**Mid-Term PAO: PY222-Research Methods, Spring 2022**

**Total Points = 100** [Written Portion= 80; MCs, = 20]

By typing my name here and/or submitting this work, I attest that I have *fully complied with the BSC Honor code including the stipulations outlined academic integrity reminder below and those in the syllabus for this course.*

**TYPE YOUR NAME:**

**Academic Integrity Reminder:** You may use the following on this part of this mid-term PAO:

-YOUR notes (not someone else’s)

-YOUR Heath and Kail textbooks

* That’s it. You may NOT use ANYTHING else. No other books, not the internet/web, not another person, or another person’s work, etc. – nothing else.
* *TYPE YOUR INITIALS HERE TO SIGNIFIY YOUR UNDERSTANDING AND AGREEMENT:* \_\_\_\_\_\_

**Directions:** Type your responses in the spaces underneath each question. *PLEASE leave the questions intact and space as needed to type your response below each question***.**

**Submit on Moodle in the space provided. Submit ONLY a WORD document – nothing else.**

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[Written Portion = 80]

**1.** You read an article stating that Facebook is negatively related to happiness. In the study, a group of high school students were asked how many times a day they checked their Facebook pages and how happy they were. In discussing this article with your friend he exclaims, “I knew it! I have always said that being on Facebook is the cause of all my unhappiness! *[12 points]*

*Answer the following:*

**A.** What type of claim is the *author* making? Why do you say so? [2]

**B.** Describe in words the relationship noted by the author. [3]

**C.** Using the three criteria for evaluating causal claims, discuss the reasons your friend is correct or incorrect in his interpretation of the study. [7]

**2.** You conduct a study to assess what factors may be associated with belief in COVID-19 conspiracy theories. To study this, you sample a large group of BSC students and have them complete measures of belief in various COVID-19 conspiracy theories, intelligence (IQ), SES, analytical thinking style (ATS), tendency to believe in other kinds of conspiracy theories (CONS\_Gen = Conspiracy beliefs in general), and gender. In all the data, higher numbers would be more of that variable). Gender was coded as 0=male, 1 = female, 2 = transgender, 3 = other or not disclosed. The data are below. *[20 points]*

|  |  |  |
| --- | --- | --- |
| **DV: Belief in COVID-19 conspiracy theories (higher = more belief)** | **Standardized** |  |
| **Variables in the regression model** | **b (beta)** | **Significance (p)** |
| Gender | .33 | .66 |
| IQ (Intelligence) | .13 | .14 |
| SES (Socio-Economic Status) | -.18 | .11 |
| ATS (Analytical Thinking style) | -.44 | .01 |
| CONS\_Gen (Conspiracy beliefs in general) | .39 | .01 |

*Answer the following:*

**A.** What seems to be the most important predictor of the outcome variable of interest? Use that in a sentence describing that beta. **(Don’t forget the important, “controlling for” etc. part.)** [5]

**B.** Choose one of the variables other than the one you identified in A and describe how this variable relates to the DV considering direction of the effect, statistical significance, and strength of relationship compared with the other variables. (In essence, write a sentence properly describing one of the betas.) [8]

**C.** What if a friend comes along and says she does not think thinking style is to blame for the tendency to believe in COVID-19 conspiracy theories but rather that less intelligent people are more likely to believe in these wacky conspiracy theories. What do you say and why? [4]

**D.** Suppose another friend comes along and she does not think thinking style is to blame for the tendency to believe in COVID-19 conspiracy theories, but rather that it is likely education. She thinks more highly educated people are less likely to believe in the conspiracy theories regardless of thinking style. What do you say and why? [3]

**3.** Parker and Pitts (2021) investigated how upsetting events may impair memory. They showed 75 college students a film of a bank robbery in which a lone robber holds up a teller and runs out with two men in pursuit into a parking lot. They pass two boys playing. There were two identical versions of the video except for the ending, in which the last 15 seconds was either violent (a boy is shot and falls to the ground bleeding) or nonviolent (the bank manager telling employees and customers what has happened and to stay calm). In another version, the video contains the same bank and people, but there is no robbery (neutral). When participants arrived they were escorted to individual rooms to view the video alone. A research assistant read the instructions to participants. A computer program randomly selected which film to show. After viewing the films, all participants answered 25 specific questions about their memory of the events in the video and the number correct out of 25 was noted. Parker and Pitts (2021) predicted that those who saw a violent video would show less memory for the events depicted than would those who saw neutral or non-violent videos*. [40 points]*

*Answer the following:*

**A.** What kind of research design was used here? [2]

**B.** Explain one thing the researchers did (other than the use of random assignment) that was designed specifically to help reduce or minimize error variability and how it does so. [4]

**C.** Explain one thing the researchers did (other than the use of random assignment) that was designed specifically to help maximize systematic or between-groups variability and how it does so. [4]

**D.** Offer one thing the researchers could have done to slightly improve how they minimized error variance (other than using a larger sample). Tell us how it would minimize error. [4]

**E.** A friend argues, "Maybe all the people with worse memories saw the shooting part. That's why they recalled less details in the questions." What can you say in response? [3]

**F.** Suppose after participants’ memory was assessed, the researchers asked them to rate on a scale from 1 (*not at all*) to 7 (*very much*) how upsetting they found the video. What is this technique called? Which of the four big validities is it most designed to assess or support? [4]

**G.** Now, suppose the researchers conducted a second follow-up study win which they have participants write either a brief story about the most traumatic event that has happened to them or a brief story about the best thing that has ever happened to them. They then give them a list of words to recall and measure memory in this manner. The changes in the upset variable and the memory variable are designed to enhance which validity of the study (mostly)? [3]

**H.** Pose a clear question you should ask about each of the four BIG validities (construct, statistical, external, and internal) *in context of this study* (the main one in #3 above).  That is, do ***not*** ask a generic question. *Link it to this study directly.* Make sure to label which validity to which each questions refers. Immediately after, indicate how you would answer the questions, given the information you have available about the study. [8]

**I.** Type an APA-style results paragraph based on the analyses of the data (shown below – on next page). [8]

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|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ANOVA** | | | | | |
| DV: Memory Score | | | | | |
|  | Sum of Squares | df | Mean Square | F | Sig. |
| Between Groups | 333.840 | 2 | 166.92 | 12.75 | .002 |
| Within Groups | 942.160 | 72 | 13.09 |  |  |
| Total | 1176.000 | 74 |  |  |  |

Table

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**4.** What is the primary control problem for a within-subjects design and what is a researcher’s primary strategy to deal with this potential problem? Why is a within-subjects design more powerful than a between-subjects design? *[8 points]*

**BONUS (up to 5 points).** Is it always necessary to use a large sample in a study? Reflect for a moment on when a study might need to use many participants, and when a study might not need to use many participants. Which of the four big validities does the number of participants address?