

Open book test: (30%)
10am. Thursday 28th April 2022.

OPEN BOOK TEST
EXAMPLES

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THE TEST ITSELF...

- Open book-test – you can take all your lecture notes/stats book in to the test
- Eight scenarios 35 MINS
 - Each has 4 multiple choice questions
 - Examples today
 - 4 marks per scenario = 32 marks.

ETHICAL CONSIDERATION TEST

- 25 MINS – FOLLOWING THE OPEN BOOK TEST
 - 10 questions out of 25
 - E.g. what is informed consent?
- **Revise lecture one – ethics section only and the following...**
 - <https://www.bps.org.uk/sites/bps.org.uk/files/Policy/Policy%20-%20Files/BPS%20Code%20of%20Human%20Research%20Ethics.pdf> (pages 4-26)
- **YOU WILL NOT USE YOUR NOTES FOR THIS PART OF THE TEST**

RECAP...

- Things you will need to know for the test...
 - **Design** (related/within or unrelated/between)
 - **Independent variable/Dependent variable**
 - **Hypothesis type** (null, experimental)
 - **Hypothesis direction** (one-tailed, two-tailed)
 - **Type of tests** (mann-whitney, wilcoxon, related t-test, unrelated t-test, chi square)
 - **Probability** (0.05)
 - **Data type** (ordinal, ratio, interval, nominal)

VARIABLES

- **Independent variables** - these are variables that are being manipulated by the researcher (for example – we give the child chocolate (1) or withhold it (2) (*Cause*))
- **Dependent variables** – are the changes measured by the researcher – for example, the level of hyperactivity (*Effect*)

PARTICIPANTS IN DESIGNS

- There are two basic research designs associated with the experimental research strategy
 - between-subjects design/unrelated/independent-measures design
 - we obtain each of the different groups of scores from a separate group of participants
 - e.g. one group of students is assigned to teaching method A and a separate group to method B
 - within-subjects design/related/repeated-measures design
 - different groups of scores are all obtained from the same sample of participants
 - e.g. one sample of individuals is given a memory test using a list of one-syllable words, and then the same set of individuals is tested again using a list of two-syllable words

TYPE OF TEST

- Wilcoxon (2 conditions-related)
- Mann-Whitney (2 conditions-unrelated)
- Chi-square (categories)
- t-tests (2 conditions - related and unrelated)

HYPOTHESIS DIRECTION

- A **two-tailed test** - is the standard test of significance to determine if there is a relationship between variables in either direction.
 - A significant difference in drinking habits between male and females
- A **one-tailed test** - is a test of significance to determine if there is a relationship between the variables in one direction.
 - Females will drink significantly less than males

DATA TYPES

nominal

What is your gender?

- ☒ M – Male
- ☐ F – Female

What is your hair color?

- ☒ 1 – Brown
- ☐ 2 – Black
- ☐ 3 – Blonde
- ☐ 4 – Gray
- ☐ 5 – Other

Where do you live?

- ☒ A – North of the equator
- ☐ B – South of the equator
- ☐ C – Neither: In the international space station

interval



ordinal

How do you feel today?

- ☒ 1 – Very Unhappy
- ☐ 2 – Unhappy
- ☐ 3 – OK
- ☐ 4 – Happy
- ☐ 5 – Very Happy

How satisfied are you with our service?

- ☒ 1 – Very Unsatisfied
- ☐ 2 – Somewhat Unsatisfied
- ☐ 3 – Neutral
- ☐ 4 – Somewhat Satisfied
- ☐ 5 – Very Satisfied

ratio



Researchers carried out a natural experiment measuring the stress levels of ten participants who continued to live near a volcano even after an eruption. These were compared with the stress levels of ten participants who lived outside the danger zone of a volcanic eruption. Stress levels were measured on a ten point scale with 1 being low stress and 10 being high stress.

What is the DV in this study?

What is the design of the study?

A laboratory experiment was carried out to see how emotion/arousal affected memory. In Part One of the experiment twenty participants were shown a video of a man walking down a street. They were then shown several photographs of men and had to identify the man from the video. In Part Two of the experiment the same participants were shown a video of a man committing a robbery. Again they were shown several photographs of men and had to identify the man committing the robbery. A difference between groups (part 1 and part 2) was predicted.

What is the IV in this study?

What type of hypothesis was predicted?

A team of psychologists investigated if there are differences in the depression rates of married individuals and cohabiting individuals (living together, but not married). Research shows that married couples consistently exhibit more depressive symptoms than cohabiting couples. The results supported this finding. A quota sample of 30 married individuals and 30 cohabiting individuals was selected. The team of psychologists conducted a questionnaire. One question on the questionnaire listed 10 symptoms of depression (e.g. problems with sleeping) and then the individual had to identify which symptoms they had experienced in the last year.

What is the design of the study?

What type of hypothesis was supported?

A psychologist conducted a natural experiment into whether teenagers who smoke cigarettes have fewer friends than teenagers who do not smoke cigarettes. A random sample of teenagers were selected and they reported to the psychologist whether they smoked cigarettes or not and they were then asked to estimate how many friends they had. The psychologist reported the percentage number of friends for both the 'cigarette smokers' and 'non-cigarette smokers' groups.

What type of data is this?

What is the appropriate statistical test here?

A team of psychologists investigated the stress levels of different types of occupations. They interviewed 20 people in 'high level qualification' jobs (e.g. Doctor, Lawyer) and 20 people in 'low level qualification' jobs (e.g. Shop Assistant, Cleaner). They used a stratified sampling technique to select the participants. In their interviews they used a stress scale (where 100 is the highest stress score) to assess the stress levels of the two groups.

What is the IV in this study?

What is the design of this study?

It was predicted that pupils with low levels of self-confidence in reading do better when reading to an animal. A psychologist was asked to investigate whether using a dog in the class could increase reading accuracy thereby improving confidence in the skill. She measured the cortisol levels in the saliva of ten children after they had been reading in front of their peers and then again the following day after reading to a dog. Cortisol is released when an individual interprets a situation as being stressful. The results supported the hypothesis.

What type of hypothesis was predicted in this?

What stats test is appropriate?