

PSYC 5322: Psychometrics

Tarleton State University

Homework 2

1. Calculate and interpret the Pearson correlation coefficient for the relationship between *Introversion* and *Social dominance* for the following data:

| | | | | | | | | |
|------------------------|---|---|---|---|---|---|---|---|
| Introversion score | 0 | 0 | 1 | 1 | 2 | 2 | 4 | 5 |
| Social-dominance score | 4 | 5 | 4 | 2 | 1 | 3 | 2 | 1 |

2. The following data is designed to assess the relationship between sex and hair length. Calculate and interpret the phi coefficient from these data.

| | Short hair | Long hair |
|--------|------------|-----------|
| Male | 16 | 4 |
| Female | 8 | 12 |

3. Teachers were asked rate their attitude toward the students in their classes. A score of 0 was recorded for negative responses, whereas a score of 1 was recorded for positive responses. Calculate and interpret the point-biserial correlation to assess the relationship between this variable and grades on a midterm exam:

| | | | | | | | | | | |
|------------------|---|---|---|---|---|---|---|----|----|----|
| Teacher attitude | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 |
| Midterm score | 5 | 7 | 4 | 7 | 9 | 5 | 9 | 11 | 13 | 15 |

4. Two personality tests measure empathy and nurturance on an ordinal level. Calculate and interpret the Spearman correlation for the data below:

| | | | | | | | |
|------------|---|---|---|----|---|----|----|
| Empathy | 3 | 5 | 8 | 10 | 9 | 17 | 12 |
| Nurturance | 2 | 4 | 7 | 5 | 6 | 10 | 14 |