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.

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