

Preregistration

My preregistration for Prod and Reprod 2022

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Data collection	Yes , we already collected the data. The data was collected by Fred Tremblay (author), using GPS-accelerometry and DLW data from black-legged kittiwakes (<i>Rissa tridactyla</i>) breeding on Middleton Island, AK, in 2021
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Hypothesis

H1: The two sample method has no significant impact on kittiwakes' energetics and behaviour compared to the single sample method when using doubly-labelled water (DLW).

H2: The two sample method has a significant impact on kittiwakes' energetics and behaviour compared to the single sample method when using doubly-labelled water (DLW).

Dependent variable

Daily Energy Expenditure: energy expenditure measured using DLW in kJ/g*day Time-activity budget: porportion of time (%) that a bird is involved in 5 behaviours (flying, swimming, resting on land, attending colony, and glidding). The behavioural classiffication was obtaine dusing GPS-accelerometry data via a Hidden Markov Model.

Conditions

Kittiwakes will be assigned to two different treatment groups: single-sample and two-sample. Each group represents a different method for measuring energy expenditure using DLW.

Analyses

Paired test to test for difference between 1-sample and 2-sample's DEE

Anova to test for difference in TAB between 1-sample and 2-sample method. If difference detected with Anova, post-hoc follow up to determine the nature and direction of the difference.

**Outliers and
exclusions**

Example 1: We will compute the overall mean and standard deviation across all conditions, and winsorize at 2.5 SD above/below the mean. Example 2: We will exclude participants who incorrectly answer at least 2 of our 3 attention check questions. Example 3: We will exclude any participants who complete the survey in less than 30 seconds.

Sample size

We will include data from 51 kittiwakes (Single sample = 10, two-sample = 41). For all individuals, we obtained field metabolic rate and time-activity budget. To prevent a sex bias based on sex and mass difference, this study includes only males, and we will use the corrected energy expenditure to a mass of 450g for all individuals.

Other

The data used for this class project has been used to answer a different question. Thus, the sample size for each treatment group is not ideal

and squewed. We acknowledge the bias in our data and conclusions drawn from this class project should not be extended past the scope of this course.

Study type Finally. For record keeping purposes, please tell us the type of study you are pre-registering.

- Class project or assignment

References
