A Quantitative Analysis of Course Evaluation

What would influence the overall score of a course?

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# Introduction

Codebook
Variable Meaning eval #: for future reference sequence: which course? year: which year? instructor: who taught? overall: mean score of the responses to the question “Overall, this was an excellent course.” discussion: … “the instructor facilitated discussions that were engaging and useful.” learning: … “the instructor helped you gain significant learning from the course content.” inclusivity: … “the instructor worked to create an inclusive and welcoming learning environment.” contribution: … “Overall, this instructor made a significant contribution to your learning.”

# Descriptive Statistics

We evaluated 205 classes belonged to HUMA or SOSC sequence in the year of 2019. There are 1737 students enrolled in a HUMA course, and 1648 students enrolled in a SOSC course. HUMA courses received a 4.33 overall score on average, while SOSC courses received 4.5. HUMA courses received a 4.58 Inclusivity score on average, SOSC 4.62.

## 1. Inclusivity Rank

Generally speaking, SOSC sequences perform better than HUMA sequences in terms of Overall score. 

## 2. Overall Rank

Generally speaking, SOSC sequences also perform better than HUMA sequences in terms of Inclusivity score. 

## 3. Correlation between Inclusivity and Overall

Generally speaking, there is a positive relationship between the two. To achieve a higher overall score, HUMA courses have too have a higher inclusivity score.

Estimate separate linear regression models of the relationship between inclusivity and overall score for each type of course (HUMA/SOSC). The table reports the estimated parameters and standard errors.

## # A tibble: 4 x 8
## # Groups: type [2]
## type data model term estimate std.error statistic p.value
## <chr> <list> <lis> <chr> <dbl> <dbl> <dbl> <dbl>
## 1 HUMA <tibble [104 × 9… <lm> (Intercep… -0.976 0.402 -2.43 1.71e- 2
## 2 HUMA <tibble [104 × 9… <lm> inclusivi… 1.16 0.0877 13.2 8.14e-24
## 3 SOSC <tibble [101 × 9… <lm> (Intercep… 0.434 0.320 1.36 1.78e- 1
## 4 SOSC <tibble [101 × 9… <lm> inclusivi… 0.879 0.0690 12.7 1.42e-22



# Add more variables into the linear model

Considering HUMA and SOSC together, estimate the linear model: overall ~ inclusivity

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| term | estimate | std.error | statistic | p.value |
| (Intercept) | -0.2924976 | 0.2648535 | -1.104375 | 0.2707377 |
| inclusivity | 1.0226578 | 0.0574294 | 17.807225 | 0.0000000 |

Considering HUMA and SOSC together, estimate the linear model: overall ~ type + enrolled + discussion + learning + inclusivity + contribution

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| term | estimate | std.error | statistic | p.value |
| (Intercept) | -0.8525478 | 0.2104793 | -4.0505069 | 0.0000735 |
| typeSOSC | 0.0239532 | 0.0273258 | 0.8765783 | 0.3817834 |
| enrolled | 0.0077900 | 0.0053770 | 1.4487500 | 0.1489973 |
| discussion | 0.1030758 | 0.0615915 | 1.6735394 | 0.0958082 |
| learning | 0.2738445 | 0.0880763 | 3.1091731 | 0.0021540 |
| inclusivity | 0.3160998 | 0.0656531 | 4.8146942 | 0.0000029 |
| contribution | 0.4385587 | 0.0969995 | 4.5212451 | 0.0000106 |

## Graphs

These graphs demonstrate the second linear model: overall ~ type + enrolled + discussion + learning + inclusivity + contribution

It appears that these three variables in the course evaluation are significantly related with the overall score, namely: 1. learning: … “the instructor helped you gain significant learning from the course content.” 2. inclusivity: … “the instructor worked to create an inclusive and welcoming learning environment.” 3. contribution: … “Overall, this instructor made a significant contribution to your learning.” 