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TIG109: Metod 2 och projekt, 15 hp, VT 2024

Delkurs 1: Experimentdesign, 4 hp

TENTAMEN

Maxpoäng är 25, gränsen för **Godkänt** är 13 och för **Väl godkänt** 20 poäng.

Frågorna är formulerade på engelska.

Tillåtet hjälpmedel: tryckt engelskt lexikon (utan anteckningar)

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Multiple-choice

Please select the best alternative.

- 1 The matched groups design is used when separate groups are needed for the levels of the independent variable, when a good matching variable is available, and when

Välj ett alternativ:

- extreme groups need to be tested.
- an adjustment needs to be made for nonequivalent groups.
- a relatively small number of participants is available.
- a relatively large number of participants is available.

Totalpoäng: 1

2 Which of the following types of variables is most likely to be an independent variable in a natural groups design?

Välj ett alternativ:

- extraneous variables
- individual differences (subject) variables
- environmental variables
- matching variables

Totalpoäng: 1

3 Which of the following conclusions is possible when a study contains a confounding?

Välj ett alternativ:

- The effect of the independent variable can be unambiguously interpreted.
- The effect of neither the independent variable nor of the confounding variable can be unambiguously interpreted.
- The effect of the confounding variable can be unambiguously interpreted.
- The effects of both the independent variable and the confounding variable can be unambiguously interpreted.

Totalpoäng: 1

4 When a study is free of confoundings it is said to have

Välj ett alternativ:

- reliability.
- external validity.
- internal validity.
- confidence intervals.

Totalpoäng: 1

5 The results of an externally valid study are ones that

Välj ett alternativ:

- apply only to the subjects, conditions, and settings tested in the original study.
- apply to a wider range of subjects, conditions, and settings than those tested in the original study.
- are not likely to replicate if the study is repeated.
- are likely to be difficult to interpret unambiguously.

Totalpoäng: 1

6 One approach for the use of inferential statistics to decide whether an independent variable has a reliable effect on the dependent variable begins by assuming that the independent variable had no effect. This approach is called

Välj ett alternativ:

- overlapping error testing.
- null hypothesis significance testing.
- confidence interval testing.
- significance level (alpha) testing.

Totalpoäng: 1

7 The goal of random assignment to experimental conditions is to

Välj ett alternativ:

- make sure the dependent variable does not differ across conditions.
- select different levels of a natural groups variable.
- hold conditions constant across conditions.
- balance individual differences variables across conditions.

Totalpoäng: 1

8 In scientific research, what distinguishes an experimental study from a survey study?

Välj ett alternativ:

- to predict one factor from the other
- to describe factors
- to find correlations between factors
- to test the causality of factors

Totalpoäng: 1

9 In order for a study to be called an experiment, it has to include

Välj ett alternativ:

- at least two variables.
- an established causal relation.
- at least one variable.
- at least three variables.

Totalpoäng: 1

10 A potential problem in a repeated measures design experiment is

Välj ett alternativ:

- random assignment.
- intact groups.
- differential transfer.
- individual differences.

Totalpoäng: 1

11 What is the general rule for balancing practice effects in an incomplete repeated measures design experiment?

Välj ett alternativ:

- Each condition must appear in each ordinal position exactly once.
- Each condition of the experiment must appear in each ordinal position (first, second, third, etc.) equally often.
- Each condition of the experiment must appear in only one ordinal position.
- Each condition must appear only in the first ordinal position.

Totalpoäng: 1

12 Practice effects are described as nonlinear when participants experience

Välj ett alternativ:

- abrupt changes in a condition and little or no change in subsequent conditions.
- lingering effects of one condition when they participate in subsequent conditions.
- individual differences in the conditions of the experiment.
- relatively constant change across the conditions of the experiment.

Totalpoäng: 1

- 13 Which of the following sequences constitutes two blocks in an independent groups design with the conditions A, B, C, and D?

Välj ett alternativ:

- AB
- AA
- ABCDDCBA
- ABCD

Totalpoäng: 1

- 14 Which of the following patterns indicates that there has been no interaction effect in a complex design experiment when the results are plotted in a line graph?

Välj ett alternativ:

- when the lines start out apart and converge to the same point
- when the lines intersect forming a crossing pattern
- when the lines start out at the same point and diverge from each other
- when the lines are parallel

Totalpoäng: 1

- 15 An interaction effect may be uninterpretable when this problem in measurement occurs:

Välj ett alternativ:

- ceiling or floor effect.
- simple main effect.
- nonparallel lines.
- highly reliable measurement of the dependent variable.

Totalpoäng: 1

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Factors, variables, and conditions

Please enter numbers.

- 16 A repeated measures group design in which the participants are tested at at three time points has:

a total of independent variable(s)

a total of condition(s)

a total of separate group(s) of participants

Totalpoäng: 3

- 17 A 2 x 3 complex design with independent groups has:

a total of independent variable(s)

a total of condition(s)

a total of separate group(s) of participants

Totalpoäng: 3

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Experimental designs

Below are four brief descriptions of research procedures. Read each description carefully and identify which type(s) of design is illustrated (each could be *one* or *several* of a–g, such as “a” or “a and f” or “a, f, and g”).

- a. independent groups: random groups design**
- b. independent groups: matched groups design**
- c. independent groups: natural groups design**
- d. repeated measures: incomplete design**
- e. repeated measures: complete design**
- f. complex design (not mixed)**
- g. mixed complex design**

- 18 A researcher wishes to test a hypothesis about transfer of physical abilities between professional sports. Specifically, she believes professional football players will have more difficulty hitting a baseball than will professional basketball players. From the rosters of two local professional teams she randomly selects 10 football players and 10 basketball players to compete in a baseball hitting contest.

Välj ett eller flera alternativ:

- independent groups: random groups design
- independent groups: matched groups design
- independent groups: natural groups design
- repeated measures: incomplete design
- repeated measures: complete design
- complex design (not mixed)
- mixed complex design

Totalpoäng: 1

- 19** A researcher explored the relation between cognitive workload, feedback and emotions for car drivers. There were 30 participants in the experiment, aged 21 to 29 who each carried out four tasks. Tasks had the difficulty levels easy and hard, and there was either no delay or a slight delay on actions while carrying out a task. During the experiment, video recordings of the participants facial expressions were collected. Moreover, each participant was asked to report their experienced level of emotions after each task.

Välj ett eller flera alternativ:

- independent groups: random groups design
- independent groups: matched groups design
- independent groups: natural groups design
- repeated measures: incomplete design
- repeated measures: complete design
- complex design (not mixed)
- mixed complex design

Totalpoäng: 1

20 A researcher asks for volunteers from a large psychology lecture class to participate in a psychology experiment involving two groups. He obtains 30 volunteers. Each person's name is put on an index card. The cards are shuffled and then divided into two piles of 15. Students whose names are in the first pile are placed in the experimental group and those in the other pile are assigned to the control group.

Välj ett eller flera alternativ:

- independent groups: random groups design
- independent groups: matched groups design
- independent groups: natural groups design
- repeated measures: incomplete design
- repeated measures: complete design
- complex design (not mixed)
- mixed complex design

Totalpoäng: 1

21 Right ear advantage in language perception was studied (the phenomenon that speech sounds are better recognized when coming from the right than from the left). The aim of the study was to investigate whether speech perception is affected by the integrated perceived direction of self or only by the direction of the ears. Right-handed participants (N = 35) were tested in a single response dichotic listening task with consonant-vowel-syllables presented in 144 pairs, while instructed to listen in one direction. Each participant was tested in three head direction conditions: straight, left, and right, with the gaze held straight in relation to the seating position in all conditions. Each participant was tested in two blocks of each combination of attended listening direction and head direction, of which order was randomized and ABBA counterbalanced.

Välj ett eller flera alternativ:

- independent groups: random groups design
- independent groups: matched groups design
- independent groups: natural groups design
- repeated measures: incomplete design
- repeated measures: complete design
- complex design (not mixed)
- mixed complex design

Totalpoäng: 1