**942 Q1 Hw#3** data 🡪 **942\_q1h3first\_212.sav**

**942\_q1h3second\_212\_mod.sav & 942\_q2h3second\_212\_app.sav**

1a. Use 942\_q1h3first\_152.sav with the criterion dep -- get the correlation with the criterion and following values for each predictor from a multiple regression (do not use exponential notation).

R² \_\_\_0.5451\_\_\_\_\_\_ F \_\_\_\_79.49\_\_\_\_\_\_\_ df \_6\_\_\_, \_\_\_\_398\_\_\_\_\_\_\_ p \_\_<000.1\_\_\_\_\_\_\_\_

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Predictor | r | p (for r) | b | β | p for (b & β) | multivariate contributor ? |
| stress | 0.490 | 1.58e-25 | 0.21501 | 0.24471590 | 1.5e-10 | Y |
| SES | -0.680 | 1.19e-55 | -0.68496 | -0.54728253 | < 2e-16 | Y |
| salarysat | 0.032 | 0.518 | 0.07162 | 0.03946494 | 0.24559 | N |
| priorgrad | 0.220 | 1.12e-05 | 0.69704 | 0.07657744 | 0.02737 | Y |
| mar | -0.310 | 2.06e-10 | -1.66837 | -0.12703965 | 0.00103 | Y |
| findep | -0.096 | 0.0528 | 0.24462 | 0.01889724 | 0.61023 | N |
| constant (a) |  |  | 27.47207 |  | < 2e-16 |  |

1. Interpret all r, b & β values and interpret a (review Hw#1 instructions about interpretations)

**Remember 🡪 the correlations are bivariate statistics, but b & β are from a multivariate regression model !!!!!**

|  |  |  |
| --- | --- | --- |
| predictor | term | Interpretation |
| stress | r | Greater stress ratings are associated with greater depression ratings |
| b | One unit increase in stress is associated with 0.215 point increase in depression ratings after controlling for SES, salary satisfaction, prior graduate studies, marital status, and financial satisfaction |
| **β** |  |
| SES | r | Lower socio-economic status is associated with greater depression ratings |
| b |  |
| β |  |
| salarysat | r | Salary satisfaction and depression ratings are not linearly related |
| b |  |
| β |  |
| priorgrad | r | Being a previous graduate student is associated with greater depression ratings |
| b |  |
| β |  |
| mar | r | Being married is associated with lower depression ratings |
| b |  |
| β |  |
| findep | r | Financial independence from family is not associated with depression ratings |
| b |  |
| β |  |
| constant (a) | |  |

2a. Use 942\_q1h3second\_212\_mod.sav with the criterion ggpa -- get the correlation with the criterion and following values from a multiple regression for each predictor (do not use exponential notation).

R² \_\_\_\_\_\_\_\_\_ F \_\_\_\_\_\_\_\_\_\_\_ df \_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_ p \_\_\_\_\_\_\_\_\_\_

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Predictor | r | p (for r) | b | β | p for (b & β) | multivariate contributor ? |
| averate |  |  |  |  |  |  |
| ugpa |  |  |  |  |  |  |
| hrsjob |  |  |  |  |  |  |
| prog |  |  |  |  |  |  |
| reptclas |  |  |  |  |  |  |
| rural\_urban |  |  |  |  |  |  |
| constant (a) |  |  |  |  |  |  |

1. Write out the raw score multiple regression model

* Do not use exponential notation
* Remember to use all predictors & weights, not just the significant ones
* Remember to apply this to raw score versions of the predictors

ggpa’ =

1. Write out the standardized score multiple regression model

* Do not use exponential notation
* Remember to use all predictors & weights, not just the significant ones
* Remember to apply this model to Z-score versions of the predictors

Zggpa’ =

1. Use 942\_q2h3second\_212\_app.sav to obtain the following predicted GGPA values

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Model | Applicant #5 | Applicant #9 | Applicant #12 | Applicant #17 |
| Based on raw score model |  |  |  |  |
| Based on standardized score model |  |  |  |  |

1. Look at the predicted Z-vaues for Applicants 5 & 9. These seem like really low ggpa values? Is there a problem with the model? A problem with the formula? Please explain.
2. Look at the predicted Z-values for Applicants 12 & 17. How can we have a predicted GPA that is negative? Is there a problem with the model? A problem with the formula? Please explain.