Reliability Analysis

ZOOMONITOR

Evaluating Observer Reliability

Ensuring that observers are able to consistently identify behaviors is a critical component of behavioral sampling. This process most commonly involves new observers scoring data simultaneously to a trained observer and checking the recorded data match a set criterion ("Inter-observer reliability"). Consistency within an observer is also important, especially for long-term monitoring projects, and can be checked using video recordings ("Intra-observer reliability").

Interval	Control Observer	Compare Observer	Agreement
1	Inactive	Inactive	Yes
2	Locomotion	Locomotion	Yes
3	Inactive	Locomotion	No
4	Feeding	Feeding	Yes
5	Feeding	Feeding	Yes

Percent Agreement = 4/5 X 100 = 80%

	Inactive	Locomotion	Feeding	Total
Inactive	1			1
Locomotion	1	1		2
Feeding			2	2
Total	2	1	2	5

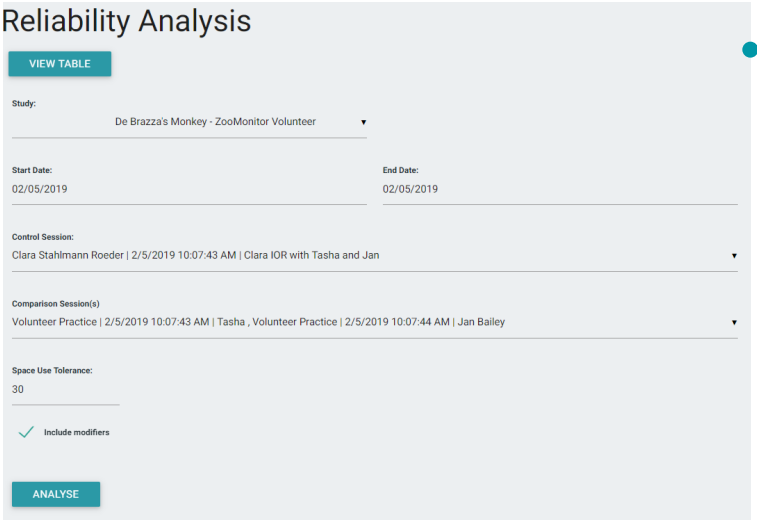
Chance Probability = (2/5 x 1/5) + (1/5 x 2/5) + (2/5 x 2/5) = 0.32

Cohen's Kappa = (0.8 - 0.32) / (1 - 0.32) = 0.7059

95% Confidence Interval = 0.19 to 1

Conducting Reliability Analyses in ZooMonitor

In your Admin section, you can conduct Reliability Analyses for Behavioral Observations projects. Reliability Analyses are currently only available for comparing Interval data.



Study—name of your active project.

Start/ End Date—date range for reliability comparisons.

Control Session—session by trained observer .

Compare Session(s)—one or more sessions to be compared to the control session.

Space Use Tolerance—acceptable distance between the space use coordinates of the comparison sessions to be considered in agreement.

Include modifiers—optionally choose whether you'd like to include behavior modifiers in the comparison.

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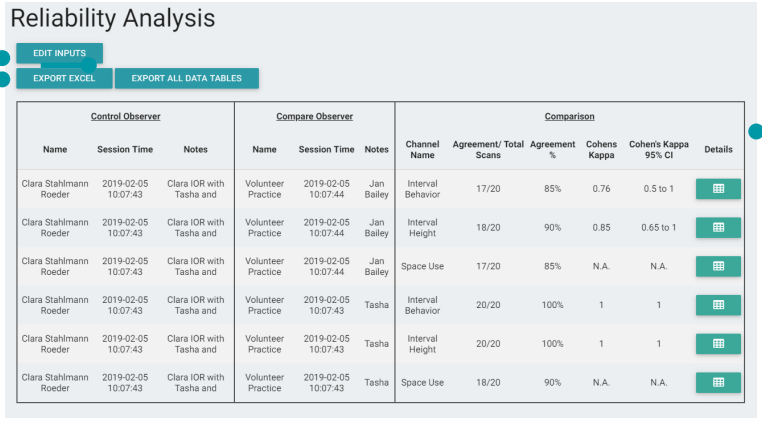
Reliability Analysis Output Results

ZooMonitor calculates two standard reliability metrics: Percent Agreement and Cohen's Kappa. Percent Agreement, also known as the index of concordance, is the percent of intervals with matching data between the comparison sessions. Cohen's Kappa is calculated from the percent agreement and includes an additional penalty factor to account for chance agreements.

Edit Inputs—return to the original input form.

Export Excel —export the data summary table shown on the page.

Export All Data Tables—export a table with detailed results by interval (includes all comparisons)



View Detailed Results—inspect agreement matches by interval for each channel.

Note: Any blank intervals where behavior was not recorded in the control session are removed from analysis. Blank intervals missed in the compare session are scored as not agreement.

Detailed Results Data Tables

To quickly identify intervals that were not in agreement, you can view and export detailed results. In addition, you can view and export the confusion matrix used to calculate the Cohen's kappa statistic.

