot shows the 'Data Library' interface in Jamovi. The left sidebar contains a list of actions: 'New', 'Open', 'This PC', 'Data Library' (highlighted with a dashed yellow box), 'Special Import', 'Save', 'Save As', and 'Export'. The main area displays a list of data sets under the heading 'Data Library'. A search bar is at the top. A dashed yellow box highlights a group of folders: 'learning statistics with jamovi', 'Meta-Analysis for JAMOMI', 'Functions for Medical Decision in ClinicoPath jamovi Module', 'R data sets', and 'SEM'. Below these are several data sets, each with a file icon and a description: 'Big 5 (Dolan, Oort, Stoel & Wicherts, 2009) A nice correlation data set', 'Tooth Growth An uninspiring ANOVA data set', 'Bugs (Ryan, Wilde & Crist, 2013) A repeated measures ANOVA data set', and 'Anderson's Iris Data The 'iris' data set from R'.



# Add Module/Library


The image shows the Jamovi software interface. At the top, the 'Analyses' menu is open, displaying various statistical analysis options: Exploration, T-Tests, ANOVA, Regression, Frequencies, Factor, MAJOR, meddecide, and SEM. A yellow dashed box highlights the 'Modules' button in the top right corner of the software window. A yellow arrow points from this button to a 'Modules' dialog box that is open. This dialog box has a 'jamovi library' section highlighted with a yellow dashed box. Below this, it lists 'Installed Modules' including jmv, scatr, MAJOR, meddecide, and semlj. A second yellow arrow points from the 'jamovi library' section to a larger screenshot of the 'Add Modules' dialog box. This larger dialog box shows a search bar and a list of available modules: 'scatr 1.2.0' (already installed), 'Rj - Editor to run R code inside jamovi 2.0.8' (with an 'INSTALL' button), and 'jpower - Power Analysis for Common Research Designs 0.1.2' (with an 'INSTALL' button).








# *jamovi* in Action



## *Let's go...*



- ▶ Open Data(set)
- ▶ Descriptive + Plot
- ▶ Normality test
- ▶ Chi-Square test
- ▶ Correlation test
- ▶ Linear Regression test
- ▶ T-test
- ▶ F-test
- ▶ Meta-analysis

**Lectures and Talks in  
*Scholarly Communication***

***Thank you...***

**ANY  
QUESTIONS?**