Medical Student Attitude Toward Personalized Medicine Report

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Begin by calling packages which will be used later in the report:

library(knitr)  
library(psych)

Reading in the data from the Github Repository (/kippjohnson/PMQ):

tmp <- tempfile()  
download.file("https://raw.githubusercontent.com/kippjohnson/PMQ/master/SurveyResponses.csv", destfile=tmp, method="curl")  
infile <- read.csv(tmp,header=TRUE)

### Demographics

|  |  |  |
| --- | --- | --- |
|  | Number of Students | PercentTotal |
| Male | 109 | 0.51 |
| Female | 101 | 0.48 |
| No Sex Given | 2 | 0.01 |
| MS1 | 65 | 0.31 |
| MS2 | 64 | 0.30 |
| MS3 | 64 | 0.30 |
| MS4 | 17 | 0.08 |
| No Year Given | 2 | 0.01 |
| Total Dual Degree | 178 | 0.84 |
| Total with Research Interest | 33 | 0.16 |

### EBPAS Statistics

The first step is to compute EBPAS total score, along with its subsets for scores of openness, divergence, and education. Questions 1-12 define the EBPAS scale on the survey, with its three subsets of openness, divergence, and education. There are a number of people who did not completely fill out the first 12 questions of the survey, and for this analysis they will be dropped.

\_\_\*\*One question I had: should the divergence Likert scores be reversed?\_\_

Number of people who did not completely fill out the first 12 questions of the survey: **17**

We will drop all of these individuals from the rest of the study? *This is something which should be discussed*

Computing Crohnbach's Alpha: We use the alpha() function from the psych package in R. The EBPAS cronbach's alpha is taken from the literature (Overby et al., J Pers. Med. 2014), as was done in the paper on which we are modeling this.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | N | Mean | SD | Min | Max | Range | Alpha |
| EBPAS | 195 | 35.410 | 5.118 | 23 | 51 | 28 | 0.780 |
| education | 195 | 10.610 | 2.490 | 5 | 17 | 12 | 0.545 |
| divergence | 195 | 9.713 | 2.561 | 4 | 18 | 14 | 0.545 |
| openness | 195 | 15.087 | 2.949 | 5 | 20 | 15 | 0.814 |

### Remaining Analysis Plan

#### Step 1: Frequencies

Calculate frequencies of medical student characteristics

Includes:

* Attitudes toward PGT testing
* Education
* Attitudes toward DTC
* Comfort using technology
* Knowledge of genomic testing concepts
* Ability to understand genomic testing concepts

*Also calculate these by covariate?*

#### Step 2: T-Tests

Collapse predictors listed in Step 1 into binary categories and conduct T-tests of them vs. EBPAS-GI score.

#### Step 3: Linear Regression

Model EBPAS ~ Step 1 predictors + possible covariates

Covariates collected include:

* Age
* Gender
* Medical School Year
* Dual Degree
* Interest in Research