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Student ID #: \_\_\_\_\_

PSC 041

Research Methods in Psychology

SS1 2022

### Unit 1B Exam

#### Research Summary

**Please answer the following questions in the space provided. Only write on the lines.**

**Adapted from:** Iyengar, S. S., & Lepper, M. R. (2000). When choice is demotivating: Can one desire too much of a good thing? *Journal of Personality and Social Psychology*, 79(6), 995-1006.

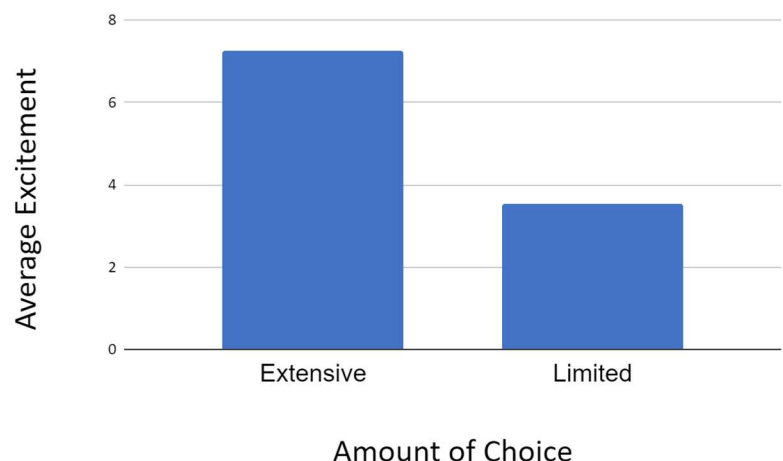
Can you have too much of a good thing? Marketing analysts assume that the more choices they offer, the more likely customers will be able to find and buy just the right thing. They assume, for instance, that offering 50 styles of jeans instead of two increases the chances that shoppers will find a pair they really like. Researchers wanted to find out if the marketing analysts are right, that more choice is a good thing for sales.

It all began with jam. In 2000, psychologists Sheena Iyengar and Mark Lepper published a remarkable study. On two consecutive Saturdays, neither of which fell on a long holiday weekend, a tasting booth was set up inside a high-end grocery store for five hours during peak shopping hours. On one Saturday, shoppers saw a display table with 34 varieties of gourmet jam. On the other Saturday, shoppers saw a similar table, except that only 3 varieties of the jam were on display. The researchers decided which booth to set up on the first and second Saturday randomly by flipping a fair coin. Selection of the jam flavors to display was carefully considered; all jams were the same brand and the most common (e.g., strawberry) were not included.

Any person who sampled the spreads received a coupon for \$1 off of jam purchase. Those coupons had a code that was tracked at the register. When the coupon was scanned it prompted a question to appear on the check-out screen. Customers were asked “How excited are you to eat the jam you purchased?” Customers indicated their excitement from a scale from 0 (not at all excited) to 10 (Extremely Excited). People who saw the large display were more excited about their jam than people who saw the small display. The amount of choices significantly affected the excitement

about jams,  $t(500) = 5.02$ ,  $p = .01$ .

Researchers found that participants who were exposed to three jam choices were less excited about their jam ( $M = 3.52$ ,  $SD = 1.72$ ) compared to those who were exposed to 34 jam choices ( $M = 7.25$ ,  $SD = 0.56$ ).



## Hypotheses

5 pts 1. What is the null hypothesis?

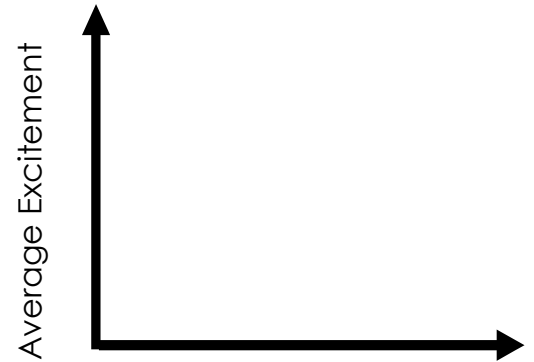
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5 pts 2. Sketch the null hypothesis:



5 pts 3. Write a directional research hypothesis.

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5 pts 4. Write a non-directional research hypothesis.

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## Predictor Variable

5 pts 5. Name the predictor / independent variable

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10 pts 6. How did the researchers operationally define the predictor / independent variable? Describe it using your own words. *Be sure to include the levels or values and indicate how the codes will be interpreted.*

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5 pts 7. The predictor / independent variable is (fill in the box)

- ☐ **Categorical**
- ☐ **Continuous**

5 pts 8. How was the predictor / independent variable measured? (fill in the box)

- ☐ **Observation**
- ☐ **Self-Report**
- ☐ **Physiological**
- ☐ **It was manipulated** (under the experimenter's control)

## Outcome Variable

5 pts 9. Name the outcome / dependent variable

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10 pts 10. 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.*

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5 pts 11. The outcome / dependent variable is (fill in the box)

- ☐ **Categorical**
- ☐ **Continuous**

5 pts 12. How was the outcome / dependent variable measured? (fill in the box)

- ☐ **Observation**
- ☐ **Self-Report**
- ☐ **Physiological**
- ☐ **It was manipulated** (under the experimenter's control)

Another researcher wants to extend this finding using different methods to address a similar research question. Researchers followed the exact same procedures, except while they were at the sample table researchers counted how many jars customers added to their cart.

5 pts 13. How was this new outcome/dependent variable measured? (fill in the box)

- ☐ **Observation**
- ☐ **Self-Report**
- ☐ **Physiological**
- ☐ **It was manipulated** (under the experimenter's control)

**Summarize the findings (from original prompt)**

5 pts 14. Is this a value, causal, or associative claim? (fill in the box)

- ☐ **Value**
- ☐ **Causal**
- ☐ **Associative**

10 pts 15. How do you know?

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10 pts 16. How do you know that this satisfies Mill's criteria of temporal precedence?

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10 pts 17. Does this satisfy Mill's criteria of elimination of alternative explanations?

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10 pts 18. Does this interpretation follow from this study: "We found that giving more jam choices was not related to excitement" Why or why not?

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**Multiple choice/ fill in the blank / short answer.**

Select the single best answer. Indicate your choice by filling in the box to the left of your selection. Write short answers in the space provided.  
3 points each.

19. Which of the following is a definition for external validity?
- ☐ the degree to which a test or instrument is capable of measuring a concept, trait, or other theoretical entity
  - ☐ the degree to which a study or experiment is free from flaws and can therefore be taken to represent the true nature of the phenomenon.
  - ☐ the extent to which the results of research or testing can be generalized beyond the sample that generated them.
20. The finding that "the more classes a person takes, the more money they spend on textbooks" illustrates relationship.
- ☐ a positive
  - ☐ a negative
  - ☐ a curvilinear
  - ☐ no relationship
21. If an experimenter wants to know if eating a big protein breakfast before an exam affects performance. He splits participants into an experimental group that eats a big protein breakfast and a control group. The protein group is served bacon, sausage, and eggs. The control group is served cereal, yogurt, and fruit. Because he has a lot of vegetarians in his study, he decides to put them all in the control group. What is a possible problem with the experiment?
- ☐ The construct validity of the protein breakfast was poor.
  - ☐ The study is correlational, preventing causal conclusions to be drawn.
  - ☐ The groups did not start out completely equal: vegetarians might naturally perform differently from non-vegetarians on the exam.
22. Which of the following is the best operational definition for the construct "memory"
- ☐ Number of pieces of information a person remembers from a video
  - ☐ Brain activity measured by EEG
  - ☐ self-report of how good is your memory (1-5)
23. If you question the construct validity of a study, which of the following questions would you be asking?
- ☐ Were the variables measured accurately?
  - ☐ How well do the results generalize to the overall population?
  - ☐ Does the predictor variable cause changes in the outcome variable?
  - ☐ Which statistic should be computed?
24. What sort of evidence are testimonials from individuals?
- ☐ rational
  - ☐ empirical
  - ☐ scientific
  - ☐ anecdotal

25. An important characteristic of science is that it is empirical. Which of these statements describes this characteristic?

- ☐ Scientific inquiry has value independent of any economic value that may result from the research
- ☐ All natural, social, and psychological phenomena are causally determined by preceding events or natural laws
- ☐ Science is based on objective, reproducible evidence and not on pure reason, emotion, or subjective experience
- ☐ All scientific knowledge is open to further testing and revision

26. I believe that fairies exist. I believe that fairies are very shy and that they do not show themselves to people.

Therefore, if fairies do actually exist, you won't see any fairies.

But also, If fairies do not exist, you won't see any fairies.

Because these two predictions are the same, which characteristic of science does my belief violate? Write a single word:

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27. A researcher wants to know how much the cost of bread changed from 1980 to 2020. What type of claim will the researcher make?

- ☐ Value claim
- ☐ Association / correlation claim
- ☐ Causal claim

28. How do you know?

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