

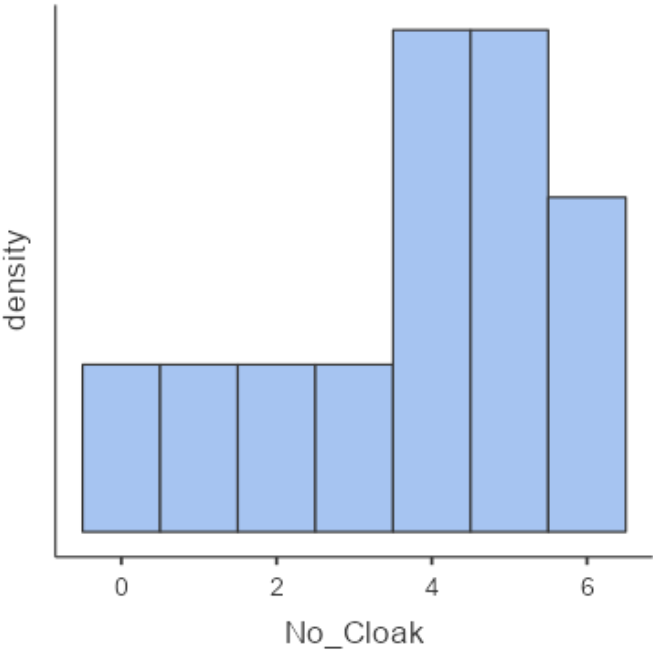
Results

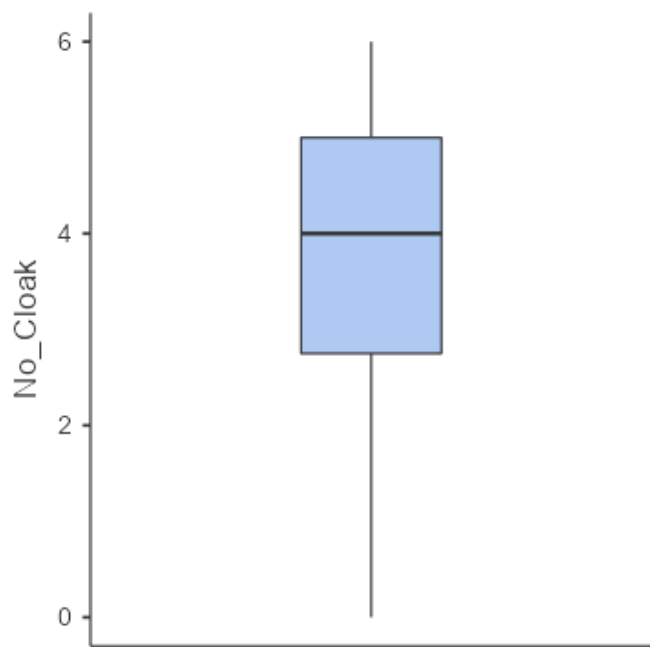
Descriptives

Descriptives		
	No_Cloak	Cloak
N	12	12
Missing	0	0
Mean	3.75	5.00
Median	4.00	5.00
Standard deviation	1.91	1.65
Minimum	0.00	2.00
Maximum	6.00	8.00
Skewness	-0.789	0.00
Std. error skewness	0.637	0.637
Kurtosis	-0.229	0.161
Std. error kurtosis	1.23	1.23
Shapiro-Wilk W	0.913	0.973
Shapiro-Wilk p	0.231	0.936

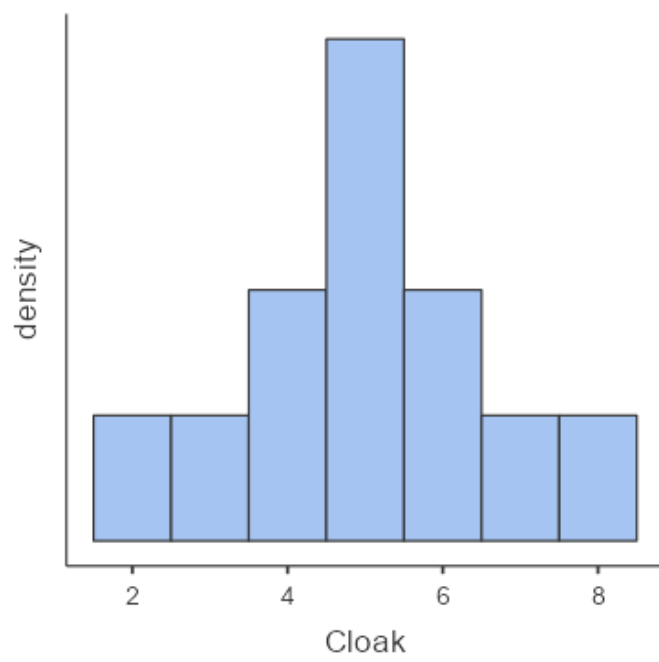
Plots

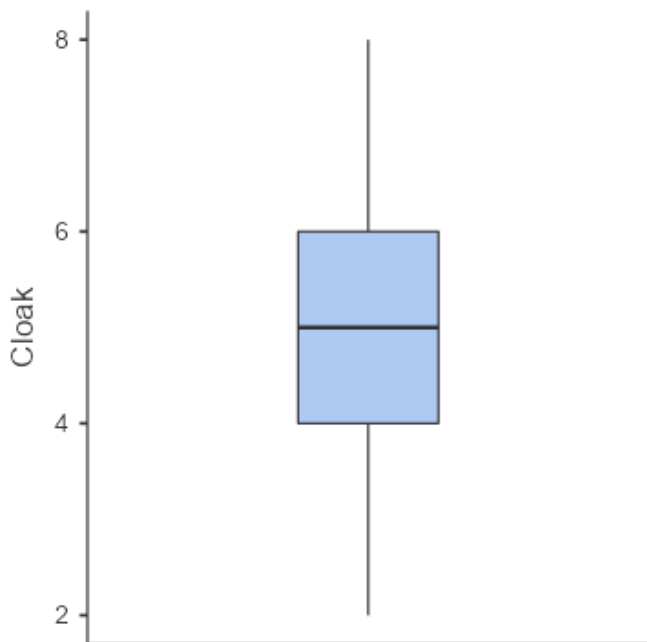
No_Cloak





Cloak





Relationships, Prediction, and Group Comparisons

Welcome to Statkat! This tool will help you to find an appropriate statistical method given the measurement level of your data. Make sure you have correctly defined the measurement levels of your variables on the Data tab. You can change the measurement level of a variable via the Setup button on the Data tab, or by double clicking on a column header of interest. You have selected the Relationships, Prediction, and Group Comparisons option. This is the place to be if you are interested in

- the relationship between two or more variables, or
- predicting one variable from other variables, or
- the difference between independent (unrelated) groups on a certain variable.

To get started, drop a variable in the box below Variable 1 / Dependent Variable, and one or more variables in the box below Variable 2 / Independent Variables. Our tool will then come up with a statistical method that may be appropriate for your data! In addition, you can drop one or more variables in the box below Control Variables. Control variables are variables that you are not particularly interested in, but which may be related to the dependent variable and possibly also to the independent variables. In experiments (with random assignment), control variables are often included to increase power. In observational studies, control variables are often included mainly to equate subjects on the control variables. This prevents the control variables from confounding the relationships between the independent variables and the dependent variable. If your research question does not make a clear distinction between an independent variable and a dependent variable, the decision of which variable to define as Variable 1/Dependent Variable and which as Variable 2/Independent Variables can be arbitrary. But doesn't this decision affect the recommended method? Well, in some cases it does affect the primary method recommendation, but if a simpler method can be performed by flipping the two variables, this is usually mentioned. It is then up to you which of the recommended methods you prefer. It is important to keep in mind here that none of the correlational statistical techniques can say anything about causality anyway (not even a method like regression analysis), so even if you do make a distinction between an independent and dependent variable, the statistical method will only say something about association, not causation. Note: Our advice is based on the measurement level of your data and on the number of variables entered. There can be details related to your data, task, or assignment that may render the advice moot. Always check the assumptions made by the statistical method before interpreting the results. We always try to come up with the least complicated method that might be applicable given your data. Keep in mind that there may be other, more advanced, methods that might be applicable as well.

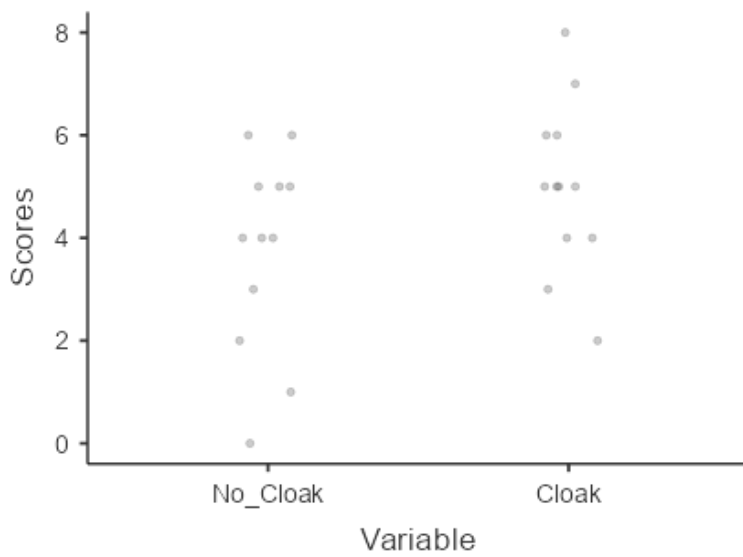
Repeated Measurements

You have entered two related numeric variables. Hence, the [paired sample t test](#) seems to be a good option for you! In order to run this test in jamovi, go to: T-Tests > Paired Samples T-Test

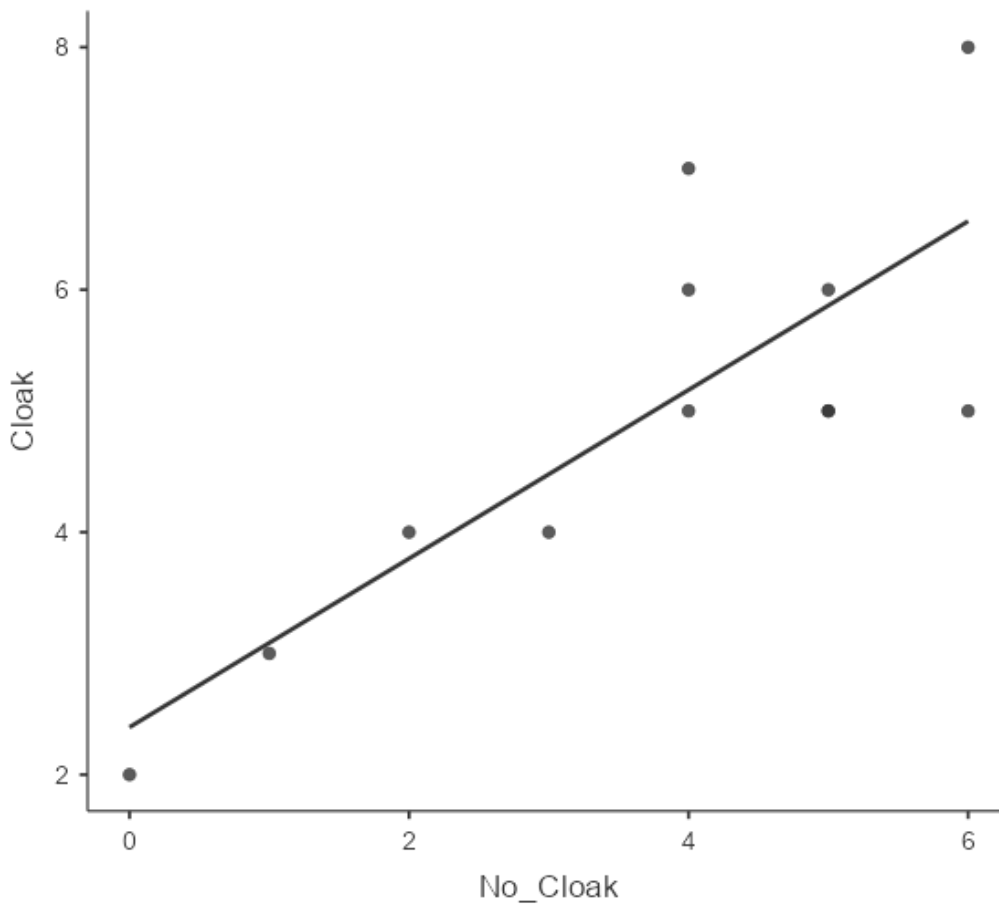
- Drop the two paired variables in the box below Paired Variables, one on the left side of the vertical line and one on the right side of the vertical line
- Under Hypothesis, select your alternative hypothesis

If the normality assumption is violated, you could use the non-parametric [Wilcoxon signed rank test](#). Click on the links to learn more about these tests!

Scatter Plot



Scatterplot



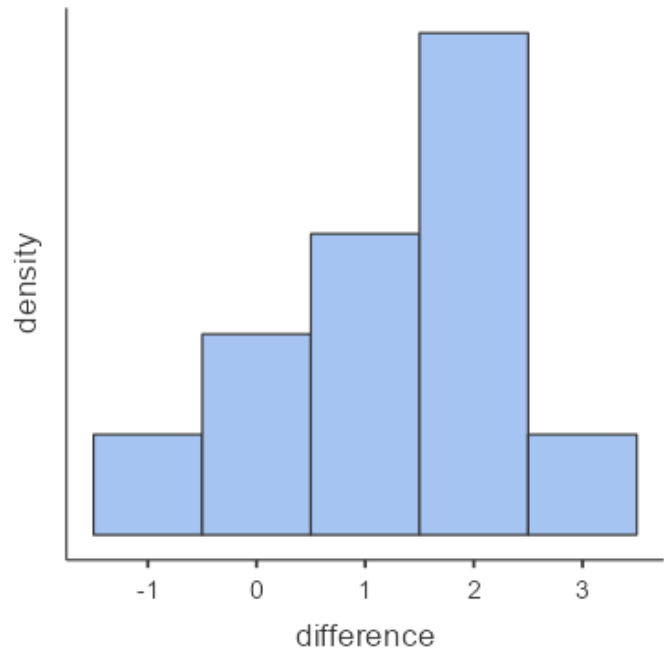
Descriptives

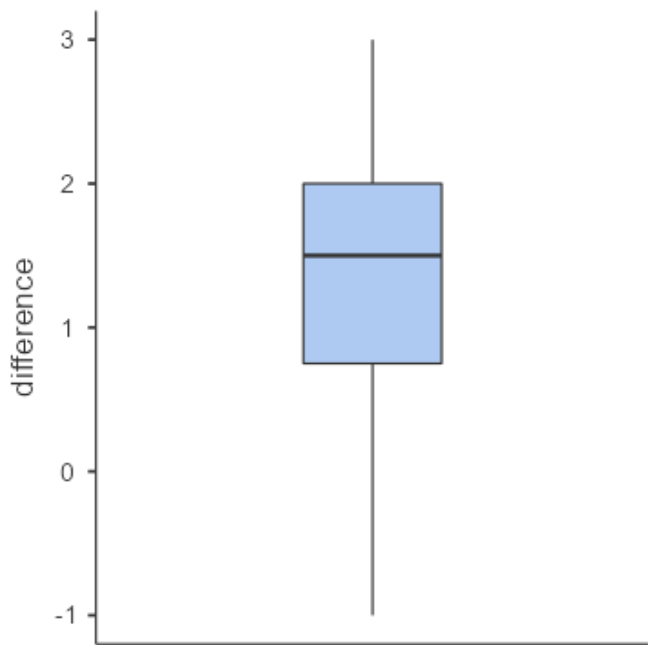
Descriptives

difference	
N	12
Missing	0
Mean	1.25
Median	1.50
Standard deviation	1.14
Minimum	-1.00
Maximum	3.00
Skewness	-0.583
Std. error skewness	0.637
Kurtosis	-0.138
Std. error kurtosis	1.23
Shapiro-Wilk W	0.912
Shapiro-Wilk p	0.228

Plots

difference





Paired Samples T-Test

Paired Samples T-Test

								95% Confidence Interval			
			statistic	df	p	Mean difference	SE difference	Lower	Upper		Effect Size
No_Cloak	Cloak	Student's t	-3.80	11.0	0.003	-1.25	0.329	-1.97	-0.527	Cohen's d	-1.10

Note. $H_a: \mu \text{ Measure 1} - \text{Measure 2} \neq 0$

Normality Test (Shapiro-Wilk)

				W	p
No_Cloak	-	Cloak		0.912	0.228

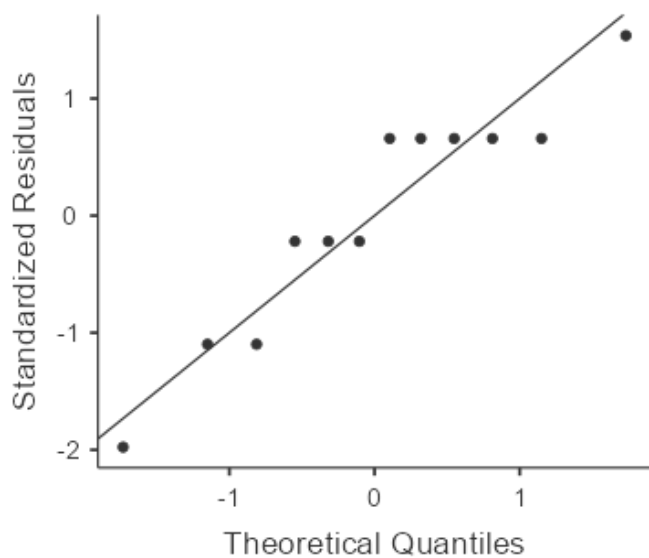
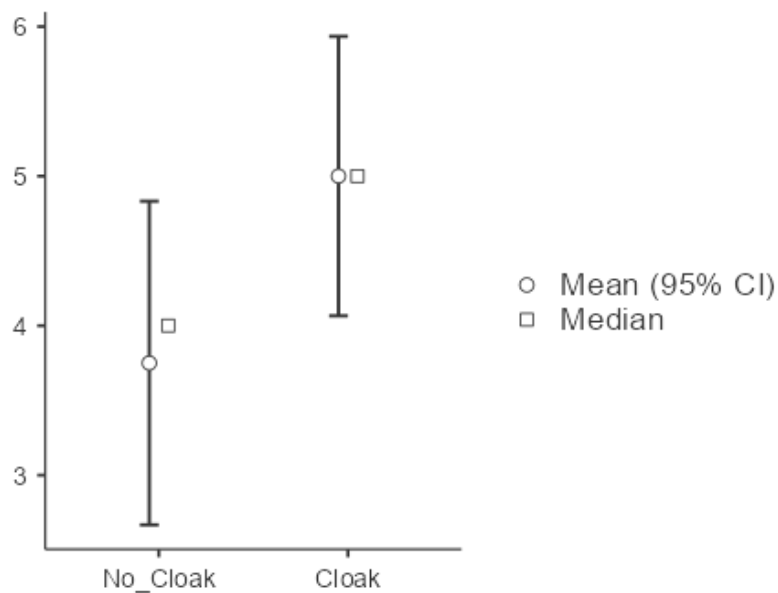
Note. A low p-value suggests a violation of the assumption of normality

Descriptives

	N	Mean	Median	SD	SE
No_Cloak	12	3.75	4.00	1.91	0.552
Cloak	12	5.00	5.00	1.65	0.477

Plots

No_Cloak - Cloak



Robust Paired Samples T-Test

Robust Paired Samples T-Test

							95% Confidence Interval		
		t	df	p	Mean difference	SE	Lower	Upper	Cohen's d
No_Cloak	Cloak	-2.70	7.00	0.031	-1.00	0.370	-1.87	-0.125	0.398

Bayesian Paired Samples T-Test

Bayesian Paired Samples T-Test

			BF₁₀	error %
No_Cloak	-	Cloak	16.3	4.03e-6

[3] [4] [5]

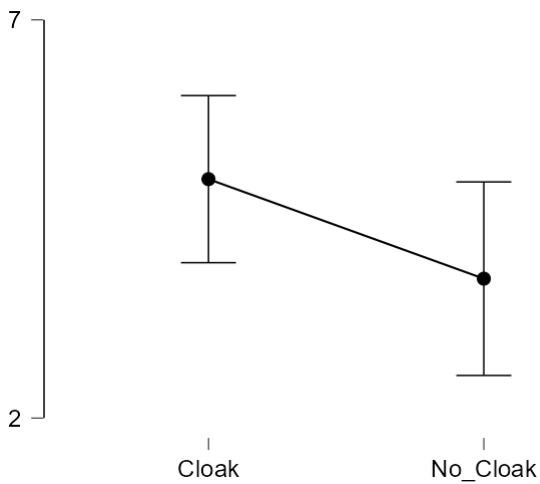
Descriptives

Descriptives

	N	Mean	SD	SE	95% Credible Interval	
					Lower	Upper
No_Cloak	12	3.75	1.91	0.552	2.53	4.97
Cloak	12	5.00	1.65	0.477	3.95	6.05

Descriptives Plot

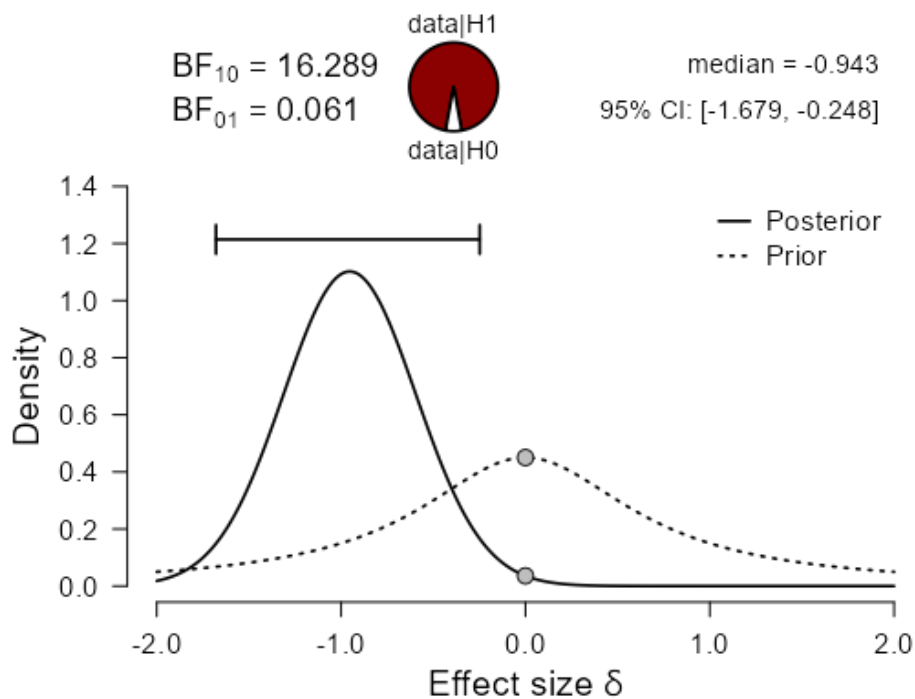
No_Cloak - Cloak



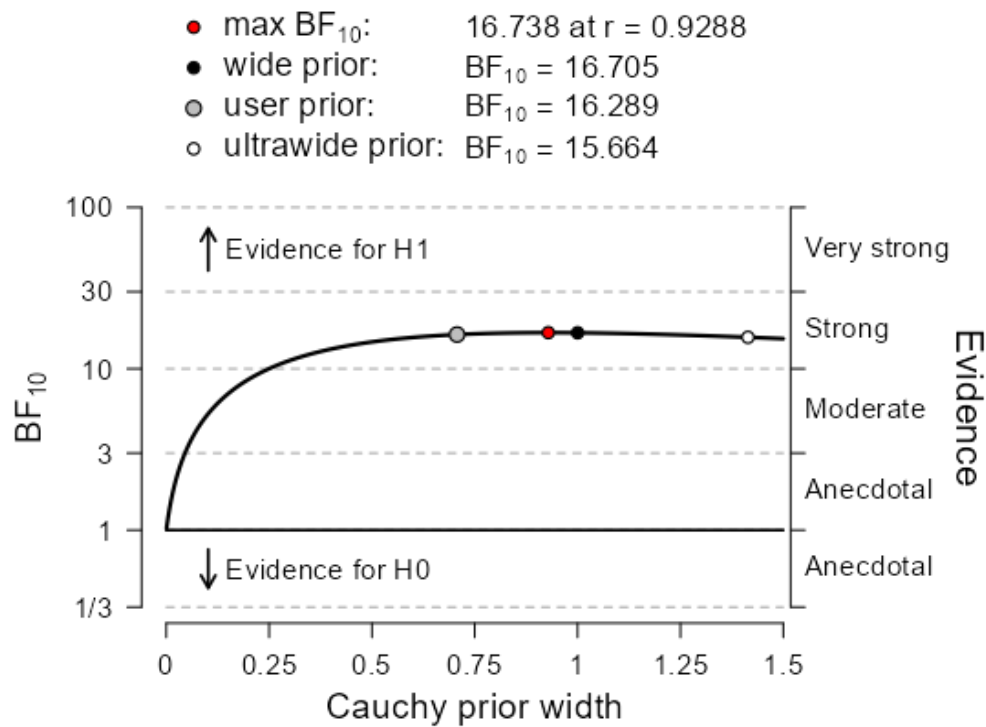
Inferential Plots

No_Cloak - Cloak

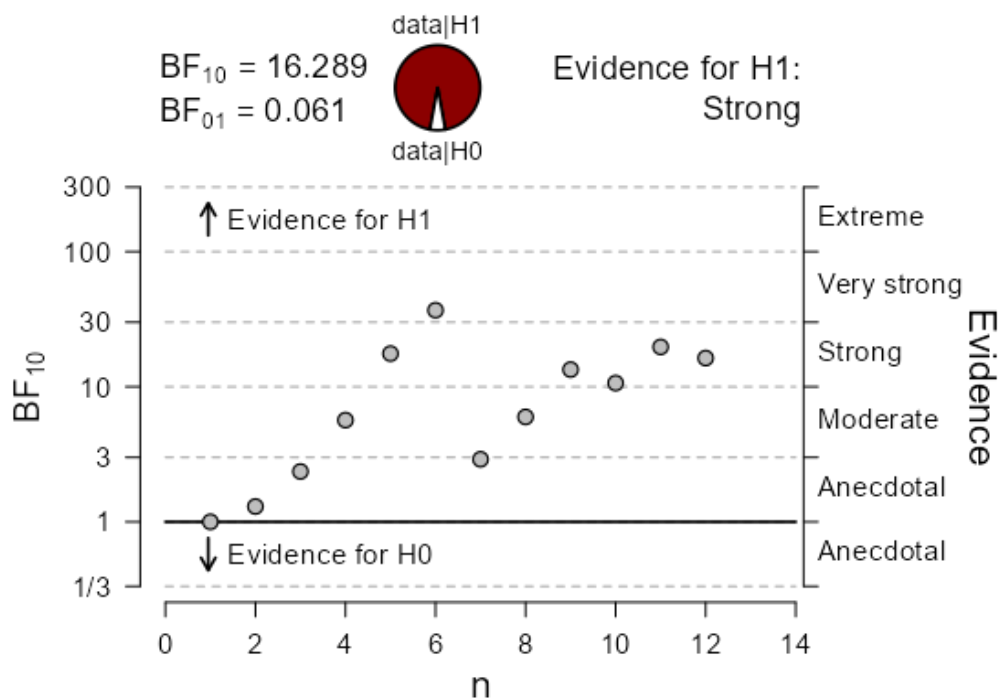
Prior and Posterior



Bayes Factor Robustness Check



Sequential Analysis



References

- [1] The jamovi project (2022). *jamovi*. (Version 2.3) [Computer Software]. Retrieved from <https://www.jamovi.org>.
- [2] R Core Team (2021). *R: A Language and environment for statistical computing*. (Version 4.1) [Computer software]. Retrieved from <https://cran.r-project.org>. (R packages retrieved from MRAN snapshot 2022-01-01).
- [3] JASP Team (2018). *JASP*. [Computer software]. Retrieved from <https://jasp-stats.org>.

[4] Morey, R. D., & Rouder, J. N. (2018). *BayesFactor: Computation of Bayes Factors for Common Designs*. [R package]. Retrieved from <https://cran.r-project.org/package=BayesFactor>.

[5] Rouder, J. N., Speckman, P. L., Sun, D., Morey, R. D., & Iverson, G. (2009). Bayesian t tests for accepting and rejecting the null hypothesis. *Psychonomic Bulletin & Review*, 16, 225-237.