



Oxford Cambridge and RSA

Monday 13 May 2024 – Afternoon

AS Level Psychology

H167/01 Research methods

Time allowed: 1 hour 30 minutes



You must have:

- a ruler (cm/mm)
- a scientific or graphical calculator



Please write clearly in black ink. **Do not write in the barcodes.**

Centre number

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Candidate number

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First name(s) StemUp Model Solution

Last name _____

INSTRUCTIONS

- Use black ink. You can use an HB pencil, but only for graphs and diagrams.
- Write your answer to each question in the space provided. If you need extra space use the lined pages at the end of this booklet. The question numbers must be clearly shown.
- Answer **all** the questions.

INFORMATION

- The total mark for this paper is **75**.
- The marks for each question are shown in brackets [].
- Quality of extended response will be assessed in questions marked with an asterisk (*).
- This document has **20** pages.

ADVICE

- Read each question carefully before you start your answer.

Section A

Multiple Choice

For each question write the letter in the box.

1 When writing up a practical report, which of these best describes what an abstract is?

- A a link to related existing research
- B a summary of the research
- C an evaluation of the research
- D an extension of the research

Your answer

B

[1]

2 Which sampling technique starts with one person, who is asked to suggest another person to take part, and then that person asks someone else, and so on?

- A opportunity sampling
- B random sampling
- C self-selected sampling
- D snowball sampling

Your answer

D

[1]

3 What is criterion validity?

- A whether the measurement of a variable can be applied to the target population
- B whether the measurement of a variable can be replicated
- C whether the measurement of a variable can predict outcomes for similar behaviour in the future
- D whether the measurement of a variable relates to everyday life

Your answer

C

[1]

- 4 The table below shows the findings from a sample of 50 people asked about their favourite colour. What percentage of people said their favourite colour was blue?

Colour	Number of people who said this was their favourite colour
Red	17
Blue	11
Green	9
Yellow	7
Pink	6

- A 2.2%
- B 5%
- C 11%
- D 22%

Your answer

D

[1]

- 5 In an experiment, which type of hypothesis predicts there will be 'no difference' between the conditions?

- A alternative hypothesis
- B null hypothesis
- C one-tailed alternative hypothesis
- D two-tailed alternative hypothesis

Your answer

B

[1]

6 Which type of statistical analysis requires data to come from conditions with similar variances?

- A descriptive statistical tests
- B measures of dispersion statistical tests
- C non-parametric statistical tests
- D parametric statistical tests

Your answer

D

[1]

7 Which of these always has an independent variable?

- A field experiments
- B laboratory experiments
- C quasi experiments
- D all of the above

Your answer

D

[1]

8 Which of these is **not** a type of reliability?

- A inter-rater
- B peer-review
- C split-half
- D test-retest

Your answer

B

[1]

9 Which term refers to when participants change their behaviour to present themselves in a more favourable way?

- A social acceptance
- B social desirability
- C social inclusion
- D social referencing

Your answer

B

[1]

10 Which of these is **not** a term used when describing the outcome of a correlation statistical analysis?

- A negative
- B positive
- C skew
- D zero

Your answer

C

[1]

11 How were participants recruited for Chaney et al.'s (2004) Funhaler study?

- A through local child or general practitioner clinics
- B through local newspapers
- C through local schools
- D through local sports clubs

Your answer

A

[1]

- 12 In Bandura et al.'s (1961) study into the transmission of aggression in children, how was time sampling used to observe the children during phase 3 of the experiment (test for delayed imitation)?
- A continuously for 20 minutes
 - B every 5 seconds for 20 minutes
 - C every minute for 20 minutes
 - D randomly throughout a period of 20 minutes

Your answer

B

[1]

- 13 In Freud's (1909) study of Little Hans the data was obtained through information contained in letters written by Hans' father. Which type of data is this?
- A binary
 - B nominal
 - C primary
 - D secondary

Your answer

D

[1]

- 14 What is 28.6359 written to two significant figures?
- A 28
 - B 28.64
 - C 28.7
 - D 29

Your answer

D

[1]

15 If a psychologist plans to conduct a study which makes it easy for participants to stop taking part at any stage if they want to, which ethical consideration is being addressed?

- A** consent
- B** debrief
- C** deception
- D** right to withdraw

Your answer

D

[1]

Section B

Research design and response

Count your blessings

As many as 1 in 4 people experience mental health issues at some time in their life and psychologists are always looking for new ways to help people cope with such matters. One interesting idea is that by writing down things that we should be grateful for (such as having good friends, a nice sunny day and our physical well-being) we can help improve our mental health. Psychologists want to investigate this further by using the self-report method, asking people about what kind of things they feel grateful for and how this makes them feel.

16

(a) Identify **one** reason why the study might have low population validity.

Only people with certain characteristics, such as those comfortable discussing their mental health, may agree to take part in the self-report. [1]

(b) Write a one-tailed alternative hypothesis for this study.

There will be a significant positive correlation between the number of things a person writes down that they feel grateful for in one week and their self-rated mental health on a scale of 1 to 10, where 1 is very poor mental health and 10 is very good mental health. In other words, the more things people record being grateful for, the higher their mental health rating will be. [3]

17* Explain how you would use the self-report method to investigate what kind of things make people feel grateful and if this helps improve their mental health. Justify your decisions as part of your explanation. You must refer to:

- the use of a structured interview
- one question that uses a Likert scale
- the sampling method you would use to collect participants.

You should use your own experience of practical activities to inform your response. [12]

I would use a structured interview, where every participant is asked the same pre-set questions in the same fixed order, face to face in a quiet room at a local community centre, with the interviewer reading each question from a script and recording answers on...

a standardised sheet. Each interview would last about 15 minutes and use the same ten questions, with standardised instructions read out at the start so every participant is treated in the same way. Questions would first ask people to describe what kinds of things they feel grateful for, then ask how grateful they feel and how they rate their mental health. I chose a structured interview because the standardised questions make the procedure replicable and the answers easy to compare, which is what I needed in my own practical, a structured interview on students' sleep and stress, where keeping to the script meant two of us could run interviews and still collect consistent data. One question would use a Likert scale: 'Writing down the things I am grateful for improves my mood and mental health.' Participants choose from strongly agree, agree, neither agree nor disagree, disagree or strongly disagree, scored 5 to 1. I chose a Likert scale because it turns feelings about gratitude into quantitative data that can be averaged and compared statistically, while the neutral option stops people being forced into an opinion. In my sleep and stress practical the Likert items were quick for participants to answer and easy for us to score and plot, so I would use one here.

I would use a self-selected (volunteer) sample, putting up a poster and a social media advert asking adults aged 18 and over who are interested in gratitude and well-being to contact the researcher, and taking the first 30 volunteers. Volunteer sampling is justified because mental health is a sensitive topic, so people who choose to take part are more willing to talk openly and less likely to withdraw, and it is quick and ethical. In my practical we recruited volunteers through the college noticeboard and they were motivated and completed every question, although I recognise this may give a sample of people already interested in mental health.

.....

.....

.....

.....

- 18 Suggest **one** open question that you could use in this study.

Describe the things in your life that make you feel grateful and explain how thinking about them affects your mental health and mood.

.....

..... [2]

19

- (a) Outline **one** strength of the use of open questions in this study.

Open questions let participants answer in their own words without being restricted to set response options, so the researchers gain rich, detailed qualitative data about exactly what each person feels grateful for, such as friends or good weather, and why this improves their mental health. This gives a more accurate and valid picture of the link between gratitude and well-being than a tick-box answer could.

..... [3]

- (b) Outline **one** weakness of the use of open questions in this study.

Open questions produce long, varied qualitative answers about what people feel grateful for and how it affects their mental health, which are difficult and time consuming to analyse because every response is different and the researcher has to interpret and categorise them. This makes it hard to compare participants objectively or to draw a clear conclusion about whether gratitude improves well-being.

..... [3]

20 Outline how you would address **two** ethical considerations in the design of this study.

1 *Informed consent. Before the interview begins, each participant would be given a consent form explaining that the study is about gratitude and mental health, that they will be asked personal questions about their feelings, roughly how long it will take and what the data will be used for. They sign only if they are happy to continue, so they agree knowing what is involved.*

2 *Protection from harm. Because talking about poor mental health could be upsetting, the interviewer would remind participants that they can skip any question or stop at any time, would be trained in handling sensitive topics, and would debrief everyone at the end, checking they feel fine and giving details of support services such as Mind or their GP.*

[6]

21 Outline **one** strength of using an interview rather than a written questionnaire in this study.

In a face to face interview the interviewer is present, so if a participant does not understand a question about what they feel grateful for or how it affects their mental health they can ask for it to be clarified straight away, and the interviewer can also notice if someone becomes upset discussing mental health and reassure them. With a written questionnaire the researcher is usually absent, so misunderstandings go uncorrected and answers may be less valid.

[3]

22 Suggest **two** variables that could be correlated in this study to investigate the relationship between feeling grateful and mental health/well-being.

Variable 1 *Number of things each person writes down that they feel grateful for in one week.*

Variable 2 *Self-rating of mental well-being on a scale of 1 to 10, where 1 is very poor and 10 is excellent.*

[2]

Section C

Data analysis and interpretation

The eyes have it

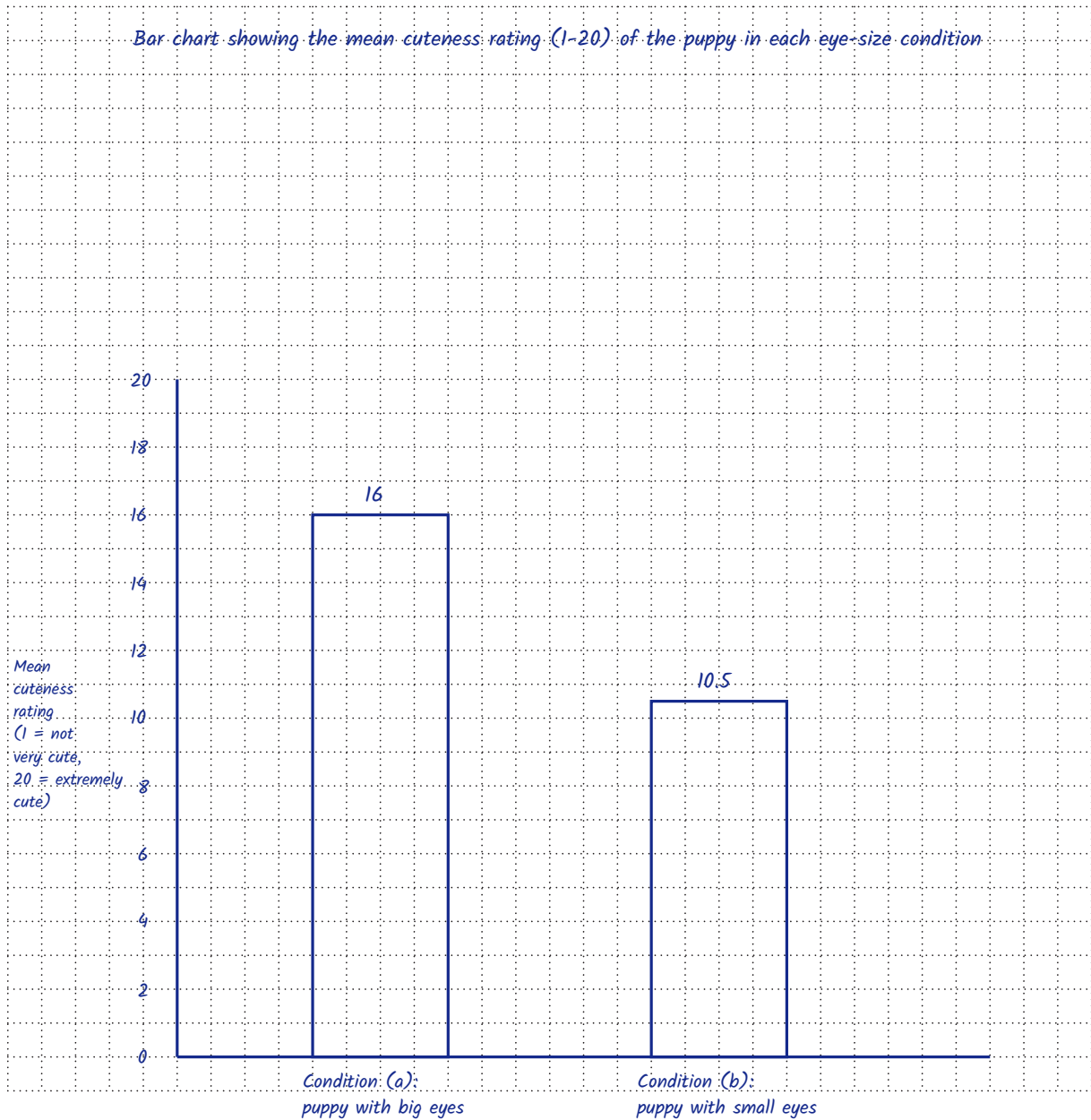
Most people agree that puppy dogs are cute, but why is this?

A psychologist investigated the possibility that the eyes play a big part. They conducted a repeated measures design experiment using a photo of the same puppy but with the eyes made to look different sizes (big or small). First participants were shown the photo with the big eyes, then a week later the same participants were shown the photo with the small eyes. On each occasion participants were asked to rate how cute the puppy was on a scale of 1 ('not very cute') to 20 ('extremely cute').

The data collected is shown in the table below.

Ratings of how cute a puppy is (1 = 'not very cute', 20 = 'extremely cute')		
Participant	Condition (a) with big eyes	Condition (b) with small eyes
a	18	7
b	14	3
c	12	14
d	17	20
e	19	9
f	16	10

- 23 Draw a fully labelled bar chart displaying the mean rating for how cute the puppy was perceived to be in each condition of this study.



[4]

Condition (size of the puppy's eyes in the photo)

24 Outline **two** conclusions that can be made from the data collected in this study.

1 The puppy with big eyes was judged cuter than the same puppy with small eyes, as the mean rating was 16 compared with 10.5, with four of the six participants rating the big-eyed version higher. This suggests large eyes are a key cue for cuteness, perhaps because they resemble the proportions of a human baby's face and trigger a caring response.

2 Eye size does not affect everyone in the same way: participants c and d actually rated the small-eyed puppy as cuter (14 versus 12 and 20 versus 17), and ratings for the small eyes ranged widely from 3 to 20. This suggests cuteness judgements are partly subjective and shaped by individual preferences, not only by the eyes.

[6]

25 Outline **one** strength and **one** weakness of the use of quantitative data in this study.

Strength The 1 to 20 cuteness rating gives numerical scores that are objective to record and easy to analyse, so the researcher can calculate the mean for each condition (16 for big eyes and 10.5 for small eyes), draw a bar chart and run a Wilcoxon test to see if the difference in cuteness is significant, rather than relying on vague descriptions of how cute the puppy looked.

Weakness A number such as 18 or 7 tells us how cute the participant found the puppy but not why, so we learn nothing about which features they were reacting to, and one person's idea of a 14 on the cuteness scale may differ from another's, so the scores may not mean the same thing across participants.

[6]

26

- (a) The inferential statistical test used to analyse the data collected in this study is the Wilcoxon Signed Ranks test. Explain how data is ranked for this test in this study.

Ranking means putting scores in order and giving each one a number showing its position, with the smallest value given rank 1. For the Wilcoxon test the ratings themselves are not ranked; instead the difference between each participant's cuteness rating for the big-eyed puppy and the small-eyed puppy is worked out, the sign is ignored and the differences are ranked from smallest to largest, with tied differences sharing the average rank.

[3]

- (b) Using the Wilcoxon Signed Ranks test, calculate the value of T for the data collected in this study by completing the table below. [3]

Formula/process:

T = the sum of the ranks of the differences with the least frequent sign

Ratings of how cute a puppy is (1 = 'not very cute', 20 = 'extremely cute')					
Participant	Condition (a) with big eyes	Condition (b) with small eyes	Difference (a) – (b)	Ranks of differences	T value (sum of the ranks of the differences with the least frequent sign)
a	18	7	+11	5.5	Least frequent sign is negative (c and d) T = sum of ranks of negative differences T = 1 + 2 T = 3
b	14	3	+11	5.5	
c	12	14	-2	1	
d	17	20	-3	2	
e	19	9	+10	4	
f	16	10	+6	3	

- 27 Outline **one** reason why the reliability of the data collected in this study could be low.

Reliability is about consistency of measurement. The 1 to 20 cuteness scale is subjective, so participants may interpret it differently: one person's 14 may represent the same level of cuteness as another person's 10, and the same participant might rate differently a week later. This means the ratings are not a consistent measure of cuteness and the data could not be reproduced if the study were repeated.

[3]

END OF QUESTION PAPER

[illegible]

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