

First Name: _____ Last Name: _____

Student ID #: _____

PSC 041

Research Methods in Psychology

WQ 2024

Unit 5 Exam Version A

Research Summary

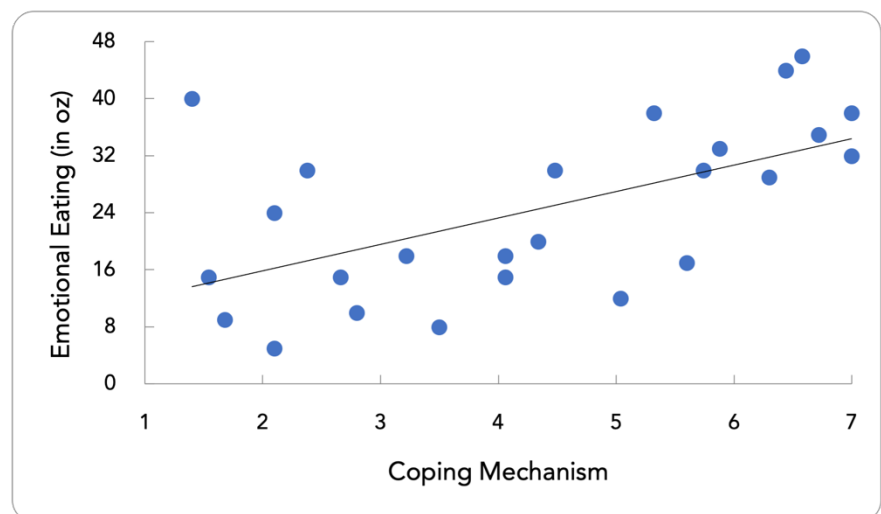
For multiple-choice questions, fill in the box to indicate your selection. Do not make stray marks in other boxes. For short answer questions, try to write on the lines and stay in the space provided.

Adapted from: Van Strien, T., Herman, C. P., Anschutz, D. J., Engels, R. C., & de Weerth, C. (2012). Moderation of distress-induced eating by emotional eating scores. *Appetite*, 58(1), 277-284.

Phrases such as “I am eating my feelings” or “Ice cream is my comfort food” have become common in conversation but emotional eating can actually be a more serious mental health concern. The term “emotional eating” describes eating as a coping mechanism to suppress or soothe negative emotions like stress, boredom, or sadness. Eating to satiate hunger is not considered emotional eating. Researchers wanted to know if people who consider themselves emotional eaters actually do eat more than people who don’t think of themselves that way. They predicted that the more someone identifies as an emotional eater, the more he, she, or they will snack if they are feeling negative emotions.

First, to identify emotional eaters, the participants were asked how likely they thought they were to snack when they were in different moods (e.g. excited, happy, stressed, or upset) on a scale from 1 (not at all likely) to 7 (very likely). Each participant’s ratings for the negative moods were averaged to form a single coping mechanism score. The ratings for the positive moods were ignored. All participants were then given a 48oz bucket of popcorn and asked to watch a sad movie. The movie provoked a negative mood. At the end of the movie, the researchers weighed out the remaining popcorn (in ounces) and subtracted that from 48 to calculate the exact amount of popcorn consumed by each participant.

As expected, those who said that they were more likely to snack when they were emotional did eat more popcorn than the participants who said that they were less likely to snack when they were in negative moods. The researchers concluded that those who identify more as emotional eaters do eat more to regulate negative emotions, $r(46) = .37, p = 0.002$.



Predictor Variable

Thinking about the predictor / independent variable: Coping mechanism

Partial operational definition: Participants rated how likely they were to eat in a variety of different moods on a scale of 1(not at all likely) to 7(very likely). The ratings for the responses to the items describing negative moods were averaged. A high number indicates someone who identifies as an emotional eater.

- 2 pts 1. The predictor / independent variable is (fill in the box)
☐ **Categorical** ☐ **Continuous**
- 2 pts 2. How was the predictor / independent variable measured? (fill in the box)
☐ **Observation** ☐ **Physiological**
☐ **Self-Report** ☐ **It was manipulated**
- 5 pts 3. Is this a causal or associative claim? (fill in the box)
☐ **Causal** ☐ **Associative**
- 5 pts 4. This variable is (fill in the box)
☐ **between groups** ☐ **within group**

Use this information only for the next three questions.

Another researcher wants to extend this finding using a different operational definition for the predictor variable. This researcher assigns participants to either read about someone who effectively uses emotional eating as a coping mechanism or someone who effectively uses strenuous exercise as a coping mechanism.

- 2 pts 5. How was this new predictor / independent variable measured? (fill in the box)
☐ **Observation** ☐ **Physiological**
☐ **Self-Report** ☐ **It was manipulated**
- 5 pts 6. Is this now a causal or associative claim? (fill in the box)
☐ **Causal** ☐ **Associative**
- 5 pts 7. This variable is (fill in the box)
☐ **between groups** ☐ **within group**

Outcome Variable

Thinking about the outcome / dependent variable: Emotional Eating

- 10 pts 8. How did the researchers **operationally define** the outcome / dependent variable? Describe it using your own words. Be sure to include the levels or values and indicate how the codes will be interpreted.

- 2 pts 9. The outcome / dependent variable is (fill in the box)

☐ **Categorical**

☐ **Continuous**

- 2 pts 10. How was the outcome / dependent variable measured? (fill in the box)

☐ **Observation**

☐ **Physiological**

☐ **Self-Report**

☐ **It was manipulated**

- 10 pts 11. Evaluate the **construct validity** of the outcome / dependent variable.

ProTips: Give an overall evaluation. Think about the face validity, the procedure, and the method-match to inform your decision. Use specific vocabulary. Be sure to only discuss this one variable.

Evaluate Internal Validity

10 pts 12. For the original research summary, 'the sadness of the movie' is **unlikely to be a confound** because...

10 pts 13. For the original research summary, there is **not a testing effect** because...

Summarize the findings

5 pts 14. How did the researchers summarize the findings? (fill in the box)

- ☐ **compare group means**
- ☐ **compare group frequency**
- ☐ **indicate strength and direction of the overall relationship**

5 pts 15. What sort of relationship did the research reveal?

- ☐ **No relationship**
- ☐ **Moderate negative linear relationship**
- ☐ **Weak negative linear relationship**
- ☐ **Moderate positive linear relationship**
- ☐ **Weak positive linear relationship**

5 pts 16. The p value is _____. Therefore, there ____ a statistically significant relationship between the variables. (fill in the box)

- | | |
|---|--|
| <input type="checkbox"/> greater than 0.05; is | <input type="checkbox"/> greater than 0.5; is |
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10 pts 17. Does this interpretation follow from this study: "We found that being an emotional eater causes people to eat more when they are feeling sad."
Why or why not?

Evaluate External Validity

- 10 pts 18. For this research, the participants were all between the ages of 18 and 22. Evaluate this aspect of **external validity**.

Another researcher attempted to replicate this study. They recruited another set of participants from the same population and in the same way. They carefully replicated every step of the procedure. They did not find the same results; there was no relationship between identifying as an emotional eater and amount of popcorn eaten.

- 5 pts 19. This is a failure to

- ☐ **replicate**
- ☐ **generalize**

- 5 pts 20. This new finding brings into doubt the

- ☐ **external validity**
- ☐ **internal validity**

- 5 pts 21. This new finding ...

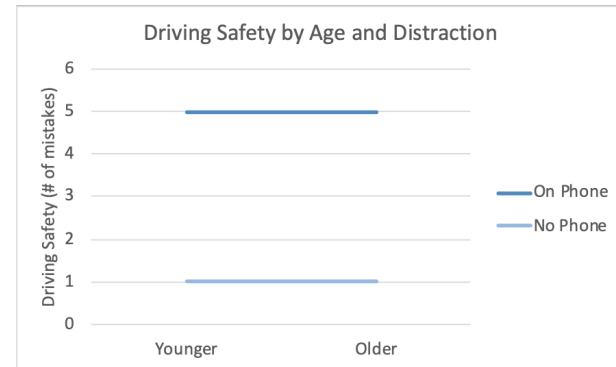
- ☐ **can be explained in a way that coexists with the original finding.**
- ☐ **indicates that one of the findings is likely to be invalid.**

Multiple Choice (mostly)

Select the single best answer. Indicate your choice by filling in the box to the left of your selection. Do not make stray marks in the other boxes. 2.5 points each

22. According to this graph, what type of relationship do age and distraction share on driving safety?

- ☐ Additive because the lines are parallel
- ☐ Additive because the lines are not parallel
- ☐ Interaction because the lines are parallel
- ☐ Interaction because the lines are not parallel
- ☐ null



23. Which of these two statements describes the pattern above?

- ☐ The effect of one predictor variable on the outcome variable differs depending on the level of the other predictor variable.
- ☐ The effect of each predictor variable on the outcome variable is the same regardless of the level of the other predictor variable

24. This is a ____ design

- ☐ 2x2x2
- ☐ 2x2x3
- ☐ 3x3
- ☐ 2x2
- ☐ 2x3
- ☐ 4x4

25. How many possible main effects could there be in this study?

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4

26. The mean is the most widely used statistic for describing central tendency. However, the mean is heavily influenced by ____.

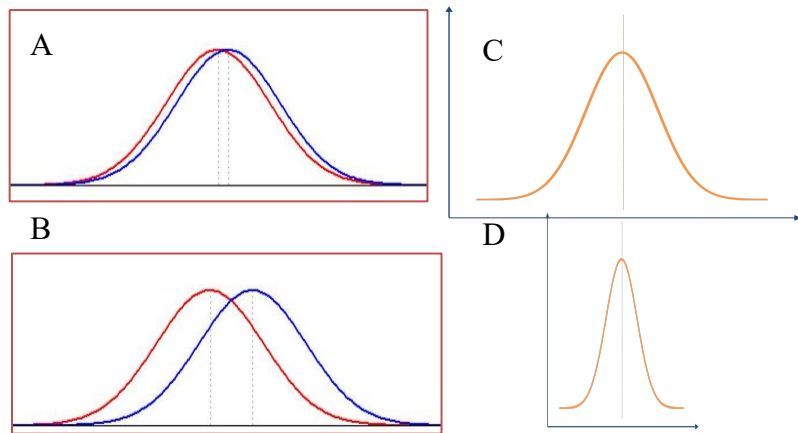
- ☐ spread
- ☐ dispersion
- ☐ outliers
- ☐ the median

27. A Cohen's d value of 0.85 can be interpreted as indicating a

- ☐ small effect
- ☐ weak positive correlation
- ☐ strong positive correlation
- ☐ large effect

28. Which of these sketches shows a large effect size?

- ☐ A
- ☐ B
- ☐ C
- ☐ D



29. Jesse's class takes a personality test in which extroversion is measured on a scale from 1-7. Based on the distribution of responses from his class, his z-score on extroversion is 2.7. Which of the following sentences best describes this result?

- ☐ Jesse is extreme for his class on extroversion.
- ☐ Jesse is about average for his class on extroversion.
- ☐ Jesse is slightly above average for his class on extroversion.

30. Dr. Smith concludes that his patient does not have Covid-19 but he is wrong. What type of error has he committed?

- ☐ Type I – false positive
- ☐ Type II – false negative
- ☐ P-hacking
- ☐ HARKing
- ☐ File drawer

31. A researcher is interested in the relationship between how attractive a defendant is and how guilty they seem. She wants to test the hypothesis that the rating of guilt (measured on a 7-point scale with 1 being "certain innocence" and 7 being "certain guilt") decreases as the rating of attractiveness (measured on a 7-point scale with 1 being "very unattractive" and 7 being "very attractive") increases. The appropriate inferential statistic would be the

- ☐ correlation coefficient r .
- ☐ t-test.
- ☐ ANOVA.
- ☐ chi-square.

32. Simran wants to test the hypothesis that the mean amount of sales dollars spent in a month will vary between Oak Ridge, Oak Wood, and Oak Park shopping malls. The appropriate inferential statistic would be the

- ☐ correlation coefficient r .
- ☐ z-score.
- ☐ ANOVA.
- ☐ chi-square.

33. Zhara wonders if having a visible tattoo during a job interview is related to being hired or not. The appropriate inferential statistic would be the

- ☐ correlation coefficient r .
- ☐ t-test.
- ☐ ANOVA.
- ☐ chi-square.