A researcher is interested in measuring test-taking motivation behaviourally with impossible anagrams. To this effect, the researcher administers a test of 7 anagrams (Anagram Persistence Test; APT), but 2 of the anagrams are impossible to solve (APT item 3 and item 5). So, the amount of time spent trying to solve the impossible anagrams is considered an indication of test-taking motivation.

Data file: grit\_study\_lab\_test

You can find the data file at this link: <https://tinyurl.com/yyuotnhc>

The relevant items in the data for this portion of the lab questions are called ‘apt3\_time\_imp’ and ‘apt5\_time\_imp’.

### QUESTION 7

1. Next, create a composite score (sum score) out of the ’apt3\_time\_imp’ and the ‘apt5\_time\_imp’ variables.

Name the composite score variable ‘apt\_time\_imp\_sum’. 

What is the mean associated with the ‘apt\_time\_imp\_sum’ variable?

|  |  |  |
| --- | --- | --- |
|  | a. | 125.19 |
|  | b. | 137.99 |
|  | c. | 178.96 |
|  | d. | 1268.14 |
|  | e. | 130.32 |
|  | f. | 108.868 |

### QUESTION 8

1. What is the Pearson correlation between the age variable and the ‘apt\_time\_imp\_sum’ variable?

|  |  |  |
| --- | --- | --- |
|  | a. | .215 |
|  | b. | .169 |
|  | c. | .186 |
|  | d. | None of the other options is correct. |
|  | e. | .103 |
|  | f. | .058 |

### QUESTION 9

1. Is there statistical significant evidence to suggest that there is an association between age and test-taking motivation (i.e., the ‘apt\_time\_imp\_sum’ variable)? What is the p-value?

|  |  |  |
| --- | --- | --- |
|  | a. | Yes, p = .145 |
|  | b. | None of the other options is correct. |
|  | c. | No, p = .139. |
|  | d. | Yes, p = .139. |
|  | e. | Yes, p < .05. |
|  | f. | No, p = .145. |

### QUESTION 10

1. What is the standard error of the mean associated with the ‘apt\_time\_imp\_sum’ variable?

|  |  |  |
| --- | --- | --- |
|  | a. | None of the other options is correct. |
|  | b. | 91.043 |
|  | c. | 8.123 |
|  | d. | 10.269 |
|  | e. | 8.490 |
|  | f. | 7.126 |

### QUESTION 11

1. Now, the researcher is interested in percentiles. One of the variables in the data file is called ‘apt\_time\_imp\_ranks’. With that variable (and/or computations on that variable), answer the following questions.

What was the percentile associated with the Case ID = 7? Answer the question to three decimal places (even though such a value is impossible for a percentile).

|  |  |  |
| --- | --- | --- |
|  | a. | 51.739 |
|  | b. | 48.245 |
|  | c. | 56.265 |
|  | d. | 21.658 |
|  | e. | 63.043 |
|  | f. | 59.687 |

### QUESTION 12

1. What percentage of cases achieved an 'apt\_time\_imp' raw score of 108.868 or less?

|  |  |  |
| --- | --- | --- |
|  | a. | 46% |
|  | b. | 55% |
|  | c. | 42% |
|  | d. | 50% |
|  | e. | None of the other options is correct. |
|  | f. | 62% |

### QUESTION 13

1. What was the raw sum score that corresponded closest to the 21st percentile?

### QUESTION 14

1. Calculate z-scores for the apt\_time\_imp\_sum variable. What is the z-score associated with case ID 55?

|  |  |  |
| --- | --- | --- |
|  | a. | 2.294 |
|  | b. | 2.958 |
|  | c. | 1.359 |
|  | d. | 2.523 |
|  | e. | 1.684 |
|  | f. | None of the other options is correct. |

### QUESTION 15

1. Calculate T-scores for the 'apt\_time\_imp\_sum' variable. What is the T-score associated with case ID 88?

### QUESTION 16

1. The researcher included a short-form of the Advanced Progressive Matrices (APM) in the research project. The APM short-form consisted of 9 items: apm7, apm9, apm15, apm17, apm25, apm27, apm29, apm31, apm33.

First, within Jamovi, score the nine APM items according to the scoring key below:

apm7: 6 = 1; all other responses = 0

apm9: 8 = 1; all other responses = 0

apm15: 2 = 1; all other responses = 0

apm17: 6 = 1; all other responses = 0

apm25: 7 = 1; all other responses = 0

apm27: 7 = 1; all other responses = 0

apm29: 6 = 1; all other responses = 0

apm31: 4 = 1; all other responses = 0

apm33: 5 = 1; all other responses = 0

Then, create a composite score out of the nine scored items such that the composite score represents the average APM score for each case; thus, the theoretical range associated with such composite scores would be .00 to 1.0. Name the composite score ‘apm\_r\_avg’.

What was the mean associated with the 'apm\_r\_avg' variable?

|  |  |  |
| --- | --- | --- |
|  | a. | .554 |
|  | b. | None of the other options is correct. |
|  | c. | .415 |
|  | d. | .358 |
|  | e. | .514 |
|  | f. | .499 |

### QUESTION 17

1. The researcher includes an 11-item self-report measure of competitiveness (variable names starting with 'Comp\_'). The items were responded to on a 5-point Likert scale (Strongly Disagree = 1; Strongly Agree = 5). Two of the items (items Comp\_2 and Comp\_10) are negatively keyed.

Reverse score the two negatively keyed items and label the reverse scored items Comp\_2\_r and Comp\_10\_r.

What is the mean associated with the Comp\_10\_r?

|  |  |  |
| --- | --- | --- |
|  | a. | 3.917 |
|  | b. | 2.913 |
|  | c. | None of the other options is correct. |
|  | d. | 2.891 |
|  | e. | 4.159 |
|  | f. | 3.336 |

### QUESTION 18

1. Create a composite (average) score associated with the 11 Competitiveness items (items starting with Comp\_), whereby higher scores indicate greater competitiveness (be mindful of the negatively keyed items). Name the composite score variable ‘Comp\_avg\_r’.

What is the mean associated with ‘Comp\_avg\_r’ variable?

|  |  |  |
| --- | --- | --- |
|  | a. | 2.985 |
|  | b. | 3.124 |
|  | c. | 3.474 |
|  | d. | None of the other options is correct. |
|  | e. | 2.521 |
|  | f. | 3.101 |

### QUESTION 19

1. Calculate the standard error of the mean for the ‘Comp\_avg\_r’ variable. What is it?

### QUESTION 20

1. On the basis of your answers to the preceding two questions (and perhaps some further calculations), would you say that, on average, people in the sample were statistically significantly competitive (alpha = .05), where a mean value of 3.0 is considered a neutral level of competitiveness? What is the key result required to answer this question?

|  |  |  |
| --- | --- | --- |
|  | a. | No, key result = 3.287 |
|  | b. | None of the other options is correct. |
|  | c. | Yes, key result 3.287 |
|  | d. | Yes , key result = 3.38 |
|  | e. | No, key result = 3.38 |
|  | f. | Cannot be determined. |

### QUESTION 21

1. What was the coefficient alpha associated with the Competitiveness questionnaire?

|  |  |  |
| --- | --- | --- |
|  | a. | .785 |
|  | b. | Cannot be determined. |
|  | c. | .659 |
|  | d. | .791 |
|  | e. | .705 |
|  | f. | None of the other options is correct. |

### QUESTION 22

1. What was the internal consistency reliability associated with Competitiveness Questionnaire that does not assume essential tau-equivalence?

|  |  |  |
| --- | --- | --- |
|  | a. | None of the other options is correct. |
|  | b. | .895 |
|  | c. | .855 |
|  | d. | .865 |
|  | e. | .841 |
|  | f. | .783 |

### QUESTION 23

1. On the basis of the coefficient alpha associated with Competitiveness Questionnaire, may the data be considered sufficiently reliable for basic research purposes, based on widely accepted guidelines?

|  |  |  |
| --- | --- | --- |
|  | a. | No |
|  | b. | There are no widely accepted internal consistency reliability guidelines. |
|  | c. | Yes |
|  | d. | None of the other options is correct. |

### QUESTION 24

1. What was the internal consistency reliability (coefficient alpha) associated with the 10-item short-form APM?

### QUESTION 25

1. Which of the nine APM short-form items contributed the least amount of reliable variance to the APM 9-item short-form total scale?

|  |  |  |
| --- | --- | --- |
|  | a. | Item 9 |
|  | b. | Item 7 |
|  | c. | Cannot be determined |
|  | d. | Item 17 |
|  | e. | None of the other options is correct. |
|  | f. | Item 33 |

### QUESTION 26

1. By how much would the coefficient alpha increase by excluding the “worst” item from the 9-item short-form APM?

### QUESTION 27

1. What is the Pearson correlation between the ‘apm\_avg\_r’ variable and the ‘Comp\_avg\_r’ variable for Race 1?

NB: There's a race variable in the data file named 'race'. It has two groups: one race is labeled '1' and the other race is labeled '2'.

### QUESTION 28

1. What is the Pearson correlation between the ‘apm\_avg\_r’ variable and the ‘Comp\_avg\_r’ variable for Race 2?

### QUESTION 29

1. Test the difference between the Race 1 and Race 2 ‘apm\_avg\_r’ and the ‘Comp\_avg\_r’ variable correlations. What was the z-value associated with this statistical test?

**QUESTION 30**

1. On the basis of the test of the difference between the two correlations, may it be said that the difference was significant statistically?

|  |  |  |
| --- | --- | --- |
|  | a. | No, with p = .029. |
|  | b. | Yes, with p = .056. |
|  | c. | No, with p = .519 |
|  | d. | No, with p = .014. |
|  | e. | Yes, with p < .001. |
|  | f. | None of the other options is correct. |

**QUESTION 31**

1. For this question, estimate the true score correlation between the ‘apm\_avg\_r’ and ‘Comp\_avg\_r’ variables for the total sample. Use coefficient alpha. What was the true score correlation?

|  |  |  |
| --- | --- | --- |
|  | a. | .19 |
|  | b. | .23 |
|  | c. | .16 |
|  | d. | .14 |
|  | e. | None of the other options is correct. |
|  | f. | .124 |

### QUESTION 32

1. A researcher has created a digit span backward memory span test. One form (Form A) was administered to 12 people. The researcher has scored the test such that each person has one score that represents their “longest digit span backward” capacity. Form A of the digit span test was administered a second time to the same 12 people about 4 weeks after Form A was administered. Finally, a second form of the test (Form B) was designed to be a parallel form of Form A. Form B was administered on the same day as Form A to the same 12 people. The scores associated with each of the forms/administrations are listed below:

Form A – Time 1: 4, 6, 5, 3, 5, 5, 4, 3, 6, 7, 6, 4

Form A – Time 2: 4, 7, 5, 3, 6, 6, 5, 4, 4, 8, 6, 5

Form B – Time 1: 4, 6, 6, 3, 6, 6, 2, 5, 4, 7, 7, 6

What was the test re-test reliability associated with the digit span backward test?

|  |  |  |
| --- | --- | --- |
|  | a. | .526 |
|  | b. | .603 |
|  | c. | .628 |
|  | d. | None of the other options is correct. |
|  | e. | .038 |
|  | f. | .782 |

### QUESTION 33

1. What was the statistical significance level associated with the test retest reliability estimate?

|  |  |  |
| --- | --- | --- |
|  | a. | None of these options. |
|  | b. | .000 |
|  | c. | .526 |
|  | d. | .001 |
|  | e. | .050 |
|  | f. | .003 |

### QUESTION 34

1. Would you say that the digit span subtest was associated with excellent test retest reliability?

|  |  |  |
| --- | --- | --- |
|  | a. | Cannot be determined |
|  | b. | Yes |
|  | c. | None of the other options is correct. |
|  | d. | No |

### QUESTION 35

1. What was the parallel forms reliability estimated associated with the two forms?

|  |  |  |
| --- | --- | --- |
|  | a. | .584 |
|  | b. | .728 |
|  | c. | Cannot be determined. |
|  | d. | .782 |
|  | e. | None of the other options is correct. |
|  | f. | .624 |

### QUESTION 36

1. Was there statistical evidence to suggest that the two forms (A and B) were associated with unequal difficulty? What was the p-value associated with the appropriate statistical test?

|  |  |  |
| --- | --- | --- |
|  | a. | No, p**=** .394. |
|  | b. | Yes, p= .003 |
|  | c. | Yes, p**=** .394. |
|  | d. | No, p = .003 |
|  | e. | Cannot be determined. |
|  | f. | None of the other options is correct. |

### QUESTION 37

1. A researcher is interested in understanding the nature of a personality dimension known as ‘grit’. To that effect, the researcher administers a 12-item questionnaire designed to measure grit (“Grit Scale”). Each item is measured on a 5-point Likert scale such that 1 = ‘Not like me at all’ and 5 = ‘Very much like me’. Therefore, higher scores indicate greater grit. Theoretically, the 12-item questionnaire is supposed to measure two dimensions, but more research is needed to determine if that is the case. Consequently, conduct a factorial validity analysis of the ‘Grit Scale’ with the sample of data provided (data file: grit\_study\_lab\_test). Use parallel analysis to determine the number of factors to extract from the correlation matrix, and use maximum likelihood estimation to derive a factor solution. Use direct oblimin rotation, if more than 1 factor should be extracted from the correlation matrix.

Grit Scale Items

1. I often set a goal but later choose to pursue a different one.\*

2. I am diligent.

3. I become interest in new pursuits every few months.\*

4. My interests change from year to year.\*

5. I am a hard worker.

6. I have difficulty maintaining my focus on projects that take more than a few months to complete.\*

7. I have achieved a goal that took years of work.

8. I have overcome setbacks to conquer an important challenge.

9. I have been obsessed with a certain idea or project for a short time but later lost interest.\*

10. Setbacks don’t discourage me.

11. I finish whatever I begin.

12. New ideas and projects sometimes distract me from previous ones.\*

Items that are keyed negatively: 1, 3, 4, 6, 9, 12

**NB:** All of the Grit Scale negatively keyed items have already been reverse coded in the corresponding data file.

1: What percentage of people responded 2 to the Grit Scale item 5?

|  |  |  |
| --- | --- | --- |
|  | a. | 15.9% |
|  | b. | 5.9% |
|  | c. | 12.5% |
|  | d. | 8.4% |
|  | e. | None of the other options is correct. |
|  | f. | 6.3% |

### QUESTION 38

1. What was the skew associated with Grit Scale item 8?

|  |  |  |
| --- | --- | --- |
|  | a. | .227 |
|  | b. | .489 |
|  | c. | 1.28 |
|  | d. | .527 |
|  | e. | None of the other options is correct. |
|  | f. | -.375 |
|  |  |  |

### QUESTION 39

1. What was the Pearson correlation between Grit Scale items 5 and item 9?

|  |  |  |
| --- | --- | --- |
|  | a. | .132 |
|  | b. | .015 |
|  | c. | None of the other options is correct. |
|  | d. | .144 |
|  | e. | -.233 |
|  | f. | .221 |

### QUESTION 40

1. How many of the Grit scale inter-item correlations were significant statistically (where signficance alpha = .05)?

|  |  |  |
| --- | --- | --- |
|  | a. | 40 |
|  | b. | 37 |
|  | c. | 32 |
|  | d. | None of the other options is correct. |
|  | e. | 25 |
|  | f. | 30 |

### QUESTION 41

1. How many dimensions should be extracted from the Grit Scale correlation matrix?

|  |  |  |
| --- | --- | --- |
|  | a. | 0 |
|  | b. | None of the other options is correct. |
|  | c. | 1 |
|  | d. | 3 |
|  | e. | 4 |
|  | f. | 2 |

### QUESTION 42

1. With respect to the Grit Scale data reduction analysis, what was the eigenvalue associated with the smallest dimension that was statistically significantly greater than the corresponding random data simulated eigenvalue?

|  |  |  |
| --- | --- | --- |
|  | a. | .265 |
|  | b. | 1.986 |
|  | c. | None of the other options is correct. |
|  | d. | .999 |
|  | e. | 1.627 |
|  | f. | 3.759 |

### QUESTION 43

1. What was the largest factor loading associated with the appropriately extracted factor solution for the Grit Scale?

|  |
| --- |
|  |

### QUESTION 44

1. With respect to variance accounted for by the appropriately extracted factor solution, how much larger was the largest Grit Scale factor, in comparison to the next largest statistically significant Grit Scale factor (estimate the difference by subtracting the smaller variance from the larger variance)?

|  |  |  |
| --- | --- | --- |
|  | a. | 15.652% |
|  | b. | 5.021% |
|  | c. | 8.86% |
|  | d. | 28.531% |
|  | e. | None of the other options is correct. |
|  | f. | 16.398% |

### QUESTION 45

1. How much of the variance in the Grit Scale items was accounted for by the appropriately extracted factor solution?

|  |  |  |
| --- | --- | --- |
|  | a. | 28.537% |
|  | b. | 53.801% |
|  | c. | 12.587% |
|  | d. | 84.587% |
|  | e. | 30.258% |
|  | f. | None of the other options is correct. |

### QUESTION 46

1. What was the communality (expressed as a proportion; e.g., .400) associated with the Grit Scale item that contributed the least amount of variance to the appropriately extracted factor solution?

|  |  |  |
| --- | --- | --- |
|  | a. | .308 |
|  | b. | None of the other options is correct. |
|  | c. | .881 |
|  | d. | .081 |
|  | e. | .119 |
|  | f. | .250 |

### QUESTION 47

1. How many of the Grit Scale items were associated with an unacceptably low amount of communality?

|  |  |  |
| --- | --- | --- |
|  | a. | 4 |
|  | b. | 1 |
|  | c. | 5 |
|  | d. | None of the other options is correct. |
|  | e. | 2 |
|  | f. | 3 |

### QUESTION 48

1. What was the correlation between factor 1 and factor 2 (for this question, be sure to extract two factors from the Grit Scale items, even if the relevant test suggests you should extract a different number of factors than two)?

|  |  |  |
| --- | --- | --- |
|  | a. | .387 |
|  | b. | .376 |
|  | c. | .158 |
|  | d. | None of the other options is correct. |
|  | e. | .259 |
|  | f. | .041 |

### QUESTION 49

1. On the basis of the factor loadings and item descriptions, what is peculiar about the first factor? Simply write a single sentence for your answer.

### QUESTION 50

1. Irrespective of the results associated with a factor analysis, create an overall composite score based on the 12 Grit Scale items (name the variable 'grit\_avg'). It should have a mean of 3.158 and a standard deviation of .600. The data file has already another variable named ‘conscientious\_avg’, which was derived from a well-known and well-validated measure of the conscientiousness personality dimension.  Finally, the two APT items named ‘apt3\_time\_imp’ and ‘apt5\_time\_imp’ measure motivation/mental toughness behaviourally and the corresponding composite score (sum) has a standard deviation of 91.043. Higher scores on the APT sum composite score suggest greater motivation/mental toughness.

What is the correlation between ‘grit\_avg’ and ‘conscientious\_avg’?

|  |  |  |
| --- | --- | --- |
|  | a. | .318 |
|  | b. | None of the other options is correct. |
|  | c. | .425 |
|  | d. | -.197 |
|  | e. | .001 |
|  | f. | -.584 |

### QUESTION 51

1. What is the Pearson correlation (and p-value) between ‘grit\_avg’ and the ‘apt\_time\_imp\_sum’ variable?

|  |  |  |
| --- | --- | --- |
|  | a. | .625 (p < .001) |
|  | b. | None of the other options is correct. |
|  | c. | -.309 (p  =.001) |
|  | d. | -.369 (p < .001) |
|  | e. | .125 (p = .569) |
|  | f. | .452 (p< .001) |

### QUESTION 52

1. Given the nature of the variables, what sort of evidence does the correlation estimated in the previous question represent?

|  |  |  |
| --- | --- | --- |
|  | a. | Suggests discriminant validity. |
|  | b. | Suggests convergent validity, but the correlation is in the opposite direction than one would expect. |
|  | c. | Suggests incremental validity,  and the correlation is in the direction that one would expect. |
|  | d. | None of the other options is correct. |
|  | e. | Suggests incremental predictive validity, but the correlation is in the opposite direction than one would expect. |
|  | f. | Suggests convergent validity, and the correlation is in the direction that one would expect. |

### QUESTION 53

1. For this analysis, the behavioural measure of test-taking motivation is the dependent variable (‘apt\_time\_imp\_sum’). Estimate the amount of incremental predictive validity associated with the Grit scale, independently of the effects of the Conscientiousness scale. What is the standardized beta-weight associated with the ‘grit\_avg’ variable?

|  |  |  |
| --- | --- | --- |
|  | a. | -.313 |
|  | b. | None of the other options is correct. |
|  | c. | -.289 |
|  | d. | .215 |
|  | e. | -.256 |
|  | f. | -.309 |

### QUESTION 54

1. What is the p-value associated with the ‘grit\_avg’ beta-weight estimated in the previous question?

|  |  |  |
| --- | --- | --- |
|  | a. | .369 |
|  | b. | .159 |
|  | c. | .081 |
|  | d. | .011 |
|  | e. | None of the other options is correct. |
|  | f. | < .001 |

### QUESTION 55

1. Is there statistically significant evidence for incremental predictive validity associated with the grit scale (i.e. ‘grit\_avg’)?

|  |  |  |
| --- | --- | --- |
|  | a. | My own personal grit is wearing down and I can't answer this question. |
|  | b. | No, as the Grit Scale beta-weight was not significant statistically. |
|  | c. | Cannot be determined, as beta-weights cannot be used as incremental predictive validity evidence. |
|  | d. | None of the other options is correct. |
|  | e. | Yes, but the effect is in the opposite direction than one would expect. |
|  | f. | Yes, as the Grit Scale beta-weight was non-significant. |

### QUESTION 56

1. What percentage of variance in the ‘apt\_time\_imp\_sum’ variable is accounted for uniquely by the grit scale (i.e. ‘grit\_avg’)?

|  |  |  |
| --- | --- | --- |
|  | a. | .298 |
|  | b. | .210 |
|  | c. | .2519 |
|  | d. | .0025 |
|  | e. | .089 |
|  | f. | None of the other options is correct. |

### QUESTION 57

1. On the basis of the appropriately specified confidence intervals associated with the unstandardized beta-weights, would it be appropriate to suggest that the Grit Scale contributed a statistically significantly greater amount of unique variance to the regression equation than the Conscientiousness scale, with the ‘apt\_time\_imp\_sum’ variable as the dependent variable?

|  |  |  |
| --- | --- | --- |
|  | a. | No |
|  | b. | None of the other options is correct. |
|  | c. | Yes |
|  | d. | Cannot be determined. |

### QUESTION 58

1. The researcher is also interested in determining whether there is evidence to suggest that the Grit Scale may be associated with bias against one or more races. To this effect, the researcher had the participants specify their race: Race 1 = 1 and Race 2 = 2 (what the races are is irrelevant for this test bias analysis; in the data file, the race variable is called ‘race’).

How many statistically significant dimensions appear to be measured by the 12-item Grit scale for Race = 1?

|  |  |  |
| --- | --- | --- |
|  | a. | 1 |
|  | b. | 4 |
|  | c. | 2 |
|  | d. | None of the other options is correct. |
|  | e. | 3 |

### QUESTION 59

1. How many statistically significant dimensions appear to be measured by the 12-item Grit scale for Race = 2.

|  |  |  |
| --- | --- | --- |
|  | a. | 1 |
|  | b. | None of the other options is correct. |
|  | c. | 4 |
|  | d. | 3 |
|  | e. | 2 |

### QUESTION 60

1. Is there statistically significant evidence to suggest the presence of construct bias, on the basis of the number of dimensions measured by the Grit Scale across the two races?

|  |  |  |
| --- | --- | --- |
|  | a. | Cannot be determined. |
|  | b. | None of the other options is correct. |
|  | c. | No |
|  | d. | Yes |

### QUESTION 61

1. Conduct the rank-order consistency test for the Grit Scale across the two races. What is the relevant correlation coefficient estimate associated with this analysis?

|  |  |  |
| --- | --- | --- |
|  | a. | .888 |
|  | b. | .629 |
|  | c. | .719 |
|  | d. | .915 |
|  | e. | .812 |
|  | f. | None of the other options is correct. |

### QUESTION 62

1. Is there evidence to suggest the presence of construct bias, on the basis of the ‘rank-order consistency’ test on the Grit Scale? Use the rule/expectation strictly, in this case.

|  |  |  |
| --- | --- | --- |
|  | a. | No |
|  | b. | Yes |
|  | c. | Cannot be determined |
|  | d. | None of the other options is correct. |

### QUESTION 63

1. In order to evaluate the predictive validity of the scale, the researcher also measured Career Success (variable in data file: ‘career\_success’) for the sample (a multi-item measure that you don’t need to know anything more about).

What is the Pearson correlation between the Grit Scale (‘grit\_avg’) and Career Success (‘career\_success’) for the total sample? Is it significant statistically?

|  |  |  |
| --- | --- | --- |
|  | a. | None of the other options is correct. |
|  | b. | .296, yes significant statistically. |
|  | c. | .283, yes, significant statistically. |
|  | d. | .089, no, not significant statistically. |
|  | e. | .256, no, not significant statistically. |
|  | f. | .256, yes, significant statistically. |

### QUESTION 64

1. What are the 95% confidence intervals associated with the Pearson correlation between ‘grit\_avg’ and ‘career\_success’ for Race = 1?

|  |  |  |
| --- | --- | --- |
|  | a. | .41/-.18 |
|  | b. | .75/.02 |
|  | c. | None of the other options is correct. |
|  | d. | .55/-.08 |
|  | e. | .36/-.32 |
|  | f. | .49/-.21 |

### QUESTION 65

1. What are the 95% confidence intervals associated with the Pearson correlation between ‘grit\_avg’ and ‘career\_success’ for Race = 1?

|  |  |  |
| --- | --- | --- |
|  | a. | .65/.22 |
|  | b. | .55/.16 |
|  | c. | Cannot be determined |
|  | d. | None of the other options is correct. |
|  | e. | .53/.14 |
|  | f. | .57/.18 |

### QUESTION 66

1. Was there evidence for predictive validity bias associated with the Grit Scale across the two races, where career success is the predicted variable? Use the unstandardized beta-weight results to answer this question. Form the conclusion and report the relevant results.

|  |  |  |
| --- | --- | --- |
|  | a. | Yes, there's evidence. Race = 1:  1.213/5.433; Race = 2: 5.786/10.832 |
|  | b. | Yes, there's evidence. Race = 1: -2.333/9.490; Race = 2: 4.786/10.832 |
|  | c. | Cannot be determined. |
|  | d. | None of the other options is correct. |
|  | e. | No evidence. Race = 1: -2.333/9.490; Race = 2: 4.786/10.832 |
|  | f. | No evidence. Race = 1: -1.425/8.490; Race = 2: 4.786/9.852 |