**PSYC234: Lecture 7 post-lecture worksheet**

This worksheet is to help you consolidate what you learned about the Kruskal-Wallis test and Friedman’s ANOVA during Lecture 7. It contains two activities.

This worksheet could be completed as part of the independent study hours for PSYC234. **It is optional but recommended**. **It is recommended that you complete this worksheet in advance of the WBA.**

Once you have finished, compare your answers to theanswer sheet provided on Moodle. You can also use this sheet and the answer sheet for revision purposes when preparing for the class test.

**Activity 1: Understanding how the non-parametric tests differ and when to use them**

It is really important that you understand which statistical test you should run in different situations. Fill in the tables below based on the research design. In each scenario, you are interested in whether the type of chocolate eaten affects feelings of contentment (response = 0-100).

|  |  |  |
| --- | --- | --- |
| Design | How would you check whether the assumption of normality is violated for this design? | If the assumption of normality is violated, which non-parametric test would you run? |
| You recruit 20 participants. On day 1, they eat milk chocolate. On day 2, they eat dark chocolate. On day 3, they eat white chocolate. |  |  |
| You recruit 12 participants and randomly assign them to either a “white chocolate”, “milk chocolate”, or “dark chocolate” group. |  |  |
| You recruit 7 participants. On day 1, they eat milk chocolate and on day 2, they eat dark chocolate. |  |  |
| You recruit 10 participants and randomly assign them to either a “white chocolate” or “milk chocolate” group. |  |  |

**Activity 2: Interpreting R output**

Interpret the following R output. Part 1 uses an independent groups design, whilst part 2 uses a repeated measures design.

**Part 1: An independent groups design**

You are a developmental researcher interested in whether the books children are exposed to affects their language production (how many words they can say). You recruit 21 2-year-old children and assign them to one of three groups – “Pinocchio”, “Cinderella”, and “Gruffalo”. The children’s parents then read this story every day for three months (i.e. children in the “Gruffalo” group read the Gruffalo every day). You then ask their parents to complete a language production assessment on their child (score = 0-100).

**Testing the assumption of normality:**

**Chart, line chart

Description automatically generated**

**Interpretation:**

**1B: Interpret the descriptive statistics and the model output**

Descriptive statistics:

Table

Description automatically generated with medium confidence

Model output:

Text, letter

Description automatically generated with medium confidence

Post-hoc tests:

**Text

Description automatically generated**

**What can we conclude? Report in APA format.**

**Part 2: A repeated measures design**

You are a researcher interested in whether the number of hours sleep individuals get affects their performance on an attention task (score = 0-100). You recruit nine participants, with all participants taking part in three conditions. In the first condition, participants get 6 hours sleep the night before (6 hours). In the second condition, they get 8 hours sleep the night before (8 hours), and in the third condition, they get 10 hours sleep the night before (10 hours).

**2B: Testing the assumption of normality**

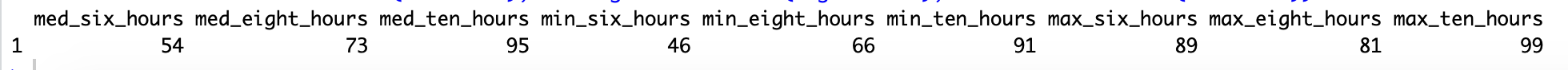
Chart, line chart

Description automatically generated

**What can we conclude?**

**2B: Interpret the descriptive statistics and the model output**

Descriptive statistics:



Model output:

**Text, letter

Description automatically generated**

Post-hoc tests:

A picture containing text

Description automatically generated

**What can we conclude? Report in APA format.**