

JASP: Open Source Statistics

Allan van Hulst

Quiz: Which of these statements is true?

- (A) $1+1=2$
- (B) The Binding Study Advice (BSA) is in the interest of students (source: unl.nl)
- (C) SPSS is user-friendly statistics software and has best-in-class features (source: ibm.com)

Pricing: Do you have any idea how expensive SPSS is?

For a non-campus license you will be paying:

- ▶ 121 Euros per authorized user per month(!)
- ▶ +96 Euros if you want to export data to Excel
- ▶ ..etc

Solution



JASP

A Fresh Way to
Do Statistics

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0.96.0
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JASP: Open Source Statistics Software

- ▶ Open Source: the ability to check whether statistical analyses are actually implemented correctly
- ▶ User-friendly interface: designed with novice users (e.g. students) in mind
- ▶ Available in the EUR software catalog

Very helpful

<https://jasp-stats.org/how-to-use-jasp/>

Let's start very simple

1. Click the **New Data** button
2. Enter the following income data:

Klaas	45000
Piet	40000
Bart	50000
Frans	55000
Joep	50000
Kees	250000

3. Compute average, median and standard deviation using the **Descriptives** button

Let's do a simple t-test

Example data: name, sex, height (in cm):

Klaas	M	178
Maartje	F	165
Vera	F	168
Piet	M	185
Janneke	F	172
Bart	M	177

Click the **T-Tests** button and choose the **Independent Samples t-test**. Do men and women have a statistically significant different mean height in this example?

Another example: a simple regression test

Some data about leg press strength (in kg) and 100m dash (in seconds):

Klaas	100	13.21
Piet	120	12.98
Frans	90	14.20
Kees	85	14.67
Jaap	130	13.45

Click the **Regression** button and choose **Linear regression**. Add the time as a dependent variable (i.e. the outcome) and add the leg press strength as a covariate. Does having more leg strength imply a faster 100m sprint time?

Comparing more than two groups: ANOVA

Some data about country leaders (name, country, years in office):

Mark Rutte	NL	14
Dick Schoof	NL	1
Nicolas Sarkozy	FR	5
Francois Hollande	FR	5
Angela Merkel	DE	16
Olaf Scholz	DE	3

Use the button **ANOVA** and choose the **ANOVA** option. Put years in office in the dependent variable box and choose the country code as a fixed factor. Are there any observable statistical differences?

Making statistics simpler: a reflection

If you want to make statistics more accessible for students, there are multiple things that you can do:

- ▶ Explain statistical theory better
- ▶ Use better and more user-friendly statistical software
- ▶ Deviate from traditional statistical theory and use simpler concepts