



AFRL-RH-WP-TR-2020-0079

Text Analysis Tools to Enhance Personnel Assessment

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August 2020

Interim Report

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REPORT DOCUMENTATION PAGE				Form Approved OMB No. 0704-0188	
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1. REPORT DATE (DD-MM-YY) 17-8-20		2. REPORT TYPE Interim		3. DATES COVERED (From - To) March 2019 – August 2020	
4. TITLE AND SUBTITLE Text Analysis Tools to Enhance Personnel Assessment				5a. CONTRACT NUMBER FA8650-18-F-6828 0007	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER 62202F	
6. AUTHOR(S) Michael A. Champion ^a and Emily D. Champion ^a				5d. PROJECT NUMBER 5329	
				5e. TASK NUMBER 09	
				5f. WORK UNIT NUMBER H0SA (532909TC)	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Campion Consulting Services ^a 403 West State St. West Lafayette, IN 47907-2056 Phone: 765-494-5909 Email: campionm@purdue.edu				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) Air Force Materiel Command Air Force Research Laboratory 711 th Human Performance Wing Airman Systems Directorate Airman Biosciences Division Performance Optimization Branch Wright-Patterson AFB, OH 45433				10. SPONSORING/MONITORING AGENCY ACRONYM(S) 711 HPW/RHCC	
				11. SPONSORING/MONITORING AGENCY REPORT NUMBER(S) AFRL-RH-WP-TR-2020-0079	
12. DISTRIBUTION/AVAILABILITY STATEMENT DISTRIBUTION A. Approved for public release. 88ABW-2020-2958, cleared on 25 September 2020					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT The purpose of this report is to describe a series of studies illustrating the use of text analysis tools to enhance personnel assessment. Text analysis refers to a range of techniques for identifying and summarizing topics, themes, or other dimensions of interest in a text corpus using various types of automated assistance. One objective of this series of studies was to identify where and how text analysis could augment existing US Air Force assessments. This objective resulted in a study that illustrated the use of text analysis techniques to score structured employment interview responses. Another objective was to examine the utility of text analysis using archival US Air Force data. This objective resulted in two studies. One illustrated the use of text analysis techniques to content analyze survey data. The other illustrated the use of text analysis to score officer training school applications. Each of the three studies was documented in multiple short reports, with over 20 in total and nearly as many appendices. The current report pulls together all of those reports and appendices into one complete document.					
15. SUBJECT TERMS Computer-aided text analysis; Computer-assisted text analysis; CATA; text analysis; machine learning; automated intelligence; content analysis; sentiment analysis; validity; testing; personnel assessment; hiring; staffing; recruiting					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT: SAR	18. NUMBER OF PAGES 760	19a. NAME OF RESPONSIBLE PERSON (Monitor) Thomas R. Carretta 19b. TELEPHONE NUMBER (Include Area Code) N/A
a. REPORT Unclassified	b. ABSTRACT Unclassified	c. THIS PAGE Unclassified			

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EXECUTIVE SUMMARY

The purpose of this report is to describe a series of studies illustrating the use of text analysis tools to enhance personnel assessment. Text analysis refers to a range of techniques for identifying and summarizing topics, themes, or other dimensions of interest in a text corpus using various types of automated assistance. The project had three overall objectives:

1. Objective 1: Conduct Literature Review of State-of-the-Art Text Analysis Software and Analytical Techniques and Identify Best Practices. This objective resulted in a literature review (Campion & Campion, 2019) entitled “Literature Review of Computer-Assisted Text Analysis Research, Software, Analytical Techniques, and Best Practices.”

2. Objective 2: Identify Where and How Text Analysis Could Augment Existing US Air Force Assessments. This objective resulted in a study that illustrated the use of text analysis techniques to score structured employment interview responses. This study is presented as the second study below.

3. Objective 3: Examine the Utility of Text Analysis Tools/Methods using Archival US Air Force Data. This objective resulted in two studies. One illustrated the use of text analysis techniques to content analyze survey data. The other illustrated the use of text analysis to score officer training school applications. These studies are presented as the first and third studies below.

Each of the three studies was documented in multiple short reports, with over 20 in total and nearly as many appendices. The current report pulls together all of those reports and appendices into one complete document.

STUDY 1: CONTENT ANALYSIS OF SURVEY DATA

As an initial evaluation, the Air Force team that was guiding the research decided to evaluate the use of text analysis techniques to reduce the burden of conducting manual content analysis of survey data. Along with measuring the job and training satisfaction of subject matter experts, the surveys were used to create realistic job preview (RJP) videos, which required content analyzing the narrative survey responses to identifying the themes relevant to job and training satisfaction, dissatisfaction, and challenges. The conclusion from Study 1 was that the text analysis did a reasonably good job of reproducing the categories identified by the researchers, and the differences in the categories were no less logical. In addition, a researcher using text analysis could conduct the analyses in a few hours that would take weeks to do manually. This research was documented in nine short reports as summarized below.

1. **Initial Text Mining of Security Forces Survey Data.** The purpose of this analysis was to text-mine the survey data and evaluate the similarity to the human content analysis. The findings showed that there was clear correspondence between the text analysis and the human-generated categories. The last section of the report showed a tutorial of how the text-mining was conducted using the software for one question.

2. **Content Analysis Agreements of the Remotely Piloted Aircraft (RPA) Sensor Operator Survey.** The purpose of this analysis was to compare the human sorting of responses

into the categories they created, with the computer sorting of responses into categories that were text mined to model the human categories. We found that many of the agreement percentages and correlations were quite high, but not all of them. We discussed possible reasons for some lower levels of agreement or correlation.

3. Further Text Mining of the Remotely Piloted Aircraft Sensor Operator (RPA SO) Survey. The purpose of this analysis was to compare the results of the text analysis to the original content analysis categories developed by the Air Force. Categories between the two approaches were relatively similar for “Good fit.” The results of “Bad fit,” on the other hand, did not align as well, partly because the Air Force categories reflected the coders’ evaluation of the comments (as reflecting undesirable personal traits) as opposed to what the respondents said.

4. Content Analysis Agreements between Text Analysis and Rater Judgments. This analysis compared how two Air Force raters sorted the Remotely Piloted Aircraft Sensor Operator (RPA SO) responses into categories developed by the computer for two open-ended survey questions. This analysis complements the previous analysis where we examined how well the computer could reproduce categories developed by humans and classify responses in agreement with the humans. Overall, the results were fairly positive. The average agreement across categories between the humans and the computer was 64%, compared to 85% between the two human raters. The average correlation between the human raters and computer averaged .41, compared to .56 between the human raters. We suggest reasons for the slightly lower levels of agreement or correlation.

5. Sentiment Analysis of the RPA SO Narrative Survey Responses. The purpose of this analysis was to conduct text analysis to measure the sentiment in responses to narrative survey questions. Sentiment analysis seeks to measure affective reactions and other feelings in textual data, usually from word dictionaries. We used two types of software: Linguistic Inquiry and Word Count (LIWC), which is the most common, and SPSS, which is the software we used for all the other text analyses. We found that sentiment analyses seemed informative enough to consider further in our research, LIWC seemed much better developed and useful for studying sentiment than the SPSS, but SPSS might still be useful because the overall positive and negative sentiment scales performed adequately.

6. Sentiment Analysis of RPA SO Survey Responses by Gender, Rank, and Skill Level. The purpose of this analysis was to determine if sentiment analyses differed by key demographics. Across all questions, men and those with higher rank/skill used more analytical words. Higher rank employees were more likely to use clout words, lower rank employees more likely to use “I,” and women more likely to use “We.”

7. Construct Validity of LIWC. The technical report contains several types of construct validity evidence, including the development process, reliability, criterion-related validity, and studies of the computed scores. The literature review found 55 studies that used LIWC, with 19 offering evidence of construct validity for measuring human attributes potentially related to hiring. Thus, the amount of construct validity evidence for LIWC is quite impressive.

8. **Text Link Sentiment Analysis in SPSS.** The purpose of this analysis was to determine whether sentiment analysis conducted with the Text Link Analysis node in SPSS would yield different results than sentiment analysis conducted with the Text Mining node. We discovered that concepts extracted are virtually identical, a potential advantage of Text Link analysis over LIWC is that it identifies categories associated with positive and negative sentiments, and an advantage of Text Link analysis over Text Mining analysis is that it can output data for individual responses. However, we conclude that Text Link analysis will probably not be useful for the Air Force purposes.

9. **Text Link Analysis of Negation.** The purpose of this analysis was to examine how SPSS might evaluate negation, meaning interpreting when text contains “not” or some variant, thus potentially reversing the meaning of a phrase. We observed that SPSS appears to be able to detect negation, but it does not pick up every occurrence. We found that scoring negation does not improve prediction. Review of example responses revealed that the negation did not change the meaning in many instances. This research reminded us that text mining generally focuses on nouns as concepts and not verbs. It considers many verbs as noise (error variance) in the analysis.

STUDY 2: SCORING STRUCTURED INTERVIEW RESPONSES

Using text analysis to score structured interview responses was based on four considerations: (1) interview responses are narrative, (b) interviews are time-consuming to administer, so text analysis may save time, (3) an automated structured interview might complement the current Air Force use of tests, and (4) interview questions might measure constructs that could complement the tests. The Air Force also had a sample of candidates available for research, the trainees in basic training at Lackland Air Force Base, who are available to participate in research studies as part of basic training. The trainees are enlisted personnel and their selection process did not include an interview. However, the officer selection process does include an interview and those who do officer selection were interested in possibly using the results of this research to improve and streamline their selection process. Therefore, we used the Lackland sample to research the feasibility of using text analyses to score structured interviews to be potentially used for officer selection. About 463 trainees were asked to respond to six interview questions by typing out their answers. The answers were scored by a panel of two research employees at the Air Force Personnel Center (AFPC). The conclusions from Study 2 were that text analysis can be used to score employment interview responses, the scores show good validity in predicting interviewer ratings, the scores show construct validity with other assessments, and use of text analysis would have practical utility for making selection decisions. This study resulted in seven short reports that are described below.

1. **Descriptive Statistics on the Lackland Sample and Armed Services Vocational Aptitude Battery (ASVAB) and Tailored Adaptive Personality assessment System (TAPAS) Data.** In preparation for the text analyses, we analyzed the descriptive statistics on the Lackland sample and the data on the existing selection procedures. Overall, the Lackland sample appears

representative of the population of candidates, and the score data on the existing tests show that they have good variance, which increases the likelihood of correlating with the text variables.

2. Initial Text Mining of One Interview Question from Lackland Sample. The purposes of this initial study were to text mine the responses to one of the interview questions and to examine the relationships with the ASVAB subtest scores. The results suggested that the text analyses will extract a meaningful number of categories and the categories will show small positive relationships to the ASVAB and TAPAS scores.

3. Illustration of Initial Training and Relabeling to Enhance Job Relatedness (Content Validity). The purpose of this analysis was to illustrate the initial training and relabeling of the categories extracted by text mining to enhance the apparent job relatedness and content validity. The training and relabeling consisted of nine types. Examples include eliminating categories for a range of reasons such as category size, combining categories that are redundant or not meaningful, and relabeling categories that may not seem clearly job related because of the generic terms assigned by the software. Subsequent training of the categories will occur based on selecting the categories that best predict a criterion.

4. Initial Text Mining of Interview Questions from Lackland AFB and Correlations with the Armed Forces Qualifications Test (AFQT). The purpose of this analysis was to conduct initial text mining of the responses to the interview questions collected from trainees at Lackland Air Force Base, and then correlate the categories extracted with the Armed Forces Qualification Test (AFQT) scores. This will illustrate the types of text-mined categories extracted from such data and evaluate the extent to which the scores correlate with mental ability. We found that text mining was able to successfully extract a large number of categories for the interview answers and the categories appear logically related to the questions, and the text mined categories showed small but meaningful correlations with mental abilities as measured by the AFQT.

5. Validity of Text Mining of Lackland AFB Interview Answers for Predicting Interview Ratings. The purpose of these analyses were to: (1) determine the validity of text mining the answers to the interview questions collected from trainees at Lackland Air Force Base in predicting the scores from human raters of the interview answers; (2) explore differences between versions of the text mining software; (3) evaluate approaches to “training” the text mining models (i.e., variables extracted) beyond the baseline model and determine the optimal approach; and (4) examine the influence of capitalization on chance by cross-validating the analyses. We found that:

(1) Text-mining models appear to be valid predictors of interview ratings and test scores,

(2) There are differences between the versions of the SPSS software and we will use the latest version (V18.2.1) going forward.

(3) Training the models in the form of building multiple times and converting unused concepts into categories improves prediction.

(4) The validities of the text variables extracted hold up very well under cross-validation.

6. Second Set of Analyses of Validity of Text Mining of Lackland AFB Interview

Answers. The purposes of these analyses were to: (1) determine how to decide on the number of categories to include in the text mined models, (2) further cross-validate the models, which included exploration of alternative approaches to model building and cross-validation, (3) examine the reliability and construct homogeneity of text-mining models, (4) analyze if sentiment analyses can predict interview ratings; and (5) examine demographic differences in text-mining model scores. The findings regarding the five purposes were:

(1) It was reasonable and fairly optimal to retain categories with at least 4 responses and a minimum correlation of .05 with the criterion.

(2) The text-mining categories cross-validate well, but not the regression equations due to the small samples compared to the large number of categories. Even cross-validation approaches designed to accommodate small samples, such as K-fold, did not cross-validate better. Unit-weighted composites of the categories cross-validated better. Other simple approaches that cross-validated even better were category counts and word counts. Combined, the cross-validities averaged .466 in the question used for analysis.

(3) Psychometric analyses of the meaningfulness of the text-mined categories revealed they had low alphas (low homogeneity) for the number of categories included in the model, traditional item-analyses improved the reliabilities slightly but did not improve the validities, the categories were highly multidimensional based on factor analyses, but the alternative forms reliabilities were fairly reasonable.

(4) Sentiment analyses measures predicted the interview ratings. A composite of seven cross-validated LIWC variables (which included word count described above) showed an average correlation of .478 for one illustrative question. When combined with the text-mined categories and grammatical errors, this resulted in a maximum achievable prediction of .487.

(5) The initial examination of demographic differences in text mining model scores showed only small and inconsistent differences for one question with women and Blacks performing higher, but slightly larger for another question with women and Whites performing higher. The differences were similar but slightly larger for the human ratings. One of the two questions examined showed small relationships between education, English as a first language, text-mining scores, and human ratings, but the other question only showed a small correlation between education and English as a first language.

7. Third Set of Analyses of Validity of Text Mining of Lackland AFB Interview

Answers. The purposes of these analyses were to: (1) apply the final text-mining analysis approach to build models to predict the ratings of all the interview questions, (2) examine differences in correlations between interview ratings and LIWC variables by question, (3) examine correlations between the text-mining models and other potential hiring predictors (AFQT and TAPAS) for construct validity purposes, and (4) determine the value of the text-mining models to select-out the lowest scoring candidates. The findings were:

(1) The text-mining models show good validity in predicting human ratings across the six questions in general, and the validity of the entire interview combining all questions is about

the same as the interrater reliability of a single human interviewer ($r = .73$) based on comparisons to the research literature ($r = .70$) and is slightly less than the reliability of the raters used in this study ($r = .83$).

(2) The LIWC variables show a pattern of correlations across questions that seem logical when interpreted post hoc. Longer answers, use of longer (more complex) words, and more analytic answers got higher ratings, while answers with more negation and use of personal pronouns got slightly lower ratings.

(3) The text-mined variables show moderate correlations with the various ASVAB scales, suggesting the variables reflect mental ability to some extent. On the other hand, the text-mined variables show only a few small correlations with the various TAPAS scales, suggesting the variables do not reflect personality traits to a great extent.

(4) The text-mining models may have practical utility for making selection decisions. For example, depending on the passing scores, using the text-mining models to select out the lowest scoring candidates will result in eliminating few candidates who would have been hired.

STUDY 3: SCORING OFFICER TRAINING SCHOOL APPLICATIONS

Officer Training School (OTS) applications are a potential context where text analysis might be used for employment decisions based on currently existing data. Boards of officers review and score the applications in a time-consuming process. Much of the information is narrative, such as past jobs, degrees, statements, and letters. Thus, text analysis might provide a useful tool to enhance efficiency if it is effective in predicting OTS Board scores. Data were available on about 497 candidates for rated (flying) positions and 1,331 for non-rated (non-flying) positions. The conclusions from Study 3 were that text analysis can be used to score OTS applications, the scores show good validity in predicting Board scores, the scores show construct validity with other assessments, the text analysis scores predict Board scores beyond numeric information, and use of text analysis would have practical utility for making selection decisions. This study resulted in three reports that are described below.

1. Description of Sample and Variables for Text Mining of Officer Training School (OTS) Applications. The purposes of these analyses were to: (1) describe the size and demographics of the samples of candidates submitting applications to OTS, and (2) describe the variables available for analyses, including the application information (predictors), the board scores and selections into the various OTS jobs (criteria), and the Air Force Officer Qualifying Test (AFOQT) Scores (existing predictors). The sample appears to be representative of OTS candidates. There appear to be many text fields appropriate for text analysis and there are also many numeric variables with good variance. The OTS board score will be the primary criterion variable because it is a continuous variable and most reflective of the board's exact evaluation of candidate credentials and not influenced by the number of openings like the selection decisions. Incremental validity beyond current hiring procedures will be evaluated with the AFOQT scores.

2. Second Analysis of the Text Mining of Officer Training School (OTS) Applications. The purposes of these analyses were to: (1) describe the text mining of the text

fields in the OTS applications, (2) analyze the univariate relationships (correlations) between the Board scores and both the text-mined variables and the numeric variables in the applications, (3) analyze the multivariate relationships (composites and regression equations) between the Board scores and both the text-mined variables and the numeric variables in the applications, (4) illustrate the potential value of using the computer models to make selection decisions in terms of the expected percentage of successful hires, and (5) examine diversity differences to estimate whether the use of the computer models would have potential to create adverse impact in the hiring of women and minorities. The findings were as follows:

(1) ***Text-Mining Results:*** First, the number of categories for each text field seems logical in the sense that fields with more variety of responses had more categories. Second, the number of categories for each text field is large, suggesting there is a wide variation in the application information across candidates. Third, the means show that the average candidate is scored on many text categories, suggesting the text categories are measuring many aspects of the candidate's application. From this we conclude that the text-mining appeared to measure meaningfully the text data in the applications.

(2) ***Univariate Results:*** The text-mining category counts show significant correlations for about 11 of the 14 text fields in 2 or more of the 4 panels. The correlations are small but useful, averaging about .135 across all samples. In addition, many of the correlations between the numeric application information and the OTS Board scores are significant. The correlations are larger in size, often in the .30s. From all these analyses, we conclude that both the text-mining variables and numeric variables on the applications show meaningful correlations with the OTS Board scores.

(3) ***Multivariate Results:*** We conducted multivariate analyses for two purposes. First, they allowed a determination of the overall level of prediction of the OTS Board scores from the application information. The correlation between a unit-weighted composite of the variables that were significant across panels are .448 for rated panel 1, .680 for rated panel 2, .360 for non-rated panel 1, and .425 for non-rated panel 2. The multiple correlation is .651 for rated panel 1, .780 for rated panel 2, .529 for non-rated panel 1, and .601 for non-rated panel 2. The adjusted R s are .606, .750, .515, and .563, respectively. Second, multivariate analyses allow an evaluation of the incremental prediction of the text variables beyond the numeric variables. The incremental R -squared (and adjusted R -squared) values are .080 (.055), .036 (.013), .047 (.039), and .065 (.037), respectively. Thus, the incremental contribution of the text variables averaged 5.7% (3.6% adjusted) across samples. From this, we conclude that computer models of application information can predict OTS Board scores fairly well, although differential weighting will be required. We also conclude that the text-mining variables add sufficiently to the prediction of OTS Board scores beyond the numerical variables to be useful in the computer models.

(4) ***Expectancy Tables:*** We created expectancy tables to illustrate the potential value of using the computer models to make selection decisions. Expectancy tables show the expected percentage of successful hires based on performance on the computer models. We defined a successful hire as a candidate that scored above average on the OTS Board scores. The tables showed that there can be substantial practical utility of the computer models in predicting which candidates will be successful hires.

(5) ***Diversity Differences:*** We examined diversity differences to estimate whether the use of the computer models would have potential to reduce adverse impact in the hiring of women and minorities. The tables show relatively few significant differences on the text variables across panels. The numeric variables show many more differences, especially the commonly observed race differences on aptitude tests like the AFOQT. The regression models, which better estimate impact on hiring decisions, only showed significant differences by gender in one panel, where women scored higher. On the other hand, there were significant differences by race for 3 of the 4 panels, but the differences by race were small, averaging .282 standard deviations across the 4 panels. The results were nearly identical for the OTS Board scores, except the race differences were slightly larger, averaging .319 standard deviations across the 4 panels.

3. Third Analysis of the Text Mining of Officer Training School Applications.

The purposes of the report are to describe two supplemental analyses: (a) Creating expectancy tables showing the incremental value of the text variables to the prediction of success on the OTS Board scores, and (b) Examining how the inclusion of text-mined variables affects adverse impact when used in combination with numeric variables to make OTS selection decisions. The findings were as follows:

(1) ***Expectancy Tables Showing Incremental Value of Text Variables:*** The additional expectancy table analyses showed that use of both the numeric and text variables increases the percentages of estimated successful hires, with greater improvements with higher cutting scores (being more selective). The addition of the text variables improves prediction to a small but meaningful extent (i.e., several percent) in most panels, depending on the cutting score.

(2) ***Potential for Adverse Impact:*** The adverse impact analyses showed that neither the Board scores nor the computer scores had any meaningful impact in three of the four panels for minorities and in all four panels for women. However, the Board scores had borderline impact and the computer scores had moderate impact in the non-rated panel 1. The results were largely due to the high selection ratios in the other three panels, as well as relatively small subgroup mean score differences on any of the panels. The impact appeared to be entirely due to the numeric variables, which consisted largely of aptitude test scores that typically have large subgroup differences. The text variables did not show adverse impact in any analysis.

These results probably overestimate the adverse impact of the computer scores in operational use, depending on how they are used. For example, they might be used only to prescreen out the lowest scoring candidates who would have little chance of passing the Board review process. Another alternative is to use the computer scores as only one input to the final decision or giving the numeric variables less weight.

CONCLUSIONS AND RECOMMENDATIONS

Based on the research studies described in this report, we draw the following conclusions:

(1) There are sources of textual data in the Air Force personnel assessment context that are amenable to text analysis, thus there are potential applications of text analysis to improve the

effectiveness or efficiency of personnel assessment. Examples explored in this series of studies include efficiently analyzing narrative survey responses from new employees, scoring structured interview answers for selection, and scoring officer training school applications for selection.

(2) Software exists for text analysis that is available and usable by Industrial and Organizational Psychologists who specialize in personnel assessment, including those employed by the Air Force. Examples of software used in this study include SPSS Modeler Premium and the Linguistic Inquiry and Word Count (LIWC).

(3) Text analyses of these source of textual data appear to measure attributes and other information on candidates and employees that is differentiating, reliable, and meaningful.

(4) When used to content analyze the narrative responses on surveys, the text analysis did a reasonably good job of reproducing the categories identified by the researchers, and the differences in the categories were no less logical. In addition, a researcher using text analysis could conduct the analyses in a few hours that would take a week to do manually.

(5) When text analysis is used to score candidate information, such as interview responses or application information, the scores show good validity in predicting the scores of human interviewers or selection Boards. The text analysis scores correlate about as highly with human scores as human scores do with each other, meaning text analysis is as reliable as individual human scores.

(6) The text analysis scores show construct validity with other assessments, meaning the scores show correlations with other assessments at the level expected based on the different constructs measured by other assessments. In particular, the text analysis interview scores and application scores correlate with existing tests used by the Air Force for selection, such as low positive correlations with tests of mental ability (AFOQT and ASVAB) and few correlations with tests of personality (TAPAS).

(7) The text analysis scores show incremental validity beyond the existing tests. For example, the text analysis scores predict OTS Board scores beyond that predicted by existing test scores (e.g., AFOQT).

(8) The text analysis scores show subgroup differences by gender or race similar to or smaller than the human scores, thus using text analysis should not increase adverse impact (i.e., differences in hiring rates). The text analysis scores have much smaller subgroup differences than existing test scores of mental ability (e.g., AFOQT, ASVAB), thus including text analysis scores along with existing tests might reduce adverse impact of the overall hiring process.

(9) The use of text analysis would have practical utility for making selection decisions. For example, depending on the passing scores, using the text analysis scores to select-out the lowest scoring candidates will result in eliminating few candidates who would have been hired with the structured interviews. In addition, computer models of applications using text analysis are able to substantially predict which candidates will be successful hires, defined as above average on the OTS Board scores.

(10) Future research might explore the criterion-related validity of text analysis scores. Possible criteria might include success in training, ratings of job performance, awards, honors, achievements, reenlistments, and other outcomes of importance to the Air Force.

(11) The next steps could also reasonably include using text analysis to assist in making operational selection decisions. For example, a text analysis computer model could be used to develop an automated structured employment interview for screening candidates, and a computer model including text analysis of the OTS application process could automate the Board selection decisions. In both cases, these scores would probably augment rather than replace human judgment, such as screening out the candidates that are unlikely to be successful, thus saving substantial human scoring time in the hiring process.

1.0 INTRODUCTION

Several studies were conducted to illustrate the application of text analysis tools to enhance personnel assessment in the US Air Force. Text analysis encompasses a variety of techniques for identifying and summarizing topics, themes, or other dimensions of interest in a large quantity of text using various types of automated assistance. . Appendix A provides a detailed description of project objectives for this effort

The contract had three overall objectives. The first objective was to conduct a literature review of state-of-the-art text analysis software and analytical techniques and identify best practices. This activity is summarized in Campion and Campion (2019).

The current report addresses two additional objectives. These were to 1) identify potential applications of text analysis methods to US Air Force assessments and 2) examine its utility using archival US Air Force data.

Each of the three studies was documented in multiple short reports, with over 20 in total and nearly as many appendices. The current report pulls together results from three studies that applied text analysis methods to US Air Force archival data.

2.0 STUDY 1: CONTENT ANALYSIS OF SURVEY DATA

The evaluation of the utility of text analysis using archival US Air Force data (Objective 3) began with considering the existing textual data corpuses that currently existed (as described in Appendix B). As an initial evaluation, the Air Force team guiding the research decided to evaluate the use of text analysis techniques to reduce the burden of conducting manual content analysis of survey data. Along with measuring the job satisfaction of subject matter experts, the surveys were used to create realistic job preview videos, which required first content analyzing the narrative survey responses to identifying the themes relevant to job and training satisfaction, dissatisfaction, and challenges. Previously, these content analyses took weeks of researcher effort, which might be shortened by text analysis if the text analysis techniques were effective in summarizing the narrative comments. Effectiveness was defined as identifying themes that were logical and similar to those identified by the researchers. This research was documented in nine short reports as described below.

The conclusion from Study 1 was that text analysis did a reasonably good job of reproducing the categories identified by the researchers, and the differences in the categories were no less logical. In addition, a researcher using text analysis could conduct the analyses in a few hours that would take a week to do manually.

2.1 Initial Text Mining of Security Forces (3P0X1) Survey Data

The purpose of this analysis was to text-mine the survey data used to create the Realistic Job Preview (RJP) videos to evaluate the similarity to the human content analysis. We mined the written survey comments from the document entitled “Survey Responses Security Forces.xlsx” and compared the results to the content analysis in document entitled “SF Themes with Quotes and Timelines.xlsx.” We mined each question with sufficient data. For each question, we compared our results with the “original” Air Force content analysis categories and the “Timeline” content categories. The text mining-based content analysis was conducted without examining the Air Force categories first to avoid bias. The arrows show the initial linkages based on a review of the themes in the categories from each approach to the content analysis. The findings show that there is clear correspondence between the text analysis and the human generated categories. The last section of the report shows a tutorial of how the text-mining was conducted using the SPSS software for one question.

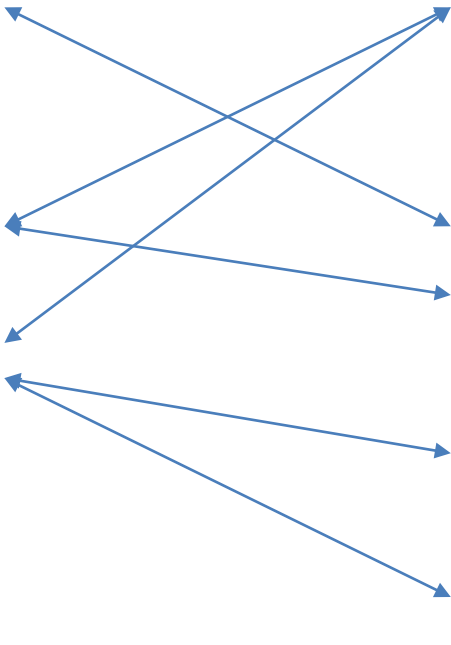
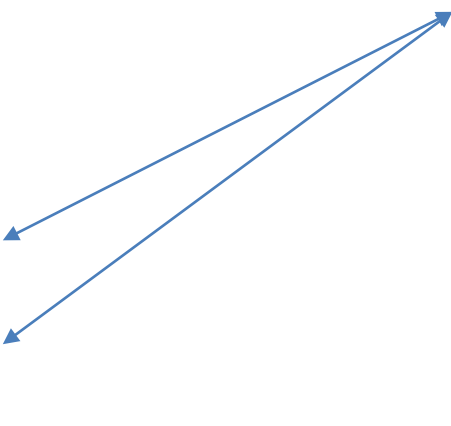
2. What makes Security Forces a good "fit" for you (i.e., a good match for your personality, interests, skills)?

Text Mined Results	Linkages	Air Force Results (Original)
1. Skills match career 2. Attracted by training and development and other opportunities 3. Attracted by working in security/law enforcement/military 4. Like working with people 5. Like nature of work itself 6. Leadership opportunities 7. Working with weapons 8. Physicality of job		1. Law Enforcement 2. Work Environment 3. Deployment/TDYS 4. Weapons 5. Authority 6. Public 7. Education/Degree 8. Opportunities 9. Schedule 10. Team Player 11. Personality 12. Drive/Motivation/Attitude 13. Thrill of the unknown/ something new every day 14. Mental/Physical Demands 15. Comradery 16. Pride in career field 17. Discipline 18. Work Ethic
Text Mined Results	Linkages	Air Force Results (Timeline)
1. Skills match career 2. Attracted by training and development and other opportunities 3. Attracted by working in security/law enforcement/military 4. Like working with people 5. Like nature of work itself 6. Leadership opportunities 7. Working with weapons 8. Physicality of job		1. Law Enforcement 2. Work Environment 3. Deployment/TDYS 4. Weapons 5. Authority 6. Public

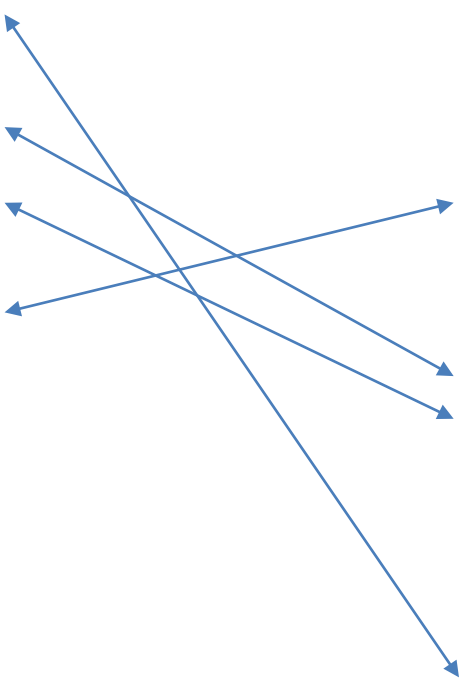
3. What would make Security Forces a bad "fit" for some other people in the Air Force?

Text Mined Results	Linkages	Air Force Results (Original)
1. Challenges of a security career (e.g., hard, stigma, male dominated, etc.) 2. Rigorous and continual training 3. Security forces culture and life 4. People challenges (e.g., personalities, negativity, etc.) 5. Military challenges (e.g., discipline, values, mindset, etc.) 6. High standards 7. Difficulty of deployments (e.g., schedules, family life, etc.) 8. Difficulty of the work (e.g., hours, weather, nature, etc.)		1. Law Enforcement 2. Work Environment 3. Deployment/TDYs 4. Weapons 5. Authority 6. Public 7. Education/Degree 8. Opportunities 9. Schedule 10. Team Player 11. Personality 12. Drive/Motivation/Attitude 13. Thrill of the unknown/ something new every day 14. Mental/Physical Demands 15. Comradery 16. Pride in career field 17. Discipline 18. Work Ethic
Text Mined Results	Linkages	Air Force Results (Timeline)
1. Challenges of a security career (e.g., hard, stigma, male dominated, etc.) 2. Rigorous and continual training 3. Security forces culture and life 4. People challenges (e.g., personalities, negativity, etc.) 5. Military challenges (e.g., discipline, values, mindset, etc.) 6. High standards 7. Difficulty of deployments (e.g., schedules, family life, etc.) 8. Difficulty of the work (e.g., hours, weather, nature, etc.)		1. Law Enforcement 2. Work Environment 3. Deployment/TDYs 4. Weapons 5. Authority 6. Public

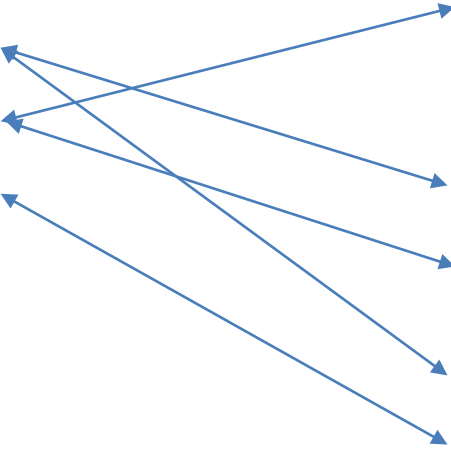
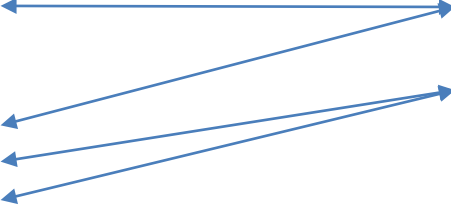
4. What aspects of the 3P0X1 career field make the job extremely difficult or challenging for you? How do you overcome those challenges?

Text Mined Results	Linkages	Air Force Results (Original)
1. Career challenges (e.g., changes, difficulties, bottlenecks, prosecution of law, etc.) 2. Training challenges (e.g., excessive, unneeded, gaps, inconsistency, deficiencies, etc.) 3. Work challenges (e.g., hours/schedules/shifts/weekends, demands/load/difficulties, etc.) 4. Family stress and lack of balance 5. Leadership challenges (e.g., poor, toxic, shuffling, etc.)		1. Work/life balance 2. Being an SME in different areas within career field 3. Fear of Death 4. Deployments 5. Stress 6. Unclear instructions/constant change in duties 7. Lack of Sleep 8. Leading many individuals 9. Lack of motivation/passion from other SF members 10. Inconsistency/Change in supervision 11. Heightened level of responsibility 12. Washouts and lazy Airmen 13. Generational differences
Text Mined Results	Linkages	Air Force Results (Timeline)
1. Career challenges (e.g., changes, difficulties, bottlenecks, prosecution of law, etc.) 2. Training challenges (e.g., excessive, unneeded, gaps, inconsistency, deficiencies, etc.) 3. Work challenges (e.g., hours/schedules/shifts/weekends, demands/load/difficulties, etc.) 4. Family stress and lack of balance 5. Leadership challenges (e.g., poor, toxic, shuffling, etc.)		1. Work/life balance 2. Being an SME in different areas within career field 3. Fear of Death

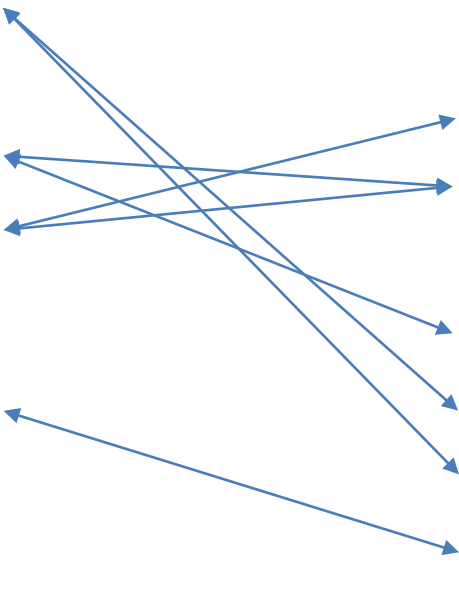
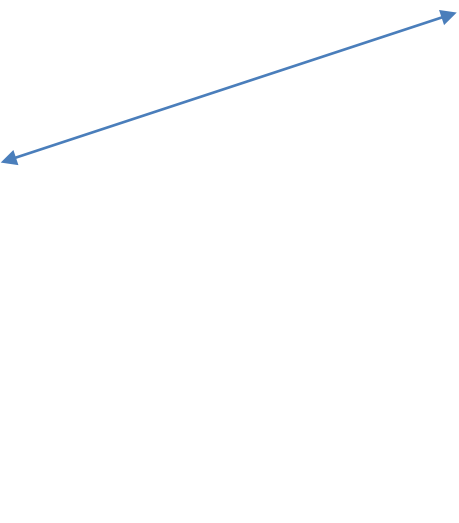
5. What aspects of the 3P0X1 career field do you dislike or not enjoy?

Text Mined Results	Linkages	Air Force Results (Original)
- Aspects of the career (e.g., path/progression, complexities, huge, male dominated, dangerous, etc.) - Training (e.g., constant, pointless, how implemented, etc.) - Quality of leadership e.g., poor, mediocre, toxic, micromanaging, weak, lazy, ineffective, etc.) - Work hours (e.g., changing hours, shifts, holidays, deployments, etc.)		- Monotony - Fitness Requirements/Physical strains - Lack of respect from service members/general public - Work Schedule - Stress - Deployment - Manning issues - Law Enforcement - Training - Leadership - Lack of recognition - Combining Security and Law Enforcement - Post Briefs - Morale - Lack of career field progression - Lack of career progression
Text Mined Results	Linkages	Air Force Results (Timeline)
- Aspects of the career (e.g., path/progression, complexities, huge, male dominated, dangerous, etc.) - Training (e.g., constant, pointless, how implemented, etc.) - Quality of leadership e.g., poor, mediocre, toxic, micromanaging, weak, lazy, ineffective, etc.) - Work hours (e.g., changing hours, shifts, holidays, deployments, etc.)		- Monotony - Fitness Requirements/Physical strains

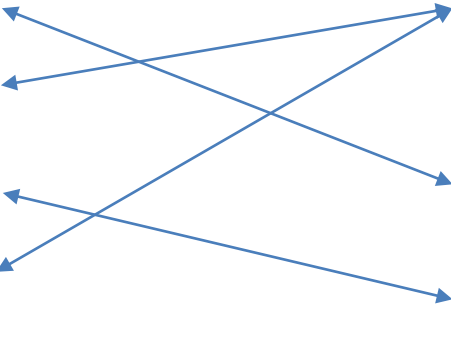
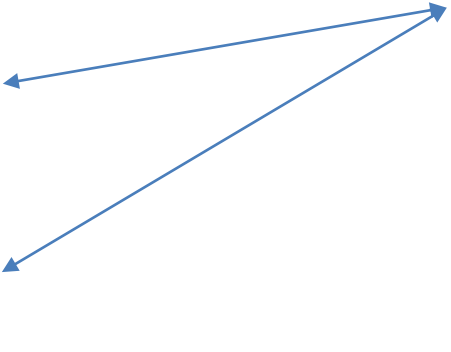
6. What aspects of the 3P0X1 career field make the job extremely rewarding or satisfying for you?

Text Mined Results	Linkages	Air Force Results (Original)
1. Rewarding career field 2. Training and development opportunities 3. Helping people 4. Security work and being a defender 5. Working in the military and helping airman		1. Helping those in need and keeping them safe 2. Being a positive influence on others 3. The need for SF 4. Opportunities to do different jobs 5. Traveling/Deployment 6. Community involvement 7. Watching Airman's professional growth and development 8. Opportunity to grow as a leader and Airman 9. Comradery and pride in career field
Text Mined Results	Linkages	Air Force Results (Timeline)
1. Rewarding career field 2. Training and development opportunities 3. Helping people 4. Security work and being a defender 5. Working in the military and helping airman		1. Helping those in need and keeping them safe 2. Being a positive influence on others

7. What are the biggest job-related challenges new Airmen face when they PCS to their first duty station as a 3P0X1 (i.e., what commonly makes being a 3P0X1 specialist difficult for new Airmen)?

Text Mined Results	Linkages	Air Force Results (Original)
1. Training required (e.g., amount of knowledge, mandatory requirements, both technical and security, cross-training in other jobs, academics, etc.) 2. Military lifestyle (e.g., strict, structured, disciplined, etc.) 3. Job demands (e.g., standards, proficiency evaluation, sometimes monotonous and boring work, work schedule, uncertainty, impact on family, etc.) 4. Dealing with other people (e.g., struggling or disgruntled airmen, bad troops, young troops, weak leadership, etc.)		1. Understanding of the career field 2. Weapons 3. Being away from family 4. Deployments 5. Work schedule 6. Fast pace of career field 7. Level of responsibility placed upon them 8. Adapting to military lifestyle 9. Confidence 10. Transition from tech training to duty station 11. Completion of CDCs while performing job duties 12. Lack of good supervision and support system
Text Mined Results	Linkages	Air Force Results (Timeline)
1. Training required (e.g., amount of knowledge, mandatory requirements, both technical and security, cross-training in other jobs, academics, etc.) 2. Military lifestyle (e.g., strict, structured, disciplined, etc.) 3. Job demands (e.g., standards, proficiency evaluation, sometimes monotonous and boring work, work schedule, uncertainty, impact on family, etc.) 4. Dealing with other people (e.g., struggling or disgruntled airmen, bad troops, young troops, weak leadership, etc.)		1. Understanding of the career field 2. Weapons

12. What job-related characteristics of the 1A8X1 career field influence(d)/ motivate(d) you - or other first-term Airmen - to re-enlist in the future as a 1A8X1?

Text Mined Results	Linkages	Air Force Results (Original)
1. Like career field of security and law enforcement 2. Training and development opportunities and challenge 3. Job opportunities and satisfaction 4. Quality of leadership (e.g., modern, true, good supervisor, etc.) 5. Military opportunities 6. Family-related reasons 7. Help airmen		1. Job opportunities and training 2. Traveling 3. Being first responders 4. K9 5. Brotherhood/comradery 6. To serve the country and passion for career field 7. Leadership opportunities 8. Good leadership 9. Benefits
Text Mined Results	Linkages	Air Force Results (Timeline)
1. Like career field of security and law enforcement 2. Training and development opportunities and challenge 3. Job opportunities and satisfaction 4. Quality of leadership (e.g., modern, true, good supervisor, etc.) 5. Military opportunities 6. Family-related reasons 7. Help airmen		1. Job opportunities and training 2. Traveling 3. Being first responders 4. K9

Questions without Enough Text to Mine

8. What are the most common misconceptions trainees have when they first start the 3P0X1 (Security Forces) Preliminary Course and/or the Apprentice Course?
9. What do new trainees have the most difficult time mastering in the 3P0X1 Preliminary (Security Forces) Course and/or the Apprentice Course? What are the most common reasons trainees wash out? For recent graduates, think about your classmates who did not pass the courses or struggled, why do you think they quit or had trouble?
10. What do new trainees find most rewarding/satisfying about the 3P0X1 (Security Forces) Preliminary Course and/or the Apprentice Course? For those of you who are recently graduated think of which aspects were extremely rewarding/satisfying for you.
11. How can trainees maximize their chances of successfully completing the 3P0X1 (Security Forces) Preliminary Course and/or the Apprentice Course?

Each question only had 7 responses, which was not enough to apply text mining methods

Example of Text Mining Process with “Unique” Question

These are the steps on how to extract the concepts, build the categories, and score the data to see how many respondents gave comments related to each category. The goals with these steps were to minimize the amount of researcher time and subjective judgment involved.

Step 1. Extract concepts from the data.

In this case, the software extracted 1,559 concepts. Concepts include words (e.g., “career”) and phrases (e.g., “career field”) determined by natural language processing (NLP) and data dictionaries pre-programmed into SPSS Modeler. Important to note here is the “Docs” column, which tells us how many documents included this word or phrase. “Global” tells us the number of times the word or phrase occurs in the entire corpus of text. See Figure 1.

	Concept	In	Global	Docs	Type
1	security forces		158	114 (40%)	<Unknown>
2	career		118	93 (33%)	<Unknown>
3	career field		80	63 (22%)	<Unknown>
4	opportunities		70	55 (19%)	<Unknown>
5	job		53	43 (15%)	<Unknown>
6	air force		51	46 (16%)	<Unknown>
7	work		48	43 (15%)	<Unknown>
8	base		44	31 (11%)	<Unknown>
9	sf		43	38 (13%)	<Unknown>
10	challenges		41	34 (12%)	<Unknown>
11	defenders		39	25 (9%)	<Unknown>
12	security		33	27 (10%)	<Unknown>
13	people		32	29 (10%)	<Unknown>
14	day		32	24 (8%)	<Unknown>
15	hours		30	28 (10%)	<Unknown>
16	mission		28	26 (9%)	<Unknown>
17	security forces		27	22 (8%)	<Unknown>
18	afsc		26	22 (8%)	<Unknown>
19	law enforcement		26	25 (9%)	<Unknown>
20	airmen		24	18 (6%)	<Unknown>
21	higher standard		21	20 (7%)	<Unknown>
22	members		21	20 (7%)	<Unknown>
23	everyday		21	19 (7%)	<Time2>
24	life		21	21 (7%)	<Unknown>
25	raven		20	19 (7%)	<Unknown>
26	training		19	17 (6%)	<Unknown>
27	situation		19	17 (6%)	<Unknown>
28	responsibility		17	14 (5%)	<Unknown>
29	installation		17	15 (5%)	<Unknown>
30	duties		15	15 (5%)	<Unknown>
31	personnel		15	15 (5%)	<Unknown>
32	world		15	14 (5%)	<Unknown>
33	time		15	14 (5%)	<Unknown>

Figure 1. Step 1: Example of a list of concepts extracted from contextual data

Step 2. Categorize the concepts. Much like the previous screen, the “Docs” column indicates how many documents in which each *category* occurs. The “Descriptors” column simply tells us how many “descriptors” are in each category. See Figure 2.

Category	Descriptors	Docs
All Documents	-	284
Uncategorized	-	17
No concepts extracted	-	82
resources	74	178
finance	65	151
military	52	100
work	29	69
mars rover	24	75
occupation	22	47
training	20	34
government	19	48
anatomy	19	24

Figure 2. Step 2: Concept categorization

Step 3. Starting with the highest frequency categories, examine the subcategories and the concepts under each by clicking the “+” in the box next to the category. See Figure 3.

Category	Descriptors	Docs
All Documents	-	284
Uncategorized	-	17
No concepts extracted	-	82
resources	74	178
resources		11
state resources		1
military resources		1
limited resources		1
valuable resources		1
human resources	69	174
human resources		1
career	49	165
biggest career		1
disciplined military structured career		1
stressful career		1
year career		2
incentives		1
career demands		1
af career		2
umbrella of career		1
usaf career		1
career opportunities		1
largest single afsc career		1
career paths		3
aspects of the career		1
career growth		1
nuclear career		1
multiple career		1
career progression		1

Figure 3. Step 3: Examine the subcategories

Step 4. Although the goal is to minimize subjectivity, the results must be interpreted actively in light of the questions asked of the respondents. Otherwise, the results will appear to be little more than counts of words and meaningless category labels. For example, some high frequency words are not relevant to interpretation (e.g., job) and more meaning can be derived by the less frequent but more interpretable sub-categories (e.g., challenging job). Also, it helps to know if the question is asking for positive or negative information, so you can recognize useful categories. See Figure 4.

	AOUnique (165)	Categories
1	89 ...Security Forces is slightly more demanding than other career fields due to the schedule...	day finance/security/security for... resources/human resourc...
2	302 ...Security Forces provides TDY opportunities that aren't offered in other career ...	finance/security/security for... mars rover/opportunities occupation resources/human resourc...
3	300 I believe that Security Forces still offers many more opportunities for growth than the average career ...	business management finance/security/security for... mars rover/opportunities resources/human resourc... work
	156 ... high. If you don't particularly like what you may be doing you can always explore new opportunities within the career field ...	airmen anatomy/body regions/hea... finance/security/security for...

Figure 4. Step 4: Identification of unique words

Step 5. It is very helpful to read example comments in each category, which is easily done in the SPSS text mining software by clicking on the category and then clicking on show details.

Step 6. It might help to copy the categories with the frequencies and paste them into a Word or Excel document so you can edit, sort, highlight, or otherwise work with them to create the final content analyses.

Step 7. It might be a helpful strategy to label the categories in the content analysis based on the higher frequency category headings (e.g., “opportunities”) and then use the lower-frequency sub-category headings to explain them (e.g., “great opportunity”). This can often be done by going down the list from top (highest frequency categories) to bottom (lowest frequency categories). It should be noted that often categories will be combined from higher and lower in the list because they are similar. Also, the low frequency categories should probably be ignored for the sake of parsimony. See Figure 5.

Category	Descriptors	Docs
opportunities	22	73
rarest opportunities		1
travel opportunities		1
amazing opportunities		3
examples of opportunities		1
control opportunities		1
special opportunities		1
ranger opportunities		1
multiple opportunities		2
real opportunities		1
opportunities		55
lateral movement opportunities		1
awesome opportunity		1
assignment opportunities		1
new opportunities		1
vast opportunity		2
educational opportunities		1
training opportunity		2
list of opportunities		1
great opportunity	2	2
great training opportunities		1
great opportunity		2
job opportunities	2	3
job opportunities		2
job opportunity definately		1
spirit	2	2
hardened spirit		1
spirit		1
occupation	22	47

Figure 5. Step 7: Example of labeling categories in the content analysis based on high frequency categories

Step 8. Creating the content analysis categories will still require considerable researcher judgment. The value of the text mining software is that it performs the initial labor-intensive part of the process by creating the concepts, categories, and frequencies.

2.2 Content Analysis Agreements on the Remotely Piloted Aircraft (RPA) Sensor Operator (SO) Survey

These data are based on the survey of the Remotely Piloted Aircraft (RPA) Sensor Operators (SO). The purpose of this analysis was to compare the human sorting of responses into the categories they created, with the computer sorting of responses into categories that were text mined to model the human-generated categories. The computer-generated categories were created by running the text mining program to extract concepts, extracting categories from the concepts, and then manually sorting the categories to make them as similar as possible to the human-generated categories based on the titles of the human-generated categories and the titles of the text-mined categories and reading some of the responses.

In table 1 below, the percentage agreement is the total agreements (both humans and computer agreeing that a category is linked and both agreeing a category is not linked) divided by the total number of responses. The correlation is the Pearson correlation between human (0/1) and computer (0/1) agreements across the set of responses.

We picked three questions and then mined the 11 categories that had more than just a few frequencies. Number of responses in each category are not included in the table, but were not extremely different between humans and computer. We found that many of the agreement percentages and correlations were quite high, but not all of them. Reasons for some lower levels of agreement or correlation include:

- Correlations are depressed because of dichotomization and by the degree of unequal marginal distributions (Cohen).
- Category heterogeneity (variety of topics included).
- Categories that are described by different terms.
- Categories that require more human judgment or interpretation of the underlying meaning as opposed to categorizing primarily by specific terms.
- Some of the ones the human raters marked as “Stress/Anxiety,” the computer did not, even though the response had the word “stress” in it. For example, one used the term “stressful.” We thought the program stemmed, so are not sure what happened here.
- As for “Importance of Job” under “Satisfying,” there were some inconsistencies in both parties. For example, the computer tended to code those that communicated “impact” or “change” as being in this category, as did the human raters. However, neither did it consistently.
- While none of the “Good Fit” agreement scores are very high, at least with the “Motivated Personality” it seems that the computer tended to categorize any response that discussed personality directly or indirectly, and the human raters did not categorize the indirect personality responses as “Motivated Personality.”

Table 1. Content Analysis Agreement for the Remotely Piloted Aircraft (RPA) Sensor Operator (SO) Survey

	CAREER FIELD CHALLENGES				SATISFYING				GOOD FIT			AVE
	Adapting to Change	Continual Learning about Job	Shift hours/- Family time	Stress/ Anxiety	Importance of Job/ Teaching/ Family	Relationships of Crew/ Saving Lives	Responsibility/ Protecting Troops on the Ground	Shaping the Battlefield /Seeing How You Impact	Contributing to the Fight/ Sense of Accomplishment	Motivated Personality	Always Learning/ Educating Self	
Percentage Agreement												
Carretta vs. Clark	0.86	0.97	0.92	0.90	0.81	0.94	0.95	0.78	0.98	1.00	1.00	0.92
Computer vs. Human (Combined)	0.80	0.84	0.92	0.56	0.59	0.87	0.85	0.48	0.43	0.39	0.61	0.67
Correlations												
Carretta vs. Clark	0.49	0.64	0.70	0.54	0.61	0.74	0.85	0.54	0.91	0.94	0.94	0.72
Computer vs. Human (Combined)	0.55	0.42	0.84	0.03	0.19	0.52	0.61	0.24	-0.15	-0.02	0.02	0.29

2.3 Further Text Mining of the Remotely Piloted Aircraft (RPA) Sensor Operator Survey

Presented here are comparisons of the results of the computer-aided text analysis (CATA) vs. the original content analysis categories developed by the Air Force. For an overview of how we conduct CATA, please see Objective 3 – Initial Text Mining of RJP Survey Data. See Table 2 at the end of this section for a description.

Categories between the two approaches were relatively similar for “Good fit.” The results of “Bad fit,” on the other hand, did not align as well, partly because the Air Force categories reflected the coders’ evaluation of the comments (as reflecting undesirable personal traits) as opposed to what the respondents said. Most of these Air Force categories were bundled into the text-mined category of “Mismatch with individual differences.”

1. What makes 1U0X1 a good fit for you (i.e., a good match for your personality, interests, skills, etc.)?

Text Mined Results	Linkages	Air Force Results (Original)
1. Motivating job characteristics 2. Individual differences 3. Career/Development opportunities		1. Contributing to the fight/sense of accomplishment 2. Motivated personality 3. Always learning/educating self 4. Stay close to home/Different job obligations

2. What would make RPASO a bad fit for some people?

Text Mined Results	Linkages	Air Force Results (Original)
1. Stressful job characteristics 2. Shift work/Home life/Tempo 3. Mismatch with individual differences 4. Killing people		1. Poor mental fortitude for killing 2. Poor attitude/ego 3. Poor decision-making/Disregard for friendly safety 4. Impatient/Bad with ID landmarks—following directions 5. No dedication/immature unable to work well with others 6. Base location 7. Long hours/monotony/keeping operations need to know

Table 2. Text-Mined Category Descriptions

Good Fit Categories	Descriptions
Motivating Job Characteristics	Elements of the job including technology used, the job environment, sense of accomplishment from the job, and the team.
Individual Differences	Personality, interests, and attitudes toward the job.
Career/Development Opportunities	Elements of the career field, opportunities to learn, and being challenged by the job.
Bad Fit Categories	Descriptions
Stressful Job Characteristics	Elements of the job that cause stress such as the nature of office work, decision-making process, and the job environment.
Shift work/Home life/Tempo	Job scheduling and the impact this has on one's home life.
Mismatch with Individual Differences	Personality, motivation, attitudes, (in)ability to handle elements of the job, and detailed-orientation.
Killing people	Killing people, taking enemy lives, and this reality of the work.

2.4 Content Analysis Agreements between Text Analysis and Rater Judgments

This analysis compares how two Air Force raters (AM & AD) sorted the RPA SO responses into categories developed by the computer for two open-ended survey questions on the RPA SO survey. This analysis complements the previous analysis where we examined how well the computer could reproduce categories developed by human raters and classify responses in agreement with the human raters.

We mined the “Good Fit” and “Bad Fit” questions and built superordinate categories based on frequencies of the lower-order categories identified by the computer. The computer categories were created by running the text mining program to extract concepts, extracting categories from the concepts, and then manually sorting the categories to simplify them. We followed the same approach we described in the previous text mining for this project.

This resulted in the following categories:

- Good Fit
 - **Motivating Job Characteristics:** includes elements of the job including technology used, the job environment, sense of accomplishment from the job, and the team.
 - **Individual Differences:** includes personality, interests, and attitudes toward the job.
 - **Career/Development Opportunities:** includes elements of the career field, opportunities to learn, and being challenged by the job.
- Bad Fit
 - **Stressful Job Characteristics:** includes elements of the job that cause stress such as the nature of office work, decision-making process, and the job environment.
 - **Shift Work/Home Life/Tempo:** includes the job scheduling and the impact this has on one's home life.
 - **Mismatch with Individual Differences:** includes personality, motivation, attitudes, (in)ability to handle elements of the job, and detailed-orientation.
 - **Killing People:** includes killing people, taking enemy lives, and this reality of the work.

These categories were similar but not identical to the categories the human rater had created. Human-generated categories were made previously, the raters had no prior knowledge of these categories.

The raters read each survey response and then judged to which category(ies) the response belongs. The instructions, ratings forms, and survey responses judged are in Appendix C.

The table 3 below presents the following:

- Percentage agreement = total agreements (both humans and computer agreeing that a category is linked and both agreeing a category is not linked) divided by the total number of responses.

- Correlation = Pearson correlation between human raters (0/1) and the computer (0/1) agreements across the set of responses.
- Notes:
 - For the human raters, we also allowed for an “Other” category in instances where the human raters felt that no category matched or (more commonly) that the response had other information not captured by the categories.
 - We also instructed the raters that responses may fall into several categories and asked that they indicate each relevant category
 - Number of responses in each category are not included in the table, but were not extremely different between humans and the computer.

Comments on the agreement between the computer and human raters:

- Overall, the results were fairly positive. The average agreement across categories between the humans and the computer was 64 percent (%), compared to 85% between the two humans. The correlation between the human raters and computer averaged .41, compared to .56 between the human raters.
- Reasons for some lower levels of agreement or correlation:
 - Correlations are depressed because of dichotomization and by the degree of unequal marginal distributions (Cohen).
 - Category heterogeneity (variety of topics included).
 - Categories that are described by different terms.
 - The computer did not have an “Other” category to categorize responses like the human raters, which reduced the maximum possible number of potential agreements.
 - Categories that require more human judgment or interpretation of the underlying meaning as opposed to categorizing primarily by specific terms.
 - As an example, take the following response from the Bad Fit question, “1U0X1 makes a bad fit for those that *don't want* to terminate the enemy's life. It is not *a job* for those that will be affected in *killing someone* through aviation weapons.” The computer indicated “Stressful Job Characteristics” and “Killing People” due to the **bolded** terms. However, the human coders (combined) indicated “Stressful Job Characteristics,” “Killing People,” and “Mismatch with Individual Differences” presumably due to the *italicized* terms. The computer did not recognize the “don't want to” identified an individual difference. The computer is less able to identify categories when they are expressed by commonly used terms that are used frequently (e.g., “like”) as opposed to the main category term (“killing”). We noticed the same issue in coding responses to the Good Fit question.
 - In addition to the computer not categorizing responses due to high term frequency, we also saw a potential confounding of “Stressful Job Characteristics” and “Mismatch with Individual Differences” among human coders that may have, at times, also affected the agreements/correlations between human and computer coding. That is, 65% of the responses were coded “1” for both of these categories. For example, take the following response to Bad Fit, “If someone can't handle killing, can't multi-task, aren't able to learn technical information, are not fast readers, are not able to diagnose potential aircraft problems, and troubleshoot other systems issues in real-time they will not be a good “fit” as a 1U.” While the computer only coded this as “Killing

People,” both human coders also coded this as “Stressful Job Characteristics” and “Mismatch with Individual Differences.” Looking at the phrase “can’t multi-task,” it is possible the human raters coded it this way as there are two interpretations of this phrase: 1) an individual difference ability (“can’t”) and 2) a representation of characteristics of the job (“multi-task”).

Table 3. Level of Agreement for RPA SO “Good Fit” and “Bad Fit” Questions

	GOOD FIT				BAD FIT					AVE
	Motiva-ting Job Characteristics	Individual Differences	Career/ Develop- ment Opportu- nities	Other	Stressful Job Characteris- tics	Shift work /Home life/ Tempo	Mismatch with Individual Differences	Killing People	Other	
Percentage Agreement										
AM vs. AD	.83	.83	.80	.96	.58	.85	.91	.93	.96	.85
Computer vs. Human (Combined)	.66	.50	.74	NA	.52	.82	.39	.86	NA	.64
Correlations										
AM vs. AD	.53	.57	.57	.50	.31	.70	.68	.82	.33	.56
Computer vs. Human (Combined)	.30	.29	.47	NA	.20	.68	.23	.67	NA	.41

2.5 Sentiment Analysis of the RPA SO Narrative Survey Responses

Purpose: The purpose of this analysis was to conduct computer-assisted text analysis (CATA) to measure the sentiment in responses to narrative survey questions administered to RPA SOs. Sentiment analysis seeks to measure affective reactions and other feelings in textual data, usually from word dictionaries. Using CATA to identify sentiments has been a very common application in the management CATA literature.

Software: We used two types of software: (a) Linguistic Inquiry and Word Count (LIWC), which is the most common and most fully developed software for conducting sentiment analysis, and (b) SPSS Modeler Premium, which is the software we used for CATA to measure content of textual documents that also has opinion dictionaries for measuring sentiment.

Procedure: We ran both programs on the narrative responses to all eight questions in the RPA SO survey that had a sufficiently large sample. We then created mean scores across all the respondents for each question on all the sentiment dimensions within each software so they could be directly compared. The tables below list brief versions of the questions. In addition, we conducted correlational analyses at the question level of analysis to compare the covariation between the main dimensions produced by each type of software.

Results and Preliminary Observations on LIWC: Table 4 shows the LIWC sentiment analysis. LIWC produces about 90 indices, but only about 50 are related to sentiment. The others are various counts of types of words, grammar, and punctuation. All the values in the table are percentages except for several that are absolute counts and several other LIWC scales that are computed composite scores (expressed as percentiles). The sentiment counts are based on comparisons to dictionaries that contain words reflecting the emotions based on past research. The software produces a score (count) for each document (in this case, a respondent's answer to a single question), which we aggregate here for each question. The user manual does not provide a formal definition of each of the sentiment scores, but the software allows a user to see the words in the dictionary. Plus, the manual describes the research underlying the development of LIWC, including reliability and other psychometric quality evidence, and makes reference to other studies on the development of various scales and other validity evidence (such as the four computed scores: analytical thinking, clout, authentic, and emotional tone).

The sentiment scores of most potential value to understanding employee satisfaction surveys like the RPA SO survey are those that are logically related to job satisfaction and those that differentiate between the eight questions, as indexed by the standard deviations in the last column of Table 4. Some preliminary observations on the results include:

- Some of the four computed scores appear potentially relevant to the topic and vary meaningfully across the questions. For example, the emotional tone score is higher for the questions focusing on the positive aspects of the job, such as what makes a good fit, what is rewarding, and characteristics for reenlistment. The authentic score is also higher for good fit and reenlistment, although it is also higher for what makes the work difficult, perhaps because the answers require the person to be honest about themselves. Clout is higher for what makes the work different and rewarding, perhaps because of the important work of the Air Force.

- Affective processes and the sub dimensions of positive and negative emotions seem highly relevant to satisfaction surveys and show meaningful variance. In particular, the positive emotion score is higher for the questions on good fit, rewarding, and reenlistment. Likewise, the negative emotion score is higher for the question on bad fit, although not for the other negative questions on difficulty, dislike, and challenging. The affective processes score, which is a composite of the other two, is highest for good and bad fit, although it is also nearly as high for rewarding.
- The social processes composite score is highest for bad fit and rewarding, suggesting that other people may be the cause of both positive and negative reactions to the job. It is also fairly high for what makes the work different probably because of the rewarding aspects of working with others and teamwork.
- The motivational drive scores also support some of the interpretations. For example, the high affiliation scores for what makes the work different and rewarding also suggests that teamwork may be relevant. The achievement drive score is highest for (overcoming) challenges of the first assignment, and the power drive is highest for what makes the job different probably because it is the military. Reward is highest for reenlistment.
- Finally, but not the last possible observation, some of the word count scores are meaningful. For example, it takes more words to explain what makes the job different, difficult, or challenging, and reenlistment decisions, than why you like or dislike the job. The personal pronoun “we” is used for what makes the job different and rewarding, further confirming the teamwork explanation. The term “I” is used more for good fit and reenlistment, perhaps because they are more personal.

Results and Preliminary Observations on SPSS: Table 5 shows the SPSS sentiment analysis. SPSS is not primarily designed to perform sentiment analysis, unlike LIWC. We use it because of its capabilities in performing content analyses and predictive analytics. However, it includes sentiment dictionaries as part of its array of text mining programs that can be called up by the user and applied to text when needed. According to the user manual, the opinions library is “Used most commonly to extract opinions and sentiments from text data. This library includes thousands of words representing attitudes, qualifiers, and preferences that—when used in conjunction with other terms—indicate an opinion about a subject. This library includes a number of built-in types, synonyms, and excludes. It also includes a large set of pattern rules used for text link analysis” (p. 162). There is only one opinions library, with versions for several different languages. We used the English opinions library. The manual does not describe the research to develop the library or any validity evidence, and the user cannot see the words in the library because they are proprietary. The output of the analysis with the current data was about 20 different sentiment labels with most being some variant of positive or negative sentiments, but there was nearly an equal number of other topics that accounted for a smaller percentage of the words. The sentiments outputted varied slightly across the questions. The output produces the number and percentage of words and documents (respondents) who expressed each sentiment, but presumably scores at the level of individual people can be computed.

Again, the sentiment scores of most potential value to understanding employee satisfaction surveys like the RPA SO survey are those that are logically related to job satisfaction and those that differentiate among the eight questions, as indexed by the standard deviations in the last column of Table 5. Some preliminary observations on the results include:

- The overall positive sentiment score is highest for the question on good fit and somewhat higher for the question on reenlistment, but it is not higher for the other positive question on what makes the job rewarding.
- The overall negative sentiment score is higher for the questions on bad fit, difficult, dislike, and challenge, and it is lower for the questions on good fit and rewarding as expected.
- The positive and negative sentiments around specific topics (attitudes, budgets, feelings, and functioning) do not seem to follow a clear pattern based on the positive versus negative questions to a great extent.
- Likewise, the non-directional sentiments (neither positive nor negative) around specific topics (e.g., budget, context, location) do not seem to show a clear pattern across the questions. However, perhaps some of the data are informative if not expected. For example, sentiments on the context of the job seem to play a common role in what makes the job different, a bad fit, and difficult, but it is also common in reenlistment decisions. Likewise, sentiments on budget (money) seem to commonly play a role in reenlistment decisions.

Relationships between LIWC and SPSS: Table 6 shows the correlations across questions between main dimensions of each software. The correlations were computed across the eight questions as the level of analysis because the SPSS output did not readily product scores at the respondent (document) level. Further, this will address the overall focus of these analyses, which is the value of these sentiment analyses for differentiating among employee satisfaction survey questions. However, correlations at the aggregated level will be much larger due to the fact that aggregation reduces the random error from differences between respondents. We limited these analyses to the main sentiment dimensions of each software package. These are the four computed scores and the positive and negative emotion scores from LIWC, and the positive and negative word and document scores from SPSS. Some preliminary observations on the results include:

- The shaded matrix of scores in Table 6 are between the sets of scores from each software package. As expected, the positive emotion score from LIWC correlates very highly with the positive words and documents scores from SPSS ($r = .86$ and $.77$). The negative emotion score from LIWC correlates with the negative words and documents scores from SPSS, but not very strongly ($r = .34$ and $.22$).
- Similar to positive emotion, the emotional tone and authentic scores from LIWC correlate positively with positive words and documents and negatively with negative words and documents from SPSS, suggesting all three largely reflect positive emotions.
- Both the analytic thinking and clout scores from LIWC show negative correlations with both positive and negative words and documents from SPSS, suggesting those scores reflect less emotion-laden sentiments. In other words, they reflect low levels of sentiment, such as more intellectual or indifferent. Moreover, although the definition of sentiments is that they are influenced by emotions, they also reflect attitudes, thoughts, and opinions, which may not necessarily be emotionally charged.

- The intercorrelations among the LIWC scores in the top-left of Table 6 show that analytic and clout are positively related to each other, but either negatively related or unrelated to the other scores as suggested above. Authentic, emotional tone, and positive emotion are highly positively related, as was also suggested by the correlations above. Negative emotion correlates negatively with most other sentiments, but it has a very small correlation with positive emotion ($r = .17$) suggesting they are independent dimensions rather than bipolar extremes of the same dimension.
- The intercorrelations among the SPSS scores in the bottom-right of Table 6 show that the positive and negative scores are negatively related, and the two different scores for each (words and documents) are nearly identical.

The Air Force subsequently raised two questions about the sentiment analyses:

1. Why did the negative sentiment scores of LIWC and SPSS not correlate more highly? We are unsure of the answer, but we discovered four potentially relevant pieces of information.

(a) The variance in negative sentiment across the questions was less than for positive sentiment, so one explanation is simple restriction of range. In LIWC, it is about 70% as much variance and in SPSS it is 80%.

(b) Positive and negative sentiments are less negatively intercorrelated in LIWC (-.17) than in SPSS (-.29 to -.31), so they are a bit more independent in LIWC.

(c) Clout is positively associated with negative emotion in LIWC (.26), but negatively in SPSS (-.46 and -.40). Also, authentic is more negatively correlated with negative sentiment in LIWC (-.66) than in SPSS (-.22 to -.42). They appear to be measuring different constructs.

(d) While SPSS provides no information, LIWC says negative emotion is made up of three subscales (Anxiety, Anger, Sadness). Note that SPSS describes its dictionary as an opinion dictionary that extracts opinions and sentiments from the data, so that might be part of the study.

So, the bottom line is they appear to be measuring somewhat different things, but we are not clear on what that is precisely. We will continue to research this.

2. What is the meaning of the clout sentiment? According to the article they cite as to its development (Kacewicz, Pennebaker, Davis, Jeon, & Graesser, 2013), we found the basic research did not call it clout but the relevant finding was:

“Computerized text analyses across the five studies found that people with higher status consistently used fewer first-person singular, and more first-person plural and second-person singular pronouns. Natural language use during group interaction suggests that status is associated with attentional biases, such that higher rank is linked with other-focus whereas lower rank is linked with self-focus.”

So clout appears to be based on pronoun words rather than a word dictionary like the other sentiments.

Preliminary conclusions: These analyses suggest the following preliminary conclusions, among probably others:

1. The sentiment analyses seem informative enough to consider further in our research on CATA in the various applications in the Air Force. They likely have a role when it comes to surveys of employee satisfaction, but might have other uses yet to be explored. For example, perhaps they will provide incremental prediction of outcomes from hiring procedures that score candidate narrative responses.

2. The LIWC software seems much better developed and useful for studying sentiment than the SPSS software. If the research in this project results in an employment tool, the Air Force may need to acquire a commercial license to use the software, which is available from the developer.

3. The SPSS software might still be useful because the overall positive and negative sentiment scales performed adequately, especially if only overall scores are needed. Plus, being part of the SPSS software already makes the incorporation of the scores into a predictive model easier because the text can be scored for sentiment simultaneously, as opposed to a separate step if LIWC were used. Further, this would not require purchasing additional software.

Table 4. LIWC Sentiment Analysis of the RPA SO Survey Responses

Sentiments	What Makes Different?	What Makes Good Fit?	What Makes Bad Fit?	What Makes Difficult?	What Dislike?	What Rewarding?	What Challenging at First Station?	What Characteristic Led to Reenlist?	SD Across Questions
Word count*	36.99	26.37	26.00	39.94	21.45	23.84	32.10	36.17	6.86
Language Variables									
Analytical thinking**	80.19	73.24	69.44	72.39	74.28	76.28	79.27	76.19	3.57
Clout**	65.03	40.41	45.75	51.03	46.00	64.92	56.57	35.89	10.78
Authentic**	43.36	58.16	41.71	56.22	46.40	50.72	46.62	58.03	6.62
Emotional tone**	34.95	73.26	33.15	42.28	43.46	53.27	35.99	60.84	14.21
Words per sentence*	15.73	14.47	15.57	14.83	12.29	14.64	16.34	16.92	1.42
Word >6 letters	23.28	24.35	22.37	23.24	20.31	22.15	20.25	17.40	2.24
Dictionary words	81.17	85.91	84.63	86.11	79.22	87.52	81.45	85.34	2.93
Linguistic Dimensions									
Function words	46.49	48.89	45.58	50.15	42.83	49.30	46.42	49.87	2.55
Pronouns	8.65	12.25	7.70	9.95	8.07	10.36	6.86	10.47	1.78
Personal pronouns	4.84	7.32	1.71	5.71	4.54	6.86	3.61	6.57	1.88
I	0.48	6.14	0.13	3.14	2.27	2.68	0.30	4.96	2.21
We	2.40	0.58	0.27	0.70	1.24	2.56	0.55	0.53	0.89
You	1.43	0.51	0.73	1.47	0.75	1.14	0.85	0.58	0.37
She or he	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.02	0.01
They	0.52	0.08	0.58	0.40	0.28	0.47	1.90	0.49	0.55
Impersonal pronouns	3.81	4.93	5.99	4.24	3.53	3.50	3.25	3.86	0.91
Articles	8.82	9.15	7.72	7.61	7.75	12.57	9.32	9.26	1.61
Prepositions	14.23	13.85	11.80	13.93	12.77	12.78	14.26	13.70	0.87
Auxiliary verbs	6.73	6.93	8.47	8.17	6.15	6.61	7.94	7.93	0.86
Common adverbs	4.15	2.95	2.95	3.45	3.23	2.94	3.23	2.89	0.42
Conjunctions	6.02	6.15	4.66	6.64	5.24	5.21	5.94	5.47	0.63
Negations	0.87	1.31	4.50	2.62	2.04	0.51	1.68	2.66	1.26

Sentiments	What Makes Different?	What Makes Good Fit?	What Makes Bad Fit?	What Makes Difficult?	What Dislike?	What Rewarding?	What Challenging at First Station?	What Characteristic Led to Reenlist?	SD Across Questions
Other grammar									
Common verbs	11.28	11.95	13.72	13.95	12.23	14.13	14.31	13.86	1.17
Common adjectives	5.75	5.50	3.97	4.55	3.85	3.32	5.17	5.59	0.92
Comparisons	3.88	2.76	1.01	1.73	1.95	1.94	2.48	3.47	0.95
Interrogatives	0.87	0.50	1.63	0.75	0.82	1.00	1.03	0.88	0.32
Numbers	1.25	0.41	0.83	1.16	0.89	0.59	1.40	1.38	0.37
Quantifiers	2.62	1.69	1.64	2.37	2.64	1.56	2.46	2.14	0.45
Psychological Processes									
Affective processes	5.16	9.44	9.05	4.70	4.75	8.72	3.23	6.17	2.36
Positive emotion	2.30	7.92	3.51	2.65	3.11	5.28	1.64	5.06	2.05
Negative emotion	2.76	1.38	5.35	1.92	1.59	2.99	1.54	1.06	1.40
Anxiety	0.65	0.40	1.15	0.56	0.09	0.37	0.35	0.15	0.33
Anger	1.78	0.53	1.76	0.32	0.27	2.37	0.58	0.17	0.86
Sadness	0.03	0.03	0.51	0.25	0.68	0.04	0.02	0.19	0.25
Social processes	7.62	4.97	8.07	5.04	3.64	9.18	5.56	4.76	1.94
Family	0.15	0.45	0.57	0.87	0.39	0.20	0.15	0.42	0.24
Friends	0.73	0.28	0.30	0.27	0.09	1.25	0.46	0.17	0.38
Female references	0.05	0.00	0.00	0.01	0.00	0.04	0.04	0.03	0.02
Male references	0.00	0.01	0.03	0.00	0.13	0.38	0.04	0.08	0.13
Cognitive processes	11.54	12.30	15.22	11.29	10.16	11.79	12.99	12.49	1.49
Insight	2.31	3.47	2.38	2.10	1.61	2.57	4.00	2.36	0.77
Causation	2.74	2.95	1.57	2.16	1.38	3.72	1.88	3.18	0.83
Discrepancy	0.89	1.11	2.20	0.80	2.16	0.27	1.31	1.71	0.68
Tentative	1.82	1.42	3.72	2.06	2.05	1.34	2.17	1.43	0.77
Certainty	1.69	1.24	1.83	2.83	0.91	2.24	1.19	1.27	0.64
Differentiation	2.98	3.02	5.91	2.22	2.97	2.21	3.35	3.62	1.17

Sentiments	What Makes Different?	What Makes Good Fit?	What Makes Bad Fit?	What Makes Difficult?	What Dislike?	What Rewarding?	What Challenging at First Station?	What Characteristic Led to Reenlist?	SD Across Questions
Perceptual processes	1.47	1.87	1.59	1.06	0.46	2.90	1.27	1.29	0.71
See	0.43	0.49	0.54	0.23	0.18	1.82	0.37	0.36	0.53
Hear	0.06	0.13	0.16	0.21	0.00	0.15	0.08	0.38	0.11
Feel	0.38	0.77	0.81	0.56	0.20	0.48	0.46	0.45	0.20
Biological processes	1.28	2.11	1.84	1.83	0.71	1.70	0.58	0.95	0.58
Body	0.42	0.34	0.41	0.64	0.19	0.27	0.07	0.12	0.19
Health	0.80	1.01	1.38	1.05	0.44	1.07	0.48	0.53	0.34
Sexual	0.00	0.00	0.02	0.00	0.00	0.00	0.01	0.06	0.02
Ingestion	0.06	0.09	0.00	0.15	0.08	0.15	0.01	0.02	0.06
Drives	12.30	11.89	11.82	11.89	12.17	14.41	11.94	10.74	1.03
Affiliation	4.12	2.59	1.43	2.15	1.79	4.57	1.62	1.77	1.20
Achieve	3.26	4.60	4.73	5.96	5.59	4.54	6.03	4.75	0.91
Power	4.14	2.34	3.02	2.52	2.60	3.22	2.46	2.68	0.59
Reward	1.25	2.86	1.93	1.04	1.41	2.77	1.53	3.92	1.00
Risk	0.57	0.45	1.59	0.85	1.45	1.37	0.82	0.43	0.47
Time orientations									
Past focused	0.57	0.81	0.49	0.74	1.46	1.30	1.31	1.27	0.38
Present focused	9.61	9.42	12.36	12.05	11.94	9.05	11.98	10.73	1.36
Future focused	0.67	0.44	1.00	0.61	0.45	0.30	1.07	1.03	0.30
Relativity	14.16	11.99	12.35	16.48	16.14	14.01	13.41	14.36	1.60
Motion	1.98	1.81	2.12	3.02	3.17	1.47	2.46	2.49	0.59
Space	7.99	6.88	5.70	6.84	6.96	8.99	6.98	8.28	1.03
Time	4.29	3.53	4.77	6.82	6.00	3.71	4.27	4.15	1.15
Personal concerns									
Work	6.33	8.31	7.26	7.77	9.38	4.28	8.79	6.46	1.63
Leisure	0.40	0.94	0.81	1.65	0.79	0.37	0.48	0.40	0.43
Home	0.44	0.60	0.61	1.17	0.65	0.61	0.39	0.21	0.28

Sentiments	What Makes Different?	What Makes Good Fit?	What Makes Bad Fit?	What Makes Difficult?	What Dislike?	What Rewarding?	What Challenging at First Station?	What Characteristic Led to Reenlist?	SD Across Questions
Money	0.12	0.04	0.56	0.35	0.97	0.76	0.36	3.31	1.06
Religion	0.00	0.03	0.01	0.12	0.05	0.00	0.04	0.13	0.05
Death	0.84	0.17	1.30	0.14	0.04	0.52	0.50	0.00	0.45
Informal language	0.27	0.34	0.64	0.33	0.36	0.58	0.42	0.28	0.14
Swear words	0.00	0.00	0.06	0.15	0.13	0.01	0.04	0.06	0.05
Netspeak	0.06	0.00	0.04	0.20	0.22	0.30	0.20	0.02	0.11
Assent	0.08	0.27	0.10	0.02	0.08	0.02	0.01	0.08	0.08
Nonfluencies	0.09	0.07	0.42	0.04	0.05	0.21	0.21	0.13	0.13
Fillers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Punctuation									
Total punctuation	12.23	14.75	14.71	14.40	13.79	10.92	14.86	12.88	1.43
Periods	5.97	7.66	6.21	9.07	7.01	7.12	8.54	6.19	1.14
Commas	2.68	3.06	4.27	2.48	2.19	1.08	2.65	2.66	0.89
Colons	0.01	0.00	0.02	0.03	0.00	0.02	0.00	0.05	0.02
Semicolons	0.17	0.22	0.36	0.03	0.35	0.19	0.10	0.06	0.12
Question marks	0.00	0.00	0.00	0.00	0.22	0.00	0.00	0.06	0.08
Exclamation marks	0.00	0.00	0.09	0.00	0.00	0.65	0.06	0.03	0.22
Dashes	0.75	0.47	0.90	1.09	0.90	0.22	0.44	1.34	0.37
Quotation marks	0.38	0.69	0.52	0.27	0.73	0.03	0.54	0.09	0.26
Apostrophes	0.98	2.25	1.58	0.81	0.88	0.56	0.61	1.51	0.58
Parentheses	0.33	0.30	0.18	0.00	0.49	0.55	0.64	0.33	0.21
Other punctuation	0.95	0.10	0.57	0.63	1.02	0.49	1.27	0.56	0.37

NOTE: All numbers are percentages of total words, except for:

* Numbers are counts.

** Numbers are summary variables reflecting percentiles.

Table 5. SPSS Sentiment Analysis of the RPA SO Survey Responses

Sentiment	What Makes Different?		What Makes Good Fit?		What Makes Bad Fit?		What Makes Difficult?		What Dislike?		What Rewarding?		What Challenging at First Station?		What Characteristic Led to Reenlist?		SD Across Questions	
	Words	Docs	Words	Docs	Words	Docs	Words	Docs	Words	Docs	Words	Docs	Words	Docs	Words	Docs	Words	Docs
Positive	7.78%	48.42%	23.32%	77.42%	12.30%	52.63%	8.49%	48.24%	6.34%	30.86%	11.32%	45.98%	9.76%	43.02%	11.36%	54.88%	5.25%	13.20%
Positive Attitude	0.69%	6.32%	1.10%	6.45%	0.89%	6.32%	0.58%	4.71%			0.77%	4.60%	0.30%	2.33%	0.84%	7.32%	0.25%	1.68%
Positive Budget			0.63%	4.30%			0.23%	2.35%			4.99%	25.29%			0.28%	2.44%	2.31%	11.16%
Positive Competence	0.46%	4.21%	0.63%	4.30%	0.74%	4.21%	0.23%	2.35%	0.63%	2.47%	0.96%	3.45%	1.18%	9.30%	0.28%	2.44%	0.32%	2.27%
Positive Feeling			1.10%	5.38%			0.47%	4.71%					0.44%	3.49%	0.28%	2.44%	0.36%	1.30%
Positive Functioning					0.30%	2.11%												
Positive Recommendation															0.56%	3.66%		
Negative	3.66%	21.05%	4.23%	20.43%	13.78%	53.68%	7.67%	51.76%	12.68%	44.44%	1.54%	8.05%	7.25%	38.37%	6.45%	31.71%	4.27%	16.31%
Negative Attitude	0.34%	3.16%	0.47%	3.23%	1.78%	10.53%	0.35%	3.53%	0.42%	2.47%			0.30%	2.33%	0.42%	3.66%	0.53%	2.87%
Negative Budget													0.59%	3.49%	0.28%	2.44%	0.22%	0.74%
Negative Feeling	0.23%	2.11%	0.31%	2.15%	0.44%	3.16%	0.70%	7.06%					0.30%	2.33%			0.19%	2.11%
Negative Functioning	1.14%	10.53%	0.47%	3.23%	1.19%	6.32%	0.93%	8.24%	1.06%	6.17%	0.77%	4.60%	1.04%	8.14%	1.12%	7.32%	0.24%	2.28%
Budget	0.23%	2.11%			0.30%	2.11%	0.93%	8.24%	2.54%	13.58%	0.96%	4.60%	0.44%	3.49%	4.77%	32.93%	1.66%	11.08%
Contextual	4.23%	29.47%	4.38%	19.35%	5.78%	31.58%	5.70%	44.71%	3.81%	20.99%	4.41%	18.39%	2.66%	15.12%	5.89%	31.71%	1.12%	9.78%
Location													0.30%	2.33%				
Organization	0.34%	3.16%	0.31%	2.15%							0.38%	2.30%					0.04%	0.54%
Percent													0.44%	2.33%				
Period	0.69%	5.26%					1.74%	12.94%	2.11%	9.88%	0.38%	2.30%	1.33%	6.98%	0.70%	6.10%	0.68%	3.72%
Person							0.47%	4.71%	0.42%	2.47%					0.28%	2.44%	0.10%	1.30%
Time									0.42%	2.47%								
Uncertain	0.57%	5.26%	0.31%	2.15%	0.89%	6.32%	0.47%	4.71%	1.06%	6.17%			0.59%	4.65%	1.54%	13.41%	0.42%	3.51%
Unknown	78.95%	100.00%	62.75%	95.70%	61.63%	97.89%	70.35%	98.82%	67.44%	96.30%	72.94%	98.85%	72.93%	97.67%	64.80%	93.90%	5.92%	1.98%

NOTE: Sentiment categories applying to only 1 document eliminated for parsimony.

Table 6. Correlations across Questions between Main Dimensions of Each Software

	Mean	SD	Analytical thinking	Clout	Authentic	Emotional tone	Positive emotion	Negative emotion	Positive Words	Positive Docs	Negative Words
Analytical thinking	75.16	3.57									
Clout	50.70	10.78	0.55								
Authentic	50.15	6.63	-0.12	-0.50							
Emotional tone	47.15	14.21	-0.11	-0.50	0.83						
Positive emotion	3.93	2.05	-0.31	-0.45	0.63	0.93					
Negative emotion	2.32	1.40	-0.44	0.26	-0.66	-0.52	-0.17				
Positive Words	0.11	0.05	-0.31	-0.42	0.49	0.75	0.86	-0.08			
Positive Docs	0.50	0.13	-0.25	-0.40	0.54	0.68	0.77	-0.06	0.93		
Negative Words	0.07	0.04	-0.59	-0.46	-0.42	-0.46	-0.37	0.34	-0.29	-0.37	
Negative Docs	0.34	0.16	-0.55	-0.40	-0.22	-0.52	-0.51	0.22	-0.35	-0.31	0.88

N=8

2.6 Sentiment Analysis of RPA SO Survey Responses by Gender, Rank, and Skill Level

The purpose of this analysis was to determine if sentiment analyses differed by key demographics (gender, rank, and skill level). We used the RPA SO survey data because we know it well from all the other computer-assisted text analyses we have conducted, and we have these demographic variables.

We selected sentiment variables from LIWC because that software is arguably the best sentiment analysis package available. We included the 4 computed variables (first 4 below), two word count variables of potential interest (“I” and “We” because they seemed important from our discussion of clout), and 2 representing positive and negative emotion (the usual core variables in sentiment analyses).

1. Analytic
2. Clout
3. Authentic
4. Tone
5. I
6. We
7. Positive emotion
8. Negative emotion

Because we analyzed all 8 questions from the RPA survey that had sufficient data (up to 94 responses), correlation analyses were used as opposed to ANOVAs for simplicity. Also, we understood that rank and skill level had at least ordinal properties, thus a correlation analysis is sufficient. Pearson correlations was used as opposed to Spearman correlations (for rank/ordinal data) because we believe they yield the same results.

The table 7-16 are presented on subsequent pages. Our observations on the findings are below each table. They are initial and speculative.

Table 7. Frequencies of Demographic Variables

	Group	Count	Percentage
Gender	Women	12	12.8
	Men	82	87.2
	Total	94	100.00
Rank	E2	1	1.0
	E3	10	10.4
	E4	21	21.9
	E5	22	22.9
	E6	17	17.7
	E7	20	20.8
	E8	1	1.0
	E9	4	4.2
	Total	96	100.0
Skill Level	1	1	1.0
	3	7	7.3
	5	33	34.4
	7	51	53.1
	9	4	4.2
	Total	96	100.0

OBSERVATIONS: The distribution is highly skewed for gender, which will make effects difficult to find. Also, the sample size is small, as low as about 85 for some questions, which will reduce power. As such, $p < .10$ (2-tailed) was used in the tables below to balance Types 1 and 2 error.

Table 8. Correlations for Analytic

	Gender (0 = female, 1 = male)	Rank (E2- E9)	Skill Level (1, 3, 5, 7, 9)
Bad fit	0.183*	0.007	0.080
Good fit	0.095	0.311**	0.359**
Different from other CFs	0.189*	0.288**	0.317**
Job-Related Challenges	0.100	0.052	0.107
Career Field Difficult	0.061	0.049	-0.040
Career Field Dislike	0.131	-0.127	-0.034
Re-Enlist	0.229*	0.205*	0.336**
Rewarding	0.140	0.176	0.208*
* p < .10, ** p < .05			

OBSERVATIONS: Men and those higher in rank/skill employees appear to use more analytic words on several questions.

Table 9. Correlations for Clout

	Gender (0 = female, 1 = male)	Rank (E2- E9)	Skill Level (1, 3, 5, 7, 9)
Bad fit	-0.072	0.151	0.054
Good fit	0.265**	0.296**	0.247**
Different from other CFs	-0.306**	-0.001	0.017
Job-Related Challenges	0.150	-0.026	-0.016
Career Field Difficult	-0.016	-0.103	0.022
Career Field Dislike	0.052	0.053	0.144
Re-Enlist	0.146	0.01	0.112
Rewarding	-0.088	0.025	0.076
* p < .10, ** p < .05			

OBSERVATIONS: Men and those higher in rank/skill use more clout words to describe the good fit aspects of job. Women use more clout words for differences from other career fields.

Table 10. Correlations for Authentic

	Gender (0=female, 1=male)	Rank (E2- E9)	Skill Level (1,3,5, 7,9)
Bad fit	0.144	0.099	0.160
Good fit	-0.062	-0.056	-0.081
Different from other CFs	-0.010	-0.113	-0.02
Job-Related Challenges	-0.076	-0.135	-0.044
Career Field Difficult	0.150	0.054	-0.007
Career Field Dislike	0.112	-0.062	-0.049
Re-Enlist	0.145	-0.007	0.050
Rewarding	-0.077	0.024	-0.137
* p < .10, ** p < .05			

OBSERVATIONS: No significant relationships for authentic.

Table 11. Correlations for Tone

	Gender (0 = female, 1 = male)	Rank (E2-E9)	Skill Level (1, 3 ,5, 7, 9)
Bad fit	0.080	-0.125	-0.101
Good fit	-0.037	-0.296**	-0.321**
Different from other CFs	-0.054	0.018	0.097
Job-Related Challenges	0.097	0.057	0.107
Career Field Difficult	0.055	0.082	0.216**
Career Field Dislike	-0.021	0.003	0.011
Re-Enlist	0.085	-0.074	-0.053
Rewarding	0.048	-0.016	-0.017
* p < .10, ** p < .05			

OBSERVATIONS: Those of lower rank/skill use more tone for good fit, but those of higher skill use more tone for career field difficulties.

Table 12. Correlations for “I”

	Gender (0=female, 1=male)	Rank (E2-E9)	Skill Level (1,3,5, 7,9)
Bad fit	-0.058	0.012	-0.034
Good fit	-0.268**	-0.162	-0.168
Different from other CFs	0.111	0.055	0.034
Job-Related Challenges	0.048	-0.212*	-0.186*
Career Field Difficult	0.104	-0.068	-0.093
Career Field Dislike	-0.100	-0.257**	-0.291**
Re-Enlist	-0.153	0.003	-0.007
Rewarding	-0.069	-0.061	-0.116
* p < .10, ** p < .05			

OBSERVATIONS: Women and those of lower rank/skill use “I” more across some questions.

Table 13. Correlations for “We”

	Gender (0 = female, 1 = male)	Rank (E2-E9)	Skill Level (1, 3, 5, 7, 9)
Bad fit	0.070	0.237**	0.184*
Good fit	0.098	0.108	0.081
Different from other CFs	-0.333**	-0.261**	-0.210**
Job-Related Challenges	-0.219**	-0.135	-0.220**
Career Field Difficult	0.004	-0.088	-0.038
Career Field Dislike	-0.057	-0.135	-0.073
Re-Enlist	-0.044	-0.091	-0.113
Rewarding	-0.077	-0.073	-0.048
* p < .10, ** p < .05			

OBSERVATIONS: Women and those of lower rank/skill use “we” more when discussing differences and challenges, but those of higher rank use “we” more for bad fit.

Table 14. Correlations for Positive Emotion

	Gender (0 = female, 1 = male)	Rank (E2-E9)	Skill Level (1, 3, 5, 7, 9)
Bad fit	0.042	-0.114	-0.254**
Good fit	-0.013	-0.263**	-0.292**
Different from other CFs	-0.068	-0.033	0.038
Job-Related Challenges	0.108	0.060	0.011
Career Field Difficult	0.079	0.055	0.161
Career Field Dislike	0.008	-0.057	-0.075
Re-Enlist	0.075	0.243**	0.197*
Rewarding	-0.019	-0.071	-0.037
* p < .10, ** p < .05			

OBSERVATIONS: Lower rank/skill use more positive emotion for bad and good fit, but higher rank/skill use more positive emotion for re-enlistment.

Table 15. Correlations for Negative Emotion

	Gender (0 = female, 1 = male)	Rank (E2-E9)	Skill Level (1, 3, 5, 7, 9)
Bad fit	-0.066	0.022	-0.066
Good fit	0.014	0.164	0.164
Different from other CFs	0.040	-0.174	-0.096
Job-Related Challenges	-0.138	0.037	-0.049
Career Field Difficult	-0.193*	-0.216**	-0.219**
Career Field Dislike	0.036	-0.110	-0.078
Re-Enlist	-0.038	0.109	0.014
Rewarding	-0.053	-0.017	-0.038
* p < .10, ** p < .05			

OBSERVATIONS: Women and those of lower rank/skill use more negative emotion for career field difficulties.

Table 16. Correlations across All Survey Questions

	Gender (0 = female; 1 = male)	Rank (E2-E9)	Skill Level (1, 3, 5, 7, 9)
Word Count	-0.027	0.108	0.143
Analytic	0.223**	0.284**	0.393**
Clout	0.003	0.149	0.243**
Authentic	0.098	-0.116	-0.021
Tone	0.152	-0.091	-0.006
“I”	-0.133	-0.163	-0.239*
“We”	- 0.223**	-0.12	-0.08
Positive	0.050	-0.178	-0.163
Negative	-0.147	-0.092	-0.162
* p < .10, ** p < .05			

OBSERVATIONS: This analysis was conducted across all 8 questions to examine generalizability across questions and perhaps measure a trait, although at a cost of more random error in the correlations from differences in questions. Men and those of higher rank/skill use more analytical words. Those of higher skill were more likely to use clout words. Those of lower skill more likely to use “I.” Women were more likely to use “We.”

2.7 Construct Validity of LIWC

EVIDENCE FROM THE TECHNICAL REPORT

The technical report contains several types of construct validity evidence.

1. **The development process.** This consisted of the following steps for each dictionary. These steps seem like reasonable item development.

- (a) Initial collection of words from rating scales in the literature, the thesaurus, English dictionaries, and judges.
- (b) Ratings by judges of goodness of fit.
- (c) Base rate analysis, which involved eliminating words with very low rates.
- (d) Identifying high frequency words, correlating them with the dictionaries, and voting by judges.
- (e) Item analysis and more judge voting.
- (f) Refinement review by judges for mistakes and oversights.

2. **Reliability.** This consists of uncorrected internal consistency reliabilities using coefficient alpha and corrected alphas using Spearman-Brown. The alphas will be lower than for other types of measures because words are not repeated in language like items in a rating scale. The reliabilities look reasonable, given this consideration.

3. **Criterion-related validity studies.** The report describes early research where subjects were asked to write about emotional topics. The essays were scored by judges and those scores were compared to the LIWC dictionary scores. The results of these studies are not reported, but “hundreds of studies have found the LIWC categories to be valid across dozens of psychological domains.” They recommend reading Tausczik and Pennebaker (2010) for a review. That review discusses the categories of LIWC scores and bears directly on the construct meaning of the scores. The review also presents a table showing the studies that have used the scores. The table does not indicate the constructs for which the scores were used to assess, but it indicates the psychological correlates, which could be interpreted as convergent validities, so it does so indirectly. Many of these are constructs that might be relevant to personnel selection (e.g., verbal fluency, cognitive complexity, social variables, honesty, some personality traits, etc.). This may be the best single source of information on the construct validity of LIWC scores. This reading is definitely recommended. It suggests that LIWC has been used to measure a great number of psychological constructs, some of which might be relevant to staffing.

4. **Computed scale scores.** These consist of four summary variables: analytical thinking (Pennebaker et al., 2014), clout (Kacewicz et al., 2012), authenticity (Newman et al., 2003), and emotional tone (Cohn et al., 2004). Each summary variable was derived from previously published research that provided support for the construct validity in various ways (e.g., development process, reliability, criterion-related validity, etc.).

EVIDENCE FROM THE AIR FORCE REVIEW

The review contains 55 studies (of the 239) that used LIWC. Those that appeared to measure human attributes potentially related to hiring were (with construct extracted in parentheses):

- Buyl, T., Boone, C., & Wade, J. B. (2019). CEO narcissism, risk-taking, and resilience: An empirical analysis in US commercial banks. *Journal of Management*, 45(4), 1372-1400. (narcissism)
- Chen, X., & Latham, G. P. (2014). The effect of priming learning vs. performance goals on a complex task. *Organizational Behavior and Human Decision Processes*, 125(2), 88-97. (achievement)
- Gamache, D. L., McNamara, G., Mannor, M. J., & Johnson, R. E. (2015). Motivated to acquire? The impact of CEO regulatory focus on firm acquisitions. *Academy of Management Journal*, 58(4), 1261-1282. (regulatory focus)
- Hagtvedt, L. P., Dossinger, K., Harrison, S. H., & Huang, L. (2019). Curiosity made the cat more creative: Specific curiosity as a driver of creativity. *Organizational Behavior and Human Decision Processes*, 150, 1-13. (creativity)
- Harrison, S. H., & Dossinger, K. (2017). Pliable guidance: A multilevel model of curiosity, feedback seeking, and feedback giving in creative work. *Academy of Management Journal*, 60(6), 2051-2072. (ambivalent feedback)
- Madera, J. M., Hebl, M. R., & Martin, R. C. (2009). Gender and letters of recommendation for academia: agentic and communal differences. *Journal of Applied Psychology*, 94(6), 1591. (agentic versus communal orientation)
- Malhotra, S., Reus, T. H., Zhu, P., & Roelofsen, E. M. (2018). The acquisitive nature of extraverted CEOs. *Administrative Science Quarterly*, 63(2), 370-408. (extraversion)
- Martin, S. R. (2016). Stories about values and valuable stories: A field experiment of the power of narratives to shape newcomers' actions. *Academy of Management Journal*, 59(5), 1707-1724. (values)
- Martin, A. E., & Phillips, K. W. (2017). What "blindness" to gender differences helps women see and do: Implications for confidence, agency, and action in male-dominated environments. *Organizational Behavior and Human Decision Processes*, 142, 28-44. (agency)
- Moore, C., Lee, S. Y., Kim, K., & Cable, D. M. (2017). The advantage of being oneself: The role of applicant self-verification in organizational hiring decisions. *Journal of Applied Psychology*, 102(11), 1493-1513. (self-verification)
- Nadkarni, S., & Chen, J. (2014). Bridging yesterday, today, and tomorrow: CEO temporal focus, environmental dynamism, and rate of new product introduction. *Academy of Management Journal*, 57(6), 1810-1833. (temporal focus)
- Nadkarni, S., Pan, L., & Chen, T. (2019). Only timeline will tell: Temporal framing of competitive announcements and rivals' responses. *Academy of Management Journal*, 62(1), 117-143. (temporal focus)
- Owens, B. P., & Hekman, D. R. (2012). Modeling how to grow: An inductive examination of humble leader behaviors, contingencies, and outcomes. *Academy of Management Journal*, 55(4), 787-818. (humble leadership)
- Rhee, E. Y., & Fiss, P. C. (2014). Framing controversial actions: Regulatory focus, source credibility, and stock market reaction to poison pill adoption. *Academy of Management Journal*, 57(6), 1734-1758. (regulatory focus)
- Savani, K., & King, D. (2015). Perceiving outcomes as determined by external forces: The role of event construal in attenuating the outcome bias. *Organizational Behavior and Human Decision Processes*, 130, 136-146. (causal words and positive emotions)
- Schwartz, H. A., Eichstaedt, J. C., Kern, M. L., Dziurzynski, L., Ramones, S. M., Agrawal, M., ... & Ungar, L. H. (2013). Personality, gender, and age in the language of social media: The open-vocabulary approach. *PloS one*, 8(9), e73791. (personality)

- Shantz, A., & Latham, G. P. (2009). An exploratory field experiment of the effect of subconscious and conscious goals on employee performance. *Organizational Behavior and Human Decision Processes*, 109(1), 9-17. (achievement)
- Shi, W., Zhang, Y., & Hoskisson, R. E. (2019). Examination of CEO–CFO social interaction through language style matching: Outcomes for the CFO and the organization. *Academy of Management Journal*, 62(2), 383-414. (language style)
- Wilson, K. S., DeRue, D. S., Matta, F. K., Howe, M., & Conlon, D. E. (2016). Personality similarity in negotiations: Testing the dyadic effects of similarity in interpersonal traits and the use of emotional displays on negotiation outcomes. *Journal of Applied Psychology*, 101(10), 1405 - 1421. (emotional displays)

This is a large amount of usage in the management domain to measure constructs that might be relevant to the project.

CONCLUSION

The amount of construct validity evidence for LIWC is quite impressive.

2.8 Text Link Sentiment Analysis in SPSS

The purpose of this analysis was to determine whether sentiment analysis conducted with the “Text Link Analysis” node in SPSS Modeler would yield different results than sentiment analysis conducted with the “Text Mining” node. We previously conducted it with the Text Mining node, but found that some IBM experts recommended using Text Link node instead.

According to the manual, “The Text Link Analysis (TLA) node adds a pattern-matching technology to text mining's concept extraction in order to identify relationships between the concepts in the text data based on known patterns.... The Text Link Analysis node goes beyond basic concept extraction to provide information about the relationships between concepts, as well as related opinions or qualifiers that may be revealed in the data.” (p. 43). We understood this to mean that it will identify the categories that are viewed with positive or negative sentiments, which might be useful.

We discovered three findings:

1. The concepts extracted are virtually identical between Text Link and Text Mining, and the categories built are fairly similar (especially for the large categories). We conducted this analysis on both the good-fit and bad-fit questions in the RPA survey. The comparison for good-fit is shown below (Table 17 and 18).

2. A potential advantage of Text Link analysis over LIWC is that it identifies categories associated with positive and negative sentiments. This seems to be an advantage over Text Mining analysis. Listed below are the categories extracted for the good-fit question. Note that all categories extracted are not associated with positive or negative sentiments. For this question, 12 of the 25 categories were positive, 1 negative, and 12 neither. Unfortunately, most of the categories do not seem to give much insight into the data beyond doing a simple content analysis.

3. A potential advantage of Text Link analysis is that it can output data for individual responses. LIWC does this, but we could not determine how to do so with the Text Mining analysis. However, the output is not a score like LIWC, but is instead an indication (0/1) whether a response reflected one or more of the categories. Unfortunately, of the 93 responses to the good fit question, 48 were uncategorized and no concepts were extracted for another 18, yielding categories for only 27 responses.

In conclusion, we are not optimistic at present that Text Link analysis will be useful for the Air Force purposes.

Table 17. Good Fit Categories built by Text Link and Text Mining

Text Link Good fit – concepts:

13 types					Type
	Type	In	Global	Docs	
1	<Unknown>		404	89 (96%)	
2	<Positive>		160	73 (78%)	
3	<Negative>		29	20 (22%)	
4	<Contextual>		28	18 (19%)	
5	<PositiveAttitude>		9	8 (9%)	
6	<PositiveFeeling>		7	5 (5%)	
7	<PositiveCompetence>		5	5 (5%)	
8	<PositiveBudget>		4	4 (4%)	
9	<NegativeAttitude>		3	3 (3%)	
10	<NegativeFunctioning>		3	3 (3%)	
11	<Organization>		2	2 (2%)	
12	<Uncertain>		2	2 (2%)	
13	<NegativeFeeling>		2	2 (2%)	

Text Mining Good fit – concepts:

13 types					Type
	Type	In	Global	Docs	
1	<Unknown>		403	89 (96%)	
2	<Positive>		162	73 (78%)	
3	<Contextual>		29	19 (20%)	
4	<Negative>		29	20 (22%)	
5	<PositiveAttitude>		8	7 (8%)	
6	<PositiveFeeling>		7	5 (5%)	
7	<PositiveCompetence>		5	5 (5%)	
8	<PositiveBudget>		4	4 (4%)	
9	<NegativeAttitude>		3	3 (3%)	
10	<NegativeFunctioning>		3	3 (3%)	
11	<Organization>		2	2 (2%)	
12	<Uncertain>		2	2 (2%)	
13	<NegativeFeeling>		2	2 (2%)	

Text Link Good fit – categories:

Category	Descriptors	Docs
All Documents		93
Uncategorized		48
No concepts extracted		18
work		8
job		11
career field		3
rpa+<Positive>		3
operations		4
field+<Positive>		4
technology+<Positive>		2
situations+<Positive>		3
sensor operator		3
person		3
people		2
outcome		1
intelligence to understand+<Contextual>		2
individual		2
impact+<Positive>		3
feeling		1
challenge+<Positive>		4
aviation+<Positive>		2
aircrew		2

Text Mining Good fit – categories:

Category	Descriptors	Docs	
[-] All Documents		-	93
[-] Uncategorized		-	14
[-] No concepts extracted		-	18
[+] 🧑 human resources		18	33
[+] 🧑 work		11	15
[+] 🧑 job		8	22
[+] 🧑 technology		7	8
[+] 🧑 rpa		7	9
[+] 🧑 office workers		7	8
[+] 🧑 news		6	5
[+] 🧑 military operations		5	14
[+] 🧑 flight		5	7
[+] 🧑 mental processes		4	6
[+] 🧑 game		4	4
[+] 🧑 electronic data processing		4	4
[+] 🧑 behavior and behavior mechanisms		4	5
[+] 🧑 duty		3	3
[+] 🧑 pride		2	3
[+] 🧑 person		2	4
[+] 🧑 operations		2	8
[+] 🧑 individual		2	3
[+] 🧑 impact		2	7
[+] 🧑 home		2	2
[+] 🧑 fly		2	2
[+] 🧑 finding		2	2
[+] 🧑 enemies		2	2
[+] 🧑 difference		2	3
[+] 🧑 defense		2	5
[+] 🧑 choices		2	2
[+] 🧑 behavior mechanisms		2	7
[+] 🧑 aviation		2	4
[+] 🧑 application		2	2
[+] 🧑 accomplishment		2	1

Table 18. Categories Extracted for the “Good Fit” Question by Text Link

Category	Pos/Neg
Category_aircrew	
Category_aviation+<Positive>	Pos
Category_career field	
Category_career field/career field+<Positive>	Pos
Category_challenge+<Positive>	Pos
Category_feeling	
Category_field+<Positive>	Pos
Category_field+<Positive>/career field+<Positive>	Pos
Category_impact+<Positive>	Pos
Category_individual	
Category_intelligence to understand+<Contextual>	
Category_job	
Category_job/job+<Positive>	Pos
Category_operations	
Category_operations/operations+<Positive>	Pos
Category_outcome	
Category_people	
Category_person	
Category_rpa+<Positive>	Pos
Category_sensor operator	
Category_situations+<Positive>	Pos
Category_technology+<Positive>	Pos
Category_work	
Category_work/work+<Negative>	Neg
Category_work/work+<Positive>	Pos

2.9 Text Link Analysis of Negation

The purpose of this analysis is to examine how SPSS Modeler Premium might evaluate negation, meaning interpreting when text contains “not” or some variant, thus potentially reversing the meaning of a phrase. We explored this using Test Link Analysis (TLA) because that is the subroutine of the software that is used specifically to look at relationships among words. The analysis led to the following observations:

1. TLA appears to be able to detect negation. Table 19 shows the output from using TLA on the first interview question. It codes negation category types as “contextual,” apparently meaning the interpretation depends on the context and the context is that the word “not” was used. The number of categories extracted indicate the number of TLA patterns, which is in part, determined by frequency and sample size.
2. The TLA does not pick up every occurrence of a negation, but only when it is paired with a concept that occurs often enough to become a category. The threshold appears to be three occurrences.
3. We correlated the TLA categories with the AFQT to determine whether scoring negative categories would enhance prediction. Table 20 shows the results. None of the categories are significant. Note that the frequencies are extremely low for the categories, thus statistical power is very low, which could explain the findings.
4. Review of example responses scored by TLA as negation revealed that the negation did not change the meaning in many instances. For example, “this job is for people who can handle stress” is the same as “this job is not for people who cannot handle stress.”
5. This research reminded us that text mining generally, but not always focuses on nouns as concepts and not verbs. It considers many verbs as usually noise. We need to keep this in mind.

Table 19. Text Link Analysis of Interview A, Question 1

Category	Descriptors	Docs	Score	Display
All Documents		-	454	
Uncategorized		-		
No concepts extracted		-		
working+<Contextual>		4		
fx [working+no]				
fx [co-workers+no]				
fx [coworkers+no]				
fx [months of working+no]				
time+<Contextual>		4		
fx [quantity of time+no]				
fx [free time+no]				
fx [good time+no]				
fx [time+no]				
emotions+<Contextual>		4		
fx [emotions+no]				
fx [anger+no]				
fx [form of grief+no]				
fx [love+no]				
parents+<Contextual>		3		
fx [mother+no]				
fx [parents+no]				
fx [dad+no]				
months+<Contextual>		3		
fx [months not+no]				
fx [months of working+no]				
fx [months+no]				
kids+<Contextual>		3		
fx [kids+no]				
fx [new kid+no]				
fx [smartest kid+no]				
vehicle+<Contextual>		2		
fx [vehicle+no]				
fx [car+no]				
situation+<Contextual>		2		
fx [approach situations+no]				
fx [situation+no]				
school+<Contextual>		2		
fx [changing high schools+no]				
fx [school+no]				
options+<Contextual>		2		
fx [options+no]				
fx [good options+no]				
news+<Contextual>		2		
fx [new kid+no]				
fx [news+no]				
home+<Contextual>		2		
fx [home+no]				
fx [apartment+no]				
hiring+<Contextual>		2		
fx [interview+no]				
fx [hiring+no]				
regret+<Contextual>		2		
fx [regret+no]				
fx [regret moving+no]				
call+<Contextual>		2		
fx [call+no]				
fx [emergency calls+no]				

Table 20. Correlations between Text Link Analysis Categories and the AFQT

TLA Category	Mean	Correlation with AFQT
2. call+<Contextual>	0	0.014
3. emotions+<Contextual>	0.01	-0.081
4. hiring+<Contextual>	0	0.049
5. home+<Contextual>	0	-0.013
6. kids+<Contextual>	0.01	0.007
7. months+<Contextual>	0.03	0.086
8. news+<Contextual>	0	0.062
9. options+<Contextual>	0	0.019
10. parents+<Contextual>	0	0.06
11. regret+<Contextual>	0.01	0.042
12. school+<Contextual>	0.01	0.065
13. situation+<Contextual>	0.01	-0.059
14. time+<Contextual>	0.03	0.049
15. vehicle+<Contextual>	0.01	-0.026
16. working+<Contextual>	0.01	0.021

Note. None of the correlations were statistically significant.

3.0 STUDY 2: SCORING STRUCTURED INTERVIEW RESPONSES

The search to identify where and how text analysis could augment existing Air Force assessments (Objective 2) started by considering how to use text analysis to measure the attributes currently assessed by other assessments (as described in Appendix D) as well as the development of new assessment types. The Air Force currently uses employment aptitude tests (AFOQT] for officers and ASVAB for enlisted personnel) and personality tests (Self-Description Inventory [SDI] and Tailored Adaptive Personality Assessment System [TAPAS]). They also use a vocational interest inventory to help candidates identify jobs that may be a match for them (Air Force Work Interest Navigator [AF-WIN]). The objective to examine the utility of text analysis to score structured interview responses was based on four considerations. These were: (1) interview responses are narrative, so text analysis is applicable (2) interviews are time-consuming to administer, so text analysis may save time, (3) an automated structured interview might complement the current Air Force use of tests, and (4) interview questions might measure constructs that could complement existing tests (e.g., adaptability, integrity, motivation, perseverance).

The Air Force also had a sample of candidates readily available for research purposes. These were enlisted trainees in basic training at Lackland Air Force Base who are required to participate in research studies as part of basic military training. The trainees are enlisted Air Force personnel and their selection process did not include an interview. However, the officer selection process does include an interview and those performing officer selection were interested in possibly using the results of this research to improve and streamline their selection process. Therefore, the Air Force decided to use the Lackland basic trainee sample to conduct research on the feasibility of using text analyses to score structured interviews, even though the interviews would ultimately be used for officer selection. The Air Force and the researchers reasoned that the type of interview questions and the range of the answers would be approximate enough for results to generalize to an officer sample of candidates. The trainees were asked to respond to six interview questions on a range of competencies, with half behavioral questions and half situational. Because of the lack of availability of interviewers to participate in the research, the methodology involved having trainees type their answers. The answers were subsequently scored by a panel of two research interns at the Air Force Personnel Center (AFPC). Text could then be analyzed and validated against the interview scores. Information was also available on the existing selection procedures for the enlisted trainees (ASVAB and TAPAS) that could be used to evaluate the construct validity of the text-analyzed variables. This study resulted in seven short reports that are described below.

The conclusions from Study 2 were that text analysis can be used to score employment interview responses, the scores show good validity in predicting interviewer ratings, the scores show construct validity with other assessments, and use of text analysis would have practical utility for making selection decisions.

3.1 Descriptive Statistics on the Lackland Sample and ASVAB and TAPAS Data

In preparation for the analysis of the Lackland AFB interview data, we analyzed the descriptive statistics on the Lackland sample and the data on the existing selection procedures. Table 21 shows the time to respond to the interview answers in writing based on the percentile of the sample distribution. The fastest 10% of the sample completed in about 30 minutes, 50% completed in about 43 minutes, and 90% completed in about 61 minutes. We used two different forms of the interview, with the items reversed to reduce fatigue or practice effects, with about half the sample completing each (Table 22). The average age of the sample was 20.5 years (Table 23) with a range of 17 to 40 years (Table 24). The sample was approximately split by gender (Table 25) and about a fourth of trainees were minorities (Table 26). About 63% of the sample had at least 12 years of education (e.g., GED or High School Diploma), with the remainder having additional educational experience (Table 27). The most common degree was a High School Diploma or equivalent with 84% and 13% having more advanced degrees (Table 28). The various ASVAB composites and subtests showed good range and variation (Table 29), similar to the existing ASVAB norms although slightly more restricted in the lower percentiles (Tables 30 and 31). Likewise, the TAPAS facets showed good range and variation, with means and standard deviations approximately at the T-scored values of 50 and 10, respectively (Table 32). Overall, the Lackland AFB sample appears representative of the population of candidates, and the score data on the existing tests show good variance, which increases the likelihood of correlating with the text variables.

Table 21. Frequencies for Time to Complete Interview in Minutes

Percentile	Time to Complete (in Minutes)
10	29.717
20	33.263
30	36.923
40	39.687
50	42.867
60	45.937
70	50.080
80	54.660
90	61.240

Table 22. Count and Percentage of Interview Form

Form	Frequency— Count	Frequency— Percentage
Reversed	256	55.3
Not Reversed	207	44.7
Total	463	100.0

Table 23. Sample Size, Mean, Standard Deviation, Minimum, and Maximum Age

	N	Mean	SD	Min.	Max.
Age	454	20.54	4.052	17	40

Table 24. Count and Frequencies of Respondent Age

Age	Frequency— Count	Frequency— Percentage
17	9	1.9
18	167	36.1
19	92	19.9
20	47	10.2
21	38	8.2
22	19	4.1
23	14	3.0
24	15	3.2
25	9	1.9
26	9	1.9
27	5	1.1
28	6	1.3
29	5	1.1
30	2	.4
31	1	.2
32	1	.2
33	1	.2
34	2	.4
35	2	.4
36	3	.6
37	1	.2
38	2	.4
39	3	.6
40	1	.2
Missing	9	1.9
Total	463	100.0

Table 25. Count and Frequencies of Respondent Gender

Gender	Frequency— Count	Frequency— Percentage
Female	222	47.9
Male	235	50.8
Declined to Respond	3	.6
Missing	3	.6
Total	463	100.0

Table 26. Count and Frequencies of Respondent Race

Race	Frequency— Count	Frequency— Percentage
American Indian/Alaska Native	14	3.0
Asian	21	4.5
Black/African American	79	17.1
Native Hawaiian/Other Pacific Islander	7	1.5
White/Caucasian	342	73.9
Declined to Respond	17	3.7
Total	480	103.7
<i>Note.</i> Respondents were allowed to indicate more than one race, so total is more than total <i>N</i> , and percent is more than 100%.		

Table 27. Count and Frequencies of Respondent Ethnicity

Ethnicity	Frequency— Count	Frequency— Percentage
Non-Hispanic	300	64.8
Hispanic	87	18.8
Declined to Respond	8	1.7
Missing	68	14.7
Total	463	100.0

Table 28. Count and Frequencies of Respondent Education Level

	N	Mean	SD	Min.	Max.	Missing
Education	459	12.83	1.392	12	20	4

Education	Frequency— Count	Frequency— Percentage
12	293	63.3
13	56	12.1
14	56	12.1
15	20	4.3
16	26	5.6
17	1	.2
18	4	.9
19	2	.4
20	1	.2
Missing	4	.9
Total	463	100.0

Table 29. Count and Frequencies of Respondent Highest Degree Earned

Highest Degree Earned	Frequency— Count	Frequency— Percentage
High School	390	84.2
Associate's	28	6.0
Bachelor's	25	5.4
Masters	5	1.1
Missing	15	3.2
Total	463	100.0

Table 30. Means, Standard Deviations, Minimums, and Maximums of Respondent ASVAB Scores

	Mean	SD	Min.	Max.
AFQT	63.92	17.311	31	99
Mechanical	55.76	21.268	13	99
Administrative	66.28	15.898	28	99
General	61.73	19.481	21	98
Electronic	63.48	20.934	12	99
General Sciences	53.41	7.687	34	76
Electronics Information	50.98	9.097	27	77
Mechanical Comprehension	52.78	7.379	26	73
Auto & Shop Information	46.97	8.092	25	73
Word Knowledge	51.99	6.377	26	76
Paragraph Comprehension	54.30	5.737	36	69
Mathematics Knowledge	56.18	5.460	40	73
Arithmetic Reasoning	53.65	6.597	36	72
<i>Note. N = 463, 7 missing.</i>				

Table 31. Percentiles Aligned with Normed ASVAB Scores

	AFQT	
	PAY-97	Lackland Sample
20%	14	47
40%	36	60
50%	47	66
60%	60	70
80%	80	81
	Mechanical	
	PAY-97	Lackland Sample
20%	17	36
40%	42	48.8
50%	55	55
60%	65	62
80%	87	77
	Administrative	
	PAY-97	Lackland Sample
20%	13	50
40%	35	63
50%	45	67
60%	56	71
80%	78	82
	General	
	PAY-97	Lackland Sample
20%	14	42
40%	40	57
50%	51	63
60%	64	70
80%	81	80.6
	Electronic	
	PAY-97	Lackland Sample
20%	16	44
40%	36	60
50%	50	66
60%	61	71
80%	85	84
<i>Note. N = 456, 7 missing.</i>		

Table 32. Count and Frequencies of Respondent ASVAB Version

ASVAB Version	Frequency— Count	Frequency— Percentage
03E	14	3.0
04E	13	2.8
05E	85	18.4
06E	70	15.1
07E	38	8.2
08E	90	19.4
09E	84	18.1
10E	5	1.1
23F	14	3.0
23G	16	3.5
24F	14	3.0
24G	13	2.8
Missing	7	1.5
Total	463	100.0

Table 33. ASVAB Test Date

	Mean	SD	Min.	Max.
ASVAB Test Date	October 17, 2018	127 days, 12 min., 35.95 sec	June 29, 2016	June 18, 2019

Table 34. Means, Standard Deviations, Minimums, and Maximums of Respondent TAPAS Scores

TAPAS Facet	Mean	SD	Min.	Max.
Achievement	49.483	9.709	26.700	73.300
Adjustment	49.319	10.615	26.700	73.300
Cooperation	52.159	9.369	29.500	73.300
Dominance	48.253	9.323	26.700	73.300
Even Tempered	50.379	9.234	26.700	73.300
Attention Seeking	46.446	9.279	26.700	73.300
Selflessness	50.793	8.787	29.500	73.300
Intellectual Efficiency	48.866	9.376	26.700	73.300
Non-Delinquency	51.403	10.307	26.700	73.300
Order	51.529	9.853	26.700	73.300
Physical Condition	49.549	10.196	26.700	73.300
Self-Control	50.387	10.254	26.700	73.300
Sociability	48.384	9.346	26.700	73.300
Tolerance	51.248	10.118	26.700	73.300
Optimism	49.711	9.373	26.700	73.300
<i>Note.</i> Only analyzed those who took version 5.0 of TAPAS <i>N</i> = 377 due to different version or missing data.				

Table 35. ASVAB Test Date

	Mean	SD	Min.	Max.
TAPAS Test Date	December 23, 2018	148 days, 21 hrs, 46 mins, 15.4 sec	March 23, 2015	July 11, 2019
<i>Note.</i> Only analyzed those who took version 5.0 of TAPAS.				

3.2 Initial Text Mining of One Interview Question from Lackland Sample

The purposes of this initial study were to text mine the responses to one of the interview questions and to examine the relationships with ASVAB test scores. The text analysis software (SPSS Modeler Premium, V18.2.1) extracted 90 text categories for the responses to the question as shown in Table 36. Table 36 also shows the correlations between the text categories and five composites of the ASVAB, including the AFQT (Armed Forces Qualification Test) composite, and the four Air Force MAGE composites (Mechanical, Administrative, General, and Electronic). Many of the text variables showed significant correlations. To provide a maximum estimate of the relationship between the text categories and the test composites, we also computed regressions as shown in Tables 37-41. The multiple correlations ranged from .47 to .54, and all but one were significant. These values are overestimates because of capitalization on chance, especially with such a large number of variables compared to the sample size, as will be addressed in a later analysis. Nevertheless, the results suggest that the text analyses will extract a meaningful number of categories and the categories will be related to the test scores.

Interview Form A, Question 2.

Competency: Adapting to Stress and Change

Ability to adapt to new and changing tasks and situations

Question:

[REDACTED]

Table 36. Correlations between Text Mined Variables and ASVAB Scales

	AFQT	Mechanical	Administrative	General	Electronic
resources	0.082	0.051	0.082	0.075	0.04
person	-0.005	-0.014	-0.002	-0.008	-0.002
recipient	.203**	.141**	.193**	.197**	.128**
feedback	0.067	0.049	0.083	0.054	-0.012
time	-0.018	-0.046	-0.028	-0.008	-0.032
help	-0.012	0.009	-0.002	-0.022	0.043
anatomy	0.018	0.004	0.017	0.019	0.012
family	-0.014	-0.015	-0.015	-0.012	-0.007
report	0.024	0.032	0.007	0.034	-0.022
work	.132**	0.078	.119*	.134**	0.018
information	0.01	0.021	0.004	0.01	0.033
occupation	.133**	.148**	.133**	.124**	.123**
job	0.003	0.016	-0.001	0.005	-0.001
criticism	.097*	0.03	.100*	0.086	0.012
geometry	.201**	.164**	.182**	.197**	.180**
factors	0.052	-0.011	0.086	0.015	0.07
issues	0.082	0.05	0.082	0.073	0.06
economics	0.085	0.059	.093*	0.074	0.072

	AFQT	Mechanical	Administrative	General	Electronic
idea	0.036	0.002	0.042	0.028	0.041
behavior and behavior mechanisms	0.07	0.055	0.055	0.076	0.054
complexity	-0.041	-0.035	-0.056	-0.027	-0.041
solution	.233**	.135**	.225**	.220**	.178**
human resources	0.03	0.055	0.028	0.033	0.055
details	0.012	0.015	0.004	0.019	0.017
prosecution of law	-0.038	-0.056	-0.031	-0.043	-0.073
situation	-0.007	-.100*	0.029	-0.041	-0.072
problem	.129**	.125**	.128**	.116*	.142**
research	.112*	.109*	.116*	.102*	0.078
outcome	-0.056	-0.087	-0.021	-0.084	-0.046
finance	-0.008	0.038	-0.02	0.002	-0.004
finance/check	-0.045	-0.027	-0.063	-0.025	-0.061
human resources/education, training and development/challenge	0.027	0.062	0.042	0.015	0.031
geometry/angle	0.086	0.055	.096*	0.067	0.069
person/personal opinion	0.035	0.008	0.034	0.03	-0.002
occupation/white collar workers/leadership	0.009	0.031	0.009	0.009	0.012
finance/cost	0.071	0.089	0.058	0.081	0.084
finance/gain	0.013	0.045	0.005	0.017	0.01
research/scientific method	0.025	0.011	0.037	0.016	0.035
human resources/benefit	0.03	-0.003	0.038	0.019	0.018
behavior and behavior mechanisms/emotion	0.025	-0.002	0.009	0.034	0.016
report/mock reports	-0.04	-0.026	-0.016	-0.057	-0.032
occupation/supervisor	0.032	0.025	0.04	0.023	0.041
occupation/white collar workers/employee	0.005	0.009	0.019	-0.01	0.018
occupation/white collar workers	0.013	0.023	0.014	0.01	0.004
anatomy/brain	0.035	0.046	0.031	0.04	0.031
human resources/education, training and development	0.055	0.079	0.039	0.067	0.069
solution/new solution	0.039	-0.002	0.057	0.019	-0.01
geometry/holes	0.033	0.005	0.016	0.041	-0.01
family/family structure/parents/mother	0.044	0.036	0.04	0.044	0.042
finance/investments	0.018	0.058	0.01	0.025	0.017
finance/money	0.008	0.053	-0.008	0.022	0.033
occupation/manager	0.014	0.016	0.002	0.023	-0.011
geometry/complex/complex situation	-0.047	-0.076	-0.044	-0.044	-0.042
human resources/education, training and development/education	0.016	0.007	0.009	0.023	0.014
economics/property	0.004	-0.011	0.018	-0.005	0.003
job/better job	-0.019	-0.027	-0.016	-0.02	-0.03
finance/investments/future	0.01	0.039	0.014	0.007	-0.001
anatomy/head	-0.002	-0.016	0.014	-0.013	-0.018

	AFQT	Mechanical	Administrative	General	Electronic
occupation/tailor	.100*	.104*	.093*	.098*	0.079
research/data	0.09	.094*	.100*	0.077	0.074
behavior and behavior mechanisms/emotion/anger	0.018	0.006	0.004	0.028	0.027
economics/cooperation	.100*	0.066	.097*	.095*	0.065
prosecution of law/mistakes	-0.065	-0.065	-0.059	-0.066	-0.087
economics/property/assignment	-0.074	-0.042	-0.063	-0.074	-0.06
time/hard time	0.025	-0.018	0.03	0.021	0.027
family/family structure/parents/father	0.044	0.036	0.04	0.044	0.042
prosecution of law/evidence/reputation	0.041	-0.012	0.049	0.032	0.014
geometry/perspective/drawing	0.041	0.023	0.028	0.045	0.005
geometry/shapes	-0.007	-0.001	-0.024	0.009	-0.013
family/family structure	0.052	0.074	0.034	0.064	0.054
prosecution of law/evidence	0.041	-0.026	0.053	0.026	-0.001
finance/trust	-0.037	-0.009	-0.031	-0.04	0.009
anatomy/head/face	0.048	0.059	0.055	0.039	0.012
economics/waste	0.038	0.065	0.036	0.037	0.05
work/work force	-0.076	-0.09	-0.057	-0.081	-0.041
anatomy/eyes	0.002	-0.011	-0.008	0.01	0.012
time/multiple times	-0.073	-0.005	-0.091	-0.052	-0.057
criticism/constructive criticism	0.036	-0.01	0.046	0.027	-0.027
family/family structure/parents	0.052	0.074	0.034	0.064	0.054
person/single person	-0.062	-0.081	-0.048	-0.072	-0.084
human resources/skill	-0.086	-0.035	-0.063	-.095*	-0.037
report/solution report	0.019	-0.016	0.013	0.023	0.04
report/thorough report	0.048	0.041	0.041	0.054	0.011
finance/credit	0.065	0.047	0.072	0.054	0.057
geometry/perspective	.105*	0.03	.118*	0.081	0.046
finance/charge	-0.032	-0.032	-0.043	-0.023	-0.049
occupation/guide	0.048	0.034	0.041	0.05	0.035
human resources/education, training and development/knowledge	0.032	0.034	-0.001	0.057	0.05
family/family structure/child	.c	.c	.c	.c	.c
geometry/complex	.163**	.143**	.154**	.157**	.147**
** Correlation is significant at the 0.01 level (2-tailed).					
* Correlation is significant at the 0.05 level (2-tailed).					
c Cannot be computed because at least one of the variables is constant.					

Table 37. Regression of AFQT Score on the Text Categories

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.539 ^a	0.290	0.125	16.197	0.290	1.753	86	369	0.000

Table 38. Regression of Mechanical Score on the Text Categories

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.512 ^a	0.262	0.091	20.281	0.262	1.527	86	369	0.004

Table 39. Regression of Administrative Score on the Text Categories

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.521 ^a	0.271	0.102	15.069	0.271	1.598	86	369	0.002

Table 40. Regression of General Score on the Text Categories

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.537 ^a	0.288	0.122	18.253	0.288	1.736	86	369	0.000

Table 41. Regression of Electronics Score on the Text Categories

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.467 ^a	0.218	0.036	20.550	0.218	1.200	86	369	0.130

3.3 Illustration of Initial Training and Relabeling to Enhance Job Relatedness (Content Validity)

The purpose of this analysis is to illustrate the initial training and relabeling of the categories extracted by text mining to enhance apparent job relatedness and content validity. Initial training and relabeling are required for two reasons. First, initial training is necessary to eliminate small categories and combine categories that are redundant or not meaningful. Second, the labels assigned to categories may not seem clearly job related in some instances. This is because the SPSS Modeler Premium software uses dictionaries that are intended for all uses and not tailored to the employment context. As such, relabeling of some categories enhances the apparent job relatedness.

The table presented in Appendix E illustrates the initial training and relabeling process using the categories extracted for the first interview question. The table shows the categories assigned by the software, the number of documents containing the category, and any training or relabeling. The training and relabeling consists of nine types:

1. **Eliminate, no documents** – this means no documents contain this category.
2. **Eliminate, too small** – this means 3 or fewer documents contain this category. This number can be adjusted as needed. Here, researchers ensured that at least 1% of the documents contained the category in order to be retained. This is necessary to eliminate categories that will describe so few documents that the statistical power will be too low to predict any criterion scores, as well as to simplify the models.
3. **Eliminate, too small, count in main category** – same explanation as above, but the category is a subset of a larger category so will be counted in that category. This is a very common change.
4. **Eliminate, count below** – this is the same, but most of the documents in this category will be counted in one of its own subcategories that is more descriptive.
5. **Eliminate, same as main category** – sometimes a category will have a subcategory that is virtually identical.
6. **Combine** with another category that is a synonym or nearly the same.
7. **Relabel** the category with a more descriptive term.
8. **Eliminate, mostly figurative uses** – the category reflects figurative speech rather than a meaningful content category. For example, categories on anatomy often reflect figurative uses of parts of the body (e.g., save face, lend a hand, etc.). We may decide to keep these later if we believe they have useful meaning.
9. **Eliminate, too heterogeneous** – in some instances, a category is too heterogeneous to be meaningful. This problem can only be identified by reading the responses.

Subsequent training of the categories will occur based on selecting the categories that best predict a criterion. Depending on whether the model will be seen by non-researchers or others and thus face validity is important, other relabeling might occur based on having subject matter experts read the responses in each category and develop better labels for the content.

3.4 Initial Text Mining of Interview Questions from Lackland and Correlations with AFQT

Purpose. The purpose of this analysis is to conduct initial text mining of the responses to the interview questions collected from basic enlisted trainees at Lackland Air Force Base, and then correlate the categories extracted with the Armed Forces Qualification Test (AFQT) score. This will illustrate the types of text-mined categories extracted from such data and evaluate the extent to which the scores correlate with mental ability. While future research will train the text-mined variables based on interview scores, correlating with the AFQT scores provides initial insight as to the validity of the baseline text mined models.

Method. The sample consisted of 463 enlisted trainees in Air Force basic training at Lackland Air Force Base who responded to six interview questions in writing for research purposes. They were limited to about 250 words per question and the average respondent spent 1 hour answering the questions. The AFQT scores were acquired for 456 trainees. We conducted the text mining using SPSS Modeler Premium (V18.2.1) and used the initial (untrained) categories extracted for this analysis. We only retained categories that occurred in at least four documents (categories occurring in at least 1% of documents) because such extreme restriction of range would likely preclude the likelihood of showing any correlations. We also created a “count” variable that reflected the number of categories that appeared in each person’s response. This is also partly a reflection of word length. We correlated the categories extracted with the AFQT scores as a preliminary investigation of the relationship with mental ability. It was thus a concurrent research design and the criterion of mental ability served to provide construct validity information only. Future research will examine the criterion validity of the text-mined categories against interview scores.

Findings. Appendix F contains six tables with the detailed results for the six interview questions. The interview question and intended skills measured are at the top of each table. The labels of the extracted categories seem logically related to the interview questions for the most part. During the training of the model, many categories will be relabeled to make them more logical. The software uses dictionaries that are not tailored to the employment context, thus may use labels that are not intuitive to this context. The means show that the categories vary widely in their frequency and most have very low frequencies, thus limiting their chances of showing correlations due to low statistical power. Nevertheless, many categories show significant correlations with AFQT scores, though they are generally small in magnitude. Correlations with the counts of the number of text categories scored is at the bottom of each table and shown in Table 42 below. They are fairly small but meaningful, ranging from .12 to .27. The interview questions were not intended to measure the same mental abilities as the AFQT, so the size of these correlations are probably as expected. The end of each table presents the results of a multiple correlation (regression) analysis that includes all categories. Those results are reproduced below in Table 43. Although the multiple correlations are inflated due to capitalization on chance from such a large number of predictors, their sizes are large, ranging from .55 to .72 with a simple average of .66. Later analyses will utilize analysis approaches that avoid capitalization on chance or that correct for capitalization on chance via cross-validation.

Conclusions. First, the text mining software was able to successfully extract a large number of categories for the interview answers, and the categories appear logically related to the questions. Second, the text-mined categories show small but meaningful correlations with mental abilities.

Table 42. Mean Text Categories Scored and Correlation with AFQT

Question	Mean	Correlations with AFQT
1	14.70	.140**
2	20.15	.284**
3	9.16	.208**
4	20.15	.117*
5	22.73	.286**
6	29.34	.128**

Table 43. Regressions of Text Categories on AFQT Scores

Question 1: Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.720a	0.519	0.103	16.394	0.519	1.248	211	244	0.047
Question 2: Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.599a	0.358	0.187	15.61	0.358	2.089	96	359	0
Question 3: Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.547a	0.299	0.073	16.664	0.299	1.325	111	344	0.03
Question 4: Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.686a	0.471	0.098	16.441	0.471	1.263	188	267	0.04
Question 5: Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.708a	0.501	0.26	14.887	0.501	2.082	148	307	0
Question 6: Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.720a	0.518	0.13	16.146	0.518	1.335	203	252	0.015

3.5 Validity of Text Mining of Lackland Interview Answers in Predicting Interview Ratings

Purpose. The purpose of these analyses are to (1) determine the validity of text mining answers to the interview questions collected from trainees at Lackland AFB in predicting the scores from human raters of the interview answers; (2) explore differences between versions of the SPSS text mining software; (3) evaluate approaches to “training” the text mining models (i.e., variables extracted) beyond the baseline model and determine the optimal approach; and (4) examine the influence of capitalization on chance by cross-validating the analyses. This analysis will also predict the AFQT scores along with the interview ratings, which were preliminarily examined in a previous report.

Sample. The sample consisted of 463 enlisted trainees in Air Force basic training at Lackland AFB who responded to six interview questions in writing for research purposes. Responses to each question were limited to about 300 words and the average respondent spent one hour answering the six questions. As shown previously, the sample is highly diverse in terms of gender and race, with most having a high school education. Overall, the sample is representative of the Air Force enlisted trainees.

Text-Mining. We conducted the text mining using SPSS Modeler Premium. We used version 17.0 because we used that version for past analyses. We also used version 18.2.1 because it was just released and may provide improved prediction. We used the initial (untrained) categories extracted for this analysis, but explored various approaches to improve (training) the model as described below. We only retained categories extracted that occurred in at least four documents (categories occurring in at least 1% of documents) because any more extreme restriction of range would likely preclude the likelihood of showing any correlations. We also created a “count” variable that reflected the number of categories that appeared in each person’s response. This was also partly a reflection of response length, which has been shown to be a potentially important consideration when analyzing text data. All categories with the minimum number of responses (4) and the count variable were included in the correlations and regressions.

Interview Ratings. Two researchers independently rated the answers to each interview question. They were highly trained and used detailed anchored rating scales. We calculated an average of the two scores in order to compare human ratings against machine ratings. The scale was as follows: 1 = low, 2 = average, 3 = high.

Of the possible 5,556 ratings (463 participants, 2 ratings each, 6 dimensions), there were 91 “0” ratings. There is no “0” in the scale, but this was used when the responses were random letters or blank, which were coded as missing data in instances where both raters indicated a “0.” In instances where only one rater indicated a “0,” then the rating from the other rater (often a “1”) was retained 1 use in the analyses.

Table 44 shows the agreement and reliability indices for the interview ratings. The level of agreement (defined as giving the same rating) averages about 82% across questions, and the reliabilities of the mean of the two raters average about .84. Thus, the rating data appear to have very high quality.

Table 44. Interrater Reliabilities

Question	% Agreement	Intra-Class Correlation (ICC2)	Krippendorff's Alpha (Ordinal Data)
Question 1	84.9%	.874	.738
Question 2	84.7%	.887	.783
Question 3	78.8%	.807	.644
Question 4	82.3%	.870	.759
Question 5	78.0%	.778	.608
Question 6	82.5%	.812	.655

AFQT Scores. AFQT scores were available on 456 of the trainees. We examined correlations between the text-mining categories and the AFQT scores as a form of construct validity analysis because AFQT captures mental ability. The AFQT provides construct validity information by comparing the text-mined variables with the Air Force's most common hiring procedure for enlisted personnel. A previous report examined the initial prediction of these test scores. The current report includes them for all analyses.

Findings on Initial Validity. Table 45 shows the multiple correlations predicting the interview (human) ratings and AFQT scores from the text-mined categories initially extracted. The initial extraction involves no training. The models for each question using V17.0 of the software were the same models as we described previously that predicted only AFQT scores. The multiple correlations predicting the interview ratings using V17.0 ranged from .620 to .807, with a simple average of .711, across questions. These values are not corrected for shrinkage or cross-validated, so they are overestimates to some degree. Nevertheless, they are quite large. The values for predicting the AFQT also were quite large, ranging from .599 to .720, with an average of .663.

Table 45. Multiple Correlations with Interview (Human) Ratings and AFQT for SPSS Modeler Premium Versions 17.0 and 18.2.1

	N	Human Ratings				AFQT			
		V17.0	# of Variables	V18.2.1	# of Variables	V17.0	# of Variables	V18.2.1	# of Variables
Question 1	453	.807	214	.706	121	.720	214	.561	121
Question 2	451	.620	96	.506	44	.599	96	.445	44
Question 3	455	.669	112	.617	68	.547	112	.454	68
Question 4	456	.701	190	.525	103	.686	190	.501	103
Question 5	460	.749	151	.676	98	.708	151	.615	98
Question 6	460	.722	206	.601	126	.720	206	.580	126

Note. "Count" variable included as # of variables.

Findings on Software Version Differences. We first ran a model developed using SPSS Modeler Premium V17.0 in V18.2.1 to see if the results would be the same. Table 46 shows the comparison for one question (#2). The values in V18.2.1 were slightly smaller. The multiple

correlation from running the model developed using V17.0 in V17.0 was .620 and in V18.2.1 it was .605 for predicting the interview ratings. The values were .599 and .548 for predicting the AFQT. We then built initial models of all the questions using V18.2.1. Table 45 shows the comparison. For every question, the multiple correlation was meaningfully smaller in V18.2.1 than V17.0. The average dropped from .711 to .605 for predicting interview ratings and from .663 to .526 for the AFQT. However, it is important to note that the number of categories extracted by each version of the software were very different. V18.2.1 extracted far fewer categories. V17.0 extracted an average of 161.5 variables across the questions while V18.2.1 extracted an average of 93.3. The findings immediately above indicated that the number of categories has a great impact on prediction, so this likely accounts for the differences in the multiple correlations. When asked about this, the consultants at IBM argued that the linguistic resources used to develop categories in V18.2.1 (versus V17.0) were more refined, accurate, and perhaps meaningful. Moreover, we show below that the number of categories to be extracted can be easily modified.

Table 46. Multiple Correlations with Interview (Human) Ratings and AFQT Using SPSS Modeler Premium V18.2.1 on Models Developed in Version 17.0 for Question 2

	Human Ratings		AFQT	
	R	# of Variables	R	# of Variables
Version 17.0	.620	97	.599	97
Version 18.2.1	.605	83	.548	83

Findings on Training. We explored numerous avenues for training the model. By training, we mean manipulating the model in some manner to improve it. The manipulation might include applying additional analyses or using human judgment to modify the model in some manner. By improvement we mean increasing the prediction of outcomes or criteria (such as in hiring) or the construct meaningfulness of the model (such as in theory building). Training can take place at many points in the process, especially the stage where the software extracts the concepts and the stage where it builds the concepts into categories (that are used to create quantitative variables for analysis).

Based on the research reported here, reading the software manual, consulting with IBM, and substantial experimentation, we discovered two ways to train the model that had the most influence. First, categories can be “built” from concepts multiple times, resulting in more categories. Recall that the two versions of the software built a different numbers of categories in their initial models. However, the software allows more categories to be built by re-building multiple times. This improved prediction each time. Second, even after building categories, some concepts remained uncategorized. This is because the software does not evaluate the concept as being sufficiently homogeneous to constitute a category. We found that by reading the responses in the uncategorized concepts that many were homogeneous enough, defined as referring to the same general idea, that we converted them to categories manually. This again improved prediction, perhaps partly because it added more concepts. Later we found that reviewing the concepts manually, which took many hours, was not necessary. It was simpler and easier to convert all categories that met the minimum number of responses (4) into categories

because variables that do not predict do not hurt the model. They are just given no weight in the regression. Including non-predictive variables presents a sample size question, though we have sufficient responses to not be concerned with trying to use more degrees of freedom than we have currently.

Table 47 shows the influence of these two types of training (building multiple times and converting uncategorized concepts to categories) using an illustrative question (#2) in SPSS V18.2.1. As can be seen, building the categories multiple times increases the number of categories and multiple correlations up to an asymptotic level, which was seven times with this question. Likewise, converting uncategorized concepts to categories also improved prediction. We did this on two occasions, once after only building a single time and once at the end after the maximum number of categories were built. In both instances, the prediction was greatly improved. Figure 6 illustrates the relationship between the number of categories and the prediction, showing they are strongly related. The improvement from these types of training were substantial, the multiple correlation increased from .506 to .798 for predicting the interview ratings and from .445 to .790 for predicting the AFQT score from building once without any training to building seven times and converting unused concepts to categories. Of course, there will be capitalization on chance, which we explore below.

Table 47. Multiple Correlations with Interview (Human) Ratings and AFQT Using SPSS Modeler Premium V18.2.1 Demonstrating Influence of Training Question 2

	# of Variables	Human Rating R	AFQT R
"Built" Once	44	.506	.445
"Built" Once and Converted Unused Concepts into Categories	136	.690	.643
"Built" Twice	79	.583	.512
"Built" Three Times	105	.632	.580
"Built" Four Times	123	.660	.629
"Built" Seven Times (Max)	151	.700	.681
"Built" Seven Times (Max) and Converted Unused Concepts into Categories	236	.798	.790
<i>Note.</i> $N = 451$. "Count" variable included as # of variables.			

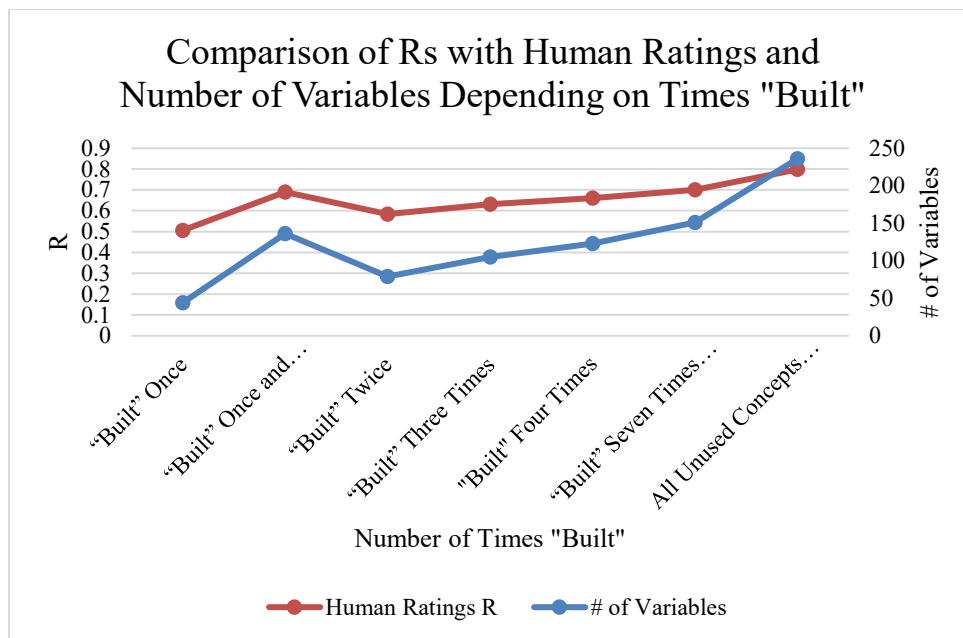


Figure 6. Comparison of correlations for computer-generated model with human raters, depending on number of times model was built

Note that building additional categories in V18.2.1 resulted in a similar number of categories as V17.0 after three builds (105 versus 96, respectively) and a similar multiple correlation (.630 versus .620, respectively), so this accounts for the differences between software versions.

We evaluated additional approaches to training that were not effective. For example, finding synonyms at the concept level proved to be too complex for the payoff with the large number of concepts, and there was uncertainty as to whether it would help (e.g., “smart” might be a synonym for “intelligent,” but it also might mean “smart-aleck,” so should be kept separate). We also explored the influence of modifying the categories built, which is useful for improving the meaning of the category structure for content analysis purposes, but it had little impact on prediction. Our modifications included both attempting to improve the homogeneity of the categories by removing heterogeneous subcategories, combining similar categories, separating out homogeneous subcategories into their own categories, and other modifications, but they did not appear to improve prediction. We intend to explore other approaches to training, but they have not been determined yet and will depend on likely improvement to the models and future learning or discoveries in this project. After we determine the optimum approach to training we will apply it to the other five interview questions.

Appendix G to this report contains the tables showing the categories extracted and the correlations with the criteria for every model. We find the correlations are more useful than the beta weights for understanding the value of the categories because the latter are influenced by multicollinearity.

Findings on Cross-Validation: The above analyses all beg the question of how much these analyses capitalize on chance. We know that including a large number of variables and selecting variables based on prediction are approaches to statistical analyses that are influenced greatly by capitalization on chance. For estimating the effect of capitalization on chance, cross validation is better than shrinkage formulas when the number of variables is very large because the shrinkage formulas will overcorrect. Again, we used Question 2 for illustration purposes. We divided the sample randomly into two subsamples by assigning every other case to each subsample. Then we built the model in one subsample and examined its validity in both that subsample and the other subsample. We then did the opposite, building in the other subsample. We built the models four times to ensure the number of categories was similar to the above analyses for this question, but we did not convert unused concepts into categories. Table 48 shows the results. Using the interview ratings, the multiple correlation went from .724 to .688 and from .722 to .675 in the cross-validation samples. Similar differences were observed for the AFQT. Thus, the validities held up surprisingly well under cross-validation.

Table 48. Multiple Correlations with Interview (Human) Ratings and AFQT Using SPSS Modeler Premium V18.2.1 Demonstrating Cross-Validation for Question 2

	N	Interview Ratings		AFQT	
		R	# of Variables	R	# of Variables
Subsample 1 and Tested on Subsample 1	232	.724	90	.702	90
Subsample 1 and Tested on Subsample 2	231	.688	81	.669	81
Subsample 2 and Tested on Subsample 2	231	.722	87	.697	87
Subsample 2 and Tested on Subsample 1	232	.675	71	.647	71
<i>Note.</i> "Count" variable included as # of variables. The models were built four times, but uncategorized concepts were NOT converted to categories.					

Conclusions: We conclude the following in terms of our four purposes. First, text-mining models appear to be valid predictors of interview ratings and test scores in this study. Second, there are differences between the versions of SPSS Modeler Premium and we will use the latest version (V18.2.1) going forward. Third, training the models in the form of building multiple times and converting unused concepts into categories greatly improves prediction. Finally, the validities of the text variables extracted hold up very well under cross-validation.

3.6 Second Set of Analyses of Validity of Text Mining of Lackland Interview Answers

Purposes. The purposes of these analyses were to: (1) determine how to decide on the number of categories to include in the text mined models, (2) further cross-validate the models, which included exploration of alternative approaches to model building and cross-validation, (3) examine the reliability and construct homogeneity of text-mining models, (4) analyze if sentiment analyses can predict interview ratings, and (5) examine demographic differences in text-mining model scores.

METHOD

Sample. We used the same sample of about 463 enlisted basic trainees at Lackland AFB who completed written responses to six interview questions as described in the previous reports.

Text-Mining. We conducted all text mining using SPSS Modeler Premium (Version 18.2.1). The text mining produced the predictor variables for these analyses in terms of the categories of words and phrases identified by the analysis of the answers to the interview questions.

Interview Ratings. The same ratings were used as described in the previous sections. Two individual researchers rated the quality of the interview question responses and responses were averaged to get a single human rater score. These data provide the criteria for these analyses because they represent the quality of the answers to the interview questions. They were highly reliable.

Sentiment Analyses. We used the Linguistic Inquiry and Word Count (LIWC; Pennebaker et al., 2007) software to measure a wide range of sentiments and counts of various parts of speech. LIWC yields more than 90 linguistic measures.

Demographics. Data were available on gender, race, and English as a first language. Analyses of correlations with these variables will indicate whether any adverse impact (i.e., differences in passing rates between subgroups) might be produced if these text-mined categories are used for hiring.

FINDINGS

Findings on how to determine number of categories to include:

These analyses were motivated by uncertainty in deciding how many categories to include in the initial analyses. The text analyses can initially produce a very large number of categories—too many to include in the analyses. To illustrate, Table 49 shows the maximum number of variables that were initially produced for each question. These analyses are based on two subsamples for each question for cross-validation. The models were built by extracting the maximum number of categories that SPSS would produce (from building categories until the software hit a maximum) and then converting remaining concepts that were not in a category, but were above a given size (at least 4 responses), to their own categories manually. As can be seen,

the number of categories initially produced is very large (in the hundreds) and must be reduced in some manner in order to be analyzed because, for example, the number of variables approaches or exceeds the sample size. Thus, analyses such as regression will not run. In fact, there should be many sample members per category for regression analyses to be stable.

Table 49. Summary of Number of Categories for each Subsample per Question

	N	# of Categories
Question 1		
Subsample 1	232	250
Subsample 2	231	242
Question 2		
Subsample 1	232	134
Subsample 2	231	142
Question 3		
Subsample 1	232	154
Subsample 2	231	164
Question 4		
Subsample 1	232	256
Subsample 2	231	238
Question 5		
Subsample 1	232	195
Subsample 2	231	199
Question 6		
Subsample 1	232	266
Subsample 2	231	252

One obvious way to reduce the number of categories is to only retain those that contain a minimum number of responses. The analyses in Table 49 already limited the categories to just those that appeared in 4 responses, which is about 1% of the entire sample of about 463 trainees. Generally, categories with few responses will have such low variance that they would be unlikely to show correlations with criteria. We used a minimum of 4 for our analyses because some of the small categories showed relationships with the criteria (as described below), but we recognize that perhaps other minimums could be set.

Another important way to reduce the number of categories is to base it on how well they correlate with the criterion (human ratings of the interview answers). We calculated the correlations between all of the categories and the criterion for each subsample for each question. Then we created figures showing the distributions of the correlations with categories containing at least 4 responses. Figure 7 shows the distribution for the correlations (absolute value) across all of the questions and subsamples. The number of correlations drops off rapidly until about .2, then the curve flattens out. Only a couple percent of correlations are .2 or larger, about 20% are between .1 and .2, and about 80% are below .1. In subsequent analyses (to be discussed), we examined retaining the categories above .1, .05, and all of them. We found that moving from .1

to .05 increased prediction, but there were diminishing returns by including categories with correlations less than .05. Therefore, for most of the analyses, we used a minimum of .05 to retain categories as a second requirement, which usually resulted in retaining more than 50% of the categories with more than 4 responses.

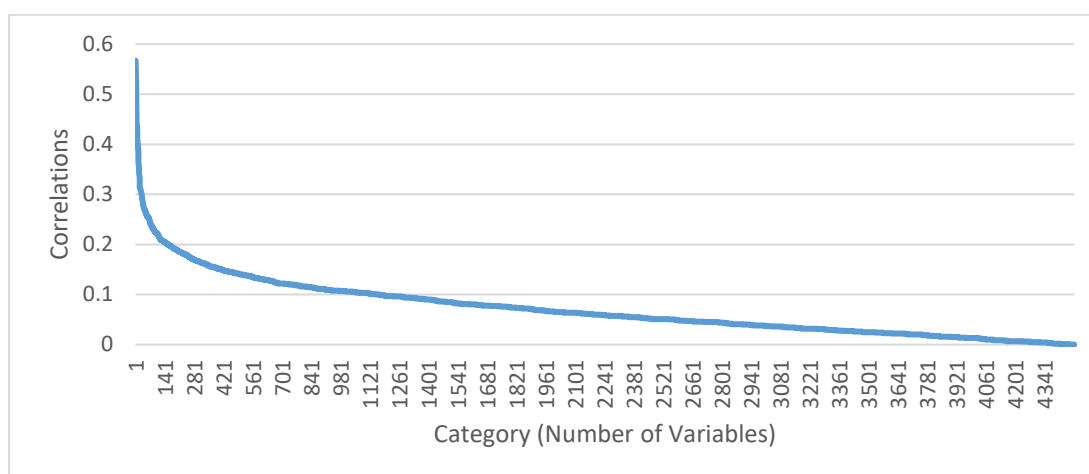


Figure 7. Plot of Correlations across All Questions and Subsamples

Findings on cross-validation:

These are the steps we followed.

1. We thought that the extraction of concepts and building of categories was the most important part of the models to cross validate. Therefore, as documented earlier, our initial approach to cross-validation was to extract concepts and build categories in one subsample for each question, and then apply the categories to the other subsample. We computed a regression in each subsample to determine the degree of prediction of the criteria. Table 50 shows example results for two of the questions (Question 2 and Question 4). The regressions in the second subsample were almost as large as in the first subsample, thus the categories cross-validated very well.

We should note that we conducted a majority of our analyses on just Questions 2 and 4, or just Question 2, due to the amount of time it took to complete these analyses. For the same reason, we limited most analyses to just the human ratings criteria.

Table 50. Cross-Validations of the Categories Extracted

Question 2		Interview Ratings			AFQT		
	N	R	# of Categories	Alpha	R	# of Categories	Alpha
Model Developed in Sample 1 and Validated in Sample 1	232	.730	74	.571	.740	80	.506
Model Developed in Sample 1 and Cross-Validated in Sample 2	231	.734	74	.612	.695	61	.566
Model Developed in Sample 2 and Validated in Sample 2	232	.772	82	.540	.743	77	.502
Model Developed in Sample 2 and Cross-Validated in Sample 1	231	.737	68	.601	.690	66	.559
<i>Note.</i> “Count” variable included as # of variables. The models were built until no new categories emerged and uncategorized concepts with frequencies of 4 or more were converted to categories.							

Question 4		Interview Ratings			AFQT		
	N	R	# of Categories	Alpha	R	# of Categories	Alpha
Model Developed in Sample 1 and Validated in Sample 1	232	.903	160	.517	.831	138	.505
Model Developed in Sample 1 and Cross-Validated in Sample 2	231	.844	122	.553	.833	104	.535
Model Developed in Sample 2 and Validated in Sample 2	232	.894	141	.534	.883	128	.501
Model Developed in Sample 2 and Cross-Validated in Sample 1	231	.806	125	.516	.795	114	.523
<i>Note.</i> “Count” variable included as # of variables. The models were built until no new categories emerged and uncategorized concepts with frequencies of 4 or more were converted to categories.							

2. We did not worry as much about cross-validating the regression models because the number of variables was large, most of the weights were small, and they cross-validated well in previous research (Campion, Campion, Campion, & Reider, 2016). However, we examined them to ensure that they cross-validated. Table 51 shows the cross-validations for two of the questions (#2 and #4). We found that they cross-validated poorly. The cross-validated validities went from .729 and .771 to .337 and .252 for Question 2, and from .903 and .893 to .114 and .166 for Question 4.

Apparently, the regression equations did not cross-validate well because the large number of categories along with the relatively small sample sizes over-fit the data in the initial subsample. This was especially the case with Question 4 because it had a much larger number of categories. These findings created the need for extensive additional analyses to determine an

approach to model building that would cross-validate better in the small samples. The remaining steps describe these additional analyses.

Table 51. Cross-Validations of Regression Equations

Question 2	# of Categories	r
Model Developed in Sample 1 and Validated in Sample 1	73	.729
Model Developed in Sample 1 and Cross-Validated in Sample 2	73	.337
Model Developed in Sample 2 and Validated in Sample 2	81	.771
Model Developed in Sample 2 and Cross-Validated in Sample 1	81	.252

Question 4	# of Categories	r
Model Developed in Sample 1 and Validated in Sample 1	159	.903
Model Developed in Sample 1 and Cross-Validated in Sample 2	159	.114
Model Developed in Sample 2 and Validated in Sample 2	140	.893
Model Developed in Sample 2 and Cross-Validated in Sample 1	140	.166

Note: Categories only retained that had a minimum of 4 responses and minimum of .05 correlation.

3. To try to understand why the regression equations cross-validated poorly, we first compared the beta weights in the regression equations between samples. We found that they were very dissimilar. Even those with large weights in one subsample were not the same ones with large weights in the other subsample, thus limiting the number of variables to just those with the highest weights would not help cross-validation. Moreover, as noted in previous reports, prediction with text analysis appears to depend largely on the number of variables included rather than identifying a small number of key variables. We also examined the simple bivariate correlations between the categories and the criteria in each subsample because they would be more stable by not suffering from multicollinearity like beta weights, but we also found them to be highly inconsistent between subsamples. The reader can compare the correlations for each pair of subsamples for each question which have included in Appendix H.

4. As a result, we then evaluated the utility of simple unit weights, which does not capitalize on chance in the weighting of categories (like regression does). The scores then became sums of the categories, as opposed to being calculated using regression equations. As such, the selection of categories would still need to be cross-validated, but not the weights. This is what we usually do when building a test in selection contexts. We add up the number of correct answers in an assessment but do not differentially weight them using regression. We retained the sign of the correlations in the unit-weighted composites, however. In other words, if a category was correlated negatively with the ratings criterion, we retained that sign when calculating the composite.

5. Table 52 shows this analysis on two selected questions (2 and 4). The unit-weighted composites achieved lower but still fairly good validities in the derivation sample compared to the regressions. The cross-validations were slightly better, but the cross-validations were still far lower than desired. The validities averaged about .612 and the cross-validated validities averaged about .288. This compares to .824 and .217 for the regressions in Table 51.

Table 52. Cross-Validations of Unit-Weighted Composites

Question 2	# of Categories	r
Model Developed in Sample 1 and Validated in Sample 1	67	.582
Model Developed in Sample 1 and Cross-Validated in Sample 2	56	.380
Model Developed in Sample 2 and Validated in Sample 2	81	.604
Model Developed in Sample 2 and Cross-Validated in Sample 1	61	.274

Question 4	# of Categories	r
Model Developed in Sample 1 and Validated in Sample 1	159	.635
Model Developed in Sample 1 and Cross-Validated in Sample 2	110	.240
Model Developed in Sample 2 and Validated in Sample 2	129	.656
Model Developed in Sample 2 and Cross-Validated in Sample 1	93	.260

Note: Categories only retained that had a minimum of 4 responses and minimum of .05 correlation.

6. We then explored adding more categories because with unit weighting there was less concern with overfitting. Recall the comment previously about adding more categories typically improving prediction. We assumed that any categories that did not exist in the cross-validation sample would simply get a score of zero, and thus not affect the composite. Table 53 shows the results for Question 2 and Question 4. Retaining those with a correlation of at least .10 yielded an average validity in the primary sample of .606 and cross-validity of .276. Retaining those with a correlation of at least .05 yielded an average validity in the primary sample of .612 and cross-validity of .288. This is the analysis presented above. Retaining all categories yielded an average validity in the primary sample of .595 and cross-validity of .276. Thus, adding categories with $r = .05$ beyond those with $r = .10$ improved prediction a bit, but then got worse when we added all categories. As such, adding more items beyond a certain point seemed to dilute the more valid items. This was one of the reasons we used the minimum correlation of .05 to retain categories in our subsequent models.

Table 53. Cross-Validations of Unit-Weighted Composites Based on Number of Categories Retained

Categories retained if $r = .10$

Question 2	# of Categories	r
Model Developed in Sample 1 and Validated in Sample 1	31	.595
Model Developed in Sample 1 and Cross-Validated in Sample 2	29	.357
Model Developed in Sample 2 and Validated in Sample 2	45	.574
Model Developed in Sample 2 and Cross-Validated in Sample 1	39	.242

Question 4	# of Categories	r
Model Developed in Sample 1 and Validated in Sample 1	59	.622
Model Developed in Sample 1 and Cross-Validated in Sample 2	45	.235
Model Developed in Sample 2 and Validated in Sample 2	52	.632
Model Developed in Sample 2 and Cross-Validated in Sample 1	41	.273

Categories retained if $r = .05$:

Question 2	# of Categories	r
Model Developed in Sample 1 and Validated in Sample 1	67	.582
Model Developed in Sample 1 and Cross-Validated in Sample 2	56	.380
Model Developed in Sample 2 and Validated in Sample 2	81	.604
Model Developed in Sample 2 and Cross-Validated in Sample 1	61	.274

Question 4	# of Categories	r
Model Developed in Sample 1 and Validated in Sample 1	159	.635
Model Developed in Sample 1 and Cross-Validated in Sample 2	110	.240
Model Developed in Sample 2 and Validated in Sample 2	129	.656
Model Developed in Sample 2 and Cross-Validated in Sample 1	93	.260

All categories retained:

Question 2	# of Categories	r
Model Developed in Sample 1 and Validated in Sample 1	133	.560
Model Developed in Sample 1 and Cross-Validated in Sample 2	102	.317
Model Developed in Sample 2 and Validated in Sample 2	141	.590
Model Developed in Sample 2 and Cross-Validated in Sample 1	105	.252

Question 4	# of Categories	<i>r</i>
Model Developed in Sample 1 and Validated in Sample 1	255	.595
Model Developed in Sample 1 and Cross-Validated in Sample 2	176	.239
Model Developed in Sample 2 and Validated in Sample 2	237	.634
Model Developed in Sample 2 and Cross-Validated in Sample 1	171	.254

7. We had observed in the previous report and in the correlations between the categories and the criteria that simple category count, which is the number of all the categories that appeared in a participant's response, demonstrated strong correlations with the criteria across questions. As shown in Table 54, it predicts the human ratings fairly well across questions and subsamples, with an overall average *R* of .357. It cross-validates better than the unit-weight composites for Question 2 (with cross-validities of .429 and .456 compared to .380 and .274) and better than the regressions (with .337 and .252). For Question 4, it did not cross validate quite as well as the unit-weighted composite (with .209 and .197 compared to .240 and .260) but much better than the regressions (with .114 and .166). However, with the exception of Question 4, simple category count cross-validates fairly well across all the other five questions. Across all five questions and subsamples, it produces an average validity of .397.

Simple category count may be an alternative predictor to our unit-weighted composite. It does the same thing, except it (a) includes all the categories and (b) it does not take sign of the correlations into account. However, it does not require cross-validation because it does not capitalize on chance, either in the variables included or the sign (weight). Losing the sign likely reduces validity a bit because a small number of categories have negative signs in most analyses, but the need to cross-validate may reduce that value.

8. It was also noteworthy that category count cross-validated better than it performed in the derivation sample in 9 of 12 analyses in Table 54. This led us to wonder if just retaining the categories that cross-validated would also increase the validity in the primary sample. If so, we could just keep those categories. Keeping just measures that cross-validate is a common procedure that would not require additional statistical justification. Table 55 shows the cross-validation of category count if only the categories occurring in both subsamples are retained with a minimum of 4 responses for Question 2. Unfortunately, this did not improve prediction further. The validities were slightly lower in three of four analyses, which may be due to the slightly reduced number of categories retained with this approach.

9. The positive findings for simple category count also led us to explore another common simple predictor in text analysis—word count. The length of an essay often correlates positively with scores of the essays, perhaps in part because longer answers are likely to hit more anchors in the rating scales or in part because the candidate has more to say about their skills relating to a question. Either way, it commonly predicts. Table 54 shows that word count correlated very highly across questions, with an average of .409, which is slightly higher than the category count at .357. Unexpectedly, the only exception is Question 4 where word count showed a low correlation ($r = .118$). Without it, word count correlates an average of .467.

10. Given the positive findings for category count and word count, we created a unit-weighted composite of the two by standardizing and averaging. Table 56 shows the cross-validations. The validities of the composite were slightly higher than the validities of the best of the individual components in three of four analyses, with an average of .466. Category count and word count were highly correlated, with an average of .678, which is probably why the composite validity is not greatly higher than the components. Nevertheless, this was the highest cross-validity so far attained.

11. The use of unit-weighted composites and simple counts of categories are robust with regard to cross-validation, but miss the opportunity for greater prediction that might be achieved with statistically optimal weighting. The difficulty with statistically optimal weighting in the current context is the size of the samples given the number of variables. We have observed that the number of variables helps prediction, so we explored methods to compensate for the small sample. “K-fold cross-validation” is often used for such purposes. With K-fold, a sample is divided into K groups (often 10), 1 sample is held out as the test sample, a model is built with the other 9 samples, and then the model is applied to score the held-out sample. This is done 10 times so every subsample is scored based on models built in other subsamples. Then the correlation of those scores with the criterion estimates the cross-validity. This has the advantages of using most of the data to estimate the models, thus reducing the effects of small samples. The final model is built based on the total sample to utilize all the information, but the estimated validity of the model is not what is obtained when building it (like the multiple *R* if regression is used), but is instead the value from the series of K cross-validations.

Table 54. Cross-Validations of Category Count and Word Count

	N	# of Categories	Validity of Category Count	Validity of Word Count
Question 1				
Subsample 1 Model Tested on Subsample 1	232	250	.360	.450
Subsample 1 Model Tested on Subsample 2	231	187	.335	
Subsample 2 Model Tested on Subsample 2	231	242	.338	
Subsample 2 Model Tested on Subsample 1	232	196	.437	
Question 2				
Subsample 1 Model Tested on Subsample 1	232	134	.347	.454
Subsample 1 Model Tested on Subsample 2	231	113	.429	
Subsample 2 Model Tested on Subsample 2	231	142	.342	
Subsample 2 Model Tested on Subsample 1	232	112	.456	
Question 3				
Subsample 1 Model Tested on Subsample 1	232	154	.447	.599
Subsample 1 Model Tested on Subsample 2	231	133	.543	
Subsample 2 Model Tested on Subsample 2	231	164	.434	
Subsample 2 Model Tested on Subsample 1	232	128	.567	
Question 4				
Subsample 1 Model Tested on Subsample 1	232	256	.102	.118
Subsample 1 Model Tested on Subsample 2	231	192	.209	
Subsample 2 Model Tested on Subsample 2	231	238	.136	
Subsample 2 Model Tested on Subsample 1	232	197	.197	
Question 5				
Subsample 1 Model Tested on Subsample 1	232	195	.308	.484
Subsample 1 Model Tested on Subsample 2	231	156	.504	
Subsample 2 Model Tested on Subsample 2	231	199	.281	
Subsample 2 Model Tested on Subsample 1	232	160	.517	
Question 6				
Subsample 1 Model Tested on Subsample 1	232	266	.393	.348
Subsample 1 Model Tested on Subsample 2	231	199	.256	
Subsample 2 Model Tested on Subsample 2	231	252	.383	
Subsample 2 Model Tested on Subsample 1	232	215	.257	

Note: Categories for each sample and model are only retained if they have at least 4 responses and had a correlation with the criteria of $r \geq .05$.

Table 55. Cross-Validations of Category Count if Only the Categories Occurring in Both Subsamples Are Retained

	N	# of Categories	Validity of Category Count
Question 2			
Subsample 1 Model Tested on Subsample 1	232	102	.335
Subsample 1 Model Tested on Subsample 2	231	102	.426
Subsample 2 Model Tested on Subsample 2	231	105	.442
Subsample 2 Model Tested on Subsample 1	232	105	.340

Note: Categories for each sample and model are only retained if they have at least 4 responses and had a correlation with the criteria of $r \geq .05$.

We conducted a K-fold cross-validation here using 10 subsamples. That yielded subsamples of about 46. We created 10 models with the total sample minus one of the subsamples. As above, we extracted all possible categories, converted concepts with at least 4 responses to categories, and then only retained categories that had a minimum of 4 responses and a correlation of at least .05 with the human ratings criterion. The number of categories per model ranged from 110 to 122, with an average of 117. We then regressed the remaining categories onto the human ratings criterion. That model was then used to score the sample that was held-out. The correlation between these scores across all subsamples and the human ratings criterion was .290, which is the estimated cross-validity using this procedure. This is virtually identical to the cross-validations with the two subsamples in Table 56, which averaged .295.

Table 56. Cross-Validations of a Composite of Category Count and Word Count

Question 2	N	# of Categories	Validity of Category Count	Validity of Word Count	r between Category Count and Word Count	Validity of Category and Word Count Composite	Validity of LIWC Composite	Validity of Category Count, LIWC Composite, and Errors Composite
Subsample 1 Model Tested on Subsample 1	232	134	.347	.396	.592	.426	.450	.455
Subsample 1 Model Tested on Subsample 2	231	113	.429	.493	.767	.500	.505	.517

Subsample 2 Model Tested on Subsample 2	231	142	.342	.493	.778	.513	.505	.519
Subsample 2 Model Tested on Subsample 1	232	112	.456	.396	.573	.425	.449	.455

Findings on the reliability of text-mining model scores:

We conducted several analyses to gain insight into the construct validity of the text-mined categories. First, one approach in traditional psychometrics is to conduct reliability analyses to shed light on construct meaningfulness in the form of the homogeneity of measures. It evaluates the extent to which the scores are measuring one construct. The common index of homogeneity is coefficient alpha. Table 57 illustrates the size of the alphas for the set of categories extracted from text mining for those models (Question 2 and Question 4). They are in the .50 range which is quite low given the very large number of items. This was probably due to naturally low item intercorrelations created by the fact that the categories are somewhat mutually exclusive, meaning if candidates decide to say one thing, it precludes the candidates from saying something else because they can only give one answer.

Second, to determine whether traditional psychometric approaches might help improve item selection and validity, we conducted item analyses on the categories extracted. That is, we tried to improve the reliabilities to see if that improved the cross-validities. We did this in two ways. In step 1, we selected the categories with correlations of .05 (absolute value) or greater with the human ratings, and in step 2 we purified the categories by only retaining those with item-total correlations of .05 or greater. Table 57 shows the results for Question 2. This procedure improved the alphas but it hurt the validities, likely due to the loss of categories in the item analysis. We then tried the opposite to see if that would work better. In step 1, we selected categories based on a .05 or greater item-total correlation, and in step 2 selected categories based on correlations of .05 or better with the human ratings. This improved the validities by only retaining the minimally valid categories, but it reduced the alphas. Across all analyses, the best validities were obtained by just retaining the categories with correlations greater than .05 and not by either subsequently or previously selecting items based on an item analysis.

In a third reliability analysis, we examined the factor structure of the categories retained. The low alphas suggested that the categories were likely to be multidimensional. A principal components factor analysis identified 54 factors with eigenvalues greater than 1, 18 of which are greater than 2. Figure 8 shows the scree plot (eigenvalue distribution). As such, the reason for the low alphas is the highly multidimensional nature of the categories. As noted previously, this is undoubtedly due to the low item intercorrelations created by the fact that the categories are somewhat mutually exclusive.

Finally, we examined the correlations between respondent scores based on the different models as a type of alternative forms reliability. For the regressions in Table 57, the alternative form reliabilities were very high (.911 and .871 in each subsample for Question 2). However, these are for optimal regression equations computed separately in each subsample, and recall that these did not cross-validate well. For the unit-weighted composite in Table 57, the alternative forms reliabilities were lower but still fairly high (.692 and .722 in each subsample of Question 2).

Table 57. Analysis of Whether Item Analysis to Improve Reliability Might Improve Cross-Validities

VALIDITY APPROACH FIRST

Step 1: Select categories with .05 correlation or greater (absolute value) with human rating

Question 2	# of Categories	<i>r</i>	Alpha
Subsample 1 Model Tested on Subsample 1	67	.582	.404
Subsample 1 Model Tested on Subsample 2	67	.384	.411
Subsample 2 Model Tested on Subsample 2	81	.604	.591
Subsample 2 Model Tested on Subsample 1	81	.273	.467

Step 2: Conduct item analysis on the categories from Step 1 and select the variables with a .05 corrected item-total correlation or greater (absolute value)

Question 2	# of Categories	<i>r</i>	Alpha
Subsample 1 Model Tested on Subsample 1	51	.514	.468
Subsample 1 Model Tested on Subsample 2	51	.349	.368
Subsample 2 Model Tested on Subsample 2	59	.527	.631
Subsample 2 Model Tested on Subsample 1	59	.293	.497

ITEM ANALYSIS APPROACH FIRST

Step 1: Select the categories with a .05 corrected item-total correlation or greater (absolute value)

Question 2	# of Categories	<i>r</i>	Alpha
Subsample 1 Model Tested on Subsample 1	83	.528	.561
Subsample 1 Model Tested on Subsample 2	82	.251	.565
Subsample 2 Model Tested on Subsample 2	85	.487	.660
Subsample 2 Model Tested on Subsample 1	85	.285	.583

Step 2: With categories from Step 1, select variables with .05 correlation or greater (absolute value) with human rating

Question 2	# of Categories	<i>r</i>	Alpha
Subsample 1 Model Tested on Subsample 1	52	.543	.527
Subsample 1 Model Tested on Subsample 2	52	.276	.474
Subsample 2 Model Tested on Subsample 2	56	.509	.634
Subsample 2 Model Tested on Subsample 1	56	.281	.506

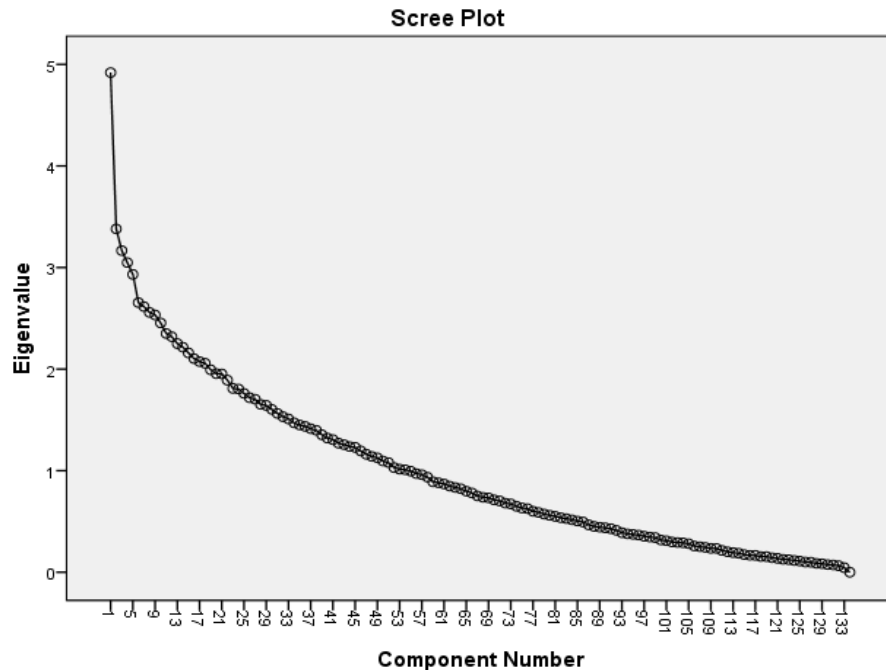


Figure 8. Plot of Eigenvalues (Question 2)

Findings on sentiment analyses:

Tables 58 and 59 show the correlations with the entire set of more than 90 LIWC measures for each of the six interview question answers in predicting the human ratings and AFQT scores, respectively. Seven of the measures consistently predicted across questions. Word count was the strongest predictor as described previously. Of note, Sixltr (number of words with 6 letters or more) also predicted across questions. Research on writing grade level shows that average sentence length (which is likely highly related to word count) and average word length (which is likely highly related to Sixltr) are the two key indicators of writing complexity level (such as in the Flesch index). In addition, the Analytical sentiment scale seems like it might be logically related to interview answer quality. The other four measures that predict across questions are more difficult to interpret and are all negatively related. They include negate (e.g., no, not, never), function (e.g., it, to, very), and the use of personal pronouns (e.g., I, them, her) and total pronouns (e.g., I, them, itself).

We created a composite of the LIWC measures that consistently predicted across questions. We reasoned that if they predicted consistently across all questions (with minor exception) that they were cross-validated. Because they differed in their correlations with the human ratings, we used their average correlations across the six questions as the weights. Weighting by correlations is common in developing empirical keys in other prediction contexts, such as biographical data (Devlin, Abrahams, & Edwards, 2009; Guion, 1965). Again, since they were the average correlations across all six questions, we assumed they were cross-validated in that sense. Table 56 shows that this LIWC composite correlated fairly strongly with the human ratings, with a range of .449 to .505 and an average of .478.

Table 58. Correlations of LIWC Variables with Interview Ratings for All Questions

Category	Question 1: Correlations with Interview Ratings	Question 2: Correlations with Interview Ratings	Question 3: Correlations with Interview Ratings	Question 4: Correlations with Interview Ratings	Question 5: Correlations with Interview Ratings	Question 6: Correlations with Interview Ratings
WC	.450**	.454**	.599**	.118*	.484**	.348**
Analytic	.322**	.185**	0.081	.207**	.133**	.222**
Clout	.200**	0.041	0.055	.207**	-0.062	-0.008
Authentic	-.193**	-0.051	-.131**	-0.016	0.056	0.013
Tone	0.035	-0.077	-0.006	.210**	-0.002	0.018
WPS	-0.085	-0.087	0.022	-0.042	.098*	-0.076
Sixltr	.189**	.201**	.228**	.138**	.173**	.154**
Dic	-0.075	-0.013	0.043	0.012	-0.068	-.145**
function	-.243**	-.178**	-0.069	-.120**	-.155**	-.264**
pronoun	-.210**	-.200**	-.105*	-.191**	-.148**	-.204**
ppron	-.101*	-.123**	-.160**	-.226**	-.166**	-.147**
i	-.161**	-0.078	-.127**	-.246**	-0.048	-0.063
we	.169**	0.021	-0.091	.198**	-0.091	-0.004
you	-.144**	-0.067	0.008	-0.025	-.103*	-.096*
shehe	-0.004	0.052	-0.079	-.214**	-0.025	-0.058
they	0.054	-0.038	0.068	0.021	0.007	-0.037
ipron	-.212**	-.164**	0.022	0.026	-0.036	-.133**
article	.163**	0.082	0.055	.149**	0.032	0.077
prep	.112*	.126**	0.039	0.082	0.057	0.065
auxverb	-.173**	-0.063	-0.027	-0.088	-.104*	-.194**
adverb	-.295**	-0.033	0.012	-.105*	-0.075	-.157**
conj	-.157**	-0.025	0.009	0.051	0.068	-0.01
negate	-.179**	-.157**	-0.05	-.160**	-.174**	-.141**
verb	-.253**	-0.059	-0.052	-.111*	-.105*	-.213**
adj	-0.06	0	-0.042	0.037	-0.053	0.063
compare	-0.039	-0.034	-0.04	0.014	0.002	0.052
interrog	-.092*	.101*	0.058	0.054	.133**	-0.084
number	.097*	-0.026	-0.073	0.038	0.083	.104*
quant	0.007	0.018	-0.065	.250**	0.027	.119*
affect	-0.053	-0.034	0.022	-0.014	-.142**	-0.072
posemo	-0.014	-0.065	0.022	.111*	-0.085	-0.025
negemo	-0.072	0.023	-0.005	-.174**	-.122**	-.094*
anx	-0.023	-0.021	-0.014	-.120**	-.150**	-0.047
anger	-0.023	-0.09	0.052	-0.042	0.017	-0.062
sad	-0.03	-0.007	-0.057	-.164**	0.057	-0.037
social	0.071	-0.027	0.008	0.006	-.121**	-.097*
family	-0.043	-0.072	-0.087	-.099*	-.111*	-0.06
friend	-.109*	-0.021	-.093*	0.022	-.120*	-0.091

Category	Question 1: Correlations with Interview Ratings	Question 2: Correlations with Interview Ratings	Question 3: Correlations with Interview Ratings	Question 4: Correlations with Interview Ratings	Question 5: Correlations with Interview Ratings	Question 6: Correlations with Interview Ratings
female	0.015	-0.027	-0.082	-.130**	-0.056	-0.053
male	-0.056	0.084	-.113*	-.186**	0.044	-0.049
cogproc	-.223**	0.091	0.055	.152**	0.06	-.118*
insight	-0.059	.107*	0.025	.239**	.137**	-0.009
cause	-.140**	0.042	0.071	0.07	0.087	-0.048
discrep	0.068	0.042	-0.015	0.054	0.073	-0.043
tentat	-.117*	0.032	-0.016	0.06	-0.05	-0.069
certain	-.131**	0.031	0.072	-0.01	-0.036	-0.039
differ	-.179**	-0.061	-0.064	0.016	-0.039	-.143**
percept	-0.082	-0.09	-.128**	0.056	0.012	-0.022
see	-0.038	-0.008	-0.016	.104*	.137**	-0.042
hear	0.003	-.134**	-0.086	0.004	-0.008	0.058
feel	-0.088	-0.049	-.096*	-0.018	-.153**	-0.032
bio	0.046	-0.086	0.012	-0.051	-.100*	0.012
body	-0.037	-0.014	0.044	-0.027	-0.072	-0.054
health	0.056	-.116*	-0.002	-0.023	-0.078	0.025
sexual	0.071	-0.06	-0.069	0.005	0.037	-0.059
ingest	.107*	-0.033	0.023	-0.038	-0.016	0.049
drives	.220**	0.089	-0.027	.153**	-0.024	0.024
affiliation	.149**	.103*	0.012	.232**	-0.056	-0.039
achieve	.216**	0.073	.109*	.107*	0.035	.109*
power	.143**	-0.011	-.096*	-0.039	0.024	0.036
reward	-0.039	-0.09	-0.053	-0.052	-.114*	-0.009
risk	-0.005	.118*	0.01	-.110*	-0.005	-0.073
focuspast	-0.014	-0.056	-0.07	-.106*	0.082	-0.016
focuspresent	-.183**	0.021	0.03	-0.043	-.193**	-.193**
focusfuture	-.126**	-0.069	.108*	-0.059	-0.012	0.004
relativ	-0.046	0.006	-0.061	-0.035	.121**	.130**
motion	-.145**	0.038	0.016	-.108*	-0.033	0.032
space	.116*	0.026	-.116*	0.056	0.057	0.061
time	-0.082	-0.062	0.038	-0.089	.116*	.134**
work	.274**	.181**	.179**	0.057	.098*	.145**
leisure	.101*	-0.035	.103*	0.011	-0.056	0.044
home	-0.003	-.103*	-0.068	-0.082	-.103*	-0.036
money	.153**	-0.078	0.062	-0.08	-0.057	.123**
relig	0.005	-0.064	-0.046	-0.075	-0.039	-0.034
death	0.003	-0.031	-0.016	0.017	-0.071	-0.008
informal	-0.064	-.105*	-0.016	-0.016	0.003	-0.009
swear	-0.012	-.096*	0.035	-0.031	-0.031	0.006
netspeak	-0.062	-.104*	-0.034	-0.055	-0.076	0.029

Category	Question 1: Correlations with Interview Ratings	Question 2: Correlations with Interview Ratings	Question 3: Correlations with Interview Ratings	Question 4: Correlations with Interview Ratings	Question 5: Correlations with Interview Ratings	Question 6: Correlations with Interview Ratings
assent	-0.046	-0.012	-0.066	0.02	-0.001	-0.039
nonflu	-0.019	-0.03	0.087	0.043	0.051	0.014
filler	-0.024	-0.041	-0.026	-0.087	0.013	-0.065
AllPunc	-0.031	.114*	0.009	0.049	0.083	.100*
Period	-0.032	0.019	-.111*	0.003	-.160**	0.045
Comma	0.073	0.024	0.088	.099*	.156**	.141**
Colon	0.019	0.047	0.035	-0.035	.098*	-0.021
SemiC	-0.018	0.057	0.032	0.028	0.06	0.067
QMark	-0.025	.114*	0.029	-0.08	0.084	-0.08
Exclam	-0.004	-0.066	-0.035	-0.018	-0.047	-0.039
Dash	.187**	0.048	0.04	.108*	0.078	.132**
Quote	0.008	.118*	0.045	-0.051	0.055	-0.065
Apostro	-.117*	0.041	-0.036	-0.058	-0.057	-0.032
Parenth	.104*	.117*	-0.044	0.077	.154**	-0.049
OtherP	0.064	0.066	0.058	-0.019	0.073	0.003
** Correlation is significant at the 0.01 level (2-tailed).						
* Correlation is significant at the 0.05 level (2-tailed).						

Table 59. Correlations of LIWC Variables with AFQT for All Questions

Category	Question 1: Correlations with AFQT	Question 2: Correlations with AFQT	Question 3: Correlations with AFQT	Question 4: Correlations with AFQT	Question 5: Correlations with AFQT	Question 6: Correlations with AFQT
WC	.171**	.267**	.187**	.100*	.167**	.172**
Analytic	.136**	.219**	.112*	.221**	.101*	.186**
Clout	0.04	.093*	-0.018	0.092	-0.075	-0.038
Authentic	0.015	0.045	-0.022	-0.014	0.036	0.08
Tone	-0.062	-0.02	-0.042	-0.07	0.064	-.112*
WPS	-.094*	-0.069	-0.022	-.101*	-0.072	-0.09
Sixltr	.187**	.341**	.179**	.280**	.294**	.135**
Dic	0.004	.142**	0.05	0.035	0.033	0.09
function	-0.025	.092*	0.034	-0.042	-0.07	-0.079
pronoun	-.118*	-0.072	-.105*	-.141**	-.166**	-.133**
ppron	-.107*	-0.025	-.126**	-.133**	-.131**	-0.073
i	-.103*	-0.081	-0.069	-.113*	-0.01	-0.027
we	0.054	-0.039	-0.054	0.081	-0.034	0.007
you	-0.005	0.013	-0.001	-.092*	-.122**	-0.047
shehe	-0.048	-0.025	-.098*	-.125**	-0.085	-0.083
they	-0.008	.144**	-0.037	0.03	0.004	-0.059
ipron	-0.063	-0.092	-0.028	-0.047	-.108*	-.157**
article	0.055	.178**	.136**	.149**	0.007	0.058
prep	.115*	.180**	0.083	.124**	0.077	.142**
auxverb	-0.089	-0.014	0.021	-0.074	-0.021	-0.073
adverb	-0.017	0.086	0.003	-.116*	0.047	-0.054
conj	-0.037	0.043	0.033	-0.077	0.066	-0.02
negate	0.035	-0.051	0.028	0.013	-.137**	-0.077
verb	-.130**	-0.001	-0.05	-.147**	-0.072	-.139**
adj	0.088	.093*	0.007	.118*	0.032	0.084
compare	0.068	0.063	0.07	0.082	0.054	0.09
interrog	-.129**	0.004	-.100*	-.093*	0.085	-.126**
number	0.052	-0.06	-0.033	0.085	0.03	0.046
quant	0.053	0.022	0.008	.203**	0.062	.150**
affect	-0.023	-0.004	0.02	-0.017	0.01	-0.01
posemo	-0.054	-0.02	0.02	-0.071	0.043	-0.073
negemo	0.042	0.009	0.009	0.064	-0.089	0.088
anx	-0.046	-0.074	0	0.049	-0.089	0.048
anger	0.055	0.008	0.06	.119*	0.015	-0.045
sad	0.041	-0.069	-0.036	0.01	0	0.079
social	-0.043	0.067	-0.072	-0.026	-.131**	-.094*
family	-0.028	0.007	-0.01	-0.045	-0.073	-0.005
friend	0.026	0.06	-0.035	-0.012	-0.082	-0.077
female	-0.076	-0.05	-0.082	-0.04	-.109*	-.098*

Category	Question 1: Correlations with AFQT	Question 2: Correlations with AFQT	Question 3: Correlations with AFQT	Question 4: Correlations with AFQT	Question 5: Correlations with AFQT	Question 6: Correlations with AFQT
male	-0.002	0.041	-0.076	-.127**	-0.052	-0.001
cogproc	-0.053	.191**	0.036	-0.009	0.091	-0.058
insight	-0.034	.225**	0.025	-0.036	0.089	-0.05
cause	-.114*	.106*	0.033	-0.052	.199**	-.124**
discrep	-0.055	0.056	0.031	-0.031	0.074	0.033
tentat	0.032	.184**	0.031	0.069	0.006	0.013
certain	-0.075	0.029	-0.042	0.083	-0.085	0.034
differ	0.042	.112*	0.04	-0.008	-0.024	-0.015
percept	-0.06	0.039	-0.043	-0.033	-0.036	0.013
see	-0.021	0.06	-0.013	0.006	0.069	0.049
hear	-0.008	-0.023	-0.013	0.002	-0.046	-0.028
feel	-0.045	0.002	-0.068	-0.068	-.133**	0.01
bio	0.036	-0.069	-0.025	-0.003	0.02	.103*
body	-0.007	-0.01	0.005	-0.027	0.004	-0.037
health	0.046	-0.047	-0.084	0.013	0.006	.127**
sexual	-0.064	0.01	.092*	0.011	0.011	-0.03
ingest	0.065	-.097*	0.007	0.007	0.045	0.078
drives	0.058	.122**	0.081	.155**	-0.091	0.039
affiliation	0.03	0.061	0.037	.139**	-0.032	-0.014
achieve	0.055	.173**	.111*	.119*	-0.017	0.067
power	0.025	-0.031	0.082	0.084	-0.052	0.058
reward	-0.065	-.119*	-0.018	0.014	-.230**	-0.032
risk	0.069	.115*	0.001	-0.014	-0.061	0
focuspast	-0.014	0.026	-.106*	-0.066	0.033	-0.024
focuspresent	-.106*	0.041	0.03	-0.058	-.109*	-.120*
focusfuture	-0.001	-0.045	0.083	-0.021	-0.017	0.031
relativ	0.052	0.043	0.052	0.04	0.088	.152**
motion	-0.057	.098*	0.017	-0.071	0.036	0.009
space	0.035	0.026	0.051	0.054	-0.01	0.041
time	.094*	-0.019	0.044	0.027	.100*	.203**
work	0.091	.123**	0.075	.158**	0.087	.152**
leisure	-0.026	-0.033	.093*	0.021	-0.001	-0.003
home	0.059	-0.054	-0.021	0.054	-0.046	-0.001
money	0.007	-0.037	-0.009	0.017	-0.015	0.009
relig	0.026	-0.014	-0.027	-0.012	0.021	-0.014
death	0.024	-0.03	-0.036	0.046	-0.009	0.073
informal	-.121**	0.022	-0.025	-0.092	-0.058	0.043
swear	-0.032	0.015	0.052	0.009	0.027	0.032
netspeak	-0.086	-.109*	-0.043	-0.042	-.127**	-0.008
assent	-.094*	-0.037	-0.045	-.097*	-0.033	-0.032
nonflu	-0.057	.125**	0.006	0.009	-0.018	0.066

Category	Question 1: Correlations with AFQT	Question 2: Correlations with AFQT	Question 3: Correlations with AFQT	Question 4: Correlations with AFQT	Question 5: Correlations with AFQT	Question 6: Correlations with AFQT
filler	0.002	-0.071	0.011	-.094*	0.076	-0.011
AllPunc	-0.086	-0.085	-0.086	-0.05	.157**	-0.086
Period	-0.086	-0.086	-0.087	-0.086	-0.076	-0.086
Comma	.183**	.161**	.151**	.197**	.192**	-0.086
Colon	-0.045	0.034	0.019	0.073	0.049	0.041
SemiC	0.072	0.05	0.043	.097*	.100*	.098*
QMark	0.049	0.054	0.015	0.008	0.068	-0.026
Exclam	-.100*	-0.009	-0.019	-0.048	-0.049	-0.035
Dash	.129**	0.047	0.051	0.006	0.055	.147**
Quote	0.034	0.089	-0.058	-0.006	0.036	-0.006
Apostro	0.047	.097*	0.052	0.064	0.023	0.057
Parenth	0.031	0.067	-0.005	0.058	0.084	0.076
OtherP	-0.031	-0.045	-0.027	0.006	.139**	0
** Correlation is significant at the 0.01 level (2-tailed).						
* Correlation is significant at the 0.05 level (2-tailed).						

Based on past unpublished research we conducted predicting writing skill, we also counted the number of errors in the essays. We used the number of errors identified by MS Word spell checker. It considers all types of errors, including spelling, punctuation, grammar, capitalization, and others. We only analyzed the total errors and did not break them out by type. The correlations between total errors and human ratings for Question 2 was -.126, meaning the raters gave only slightly lower ratings when there were more errors, probably because they were trained to focus on content and not on writing skill.

To evaluate the total prediction based on the category count, the LIWC composite, and errors, we created a composite using their average correlations across-questions. Again, we reasoned that using the average across questions was a type of cross-validation. These values were .357 for the category count and .482 for the LIWC composite. The only exception was the correlation for errors of -.126, which was only based on Question 2. Table 56 shows that this composite of all predictors correlated .455 to .519 across samples for Question 2, with an average of .487.

Findings on demographics:

To illustrate potential differences by gender and race, we computed the differences in unstandardized predicted values using the regression from the subsample 1 model applied to subsample 1 for Questions 2 and 4. The results are shown in Table 60. Negative values of the *d*-scores indicate women or minorities performed lower. The *d*-score differences are very small and inconsistent for Question 2, with women and Blacks performing higher. The differences are larger for Question 4, with women and Whites performing higher. Table 61 shows the average differences on the human ratings. The results are virtually identical except the differences are slightly larger.

Table 60. Differences in Unstandardized Predicted Value by Gender and Race Using the Subsample 1 Regression Model Applied to Subsample 1 for Questions 2 and 4

Question 2				
Gender	N	Mean	SD	<i>d</i> -score
Women	110	1.484	.390	.093
Men	118	1.447	.410	
Racioethnicity				
Whites	158	1.468	.395	.008
Blacks	38	1.471	.417	
Whites	140	1.483	.410	.183
Hispanics	42	1.410	.357	
<i>Note.</i> Pooled SD for Women vs. Men was .400. Pooled SD for Whites vs. Blacks was .398. Pooled SD for Whites vs. Hispanics was .399. Calculator used to estimate <i>d</i> -score: https://www.socscistatistics.com/effectsize/default3.aspx				

Question 4				
Gender	N	Mean	SD	<i>d</i> -score
Women	110	1.498	.508	.278
Men	120	1.363	.459	
Racioethnicity				
Whites	158	1.452	.486	.264
Blacks	38	1.324	.474	
Whites	140	1.478	.488	.378
Hispanics	42	1.295	.447	
<i>Note.</i> Pooled SD for Women vs. Men was .486. Pooled SD for Whites vs. Blacks was .485 Pooled SD for Whites vs. Hispanics was .484. Calculator used to estimate <i>d</i> -score: https://www.socscistatistics.com/effectsize/default3.aspx				

Table 61. Differences in Average Human Rating by Gender and Race Using the Subsample 1 Regression Model Applied to Subsample 1 for Questions 2 and 4

Question 2				
Gender	N	Mean	SD	d-score
Women	108	1.528	.546	.180
Men	116	1.431	.531	
Racioethnicity				
Whites	156	1.462	.528	.200
Blacks	36	1.569	.563	
Whites	138	1.478	.540	.090
Hispanics	42	1.429	.569	
Note. Pooled SD for Women vs. Men was .539. Pooled SD for Whites vs. Blacks was .535. Pooled SD for Whites vs. Hispanics was .546. Calculator used to estimate d-score: https://www.socscistatistics.com/effectsize/default3.aspx				

Question 4				
Gender	N	Mean	SD	d-score
Women	109	1.532	.579	.364
Men	119	1.336	.483	
Racioethnicity				
Whites	157	1.455	.547	.115
Blacks	37	1.392	.567	
Whites	139	1.486	.558	.454
Hispanics	42	1.238	.459	
Note. Pooled SD for Women vs. Men was .539. Pooled SD for Whites vs. Blacks was .550. Pooled SD for Whites vs. Hispanics was .546. Calculator used to estimate d-score: https://www.socscistatistics.com/effectsize/default3.aspx				

Table 62 shows the intercorrelations of English as a first language, education, unstandardized predicted scores (from the subsample 1 regression model applied to subsample 1), and human ratings for Questions 2 and 4. Education correlates slightly positively with English as a first language, predicted scores, and human ratings for Question 2. However, education only correlates positively with English as a first language for Question 4.

Table 62. Correlations of English as First Language, Education, Unstandardized Predicted Scores (Subsample 1 Regression Model Applied to Subsample 1) and Human Ratings for Questions 2 and 4

Question 2	Mean	SD	Education	EFL	Unstandardized Predicted Value
Education	12.86	1.444			
English as First Language (EFL)	0.04	0.204	.197**		
Unstandardized Predicted Value	1.460	0.399	.198**	0.004	
Average Ratings from Human Raters	1.471	0.537	.162*	-0.049	.730**

N = 232.
Note. Education ranges from 12 to 20. For EFL, (1 = “Yes” or Did not respond, 0 = “No”).
 ** Correlation is significant at the 0.01 level (2-tailed).
 * Correlation is significant at the 0.05 level (2-tailed).

Question 4	Mean	SD	Education	EFL	Unstandardized Predicted Value
Education	12.86	1.444			
English as First Language (EFL)	0.04	0.204	.197**		
Unstandardized Predicted Value	1.430	0.488	-0.057	-0.044	
Average Ratings from Human Raters	1.433	0.542	-0.036	-0.072	.903**

N = 232.
Note. Education ranges from 12 to 20. For EFL, (1 = “Yes” or Did not respond, 0 = “No”).
 ** Correlation is significant at the 0.01 level (2-tailed).

Conclusions:

Based on these analyses, the findings regarding the purposes of the report are:

1. In terms of the number of categories to include in the text-mined models, we found that it was reasonable and fairly optimal to retain categories with at least 4 responses and a minimum absolute correlation of .05 with the criterion.

2. In terms of cross-validation, we found that the text-mining categories cross-validated well, but not the regression equations due to the small samples compared to the large number of categories. Even cross-validation approaches designed to accommodate small samples, such as K-fold, did not cross validate better. Unit-weighted composites of the categories cross-validated better. Other simple approaches that cross-validated even better where category counts and word counts. Combined, the cross-validities averaged .466 in the question used for analysis, which is likely to be typical of the other questions.

3. Psychometric analyses of the meaningfulness of the text-mined categories revealed they had low alphas (low homogeneity) for the number of categories included in the model. Traditional item-analyses improved the reliabilities slightly but did not improve the validities.

Categories were highly multidimensional based on factor analyses, but the alternative forms reliabilities were fairly reasonable.

4. Sentiment analyses measures predicted the interview ratings. A composite of seven cross-validated LIWC variables (which included word count described above) showed an average correlation of .478 for one illustrative question. When combined with the text-mined categories and grammatical errors, this resulted in a maximum achievable prediction of .487.

5. The initial examination of demographic differences in text mining model scores showed small and inconsistent differences for one question with women and Blacks performing higher, but slightly larger for another question with women and Whites performing higher. The differences were similar but slightly larger for the human ratings. One of the two questions examined showed small relationships between education, English as a first language, text-mining scores, and human ratings, but the other question only showed a small correlation between education and English as a first language.

Future research should (a) decide on the model creation and cross-validation approach to be used for the other questions and then apply them to the other questions and (b) determine the utility of the validities observed in this study.

3.7 Third Set of Analyses of Validity of Text Mining of Lackland Interview Answers

PURPOSES

The purpose of these analyses were to (1) apply the final text-mining analysis approach to build models to predict the ratings of all of the interview questions, (2) examine differences in correlations between interview ratings and LIWC variables by question, (3) examine correlations between the text-mining models and other potential hiring predictors (AFQT and TAPAS) for construct validity purposes, and (4) determine the value of the text-mining models to select out the lowest scoring candidates.

METHOD

Sample: We used the same sample of about 463 enlisted basic trainees at Lackland AFB who completed written responses to six interview questions as described previously.

Text-Mining: We conducted all text mining using SPSS Modeler Premium (Version 18.2.1). The text mining produced the predictor variables for these analyses in terms of the categories of words and phrases identified by the text mining of the answers to the interview questions.

Interview Ratings: The same ratings were used as describe in the previous reports. Two individual researchers rated the quality of the interview question responses. These data provided the criteria for these analyses because they represent the quality of the answers to the interview questions. The ratings were highly reliable.

LIWC Variables: We used the Linguistic Inquiry and Word Count (LIWC; Pennebaker et al., 2007) software to measure a wide range of sentiments and counts of various parts of speech. LIWC yields more than 90 linguistic measures.

AFQT Scales: In addition to the AFQT composite score examined in the previous report, we also examined the four Air Force-specific ASVAB composites (Mechanical, Administrative, General, and Electronic [MAGE]) and the 9 ASVAB subtests (General Sciences, Electronics Information, Mechanical Comprehension, Auto and Shop Information, Assembling Objects, Word Knowledge, Paragraph Comprehension, Mathematics Knowledge, and Arithmetic Reasoning).

TAPAS Scales: The version of the Tailored Adaptive Personality Assessment System (TAPAS) used in this study (Version 5) has 15 subscale scores: Achievement, Adjustment, Cooperation, Dominance, Even Tempered, Attention Seeking, Selflessness, Intellectual Efficiency, Non-Delinquency, Order, Physical Condition, Self-Control, Sociability, Tolerance, and Optimism. Personality data were available for 377 of the sample members.

FINDINGS

1. Findings on validity of text-mining models across questions

The previous analyses showed that the text-mining variables with the best cross-validation were category count, word count, and a composite of the two. We also discovered that two prescreens enhanced validity and cross-validation: only retaining categories with at least 4 responses (1% of the sample), and only retaining categories that had a correlation of at least $|\text{.05}|$ with the interview ratings. The previous analyses were based on just two of the six questions. As such, this analysis examined the validity of text-mining models of those variables for all six questions.

Table 63 shows the correlations of the text-mining model variables with interview ratings by question. The variables predicted well across all questions except question #4. Without #4, the correlations with category count ranged from .45 to .58, with an average of .51; the correlations with word count ranged from .35 to .60, with an average of .47; and the correlations with the composite ranged from .46 to .67; with an average of .55. For #4, category count only correlates .25, word count correlated .12, and the composite correlated .21.

Table 63. Correlations of Final Text-Mining Model Variables with Interview Ratings by Question

Question 1	Mean	SD	Correlation with Human Rating
Word Count	146.97	47.03	.45**
Category Count	7.49	3.51	.57**
Composite	0.00	.90	.57**
<i>N</i> = 453.			
<i>Note.</i> Composite generated from <i>z</i> -scored Word Count and Category Count Variables.			
** Correlation is significant at the 0.01 level (2-tailed).			

Question 2	Mean	SD	Correlation with Human Rating
Word Count	130.47	35.94	.45**
Category Count	5.59	2.72	.45**
Composite	0.00	.87	.52**
<i>N</i> = 451.			
<i>Note.</i> Composite generated from <i>z</i> -scored Word Count and Category Count Variables.			
** Correlation is significant at the 0.01 level (2-tailed).			

Question 3	Mean	SD	Correlation with Human Rating
Word Count	131.37	34.15	.60**
Category Count	8.60	3.39	.58**
Composite	0.00	.89	.67**
<i>N</i> = 455.			
<i>Note.</i> Composite generated from <i>z</i> -scored Word Count and Category Count Variables.			
** Correlation is significant at the 0.01 level (2-tailed).			

Question 4	Mean	SD	Correlation with Human Rating
Word Count	147.11	47.49	.12*
Category Count	6.56	3.13	.25**
Composite	0.00	.86	.21**
<i>N</i> = 457. <i>Note.</i> Composite generated from <i>z</i> -scored Word Count and Category Count Variables. * Correlation is significant at the 0.05 level (2-tailed). ** Correlation is significant at the 0.01 level (2-tailed).			

Question 5	Mean	SD	Correlation with Human Rating
Word Count	132.03	35.71	.48**
Category Count	6.66	3.18	.48**
Composite	0.00	.88	.54**
<i>N</i> = 460. <i>Note.</i> Composite generated from <i>z</i> -scored Word Count and Category Count Variables. ** Correlation is significant at the 0.01 level (2-tailed).			

Question 6	Mean	SD	Correlation with Human Rating
Word Count	146.62	44.75	.35**
Category Count	6.32	3.22	.47**
Composite	0.00	.89	.46**
<i>N</i> = 459. <i>Note.</i> Composite generated from <i>z</i> -scored Word Count and Category Count Variables. ** Correlation is significant at the 0.01 level (2-tailed).			

Across All Questions	Mean	SD	Correlation with Human Rating
Word Count	138.48	32.31	.63**
Category Count	6.83	2.12	.73**
Composite	-0.01	0.67	.73**
<i>N</i> = 463. <i>Note.</i> Composite generated from <i>z</i> -scored Word Count and Category Count Variables. ** Correlation is significant at the 0.01 level (2-tailed).			

However, of most importance is the validity of all six questions combined because selection decisions would be made using the total score. The bottom panel of Table 63 shows that the correlation of the average of all six questions combined is .73 for category count, .63 for word count, and .73 for the composite. These validities approach the correlations between individual interviewers. For example, the meta-analysis of interview reliability by Conway, Jako, and Goodman (1995) found an average interrater reliability of .70 across 111 interviews, but that included many if not mostly less structured interviews. The interview ratings in the current study with a highly structured interview showed an interrater reliability of .83 on the average of the six questions combined. As such, the text-analysis model is about as reliable as a single interviewer based on past research and slightly less than the interviewers in this study. In past contexts, we have used this as a partial justification for using text-analysis in practice to

make selection decisions. See further analysis of the impact of using the scores in section 4 below.

We would make a note on the correlation with word count. To some readers, the correlation with word count may be interpreted as merely rewarding candidates for being verbose and not reflecting higher quality answers. We believe that, in this context, longer answers reflect better answers for several reasons:

1. Longer answers indicate the candidates have more to say about their skills in response to the question. Because they can only say something once, longer answers mean more potentially relevant content.
2. Longer answers are more likely to hit more anchors on the rating scales, so they are in fact better answers according to the scoring rubric.
3. There was some control on answer length in this context. The software indicated by font color if the answer was too short, with red font if less than 100 words and green font if over 100 words. Also, the upper bound was also limited at 300 words.
4. Other research on text-mining often shows that longer answers score higher, so this not an unusual finding.

2. Findings on correlations between interview ratings and LIWC variables across questions

In order to ensure that the correlations between interview ratings and LIWC variables would cross-validate, we computed the correlations in the two 50% subsamples for each question. These are the same subsamples we used for cross-validation earlier. Table 64 shows these correlations. We highlighted the correlations of the variables that cross-validated for each question and only focus on those for interpretation. For reference when reading Table 64, the top lists the questions and the bottom lists the definitions of each of the LIWC variables from the manual. Below we list each of the six interview questions and then summarize the significant LIWC variables.

1. Interview Question: Behavioral (Adaptability) –

Significant LIWC Variables: In addition to longer answers and longer words, answers that were more analytic, stated with more clout (defined in section 2.5), expressed drive, achievement, or power, or talked about work got higher ratings. However, answers that were more authentic, discussed cognitive processes such as attributions of causation and differentiation (e.g., but, else), focused on the present (e.g., today, is, now), or described motion (e.g., arrive, go) got lower ratings. Also, function words like pronouns (e.g., you, it, those), adverbs (e.g., very, really), conjunctions (e.g., and, but, whereas), and negation (e.g., no, not, never) got lower ratings.

2. Interview Question: Situational (Accepts Feedback) –

[REDACTED]

Significant LIWC Variables: In addition to longer answers and longer words, answers that were more analytic or discussed work (e.g., job) got higher ratings. However, function words like pronouns (e.g., you, it, those) and the use of negation (e.g., no, not, never) got lower ratings.

3. Interview Question: Situational (Integrity) – [REDACTED]

Significant LIWC Variables: Longer answers was the overwhelming predictor of higher ratings. Longer words was also positively related. However, the use of personal pronouns (e.g., I, them) was slightly negatively related.

4. Interview Question: Behavioral (Openness to Alternative Views) – [REDACTED]

Significant LIWC Variables: The predictors of this question were very different. It was the only question where longer answers did not predict ratings very well. However, many of the other scales were predictive. Answers that were analytic, had a positive tone, were quantitative, showed insight, discussed affiliation, or used the personal pronoun “we” got higher ratings. On the other hand, answers that expressed negative emotions, sadness, or gender got lower ratings. Also, answers with personal pronouns such as I, me, he, or she, or that expressed negation (e.g., no, not, never) got lower ratings.

5. Interview Question: Situational (High Motivation/Drive) – [REDACTED]

Significant LIWC Variables: Longer answers is the only predictor of higher ratings. Answers with negation (e.g., no, not, never) and present focus (e.g., today, is, now) got lower ratings.

6. Interview Question: Behavioral (Perseverance) – [REDACTED]

Significant LIWC Variables: In addition to longer answers, answers that were more analytic got higher ratings. However, answers with more personal pronouns (e.g., I, them, her),

impersonal pronouns (e.g., it, it's, those), or were present focused (e.g., today, is, now) got lower ratings. Answers with more dictionary words and verbs also got lower ratings.

By and large, the significant LIWC variables make sense in most cases. Across questions, longer answers, use of longer (more complex) words, and more analytical answers got higher ratings. Answers with more negation and use of personal pronouns got slightly lower ratings. However, hindsight bias is very powerful and it is unlikely we could have predicted the significant variables in advance.

Table 64. Correlations between Interview Ratings and LIWC Variables by Subsample per Question

Interview Questions for Reference:

1. Behavioral (Adaptability):

[REDACTED]

2. Situational (Accepts Feedback):

[REDACTED]

3. Situational (Integrity):

[REDACTED]

4. Behavioral (Openness to Alternative Views):

[REDACTED]

5. Situational (High Motivation/Drive):

[REDACTED]

6. Behavioral (Perseverance):

[REDACTED]

LIWC	Question 1		Question 2		Question 3		Question 4		Question 5		Question 6	
Variables	SS1	SS2	SS1	SS2	SS1	SS2	SS1	SS2	SS1	SS2	SS1	SS2
WC	.366**	.529**	.396**	.493**	.550**	.640**	0.062	.174**	.432**	.529**	.373**	.322**
Analytic	.259**	.375**	.207**	.172*	0.071	0.088	.243**	.171**	0.1	.176**	.288**	.155*

LIWC	Question 1		Question 2		Question 3		Question 4		Question 5		Question 6	
Variables	SS1	SS2	SS1	SS2	SS1	SS2	SS1	SS2	SS1	SS2	SS1	SS2
Clout	.151*	.249**	0.067	0.03	0.025	0.08	.296**	0.115	-0.092	-0.037	-0.07	0.055
Authentic	.200**	.204**	-0.06	-0.058	-0.095	-.161*	-0.121	0.087	.147*	-0.029	0.084	-0.064
Tone	0.056	0.037	-0.078	-0.078	-0.027	0.012	.237**	.179**	0.012	-0.018	0.044	-0.009
WPS	-0.1	-0.077	-0.081	-0.087	0.034	0.011	-0.061	-0.015	0.049	.162*	-0.052	-0.096
Sixltr	.170**	.212**	.177**	.248**	.204**	.252**	0.123	.154*	0.076	.267**	0.084	.220**
Dic	-0.066	-0.127	-0.009	-0.006	0.033	0.054	0.028	-0.021	0.019	-.152*	-.149*	-.141*
function	.183**	.325**	.177**	.189**	-0.042	-0.096	-0.11	-.137*	-0.108	.209**	.264**	.267**
pronoun	-.137*	.271**	.202**	.210**	-0.084	-0.124	-.169*	.213**	-0.071	.223**	.195**	.215**
ppron	-0.012	-.166*	-0.124	-0.131	-.130*	-.190**	.256**	.192**	-0.066	.255**	-.131*	-.166*
i	-0.068	.239**	-0.094	-0.072	-0.072	-.180**	.297**	.185**	0.025	-0.114	-0.016	-0.117
we	0.1	.225**	-0.056	0.093	-0.079	-0.103	.244**	.151*	-0.1	-0.086	-0.037	0.028
you	-.147*	-.143*	0.031	-.171*	-0.008	0.023	-0.081	0.031	-0.08	-0.128	-0.042	-.134*
shehe	0.054	-0.035	0.09	0.016	-0.105	-0.052	.190**	.239**	-0.076	0.097	-0.109	0.002
they	0.049	0.049	-.134*	0.079	0.033	0.095	-0.007	0.054	-0.022	0.02	-0.077	0
ipron	.217**	.221**	.184**	-.157*	0.025	0.019	.144*	-0.091	-0.034	-0.047	-.133*	-.131*
article	0.029	.264**	0.055	0.119	0.038	0.07	.195**	0.105	-0.027	0.083	0.114	0.039
prep	.133*	0.099	.179**	0.085	0.049	0.029	0.081	0.081	0.099	0.037	0.121	0.009
auxverb	-0.123	.220**	-0.102	-0.026	-0.01	-0.044	-0.109	-0.07	-0.118	-0.107	.263**	-0.12
adverb	.268**	.331**	-0.043	-0.012	0.024	0.002	.186**	-0.019	-0.061	-0.089	.220**	-0.097
conj	-.136*	.184**	-0.034	-0.013	-0.062	0.07	0.047	0.05	0.029	0.101	-0.07	0.052
negate	.178**	.182**	-.151*	.178**	-0.034	-0.066	-.161*	.172**	-.159*	.192**	-.153*	-0.128
verb	.249**	.269**	-0.083	-0.026	-0.042	-0.064	-0.073	-.151*	-0.052	-.166*	.261**	-.168*
adj	-0.022	-0.102	0.096	-0.089	-0.086	-0.002	-0.025	0.103	-0.024	-0.073	0.079	0.048
compare	-0.016	-0.065	0.048	-0.116	-0.063	-0.019	-0.036	0.058	0.026	-0.016	0.09	0.01
interrog	-0.066	-0.119	0.052	.167*	0.056	0.061	0.009	0.095	.154*	0.102	-0.086	-0.082
number	.132*	0.07	0.071	-0.114	0.008	-.147*	0.125	-0.039	0.079	0.095	0.088	0.123
quant	0.097	-0.062	-0.013	0.052	-0.042	-0.085	.242**	.259**	-0.034	0.094	0.124	0.117
affect	-0.043	-0.07	-0.005	-0.051	0.018	0.025	-0.027	0.001	-0.108	.177**	-0.075	-0.069
posemo	0.004	-0.021	-0.047	-0.077	0.021	0.022	0.121	0.097	-0.047	-0.124	-0.019	-0.03
negemo	-0.078	-0.091	0.036	0.026	-0.002	-0.006	.183**	-.162*	-0.073	.171**	-0.12	-0.063
anx	-0.046	-0.028	0.019	-0.069	0.067	-0.08	.181**	-0.046	-0.095	.204**	-0.093	0.003
anger	-0.003	-0.049	-0.078	-0.105	0.018	0.08	-0.068	-0.02	-0.048	0.075	-0.057	-0.068
sad	-0.051	-0.018	0.007	-0.009	-0.062	-0.053	-.157*	.172**	0.113	0.002	-0.059	-0.015
social	0.083	0.071	-0.038	-0.008	-0.042	0.053	0.073	-0.058	-.162*	-0.087	-.144*	-0.049
family	0.024	-0.099	-0.074	-0.07	-0.124	-0.045	-0.108	-0.086	-.145*	-0.056	-0.095	-0.024
friend	-0.099	-0.122	-0.032	0.013	-0.103	-0.092	0.119	-0.056	-0.129	-0.104	-0.059	-0.127
female	0.09	-0.042	-0.025	-0.017	-0.109	-0.069	-.136*	-.123	-0.084	0.037	-0.104	0.011

LIWC	Question 1		Question 2		Question 3		Question 4		Question 5		Question 6	
Variables	SS1	SS2	SS1	SS2	SS1	SS2	SS1	SS2	SS1	SS2	SS1	SS2
male	-0.056	-0.037	.131*	0.045	-0.124	-0.104	-.157*	.216**	-0.025	.145*	-0.043	-0.061
cogproc	.261**	.215**	0.089	0.097	0.112	0.004	0.119	.192**	0.038	0.076	-0.128	-0.107
insight	.183**	0.022	0.101	0.121	0.092	-0.039	.223**	.251**	0.048	.213**	-0.022	0.004
cause	-.148*	-.141*	-0.016	0.112	.137*	0.012	0.098	0.044	.133*	0.046	-0.075	-0.022
discrep	0.047	0.081	0.021	0.062	0.006	-0.031	0.031	0.077	0.053	0.088	-0.048	-0.037
tentat	-0.118	-0.116	0.067	-0.011	0.002	-0.031	0.065	0.055	-0.105	-0.003	-0.053	-0.085
certain	-0.09	-.169*	0.079	-0.007	0.03	0.112	-0.026	0.027	0.001	-0.079	-0.063	-0.017
differ	.223**	-.162*	-0.073	-0.071	-0.043	-0.079	-0.017	0.042	-0.049	-0.042	-0.121	-.167*
percept	.207**	0.031	.181**	-0.019	-0.127	-0.129	0.029	0.081	0.063	-0.038	-0.04	-0.004
see	-.130*	0.044	-0.117	0.094	-0.039	0.002	0.059	.156*	.131*	0.129	-0.092	0.007
hear	-0.061	0.094	-.145*	-0.131	-0.107	-0.067	0.026	-0.02	0.065	-0.069	0.127	-0.003
feel	-.157*	-0.035	-0.039	-0.07	-0.043	-.145*	-0.037	-0.008	-0.112	.183**	-0.06	0
bio	.154*	-0.03	-0.089	-0.084	0.015	0.009	-0.038	-0.065	-0.068	-0.125	0.028	-0.004
body	-0.074	0.017	-0.007	-0.022	0.06	0.03	-0.012	-0.043	-0.104	-0.038	-0.032	-0.078
health	.170**	-0.031	-0.121	-0.112	-0.002	-0.003	-0.016	-0.026	-0.019	-0.125	0.024	0.026
sexual	.135*	0.017	-0.07	.c	-0.116	0.016	0.019	-0.019	0.066	.c	-0.077	-0.048
ingest	0.121	0.127	-0.042	-0.026	0.042	-0.003	-0.034	-0.044	0.005	-0.035	0.061	0.041
drives	.209**	.239**	0.101	0.082	-0.076	0.017	.197**	0.111	-0.059	-0.003	0.035	0.016
affiliation	0.116	.177**	0.028	.156*	-0.029	0.051	.304**	.164*	-0.096	-0.014	-0.053	-0.025
achieve	.224**	.218**	0.086	0.065	0.023	.176**	0.076	.132*	0.009	0.053	0.112	0.106
power	.133*	.160*	0.041	-0.055	-0.126	-0.072	-0.004	-0.073	0.022	0.005	0.058	0.015
reward	-0.018	-0.053	-0.066	-0.117	-0.092	-0.018	-0.071	-0.016	-0.124	-0.112	0.093	-0.112
risk	0.053	-0.057	0.108	.137*	0.059	-0.032	-0.099	-0.121	-0.004	-0.003	-0.104	-0.04
focuspast	-0.056	0.016	-0.06	-0.05	-0.045	-0.089	-0.079	-.133*	.161*	0.011	-0.08	0.043
focuspresent	.192**	.174**	-0.025	0.06	0.033	0.027	-0.026	-0.058	.179**	.217**	.208**	.180**
focusfuture	-0.102	-.155*	-0.055	-0.093	0.036	.172**	-.144*	0.02	-0.023	0.005	-0.061	0.066
relativ	-0.043	-0.062	-0.005	0.012	-0.088	-0.038	-0.057	-0.013	.211**	0.038	.179**	0.082
motion	-.157*	-.155*	0.021	0.054	-0.021	0.047	-0.125	-0.098	0.025	-0.087	0.054	0.012
space	.198**	0.056	0.012	0.038	-0.113	-0.12	0.063	0.054	0.117	0.001	0.102	0.016
time	-.140*	-0.048	-0.063	-0.065	-0.013	0.081	-.139*	-0.036	.180**	0.061	.153*	0.112
work	.230**	.317**	.222**	.137*	0.045	.290**	0.068	0.046	0.105	0.099	0.119	.174**
leisure	0.032	.164*	-0.104	0.042	-0.001	.204**	-0.072	0.078	-0.02	-0.085	0.018	0.071
home	0.001	-0.005	-0.123	-0.069	-0.068	-0.072	-.135*	-0.02	-.130*	-0.055	-0.098	0.028
money	.177**	.150*	-0.041	-0.109	0.016	0.096	-0.083	-0.078	-0.078	-0.03	0.12	0.126
relig	-0.016	0.007	-0.083	.c	-0.021	-0.068	-0.08	-0.074	-0.038	-0.02	-0.052	-0.02
death	0.035	-0.02	0.011	-0.06	-0.036	0.016	-0.005	0.111	-0.126	-0.013	0.009	-0.031
informal	-0.027	-0.099	-0.076	-0.129	-0.089	0.07	-0.063	0.022	0.016	-0.016	-0.098	0.085
swear	0.063	-0.097	-0.068	-0.124	-0.06	.165*	-0.105	0.037	-0.033	-0.032	-0.039	0.037
netspeak	0.009	-0.111	-0.109	-0.102	-0.062	0.019	-0.072	-0.05	-0.071	-0.089	-0.057	.186**

LIWC	Question 1		Question 2		Question 3		Question 4		Question 5		Question 6	
Variables	SS1	SS2	SS1	SS2	SS1	SS2	SS1	SS2	SS1	SS2	SS1	SS2
assent	-0.053	-0.053	0.026	-0.049	-0.076	-0.057	0.029	0.009	-0.053	0.053	-0.109	0.025
nonflu	-0.004	-0.031	-0.022	-0.022	0.031	.144*	-0.019	0.09	0.095	0.019	-0.02	0.048
filler	-0.051	0.007	0.065	-0.089	0.009	-0.055	-0.104	-0.076	0.025	.c	-0.068	-0.062
AllPunc	-0.045	0.076	0.071	.153*	0.054	-0.032	0.052	0.046	0.128	0.038	0.103	0.097
Period	-0.045	0.013	-0.045	0.071	-.167*	-0.064	0.026	-0.024	-.152*	.170**	0.018	0.071
Comma	0.051	0.093	-0.001	0.059	.132*	0.047	0.115	0.085	.211**	0.105	.182**	0.101
Colon	0.109	0.003	-0.081	0.106	-0.036	0.08	0.031	-0.079	0.04	.132*	-0.042	0.002
SemiC	-0.009	-0.024	-0.009	0.111	0.008	0.06	-0.034	0.069	0.127	0.014	0.064	0.07
QMark	-0.035	0.011	.172**	0.056	0.055	-0.006	-0.124	-0.003	0.034	0.106	-0.068	-0.091
Exclam	-0.063	0.006	-0.075	-0.07	-0.053	.c	-0.028	0.002	-0.045	-0.053	0.092	-0.083
Dash	.230**	.169*	0.086	0.013	0.089	-0.026	0.096	0.13	0.087	0.096	0.039	.228**
Quote	0.016	0.013	.194**	0.042	0.079	0.016	-0.068	-0.031	0.034	0.072	-0.078	-0.051
Apostro	-.138*	-0.103	-0.019	0.097	0.024	-0.088	-0.1	-0.023	-0.061	-0.056	-0.028	-0.036
Parenth	-0.018	.210**	0.01	.179**	0.017	-0.108	0.121	0.039	.207**	0.104	-0.049	-0.048
OtherP	0.046	0.08	0.103	0.03	0.066	0.052	0.018	-0.053	0.089	0.058	-0.002	0.008
** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).												

Table 64-1 summarizes the categories, category abbreviations, and example text for the LIWC analyses.

Table 64-1. LIWC Variable Names, Abbreviations, and Example Text

LIWC Variables:			Category	Abbrev	Examples
Category	Abbrev	Examples	Friends	friend	buddy, neighbor
Word count	WC	-	Female references	female	girl, her, mom
Summary Language Variables			Male references	male	boy, his, dad
Analytical thinking	Analytic	-	Cognitive processes	cogproc	cause, know, ought
Clout	Clout	-	Insight	insight	think, know
Authentic	Authentic	-	Causation	cause	because, effect
Emotional tone	Tone	-	Discrepancy	discrep	should, would
Words/sentence	WPS	-	Tentative	tentat	maybe, perhaps
Words > 6 letters	Sixltr	-	Certainty	certain	always, never
Dictionary words	Dic	-	Differentiation	differ	hasn't, but, else
Linguistic Dimensions			Perceptual processes	percept	look, heard, feeling
Total function words	funct	it, to, no, very	See	see	view, saw, seen
Total pronouns	pronoun	I, them, itself	Hear	hear	listen, hearing
Personal pronouns	ppron	I, them, her	Feel	feel	feels, touch
1st pers singular	i	I, me, mine	Biological processes	bio	eat, blood, pain
1st pers plural	we	we, us, our	Body	body	cheek, hands, spit
2nd person	you	you, your, thou	Health	health	clinic, flu, pill
3rd pers singular	shehe	she, her, him	Sexual	sexual	homy, love, incest
3rd pers plural	they	they, their, they'd	Ingestion	ingest	dish, eat, pizza
Impersonal pronouns	ipron	it, it's, those	Drives	drives	
Articles	article	a, an, the	Affiliation	affiliation	ally, friend, social
Prepositions	prep	to, with, above	Achievement	achieve	win, success, better
Auxiliary verbs	auxverb	am, will, have	Power	power	superior, bully
Common Adverbs	adverb	very, really	Reward	reward	take, prize, benefit
Conjunctions	conj	and, but, whereas	Risk	risk	danger, doubt
Negations	negate	no, not, never	Time orientations	TimeOrient	
Other Grammar			Past focus	focuspast	ago, did, talked
Common verbs	verb	eat, come, carry	Present focus	focuspresent	today, is, now
Common adjectives	adj	free, happy, long	Future focus	focusfuture	may, will, soon
Comparisons	compare	greater, best, after	Relativity	relativ	area, bend, exit
Interrogatives	interrog	how, when, what	Motion	motion	arrive, car, go
Numbers	number	second, thousand	Space	space	down, in, thin
Quantifiers	quant	few, many, much	Time	time	end, until, season
Psychological Processes			Personal concerns		
Affective processes	affect	happy, cried	Work	work	job, majors, xerox
Positive emotion	posemo	love, nice, sweet	Leisure	leisure	cook, chat, movie
Negative emotion	negemo	hurt, ugly, nasty	Home	home	kitchen, landlord
Anxiety	anx	worried, fearful	Money	money	audit, cash, owe
Anger	anger	hate, kill, annoyed	Religion	relig	altar, church
Sadness	sad	crying, grief, sad	Death	death	bury, coffin, kill
Social processes	social	mate, talk, they	Informal language	informal	
Family	family	daughter, dad, aunt	Swear words	swear	fuck, damn, shit
			Netspeak	netspeak	btw, lol, thx
			Assent	assent	agree, OK, yes
			Nonfluencies	nonflu	er, hm, umm
			Fillers	filler	I mean, you know

3. Findings on correlations between text-mining models and ASVAB and TAPAS scales

We correlated the text-mining model variables with two other selection tests used in the Air Force (ASVAB and TAPAS) to evaluate the construct validity of the models. Table 65 shows the correlations with all the ASVAB scales by question, with a summary across questions in the last panel. Similar to the correlations with the ratings, the AFQT composite score shows a consistent pattern of correlations with the text-mined variables across questions except #4 where the correlations are much smaller. Without question #4, the correlations with category count ranged from .21 to .28, with an average of .25; the correlations with word count ranged from .15 to .22, with an average of .18; and the correlations with the composite ranged from .22 to .26, with an average of .24. For question #4, category count only correlated .15, word count correlated .09 (not significant), and the composite correlated .14.

The last two panels of Table 65 also show the correlations of the ASVAB scales with the average interview rating across the six questions, which should yield the largest estimates because of increasing reliability. This will also best represent the relationships with the interview score that would be used to make hiring decisions. The correlations with the text-mined variables were slightly larger, with .36 for category count, .23 for word count, and .31 for the composite.

Table 65. Correlations of Final Text-Mining Model Variables with AFQT Scales by Question

Question 1	Mean	SD	Word Count	Category Count	Composite
AFQT	63.92	17.31	.194**	.205**	.223**
Mechanical	55.76	21.27	.135**	.171**	.171**
Administrative	66.28	15.90	.209**	.201**	.229**
General	61.73	19.48	.160**	.193**	.197**
Electronic	63.48	20.93	0.087	.118*	.115*
General Sciences	53.41	7.69	0.029	0.062	0.051
Electronics Information	50.98	9.10	0.059	.123**	.102*
Mechanical Comprehension	52.78	7.38	0.064	.101*	0.092
Auto & Shop Information	46.97	8.09	0.019	0.052	0.04
Assembling Objects	57.38	7.16	0.029	0.065	0.053
Word Knowledge	51.99	6.38	.172**	.211**	.214**
Paragraph Comprehension	54.30	5.74	.180**	.189**	.206**
Mathematics Knowledge	56.18	5.46	.135**	.094*	.128**
Arithmetic Reasoning	53.65	6.60	0.085	.112*	.110*
<i>N</i> = 453. <i>Note.</i> Composite generated from z-scored Word Count and Category Count Variables. ** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).					

Question 2	Mean	SD	Word Count	Category Count	Composite
AFQT	63.92	17.31	.216**	.245**	.264**
Mechanical	55.76	21.27	.172**	.192**	.208**
Administrative	66.28	15.90	.240**	.257**	.284**
General	61.73	19.48	.177**	.214**	.224**
Electronic	63.48	20.93	.163**	.212**	.214**
General Sciences	53.41	7.69	.145**	.203**	.198**
Electronics Information	50.98	9.10	.116*	.145**	.149**
Mechanical Comprehension	52.78	7.38	.138**	.125**	.150**
Auto & Shop Information	46.97	8.09	0.049	0.065	0.065
Assembling Objects	57.38	7.16	.101*	0.058	0.091
Word Knowledge	51.99	6.38	.212**	.207**	.240**
Paragraph Comprehension	54.30	5.74	.171**	.224**	.226**
Mathematics Knowledge	56.18	5.46	.173**	.171**	.197**
Arithmetic Reasoning	53.65	6.60	.106*	.131**	.135**
<i>N</i> = 451. <i>Note.</i> Composite generated from z-scored Word Count and Category Count Variables. ** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).					

Question 3	Mean	SD	Word Count	Category Count	Composite
AFQT	63.92	17.31	.179**	.262**	.250**
Mechanical	55.76	21.27	.118*	.156**	.155**
Administrative	66.28	15.90	.192**	.287**	.271**
General	61.73	19.48	.154**	.221**	.212**
Electronic	63.48	20.93	.095*	.163**	.146**
General Sciences	53.41	7.69	0.033	.118*	0.085
Electronics Information	50.98	9.10	0.035	0.069	0.059
Mechanical Comprehension	52.78	7.38	0.08	0.07	0.085
Auto & Shop Information	46.97	8.09	-0.021	-0.026	-0.026
Assembling Objects	57.38	7.16	0.034	0.084	0.067
Word Knowledge	51.99	6.38	.132**	.205**	.190**
Paragraph Comprehension	54.30	5.74	.126**	.241**	.208**
Mathematics Knowledge	56.18	5.46	.163**	.219**	.216**
Arithmetic Reasoning	53.65	6.60	.128**	.150**	.157**
<i>N</i> = 455. <i>Note.</i> Composite generated from z-scored Word Count and Category Count Variables. ** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).					

Question 4	Mean	SD	Word Count	Category Count	Composite
AFQT	63.92	17.311	0.089	.145**	.137**
Mechanical	55.76	21.268	0.026	0.062	0.052
Administrative	66.28	15.898	.105*	.155**	.152**
General	61.73	19.481	0.068	.131**	.116*
Electronic	63.48	20.934	0.007	0.078	0.05
General Sciences	53.41	7.687	-0.021	0.015	-0.003
Electronics Information	50.98	9.097	0	0.015	0.009
Mechanical Comprehension	52.78	7.379	-0.028	-0.012	-0.023
Auto & Shop Information	46.97	8.092	-0.056	-0.035	-0.053
Assembling Objects	57.38	7.159	-0.037	-0.016	-0.031
Word Knowledge	51.99	6.377	.103*	.103*	.121*
Paragraph Comprehension	54.3	5.737	.103*	.099*	.118*
Mathematics Knowledge	56.18	5.46	0.058	.136**	.114*
Arithmetic Reasoning	53.65	6.597	0.02	.115*	0.079
<i>N</i> = 456. <i>Note.</i> Composite generated from z-scored Word Count and Category Count Variables. ** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).					

Question 5	Mean	SD	Word Count	Category Count	Composite
AFQT	63.92	17.31	.165**	.284**	.254**
Mechanical	55.76	21.27	.121*	.251**	.211**
Administrative	66.28	15.90	.165**	.288**	.256**
General	61.73	19.48	.152**	.256**	.231**
Electronic	63.48	20.93	.112*	.219**	.188**
General Sciences	53.41	7.69	.096*	.194**	.164**
Electronics Information	50.98	9.10	.097*	.182**	.158**
Mechanical Comprehension	52.78	7.38	0.06	.118*	.100*
Auto & Shop Information	46.97	8.09	-0.017	.121**	0.059
Assembling Objects	57.38	7.16	0.044	0.07	0.064
Word Knowledge	51.99	6.38	.175**	.273**	.253**
Paragraph Comprehension	54.30	5.74	.155**	.280**	.246**
Mathematics Knowledge	56.18	5.46	0.075	.168**	.138**
Arithmetic Reasoning	53.65	6.60	0.082	.152**	.132**
<i>N</i> = 456. <i>Note.</i> Composite generated from z-scored Word Count and Category Count Variables. ** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).					

Question 6	Mean	SD	Word Count	Category Count	Composite
AFQT	63.92	17.31	.153**	.229**	.215**
Mechanical	55.76	21.27	0.07	.139**	.117*
Administrative	66.28	15.90	.154**	.238**	.220**
General	61.73	19.48	.141**	.204**	.194**
Electronic	63.48	20.93	0.074	.148**	.124**
General Sciences	53.41	7.69	0.019	.098*	0.066
Electronics Information	50.98	9.10	0.025	0.068	0.052
Mechanical Comprehension	52.78	7.38	0.013	0.064	0.043
Auto & Shop Information	46.97	8.09	-0.081	-0.027	-0.061
Assembling Objects	57.38	7.16	0.076	.108*	.103*
Word Knowledge	51.99	6.38	.129**	.188**	.178**
Paragraph Comprehension	54.30	5.74	.111*	.192**	.170**
Mathematics Knowledge	56.18	5.46	.108*	.174**	.158**
Arithmetic Reasoning	53.65	6.60	.112*	.152**	.148**
<i>N</i> = 456. <i>Note.</i> Composite generated from <i>z</i> -scored Word Count and Category Count Variables. ** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).					

Across All Questions	Mean	SD	Word Count	Category Count	Composite
AFQT	63.92	17.31	.225**	.358**	.312**
Mechanical	55.76	21.27	.131**	.242**	.201**
Administrative	66.28	15.90	.244**	.375**	.331**
General	61.73	19.48	.189**	.315**	.270**
Electronic	63.48	20.93	.110*	.232**	.186**
General Sciences	53.41	7.69	0.054	.165**	.120*
Electronics Information	50.98	9.107	0.057	.144**	.109*
Mechanical Comprehension	52.78	7.38	0.063	.110*	.097*
Auto & Shop Information	46.97	8.09	-0.049	0.015	-0.018
Assembling Objects	50.20	20.14	0.031	0.044	0.038
Word Knowledge	51.99	6.38	.205**	.312**	.276**
Paragraph Comprehension	54.30	5.74	.186**	.319**	.268**
Mathematics Knowledge	56.18	5.46	.171**	.254**	.229**
Arithmetic Reasoning	53.65	6.60	.116*	.202**	.172**
<i>N</i> = 456. <i>Note.</i> Composite generated from <i>z</i> -scored Word Count and Category Count Variables. ** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).					

Summary across Questions on the Composite:

Across All Questions	Q1	Q2	Q3	Q4	Q5	Q6	Q1-6
AFQT	.223**	.264**	.250**	.137**	.254**	.215**	.312**
Mechanical	.171**	.208**	.155**	0.052	.211**	.117*	.201**
Administrative	.229**	.284**	.271**	.152**	.256**	.220**	.331**
General	.197**	.224**	.212**	.116*	.231**	.194**	.270**
Electronic	.115*	.214**	.146**	0.05	.188**	.124**	.186**
General Sciences	0.051	.198**	0.085	-0.003	.164**	0.066	.120*
Electronics Information	.102*	.149**	0.059	0.009	.158**	0.052	.109*
Mechanical Comprehension	0.092	.150**	0.085	-0.023	.100*	0.043	.097*
Auto & Shop Information	0.04	0.065	-0.026	-0.053	0.059	-0.061	-0.018
Assembling Objects	0.053	0.091	0.067	-0.031	0.064	.103*	0.038
Word Knowledge	.214**	.240**	.190**	.121*	.253**	.178**	.276**
Paragraph Comprehension	.206**	.226**	.208**	.118*	.246**	.170**	.268**
Mathematics Knowledge	.128**	.197**	.216**	.114*	.138**	.158**	.229**
Arithmetic Reasoning	.110*	.135**	.157**	0.079	.132**	.148**	.172**
N = 451-456.							
Note. Composite generated from z-scored Word Count and Category Count Variables.							
** Correlation is significant at the 0.01 level (2-tailed).							
* Correlation is significant at the 0.05 level (2-tailed).							

The correlations with the MAGE composites showed that the Administrative composite had the highest correlation with the text-mined variables ($r = .33$ on the average rating across questions), followed by the General ($r = .27$), Mechanical ($r = .20$), and Electronic ($r = .19$) composites. In terms of specific subtests, the largest correlations were with Word Knowledge ($r = .28$), Paragraph Comprehension ($r = .27$), Mathematics Knowledge ($r = .23$), and Arithmetic Reasoning ($r = .17$). The other subtests only showed low correlations (e.g., General Science, Electronics Information, Mechanical Comprehension, Auto & Shop, and Assembling Objects). Looking across these findings suggests that the moderate positive relationship between the text-mining models and mental ability are due mostly to verbal ability. The relationship with math skills is probably due to general mental ability.

Table 66 shows the correlations of the final text-mining model variables with TAPAS scales by question. As summarized in the last panel of the table, a total of 10 of the 90 correlations with the composite of category count and word count were significant at $p < .05$, which is slightly above the chance level. Several of the scales were significant for more than one question. To attain an estimate with the most reliable interview measure, the last panel of Table 3.7.4 shows the correlations of the TAPAS scales with the average interview score across the six questions. Two of the scales were significant, but the correlations are small: Intellectual Efficiency ($r = .124$) and Tolerance ($r = .101$). Two other scales are significant at the $p < .10$ level: Dominance ($r = .081$) and Self-Control ($r = .091$). Cooperation just misses the .10 level ($r = .075$). Note that these correlations have not been cross-validated, so they are likely to be overestimates.

Table 66. Correlations of Final Text-Mining Model Variables with TAPAS Scales by Question

Question 1	Mean	SD	Word Count	Category Count	Composite
Achievement	49.48	9.71	0.034	0.01	0.024
Adjustment	49.32	10.62	-0.061	-0.049	-0.06
Cooperation	52.16	9.37	0.093	.135**	.126*
Dominance	48.25	9.32	0.022	0.06	0.045
Even Tempered	50.38	9.23	0.045	0.016	0.034
Attention Seeking	46.45	9.28	0.01	-0.006	0.002
Selflessness	50.79	8.79	0.019	.132*	0.083
Intellectual Efficiency	48.87	9.38	0.091	0.08	0.095
Non-Delinquency	51.40	10.31	-0.009	0.02	0.006
Order	51.53	9.85	-0.02	0.076	0.031
Physical Condition	49.55	10.20	-0.034	-0.021	-0.031
Self-Control	50.39	10.25	0.096	.129*	.124*
Sociability	48.38	9.35	0.066	0.053	0.066
Tolerance	51.25	10.12	0.036	0.087	0.068
Optimism	49.71	9.37	0.027	0.008	0.02
<i>N</i> = 377.					
<i>Note.</i> Composite generated from <i>z</i> -scored Word Count and Category Count Variables.					
* Correlation is significant at the 0.05 level (2-tailed).					
** Correlation is significant at the 0.01 level (2-tailed).					

Question 2	Mean	SD	Word Count	Category Count	Composite
Achievement	49.48	9.71	-0.035	-0.08	-0.066
Adjustment	49.32	10.62	-0.093	-.117*	-.120*
Cooperation	52.16	9.37	.119*	0.011	0.074
Dominance	48.25	9.32	0.069	0.025	0.053
Even Tempered	50.38	9.23	0.01	-0.032	-0.013
Attention Seeking	46.45	9.28	-0.017	-0.012	-0.017
Selflessness	50.79	8.79	0	0.018	0.01
Intellectual Efficiency	48.87	9.38	0.075	.150**	.129*
Non-Delinquency	51.40	10.31	-0.003	-0.048	-0.03
Order	51.53	9.85	0.027	.122*	0.085
Physical Condition	49.55	10.20	-0.064	-0.031	-0.054
Self-Control	50.39	10.25	0.043	0.008	0.029
Sociability	48.38	9.35	0.011	-0.059	-0.028
Tolerance	51.25	10.12	0.078	.110*	.108*
Optimism	49.71	9.37	-0.003	0.032	0.017
<i>N</i> = 377.					
<i>Note.</i> Composite generated from <i>z</i> -scored Word Count and Category Count Variables.					
* Correlation is significant at the 0.05 level (2-tailed).					
** Correlation is significant at the 0.01 level (2-tailed).					

Question 3	Mean	SD	Word Count	Category Count	Composite
Achievement	49.48	9.71	0.015	-0.021	-0.003
Adjustment	49.32	10.62	-0.006	-0.082	-0.05
Cooperation	52.16	9.37	.131*	0.056	.105*
Dominance	48.25	9.32	0.015	0.054	0.039
Even Tempered	50.38	9.23	0.068	0	0.038
Attention Seeking	46.45	9.28	-0.034	-0.035	-0.039
Selflessness	50.79	8.79	0.079	0.095	0.098
Intellectual Efficiency	48.87	9.38	0.086	.137**	.126*
Non-Delinquency	51.40	10.31	0.027	-0.023	0.002
Order	51.53	9.85	0.026	.155**	.103*
Physical Condition	49.55	10.20	-0.013	-0.065	-0.044
Self-Control	50.39	10.25	.109*	.116*	.127*
Sociability	48.38	9.35	-0.019	-0.041	-0.034
Tolerance	51.25	10.12	0.056	0.095	0.085
Optimism	49.71	9.37	-0.015	0.006	-0.005
<i>N</i> = 377. <i>Note.</i> Composite generated from <i>z</i> -scored Word Count and Category Count Variables. * Correlation is significant at the 0.05 level (2-tailed). ** Correlation is significant at the 0.01 level (2-tailed).					

Question 4	Mean	SD	Word Count	Category Count	Composite
Achievement	49.48	9.71	0.096	-0.021	0.044
Adjustment	49.32	10.62	-0.056	-0.027	-0.049
Cooperation	52.16	9.37	.109*	0.052	0.094
Dominance	48.25	9.32	.107*	0.012	0.07
Even Tempered	50.38	9.23	0.093	0.076	0.099
Attention Seeking	46.45	9.28	-0.012	0.028	0.009
Selflessness	50.79	8.79	-0.006	-0.011	-0.01
Intellectual Efficiency	48.87	9.38	0.03	0.065	0.056
Non-Delinquency	51.40	10.31	0.031	0.044	0.044
Order	51.53	9.85	-0.053	0.038	-0.008
Physical Condition	49.55	10.20	-0.01	-0.083	-0.055
Self-Control	50.39	10.25	.136**	0.028	0.096
Sociability	48.38	9.35	0.085	0.015	0.058
Tolerance	51.25	10.12	.140**	.139**	.164**
Optimism	49.71	9.37	0.01	-0.004	0.003
<i>N</i> = 377. <i>Note.</i> Composite generated from <i>z</i> -scored Word Count and Category Count Variables. * Correlation is significant at the 0.05 level (2-tailed). ** Correlation is significant at the 0.01 level (2-tailed).					

Question 5	Mean	SD	Word Count	Category Count	Composite
Achievement	49.48	9.71	-0.005	-0.036	-0.023
Adjustment	49.32	10.62	-0.021	-0.04	-0.034
Cooperation	52.16	9.37	-0.031	-0.029	-0.034
Dominance	48.25	9.32	0.042	0.073	0.065
Even Tempered	50.38	9.23	0.029	0.013	0.024
Attention Seeking	46.45	9.28	-0.022	-0.006	-0.016
Selflessness	50.79	8.79	0.035	0.084	0.067
Intellectual Efficiency	48.87	9.38	0.033	.138**	0.096
Non-Delinquency	51.40	10.31	-0.044	-0.066	-0.062
Order	51.53	9.85	-0.059	-0.025	-0.048
Physical Condition	49.55	10.20	0.009	-0.025	-0.009
Self-Control	50.39	10.25	0.009	-0.028	-0.011
Sociability	48.38	9.35	-0.035	-0.049	-0.048
Tolerance	51.25	10.12	-0.026	-0.011	-0.021
Optimism	49.71	9.37	0.022	0.051	0.041
<i>N</i> = 377. <i>Note.</i> Composite generated from <i>z</i> -scored Word Count and Category Count Variables. * Correlation is significant at the 0.05 level (2-tailed). ** Correlation is significant at the 0.01 level (2-tailed).					

Question 6	Mean	SD	Word Count	Category Count	Composite
Achievement	49.48	9.71	-0.005	-0.036	-0.023
Adjustment	49.32	10.62	-0.021	-0.04	-0.034
Cooperation	52.16	9.37	-0.031	-0.029	-0.034
Dominance	48.25	9.32	0.042	0.073	0.065
Even Tempered	50.38	9.23	0.029	0.013	0.024
Attention Seeking	46.45	9.28	-0.022	-0.006	-0.016
Selflessness	50.79	8.79	0.035	0.084	0.067
Intellectual Efficiency	48.87	9.38	0.033	.138**	0.096
Non-Delinquency	51.40	10.31	-0.044	-0.066	-0.062
Order	51.53	9.85	-0.059	-0.025	-0.048
Physical Condition	49.55	10.20	0.009	-0.025	-0.009
Self-Control	50.39	10.25	0.009	-0.028	-0.011
Sociability	48.38	9.35	-0.035	-0.049	-0.048
Tolerance	51.25	10.12	-0.026	-0.011	-0.021
Optimism	49.71	9.37	0.022	0.051	0.041
<i>N</i> = 377. <i>Note.</i> Composite generated from <i>z</i> -scored Word Count and Category Count Variables. * Correlation is significant at the 0.05 level (2-tailed). ** Correlation is significant at the 0.01 level (2-tailed).					

Across All Questions	Mean	SD	Word Count	Category Count	Composite
Achievement	49.48	9.71	0.047	-0.015	0.015
Adjustment	49.32	10.62	-0.053	-0.069	-0.065
Cooperation	52.16	9.37	0.083	0.059	0.075
Dominance	48.25	9.32	0.075	0.081	0.081
Even Tempered	50.38	9.23	0.058	0.037	0.05
Attention Seeking	46.45	9.28	-0.006	-0.002	-0.006
Selflessness	50.79	8.79	0.036	0.094	0.066
Intellectual Efficiency	48.87	9.38	0.074	.161**	.124*
Non-Delinquency	51.40	10.31	0.002	-0.019	-0.01
Order	51.53	9.85	-0.022	.102*	0.039
Physical Condition	49.55	10.20	-0.03	-0.045	-0.039
Self-Control	50.39	10.25	0.094	0.082	0.091
Sociability	48.38	9.35	0.027	-0.021	0
Tolerance	51.25	10.12	0.074	.122*	.101*
Optimism	49.71	9.37	0.043	0.056	0.051
<i>N</i> = 377 <i>Note.</i> Composite generated from z-scored Word Count and Category Count Variables. * Correlation is significant at the 0.05 level (2-tailed). ** Correlation is significant at the 0.01 level (2-tailed).					

Summary across Questions on the Composite:

	Q1	Q2	Q3	Q4	Q5	Q6	Average
Achievement	0.024	-0.066	-0.003	0.044	-0.023	-0.023	0.015
Adjustment	-0.06	-.120*	-0.05	-0.049	-0.034	-0.034	-0.065
Cooperation	.126*	0.074	.105*	0.094	-0.034	-0.034	0.075
Dominance	0.045	0.053	0.039	0.07	0.065	0.065	0.081 ^a
Even Tempered	0.034	-0.013	0.038	0.099	0.024	0.024	0.05
Attention Seeking	0.002	-0.017	-0.039	0.009	-0.016	-0.016	-0.006
Selflessness	0.083	0.01	0.098	-0.01	0.067	0.067	0.066
Intellectual Efficiency	0.095	.129*	.126*	0.056	0.096	0.096	.124*
Non-Delinquency	0.006	-0.03	0.002	0.044	-0.062	-0.062	-0.01
Order	0.031	0.085	.103*	-0.008	-0.048	-0.048	0.039
Physical Condition	-0.031	-0.054	-0.044	-0.055	-0.009	-0.009	-0.039
Self-Control	.124*	0.029	.127*	0.096	-0.011	-0.011	0.091 ^a
Sociability	0.066	-0.028	-0.034	0.058	-0.048	-0.048	0
Tolerance	0.068	.108*	0.085	.164**	-0.021	-0.021	.101*
Optimism	0.02	0.017	-0.005	0.003	0.041	0.041	0.051
<i>Note.</i> Composite generated from z-scored Word Count and Category Count Variables. * Correlation is significant at the 0.05 level (2-tailed). ** Correlation is significant at the 0.01 level (2-tailed). ^a Correlation is significant at the 0.10 level (2-tailed).							

4. Findings on influence of using text-mining models to select out lowest scoring candidates

To illustrate the potential usefulness of the text-mining models for making hiring decisions, Table 67 shows the impact of selecting out the bottom third of candidates on the computer scores in terms of the number that would have passed the interview ratings. For this analysis, we used the composite of the category count and word count and the average interview ratings across all six interview questions ($r = .73$ as described above). Both the cumulative count and the percentage of misclassified candidates are shown for passing scores at each decile on the interview ratings. For example, if the passing score on the interview is set at cutting off the bottom 70% of candidates, only 8 candidates (6%) would have been incorrectly selected out of the pool by the computer model. This may be a reasonable false negative rate in practice. However, if cutting off the bottom 50%, 26 (19%) would be incorrectly selected out, which may be too high. In that case, a lower percentage of candidates should be screened out by the computer model.

Table 67. Impact of Selecting Out Bottom Third of Candidates on Computer Scores

Potential Passing Cutoff on Human Interview Rating Based on Average of 6 Questions (n = 461)	Influence of Using the Computer Scores to Screen Out the Bottom Third of Candidates (n = 139) - Candidates that Would Have Passed the Interview at each Passing Score Based on Human Rating if Not Screened Out	
	Cumulative Count	Cumulative Percentage
Cut off bottom 90%	1	1%
Cut off bottom 80%	6	5%
Cut off bottom 70%	8	6%
Cut off bottom 60%	16	12%
Cut off bottom 50%	26	19%
Cut off bottom 40%	41	30%
Cut off bottom 30%	58	42%
Cut off bottom 20%	73	53%
Cut off bottom 10%	107	77%
All Passing	139	100%

$N = 460$.

CONCLUSIONS

Based on these analyses, the findings regarding the four purposes of the report are:

1. The text-mining models show good validity in predicting human ratings across the six questions in general, and the validity of the entire interview combining all questions is about the

same as the interrater reliability of a single human interviewer ($r = .73$) based on the research ($r = .70$) and is slightly less than the reliability of the raters used in this study ($r = .83$).

2. The LIWC variables showed a pattern of correlations across questions that seem logical when interpreted post hoc. Longer answers, use of longer (more complex) words, and more analytic answers got higher ratings, while answers with more negation and use of personal pronouns got slightly lower ratings.

3. The text-mined variables showed moderate correlations with the various ASVAB scales, suggesting the variables reflect mental ability to some extent. On the other hand, the text-mined variables show only a few small correlations with the various TAPAS scales, suggesting the variables do not reflect personality traits to a great extent.

4. The text-mining models may have practical utility for making selection decisions. For example, depending on the passing scores, using the text-mining models to select out the lowest scoring candidates will result in eliminating few candidates who would have been hired.

4.0 STUDY 3: SCORING OFFICER TRAINING SCHOOL APPLICATIONS

The current study objective was to examine the utility of text analysis using archival Air Force data identified the scoring of Officer Training School (OTS) applications as a potential context where text analysis might be used for employment decisions based on existing data. Each year many hundreds of candidates apply to OTS. OTS Boards of current officers review and score the applications in a time-consuming process. Much of the information is narrative, such as past jobs, degrees, statements, and letters. Thus, text analysis might provide a useful tool to enhance efficiency if effective in predicting OTS Board scores. We conducted a series of studies to perform text analyses of the application information and combine it with numeric information (e.g., AFOQT scores) to predict OTS Board scores, as described below.

The conclusions from Study 3 were that text analysis can be used to score OTS applications, the scores show good validity in predicting OTS Board scores, the scores show construct validity with other assessments, the text analysis scores predict OTS Board scores beyond numeric information, and use of text analysis have practical utility for making selection decisions.

4.1 Description of Sample and Variables for Text Mining of Officer Training School Applications

PURPOSE

The purposes of these analyses were to (1) describe the size and demographics of the samples of candidates submitting applications to OTS and (2) describe the variables available for analyses, including the application information (predictors), the board scores and selections into the various OTS jobs (criteria), and the AFOQT Scores (existing predictors).

METHOD

We obtained the data on officer candidates applying to the Air Force OTS program in 2019. The sample included both those applying for “rated” (flying) positions and “non-rated” (non-flying) positions. This also included both a panel for those with prior Air Force enlistments applying to the officer corps and the panel for those applying as civilians.

The data included all the application information (e.g., education, work experience, statements of objectives, interviews, etc.) that are used to select candidates into OTS (which served as the predictors), and all the board ratings and selection decisions into OTS and the officer corps (which served as the criteria). We also obtained Air Force Officer Qualifying Test (AFOQT) scores, which are cognitive test scores used in the selection process along with the application information.

Sample Description

Table 68 shows the sample size, gender, race, and age distribution for each of the four samples and for the rated and non-rated applicants together. The sample shows good racial diversity. Average ages are in the mid-to-late 20s with good variation. The sample appears to be representative of OTS candidates.

Predictor Variables (Application Information)

Table 69 shows the predictor variables from the application. The first column is the variable label, the second column is a description of the variable, the third column indicates the data type (numerical or text) and the fourth and fifth columns show the descriptive statistics if the variables are numerical (means, standard deviations, and ranges for the numeric variables).

The text variables that consist of a finite list of a reasonable length, such as educational institutions, degrees, and perhaps current employer were converted to dummy codes (0/1) for the statistical analyses to predict the criteria. However, most of the text fields that have a great variation in responses were text-mined, and the text categories that were extracted were used as dummy codes (0/1) in the analyses. The numeric data was statistically analyzed as is to predict the criteria. In summary, many text fields were appropriate for text analysis and there were many numeric variables with good variance.

Criterion Variables (Board Scores, Selections) and AFOQT Scores

Table 70 shows the criterion variables in terms of the OTS board scores and selection decisions. Table 70 also describes the demographic information (analyzed in Table 68) and the AFOQT scores. The columns refer to the same types of information as the columns in Table 69.

The board score was the primary criterion variable because it is a continuous variable and most reflective of the board's exact evaluation of candidate credentials and not influenced by the number of openings like the selection decisions. However, also examined the selection decisions as criteria. The AFOQT scores were used as control variables so we could evaluate the incremental predictive validity of the text-mined categories and other application information beyond that existing selection procedure.

Table 68. Description of Samples

		Gender		Race						Age		
	N	Female	Male	Amer Ind/ Alaskan (A)	Asian (B)	Black/ Afr Amer (C)	Nat Haw/ Pac Isl (D)	White (E)	Hispanic	Mean	SD	Range
Non-Rated Panel 1	1057	174	883	4	56	103	13	715	162	29.95	3.29	20 - 40
Non-Rated Panel 2	273	70	203	2	31	17	2	183	30	25.95	3.84	21 - 39
Non-Rated Both Panels	1330	244	1086	6	87	120	15	898	192	29.13	3.77	20 - 40
Rated Panel 1	287	17	270	1	12	11	3	215	44	28.76	3.26	20 - 40
Rated Panel 2	210	45	165	3	14	10	1	150	23	24.55	2.03	20 - 31
Rated Both Panels	497	62	435	4	26	21	4	365	67	27.02	3.50	20 - 40
Total*	1827	306	1521	10	113	141	19	1263	256			
		17.75	83.25	0.55%	6.27%	7.82%	1.05%	70.09%	14.21%			

Note: A small amount of demographics data are missing.

* The totals are inflated due to about 375 candidates applying to both rated and non-rated boards.

Table 69. Predictor Variables (Application Information)

			Rated	Non-Rated
Variable	Description	Data Type	M (SD), Range	M (SD), Range
ID	Respondent Identification Number	Alphanumeric		
Panel	1 = AF experience, 2 = no AF experience	Numeric	1.42 (.49), 1 – 2	1.21 (.40), 1 – 2
Institution1	Name of Institution 1	Text		
Degree1	Degree and Major 1	Text		
Year1	Year graduated from Academic Institution 1	Numeric	2017.01 (2.09), 2007 – 2021	2016.78 (2.90), 2001 – 2023
GPA1	Grade Point Average from Degree 1	Numeric	3.43 (.42), 2.01 – 4	3.51 (.42), 2.01 – 4
Institution2	Name of Institution 2	Text		
Degree2	Degree and Major 2	Text		
Year2	Year graduated from Academic Institution 2	Numeric	2015.58 (2.41), 2006 – 2021	2014.91 (2.81), 2002 – 2021
GPA2	Grade Point Average from Degree 2	Numeric	3.48(.45), 2.16 – 4.04	3.45 (.43), 2.1 – 4.04
Institution3	Name of Institution 3	Text		
Degree3	Degree and Major 3	Text		
Year3	Year graduated from Academic Institution 3	Numeric	2013.73 (3.28), 2004 – 2021	2013.66 (3.44), 1999 – 2025
GPA3	Grade Point Average from Degree 3	Numeric	3.25 (.52), 2.03 – 4	3.39 (.47), 2.03 – 4
Military Education Institution	Name of Institution	Text		
Military Education Year	Year graduated from ME Institution	Numeric	2015.81 (2.75), 2004 – 2019	2015.94 (2.87), 2000 – 2020
Career Achievements	List of career achievements, separated by semicolons	Text		
Personal Achievements	List of personal achievements, separated by semicolons	Text		
Professional Affiliations	Professional affiliations, separated by semicolons	Text		

			Rated	Non-Rated
Variable	Description	Data Type	M (SD), Range	M (SD), Range
Personal/Outside Interests	List of personal/outside interests, separated by semicolons	Text		
Current Employer	Name of current employer	Text		
Current Job	Title of current job	Text		
Current Duties	List of current duties, separated by semicolons	Text		
Current Job Year Started	Year started current job	Numeric	2016.25 (1.91), 2006 – 2019	2016.20 (1.72), 2006 – 2019
All Employers	List of all employers, separated by semicolons	Text		
All Jobs	List of all jobs, separated by semicolons	Text		
All Duties	List of all duties, separated by semicolons	Text		
Number of Jobs	Count of the number of jobs respondent has had	Numeric	4.48 (1.70), 1 – 11	4.89 (2), 1 – 14
Year Started First Job	Year they started their first job	Numeric	2011.44 (3.21), 1999 – 2018	2010.43 (3.41), 1997 – 2018
Pilot License	1 = has pilot license, 0 = does not have pilot license	Numeric	.04 (.19), 0 – 1	.01 (.10), 0 – 1
Commercial Pilot License	1 = has commercial pilot license, 0 = does not have commercial pilot license	Numeric	.00 (0), 0	.00 (.03), 0 – 2
Other Aeronautical Ratings	Some indicate 1 (yes) and 0 (no), others are written in	Text		
Previous Application for Commissioned Program	1 = yes, 0 = no	Numeric	.26 (.44), 0 – 1	.27 (.45), 0 – 2
Name of Program	Name of program	Text		
Date Applied	Date (format as in the document)	Numeric		
Date Enrolled	Date (format as in the document)	Numeric		
Results	1 = selection, 2 = nonselected, 3 = disqualified, 4 = declined, 5 = disenrolled	Numeric	2.14 (.69), 1 – 5	2.15 (.71), 0 – 5
Number of Applications	1 – 3	Numeric	.36 (.71), 0 – 3	.38 (.72), 0 – 3
Active Duty Service Commitment	1 = yes, 0 = no	Numeric	.02 (.13), 0 – 1	.02 (.13), 0 – 1
Eliminated from Course	1 = yes, 0 = no	Numeric	.01 (.08), 0 – 1	.00 (.04), 0 – 1

			Rated	Non-Rated
Variable	Description	Data Type	M (SD), Range	M (SD), Range
Number of Previous Enlistments	1 – 3	Numeric	1.30 (.64), 0 – 3	1.33 (.67), 0 – 3
Date From	Oldest date (format as in the document)	Numeric		
Date To	Most recent date (format as in the document)	Numeric		
Highest Grade	List of all grades, separated by semicolons	Alphanumeric		
Component	List of all components, separated by semicolons	Alphanumeric		
Primary AFSC	List of all Primary AFSCs, separated by semicolons	Alphanumeric		
Active Duty, Guard, or Reserve	List of all, separated by semicolons	Text		
Duty Title	List of all, separated by semicolons	Text; Alphanumeric		
Number of Violations of Civil or Military Law	Count of violations	Numeric	1.88 (1.81), 0 – 12	1.74 (1.74), 0 – 14
Offenses	List of all offenses, separated by semicolons	Text		
Latest date	Date of most recent offense (format as in the document)	Numeric		
Latest age	Age at most recent offense	Numeric	22.52 (3.69), 15 – 34	23.61 (4.26), 15 – 37
Detained, Confined, or on Probation	1 = yes, 0 = no	Numeric	.08 (.27), 0 – 1	.07 (.25), 0 – 1
Drugs or alcohol	1 = yes, 0 = no	Numeric	.11 (.32), 0 – 1	.08 (.27), 0 – 1
Objectives/Reasons for AF Commission	Open-ended response	Text		
Appearance	1 = below average, 2 = fair, 3 = average, 4 = excellent, 5 = outstanding	Numeric	4.81 (.52), 1 – 5	4.88 (.41), 1 – 5
Confidence, Maturity	1 = below average, 2 = fair, 3 = average, 4 = excellent, 5 = outstanding	Numeric	4.74 (.56), 2 – 5	4.85 (.45), 2 – 5
Attitude	1 = below average, 2 = fair, 3 = average, 4 = excellent, 5 = outstanding	Numeric	4.81 (.46), 2 – 5	4.88 (.39), 2 – 5
Motivation	1 = below average, 2 = fair, 3 = average, 4 = excellent, 5 = outstanding	Numeric	4.80 (.54), 1 – 5	4.89 (.40), 1 – 5
Work Experience	1 = below average, 2 = fair, 3 = average, 4 = excellent, 5 = outstanding	Numeric	4.56 (.77), 1 – 5	4.75 (.60), 1 – 5

			Rated	Non-Rated
Variable	Description	Data Type	M (SD), Range	M (SD), Range
Leadership Potential	1 = below average, 2 = fair, 3 = average, 4 = excellent, 5 = outstanding	Numeric	4.64 (.69), 2 – 5	4.81 (.53), 2 – 5
Mental Alertness	1 = below average, 2 = fair, 3 = average, 4 = excellent, 5 = outstanding	Numeric	4.72 (.60), 2 – 5	4.85 (.46), 2 – 5
Communication Skills	1 = below average, 2 = fair, 3 = average, 4 = excellent, 5 = outstanding	Numeric	4.72 (.58), 2 – 5	4.83 (.49), 1 – 5
Potential to Complete Program	1 = below average, 2 = fair, 3 = average, 4 = excellent, 5 = outstanding	Numeric	4.77 (.51), 3 – 5	4.87 (.44), 2 – 5
Overall Evaluation	1 = below average, 2 = fair, 3 = average, 4 = excellent, 5 = outstanding	Numeric	4.70 (.60), 2 – 5	4.83 (.48), 2 – 5
Interview Comments	Comments, with great many abbreviations by interviewer to fit limited space on form	Text		
Letter of Recommendation	Letter of recommendation	Text		

Table 70. Criterion Variables (Board Scores, Selections) and AFOQT Scores

			Rated	Non-Rated
Variable	Description	Data Type	M (SD), Range	M (SD), Range
Gender	F = Female, M = Male (only available for Rated, Panel 1)	Text		
Race	A, B, C, D, E, F, G	Text		
Hisp	Y = yes, N = No	Text		
RaceRecoded	A, B, C, D, E, F, G, H	Text		
Age	Age	Numeric	27.02 (3.50), 20 – 40)	29.13 (3.77), 20 - 40
Degree	Major	Text		
GPA	Grade Point Average	Numeric	3.10 (.93), 0 – 4	3.26 (.80), 0 – 4
OTS_Board	19OT01NR, 19OT01R, 19OT02NR, 19OT02R	Alphanumeric		
NR_N_Score	Normalized board score (only non-rated)	Numeric		23.93 (1.38), 18.40 – 28.92
Board_Score	Raw board score	Numeric	26.95 (1.08), 20.6 – 29.8	24.59 (1.90), 17.6 – 30
Panel	N1, N2, S, T, WR	Alphanumeric		
Stat	N = not selected, S = selected	Text		
Board_Type	4A, 4B, 4C	Alphanumeric		
Pilot_Panel	P or blank	Text		
Pilot_QC_Notes	Comments on cut lines and/or preferences	Text		
Pilot_Status	N = not selected, S = selected	Text		
RPA_Panel	RPA or blank	Text		
RPA_Board_Type	4A, 4B, 4C	Alphanumeric		
RPA_QC_Notes	Comments on cut lines and/or preferences	Text		
RPA_Status	N = not selected, S = selected	Text		
CSO_Panel	CSO or blank	Text		
CSO_Board_Type	4A, 4C	Alphanumeric		
CSO_QC_Notes	Comments on cut lines and/or preferences	Text		

			Rated	Non-Rated
Variable	Description	Data Type	M (SD), Range	M (SD), Range
CSO_Status	N = not selected, S = selected	Text		
ABM_Panel	ABM or blank	Text		
ABM_Board_Type	4A, 4C	Alphanumeric		
ABM_QC_Notes	Comments on cut lines and/or preferences	Text		
ABM_Status	N = not selected, S = selected	Text		
AFSC_Choice_1st	21A1, 92T0, 92T3, 92T1, 17D1, 63A1, 31P1, 13M1, 71S1, 14N1, 92T2, 21M1, 13S1, 21R1, 64P1, 13N1, 35P1, 38P1, 61D1, 61B1, 62E1E, 32E1G, 61S1D, 61S1A, 61C1, 65F1, 62E1H, 61A1	Alphanumeric		
AFSC_Choice_2nd		Alphanumeric		
AFSC_Choice_3rd		Alphanumeric		
AFSC_Choice_4th		Alphanumeric		
AFSC_Choice_5th		Alphanumeric		
AFSC_Choice_6th		Alphanumeric		
AFSC_Choice_7th		Alphanumeric		
AFSC_Choice_8th		Alphanumeric		
TestForm	All indicate "T"	Alphanumeric		
TestVersion	1, 2, 7, 8	Numeric	1.75 (1.33), 1 – 8	2.00 (1.76), 1 – 8
TCO	Code	Numeric		
TestDate	Date (format as in the document)	Numeric		
ProcDate	Date (format as in the document)	Numeric		
Pilot	AFOQT Composite Score for Pilots	Numeric	66.11 (21.19), 4 – 99	50.78 (24.79), 1 – 99
CSO	AFOQT Composite Score for CSOs	Numeric	70.58 (20.80), 11 – 99	62.80 (25), 5 – 99
ABM	AFOQT Composite Score for ABMs	Numeric	65.22 (20.89), 10 – 99	53.16 (24.74), 1 – 99
OSM	AFOQT Composite Score on Officer Suitability Measure (5 personality traits correlated with school performance, describe them a adaptability and leadership potential).	Numeric	60.19 (26.33), 0 – 99	59.47 (26.86), 0 – 99
PCSM	AFOQT Composite Score on PCSM (Pilot Candidate Selection Method)	Numeric	33.99 (23.70), 0 – 99	

			Rated	Non-Rated
Variable	Description	Data Type	M (SD), Range	M (SD), Range
Acad	AFOQT Composite Academic Score	Numeric	54.23 (22.29), 11 – 99	50.59 (22.69), 5 – 99
Verbal	AFOQT Composite Verbal Score	Numeric	61.25 (23.35), 15 – 99	59.07 (24.52), 8 – 99
Quant	AFOQT Composite Quantitative Score	Numeric	47.23 (24.48), 10 – 99	42.92 (23.88), 5 – 99
VerbalAnlog_T	AFOQT Verbal Analogies Subtest Score	Numeric	453.67 (8.30), 31.46 – 72.41	52.7 (8.35), 31.46 – 71.77
ArithReason_T	AFOQT Arithmetic Reasoning Subtest Score	Numeric	52 (8.46), 29.7 – 71.29	50.52 (8.33), 27.66 – 72.5
WordKnow_T	AFOQT Word Knowledge Subtest Score	Numeric	54.12 (8.59), 32.33 – 69.7	53.64 (8.91), 30.5 – 69.7
MathKnow_T	AFOQT Math Knowledge Subtest Score	Numeric	47.93 (8.36), 30.34 – 69.42	46.53 (8.20), 30.34 – 69.42
ReadComp_T	AFOQT Reading Comprehension Subtest Score	Numeric	53.65 (7.26), 28.3 – 69.93	52.98 (7.55), 21.42 – 69.93
PhysScience_T	AFOQT Physical Science Subtest Score	Numeric	47.85 (8.55), 19.17 – 70.74	45.78 (9.03), 19.17 – 70.74
TableRead_T	AFOQT Reading Tables Subtest Score	Numeric	56.16 (8.59), 22.38 – 71.9	53.85 (9.36), 17.55 – 71.9
InstruComp_T	AFOQT Instrument Comprehension Subtest Score	Numeric	55.18 (7.53), 30.17 – 64.94	50.24 (9.27), 26.5 – 64.94
BlockCount_T	AFOQT Block Count Subtest Score	Numeric	58.14 (8.62), 31.04 – 76.48	55.08 (9.37), 24.91 – 76.48
AviatInfo_T	AFOQT Aviation Information Subtest Score	Numeric	55.50 (8.77), 33.14 – 75.82	50.45 (8.31), 29.91 – 75.66
AFOQT_SUBTEST_USE	0 or 1	Numeric	0.96 (.21), 0 – 1	0.91 (.29), 0 – 1

4.2 Second Analysis of the Text Mining of Officer Training School Applications

PURPOSE

The purpose of these analyses were to (1) describe the text mining of the text fields in the candidate applications to Officer Training School (OTS), (2) analyze the univariate relationships (correlations) between the board scores with both the text-mined variables and the numeric variables in the applications, (3) analyze the multivariate relationships (composites and regression equations) between the board scores with both the text-mined variables and the numeric variables in the applications, (4) illustrate the potential value of using the computer models to make selection decisions in terms of the expected percentage of successful hires, and (5) to examine diversity differences to estimate whether the use of the computer models would have potential to create adverse impact in the hiring of women and minorities.

METHOD

The sample included both candidates applying for “rated” (flying) positions and “non-rated” (non-flying) officer positions. This also included both a panel for those with prior Air Force enlistments (panel 1) applying to the officer corps and the panel for those applying as civilians (panel 2).

The data included all the application information (e.g., education, work experience, statements of objectives, interviews, etc.) that is used to select candidates into OTS (which served as the predictors), and all the board ratings and selection decisions into OTS and the officer corps (which served as the criteria). We also obtained Air Force Officer Qualifying Test (AFOQT) scores, which are cognitive test scores used in the selection process along with the application information

TEXT-MINING RESULTS

Table 71 describes the text mining of the 14 text fields in the OTS applications plus 1 computed variable based on the text mined categories (supervisor job experience). We used SPSS Modeler Premium V18.2.1 software, which is the same as previous studies for the Air Force. We text-mined the rated and the non-rated boards separately because the job requirements are different and the information requested in the OTS application is slightly different. We analyzed panels 1 and 2 (those with prior Air Force enlistments and those without, respectively) together because the jobs and the information are the same, and larger samples yield more stable results. However, we analyzed the relationships with OTS Board scores by panel (below) because candidates only compete with those in their panel, and there is some additional numeric information on enlistments for panel 1s.

Table 71. Description of Text-Mining Categories of Officer Candidate School Applications

Text Field	Sample	N of Sample	N of Categories with 1%+ Responses	Mean	SD
College Degrees (Degree1)	Rated	497	62	1.07	0.59
	Non-Rated	1331	48	0.97	0.67
Career Achievements	Rated	497	371	11.32	7.14
	Non-Rated	1331	153	6.23	3.71
Personal Achievements	Rated	497	393	10.20	7.09
	Non-Rated	1331	198	6.03	4.50
Professional Affiliations	Rated	497	118	3.23	3.11
	Non-Rated	1331	84	3.91	3.33
Personal/Outside Interest	Rated	497	207	7.34	3.89
	Non-Rated	1331	151	6.20	3.25
Current Job	Rated	497	40	1.01	0.74
	Non-Rated	1331	110	0.83	0.70
Current Duties	Rated	497	343	10.12	6.10
	Non-Rated	1331	240	6.88	4.10
Supervisor	Rated	497	2	0.56	0.50
	Non-Rated	1331	2	0.65	0.48
All Jobs	Rated	497	168	4.46	2.68
	Non-Rated	1331	132	3.73	2.10
All Duties	Rated	497	673	25.98	15.20
	Non-Rated	1331	665	28.77	14.21
Enlisted Duty Titles	Rated	497	26	1.09	0.72
	Non-Rated	1331	26	0.95	0.78
Offenses	Rated	497	33	0.69	1.14
	Non-Rated	1331	26	0.54	0.96
Objectives	Rated	497	618	45.33	13.87
	Non-Rated	1331	526	42.58	11.62
Interview Comments	Rated	497	466	19.94	12.28
	Non-Rated	1331	449	22.97	11.74
Letters of Recommendation	Rated	497	754	45.21	21.05
	Non-Rated	1331	624	41.29	20.84
<i>Note.</i> 1% for NR = 13, 1% for R = 4.					

The table shows the number of categories with at least 1% of the responses for each text field. For the rated sample with $N = 497$, we rounded down to require at least 4 responses. For the non-rated sample with $N = 1331$, we rounded down to require 13 responses. Requiring 1% of the sample or more ensures at least a minimum amount of variance in the text categories so they have any chance of correlating with criteria. Previous research for the Air Force identified the 1% level as being a reasonable and useful minimum.

The table also shows the mean and standard deviation for each text field. The means represent how many of the extracted text categories were counted on average across sample members. Each text category is coded 0 or 1, with 1 meaning the candidate had that variable in the application. For example, the text mining of the college degrees for the rated panel identified 62 categories, and the average candidate had 1 degree. The categories for this field approximated degree names, and each person had only 1 because this field only asked about the most recent degree. As another example, the text mining of all the jobs of the non-rated panel identified 132 categories, and the average candidate had 3.24, indicating the average candidate had about 3 previous jobs.

Looking across all of the text-mining results for the 14 text fields in the OTS applications shown in Table 71, we made three overall observations. First, the number of categories for each text field seems logical in the sense that fields with more variety of responses had more categories. So categories like Degree, Professional Affiliations, Current Job, Enlisted Duty Title, and Offenses had a relatively smaller number of categories compared to Achievements, Duties, Objectives, Interview Comments, and Letters.

Second, the number of categories for each text field was large, indicating there was a wide variation in the application information across candidates. This not only suggests that the jobs attract candidates from a wide range of backgrounds, which is likely desirable for the government/military to attract and represent the diversity of the U.S. population, and the large number indicates that the text categories capture many differences between candidates, which increases the likelihood of being able to statistically predict a criterion.

Third, the means showed that the average candidate was scored on many text categories, suggesting the text categories are measuring many aspects of the candidate's application. The standard deviations suggest that there is good variation across candidates on the text categories, which increases the likelihood of correlating with a criterion. There are also some differences between the results for the rated and non-rated samples. For example, the rated sample had much higher means and standard deviations on career achievements, personal achievements, and current duties.

Note that for text variables, missing information is counted as relevant information as opposed to removing it from the analysis like with numeric variables. That is because the lack of an experience or credential is meaningful (e.g., lack of professional affiliation, achievements, or jobs). To ensure the correctness of this approach, we compared correlations with OTS Board scores both counting and omitting missing data and found the correlations were slightly larger when missing information was counted.

The Excel spreadsheets in Appendices I and J show the category labels and means for each text field for the rated and non-rated applications, respectively. Appendix K contains a spreadsheet with frequencies on variables that are categorical but not amenable to text-mining, like names of colleges and military training.

UNIVARIATE RESULTS

Validity of Text Variables

Table 72 shows the univariate results for the text-mined variables. These are the correlations between the category counts for each text field and the OTS Board scores. Prior research with the Air Force discovered that counts of the text-mined categories was the best way to convert the variables into scores to predict criteria (see section 3.6 “Second Set of Analyses of Validity of Text Mining of Lackland Interview Answers”). That prior research also showed word count to be highly predictive, but that was not explored here because it was also highly correlated with category count and the length of “responses” are more uniform here given it is collected on an application form. A previous analysis also determined that the OTS Board scores are the primary criterion variable because it is a continuous variable, is most reflective of the board’s exact evaluation of candidate credentials, and is not influenced by the number of openings like the selection decisions (see section 4.1 “Description of Sample and Variables for Text Mining of Officer Training School Applications”).

Table 72 shows that many of the category counts of the 14 text fields were related to the OTS Board scores. About 10 of the 14 show significant correlations in 2 or more of the 4 panels ($p < .05$, 1-tailed): Career Achievements, Personal Achievements, Professional Affiliations, Personal/Outside Interests, Current Duties, All Jobs, All Duties, Objectives, Interview Comments, and Letters of Recommendation. The computed variable for supervisor jobs is also significant. The correlations were small but useful, averaging about .135 across all samples for these 11 text fields.

In general, the correlations were somewhat larger for the panel 2 samples (who lack enlisted experience) than for the panel 1 samples (who are currently enlisted Airmen). Perhaps this information is more meaningful for them because they do not have former Air Force enlisted experience. We also examined whether potential differences in range restriction (standard deviations in Table 71) might explain differences in the correlations between panels 1 and 2 (in Table 72). Panel 2 had larger standard deviations and larger correlations for professional affiliations, personal/outside interests, objectives, and letters of recommendation. Panel 2 had smaller standard deviations but still larger correlations for all jobs and all duties; and there was a mixed pattern for career achievements, personal achievements, current duties, supervisory experience, and interview comments. So there was not a clear pattern. Likewise, the larger standard deviations for the rated samples compared to the non-rated samples on career achievements, personal achievements, and current duties did not appear to create larger correlations. As such, a subjective review of the table only showed some evidence for a relationship, but considerable counterevidence. So we ran correlations between the size of the standard deviation and the size of the correlation with OTS Board scores across all panels in Table 72 and observed a correlation of .474, suggesting a fairly strong relationship. However, this analysis goes across text fields, and the text fields differ in average standard deviations. Although it might be argued that the text fields are comparable metrics in that they reflect counts of textual information and the differences in variance merely reflect the amount of information in the various text fields (and thus analyzing them together is legitimate), it might also suggest they are not comparable and this is creating a spurious relationship. Nevertheless, if this analysis is

legitimate, it means that the OTS Boards may have attended to text fields that varied more widely, and there was somewhat more variation for fields in panel 2 samples.

The text-mined variables for the letters of recommendation were of particular interest to the Air Force, partly because letters of reference are often not valid predictors based on the published literature (e.g., Muchinsky, 1979). Interest was greatest for panel 2s because the correlations were higher and the letter writers were different individuals than the interviewer, in contrast to panel 1s where the person was often the same. Therefore, we correlated the text variables with OTS Board scores for both panel 2s, and present the results in Appendix L due to their length. The variables are ranked by the size of the correlations. The text variables most highly correlated tended to be on more job-related topics (e.g., piloting, leadership, jobs, management, performance, teams, initiative, hard work, etc.). The few that were negative and significant were sometimes not as commonly job related (e.g., sports, school, etc.), but many also sounded job related. A total of 363 of the variables had correlations of .05 or greater. There was a small to moderate relationship between the size of the correlation and the mean score on the text variable, which is a reflection of the variance of the dichotomous variables ($r = .282$ for rated panel 2 and $.154$ for non-rated panel 2), suggesting that variance again played a role.

Table 72. Correlations between Text-Mining Category Counts and Board Scores for Officer Candidate School Applications

Text Field	Sample	Panel	N of Sample	N of Categories with 1%+ Responses	Correlation with Board Score	Mean	SD
College Degrees (Degree1)	Rated	1	287	50	0.09	1.08	0.54
	Rated	2	210	39	-0.039	1.05	0.65
	Non-Rated	1	1057	37	.068*	0.92	0.65
	Non-Rated	2	274	56	-0.011	1.18	0.70
Career Achievements	Rated	1	287	450	.257**	13.05	6.43
	Rated	2	210	345	.255**	8.94	7.39
	Non-Rated	1	1057	170	.300**	6.87	3.61
	Non-Rated	2	274	152	.163**	3.75	2.96
Personal Achievements	Rated	1	287	488	0.086	10.00	6.71
	Rated	2	210	417	.207**	10.47	7.58
	Non-Rated	1	1057	218	.057*	5.58	3.92
	Non-Rated	2	274	381	-0.023	7.80	5.94
Professional Affiliations	Rated	1	287	140	0.072	3.43	2.72
	Rated	2	210	121	.196**	2.97	3.57
	Non-Rated	1	1057	455	.075**	4.13	3.26
	Non-Rated	2	274	171	.215**	3.05	3.46
Personal/Outside Interest	Rated	1	287	209	0.014	7.06	3.31
	Rated	2	210	224	.158*	7.73	4.55
	Non-Rated	1	1057	153	0.019	5.89	2.83
	Non-Rated	2	274	279	.141**	7.40	4.31
Current Job	Rated	1	287	60	0.056	1.25	0.73
	Rated	2	210	32	-0.011	0.69	0.61
	Non-Rated	1	1057	35	0.035	0.87	0.73
	Non-Rated	2	274	43	0.038	0.71	0.54
Current Duties	Rated	1	287	452	0.01	12.23	5.70
	Rated	2	210	266	.242**	7.23	5.40
	Non-Rated	1	1057	245	.062*	7.37	4.06
	Non-Rated	2	274	246	.138*	5.01	3.69

Text Field	Sample	Panel	N of Sample	N of Categories with 1%+ Responses	Correlation with Board Score	Mean	SD
Supervisor	Rated	1	287	2	0.034	0.74	0.44
	Rated	2	210	2	.134*	0.30	0.46
	Non-Rated	1	1057	2	.100**	0.73	0.44
	Non-Rated	2	274	2	0.079	0.33	0.47
All Jobs	Rated	1	287	272	0.073	5.50	2.87
	Rated	2	210	115	.160**	3.04	1.51
	Non-Rated	1	1057	158	.128**	3.87	2.21
	Non-Rated	2	274	161	.150**	3.23	1.54
All Duties	Rated	1	287	1025	0.093	33.00	14.07
	Rated	2	210	444	.291**	16.39	10.83
	Non-Rated	1	1057	747	.126**	31.46	13.39
	Non-Rated	2	274	668	.153**	18.39	12.39
Enlistment Duty Titles	Rated	1	287	52	0.041	1.09	0.72
	Rated	2	210	NA	NA		
	Non-Rated	1	1057	36	0.044	0.95	0.78
	Non-Rated	2	274	NA	NA		
Offenses	Rated	1	287	38	0.041	0.72	1.20
	Rated	2	210	31	-0.075	0.64	1.06
	Non-Rated	1	1057	28	-0.037	0.56	0.98
	Non-Rated	2	274	30	0.051	0.49	0.89
Objectives	Rated	1	287	785	0.075	52.23	9.22
	Rated	2	210	518	.350**	35.89	13.61
	Non-Rated	1	1057	558	.059*	45.49	9.21
	Non-Rated	2	274	586	.196**	31.39	13.09
Interview Comments	Rated	1	287	803	.136*	27.61	10.36
	Rated	2	210	258	0.066	9.45	4.41
	Non-Rated	1	1057	522	.103**	26.60	10.20
	Non-Rated	2	274	313	.174**	8.99	4.70
Letters of Recommendation	Rated	1	287	727	.109*	34.00	7.83
	Rated	2	210	943	.303**	60.52	23.66

Text Field	Sample	Panel	N of Sample	N of Categories with 1%+ Responses	Correlation with Board Score	Mean	SD
	Non-Rated	1	1057	589	0.041	34.11	9.31
	Non-Rated	2	274	1413	.156**	68.97	28.48
<i>Note.</i> 1% for NR1 = 10, NR2 = 2, R1 = 2, R2 = 2. * $p < .10$ (1-tailed). ** $p < .05$ (1-tailed).							

Validity of Numeric Variables

Table 73 shows the correlations between the numeric application information and the Board scores. Again, many of the correlations are significant ($p < .05$, 1-tailed). The variables showing significant correlations in 2 or more of the 4 panels include: GPA for the most recent degree, number of jobs, all of the interview ratings, and all of the AFOQT scores. Military education year and highest grade (rank) were also significant, but they only applied to those in panel 1s. Also significant were GPAs for previous degrees, but few candidates had previous degrees; age of latest offense, but it also only applied to a subset of the sample; and year1 (year of first degree), but it had correlations with different signs in different samples and thus did not cross validate. The correlations are larger in size than those with the text variables, often ranging in the .30s or larger.

As with the text variables, the correlations were larger for those without prior Air Force enlisted experience (the panel 2 samples). The differences are most stark for the interview ratings, but the differences are also larger for the AFOQT scores. The appealing interpretation is that application information is more meaningful when candidates lack Air Force experience, but it raises the question of what other information is being used to evaluate those with experience. There are few instances where the correlations are much larger for the enlisted samples (panel 1s), although they did have some additional information on enlistments. We again examined whether potential differences in range restriction (standard deviations in Table 73) might explain differences in the correlations between panels 1 and 2 (in Table 73). Although there were exceptions, the means were lower and the standard deviations were higher especially for the overall evaluation and to some extent the AFOQT scores for panel 2, thus offering a potential partial explanation for the larger correlations. That is, the candidates were less skilled and more varied, so the information was more useful for making Board ratings. We did not consider it legitimate to conduct an analysis of the correlation between the standard deviations with the correlations with OTS Board scores for the numeric variables because they are on different scales. However, as a partial test we conducted a correlation across the 9 component ratings of the interview and across the AFOQT Verbal and Quantitative composite scores, and found them to be .868 and .654, respectively, thus again suggesting a strong relationship.

The Air Force expressed interest in whether “job hopping” might be viewed negatively by the OTS Boards. We tested this in two ways. First, we calculated the average jobs per year and found it to be uncorrelated with OTS Board scores (Table 73). Second, we analyzed whether a curvilinear relationship might be present, such that either too many or too few jobs might be viewed negatively, by regressing the number of jobs and the number of jobs squared on to the OTS Board scores. Again, we found no significant effects for any of the panels (presented in Appendix M). Although the candidates had a relatively large number of jobs with short tenure each, job hopping did not appear to be viewed negatively in this context. In fact, there was a small positive correlation between number of jobs and OTS Board scores for 3 of the 4 panels (Table 73). Having numerous jobs may be viewed as greater experience, and job hopping was not viewed negatively for these early-career candidates.

Table 73. Correlations between Numeric Application Information and Board Scores for Officer Candidate School Applications for Rated and Non-Rated Boards

	Rated, Panel 1				Rated, Panel 2				Non-Rated, Panel 1				Non-Rated, Panel 2			
	N	M	SD	Board Scores	N	M	SD	Board Scores	N	M	SD	Normalized Board Scores	N	M	SD	Board Scores
Board Score	287	26.89	0.99		210	27.03	1.18		1057	23.93	1.38		274	27.16	1.37	
Year1	278	2017.23	2.25	.138*	205	2016.71	1.81	-0.053	1038	2016.91	2.94	.154**	266	2016.22	2.74	-.162**
GPA1	260	3.55	0.40	.362**	207	3.28	0.39	.389**	941	3.57	0.40	.365**	265	3.27	0.42	.336**
Year2	250	2015.61	2.29	0.059	55	2015.60	2.77	-0.05	963	2014.95	2.72	-0.025	87	2014.44	3.68	-0.113
GPA2	69	3.45	0.47	.393**	45	3.52	0.42	.303*	345	3.44	0.43	.345**	78	3.48	0.41	.226*
Year3	109	2013.72	3.30	-0.082	2	-	-	-	512	2013.67	3.42	-0.063	11	2013.09	4.57	-0.033
GPA3	43	3.25	0.52	.327*	3	-	-	-	189	3.38	0.47	.151*	12	3.46	0.40	.563*
Military Education Year	284	2015.89	2.77	.117*	20	2014.65	2.21	-0.009	1043	2016.01	2.79	.112**	35	2013.86	4.35	-0.2
Current Job Year Started	286	2015.90	1.90	-0.052	206	2016.74	1.82	-0.01	1049	2016.11	1.64	-0.001	269	2016.56	1.98	-0.073
Number of Jobs	286	4.83	1.86	0.069	206	3.99	1.28	.116*	1051	5.18	2.05	.104**	269	3.78	1.28	.173**
Year Started First Job	286	2010.64	3.30	0.019	206	2012.56	2.71	-.102	1051	2010.05	3.32	-0.122**	269	2011.95	3.36	-.231**
Jobs per Year	286	0.66	0.38	.056	206	.42	1.85	-.080	1051	.64	.34	-.021	269	3.36	.35	-.069
Highest Grade	287	5.25	.92	.155**	206				1057	5.42	.92	.288**				
Pilot License	286	0.04	0.19	0.021					1037	0.01	0.10	0.025				
Commercial Pilot License	286	0.00	0.00	.c					1037	0.00	0.03	0.025				
Previous Application for Commissioned Program (1 = yes, 0 = no)	285	0.26	0.44	0.014					1039	0.27	0.45	-0.028				
Number of Applications	285	0.36	0.71	0.004					1041	0.38	0.73	-0.019				
Active Duty Service Commitment (1 = yes, 0 = no)	247	0.02	0.13	-0.047					929	0.02	0.13	-.055*				

	Rated, Panel 1				Rated, Panel 2				Non-Rated, Panel 1				Non-Rated, Panel 2			
	N	M	SD	Board Scores	N	M	SD	Board Scores	N	M	SD	Normalized Board Scores	N	M	SD	Board Scores
Eliminated from Course (1 = yes, 0 = no)	284	0.01	0.08	0.058					1040	0.00	0.04	-0.024				
Number of Previous Enlistments	286	1.30	0.65	0.024					1035	1.33	0.67	0.034				
Number of Violations of Civil or Military Law	286	1.69	1.76	-0.007	137	2.30	1.85	-0.08	1041	1.67	1.74	-.079**	159	2.20	1.69	0.044
Latest age	192	22.98	4.08	-0.111	135	21.87	2.95	.167*	702	23.89	4.34	-0.001	158	22.37	3.60	.169*
Detained, Confined, or on Probation (1 = yes, 0 = no)	276	0.08	0.27	-0.058					1009	0.07	0.25	-.094**				
Drugs or alcohol (1 = yes, 0 = no)	276	0.11	0.32	-0.019					1009	0.08	0.28	-0.048				
Appearance	285	4.97	0.19	.147**	206	4.58	0.72	.219**	1047	4.97	0.21	.169**	261	4.55	0.74	.166**
Confidence, Maturity	285	4.98	0.16	0.051	208	4.41	0.73	.417**	1047	4.97	0.18	.171**	268	4.36	0.75	.326**
Attitude	285	4.99	0.12	0.077	208	4.56	0.62	.344**	1047	4.98	0.13	.147**	268	4.49	0.69	.302**
Motivation	285	5.00	0.06	0.053	207	4.53	0.74	.497**	1047	4.99	0.09	.071*	268	4.49	0.74	.394**
Work Experience	285	4.94	0.25	0.061	208	4.04	0.93	.396**	1047	4.93	0.27	.227**	268	4.07	0.93	.369**
Leadership Potential	285	4.97	0.19	.138**	207	4.18	0.85	.466**	1047	4.97	0.20	.159**	267	4.18	0.85	.359**
Mental Alertness	285	4.99	0.12	0.08	208	4.36	0.77	.445**	1047	4.98	0.14	.143**	267	4.32	0.79	.402**
Communication Skills	285	4.96	0.19	0.088	207	4.39	0.75	.376**	1047	4.95	0.23	.175**	267	4.34	0.83	.318**
Potential to Complete Program	285	4.99	0.10	.179**	208	4.48	0.67	.516**	1047	4.99	0.12	.135**	268	4.38	0.78	.371**
Overall Evaluation	285	4.99	0.12	.149**	208	4.31	0.76	.504**	1047	4.98	0.16	.146**	268	4.27	0.81	.414**
Pilot	287	67.57	18.71	.357**	210	64.12	24.07	.468**	1057	49.51	24.45	.082**	274	55.67	25.52	.257**
CSO	287	70.88	20.41	.306**	210	70.18	21.37	.446**	1057	61.75	24.96	.148**	274	66.85	24.83	.308**

	Rated, Panel 1				Rated, Panel 2				Non-Rated, Panel 1				Non-Rated, Panel 2			
	N	M	SD	Board Scores	N	M	SD	Board Scores	N	M	SD	Normalized Board Scores	N	M	SD	Board Scores
ABM	287	65.60	19.33	.361**	210	64.71	22.89	.530**	1057	51.33	24.22	.109**	274	60.24	25.49	.281**
OSM	287	62.96	25.94	0.036	210	56.40	26.46	.140*	1057	60.62	26.39	.144**	274	55.01	28.22	0.073
PCSM	287	34.19	20.85	.280**	210	33.71	27.18	.386**								
Acad	287	51.41	20.94	.287**	210	58.08	23.52	.392**	1057	47.77	21.63	.145**	274	61.45	23.44	.314**
Verbal	287	59.80	23.29	.190**	210	63.22	23.34	.289**	1057	58.05	24.33	.173**	274	63.02	24.88	.292**
Quant	287	43.86	22.80	.244**	210	51.84	25.95	.370**	1057	39.18	21.87	.065*	274	57.32	25.79	.219**
VerbalAnlog_T	287	50.31	14.03	.139**	210	52.64	13.16	.207**	949	52.29	8.39	.121**	263	54.33	8.01	.264**
ArithReason_T	287	48.89	13.54	.177**	210	50.81	13.46	.235**	949	49.73	7.90	.067*	263	53.37	9.20	.191**
WordKnow_T	287	51.01	14.33	.137*	210	52.70	13.39	.119*	949	53.38	8.92	.144**	263	54.58	8.83	.251**
MathKnow_T	287	44.31	12.57	.200**	210	47.86	12.89	.273**	949	44.96	7.27	.102**	263	52.20	8.86	.204**
ReadComp_T	287	51.08	13.60	.141**	210	51.54	12.48	.208**	949	52.80	7.43	.216**	263	53.64	7.94	.227**
PhysScience_T	287	44.76	12.89	.152**	210	47.07	12.87	.200**	949	44.57	8.46	.079**	263	50.17	9.63	.219**
TableRead_T	287	53.94	14.61	.145**	210	53.30	13.86	.264**	949	53.84	9.29	.085**	263	53.92	9.63	.124*
InstruComp_T	287	53.17	13.89	.144**	210	52.15	13.04	.172**	949	50.13	9.35	0.045	263	50.62	8.96	.134*
BlockCount_T	287	55.64	15.19	.177**	210	55.46	13.89	.241**	949	54.91	9.36	.081**	263	55.73	9.37	.184**
AviatInfo_T	287	53.30	14.32	.172**	210	52.68	14.26	.214**	949	50.59	8.23	0.048	263	49.95	8.61	.198**
* $p < .10$ (1-tailed). ** $p < .05$ (1-tailed). c Cannot be computed because at least one of the variables is constant.																

Intercorrelations among Text and Numeric Variables

The final univariate analysis examined intercorrelations among the variables. Intercorrelations show how the various predictors relate to each other. Also, they help inform the amount of multicollinearity to expect in the multivariate analyses. Tables 74 to 77 contain the intercorrelations among the variables to be retained in the multivariate analyses (as explained below). Appendix N contains the intercorrelations among all variables. The tables have three panels: the intercorrelations among the text variables, the intercorrelations among the numeric variables, and the correlations between the text and numeric variables.

For the text variables, the intercorrelations seem logical, with small positive correlations among the achievements, affiliations, and interests variables; positive correlations among jobs and duties variables; and small positive correlations among the essay-type responses (objectives, letters, and interview notes). In addition, there were often other small correlations across all of these categories of variables.

For the numeric variables, the intercorrelations also seem logical, with moderate to large correlations among the AFOQT scores, especially the pilot-related scores, but there were only occasional small positive correlations among and with the other variables (e.g., GPA, number of jobs, rank, and overall evaluation).

Between the text and numeric variables, the text variables on jobs and duties were positively related to the numeric variables on number of jobs and highest rank for those in panel 1s, which makes sense. There were also scattered positive correlations between the text variables and GPA, overall evaluation, and rarely with AFOQT scores.

The Air Force expressed particular interest in correlations with Officer Selection Method (OSM) scores, which are presumed to measure leadership potential and adaptability. Results showed only scattered small positive correlations with other variable such as GPA, rank, number of jobs, achievements, duties, objectives, and letters. A consistent trend is difficult to spot for most panels. However, it shows a remarkable number of correlations in the non-rated panel 2 where it correlated with almost all other variables, both text and numeric.

In terms of the expected multicollinearity, the positive intercorrelations suggest that it will be an issue to some extent, but not as extreme as some contexts, such as when all the predictors are aptitude test scores. This means there will be differences between the expected results based on the correlations and the betas observed in regression analyses. That is, the multicollinearity may reduce the size of the betas due to the correlations with other variables in the model. Sometimes, this problem will even cause betas to change signs. Thus, the final models used for selection of candidates might have weights that consider multiple sources of input, such as the correlations and judgment, and not be based solely on the beta weights.

Table 74. Intercorrelations of Variables in Final Model for Rated, Panel 1

Intercorrelations among Text Variables											
	1	2	3	4	5	6	7	8	9	10	
1. Career Achievement											
2. Personal Achievement	.273**										
3. Professional Affiliation	.370**	.228**									
4. Personal Interests	.141**	.217**	0.051								
5. Current Duties	.186**	0.055	.100*	0.065							
6. Supervisor	.103*	-0.069	0.057	0.013	-0.011						
7. All Jobs	.197**	-0.091	.132*	0.031	-0.056	.448**					
8. All Duties	.317**	0.008	.196**	0.009	.462**	.293**	.499**				
9. Objectives	.185**	0.050	0.085	0.066	.182**	0.069	.145**	.291**			
10. Interview Comments	.110*	0.051	-0.007	0.073	0.025	-0.009	0.063	.181**	.166**		
11. Letters of Recommendation	.194**	.097*	.115*	.216**	.141**	0.086	.106*	.156**	.188**	.105*	
N = 287, * <i>p</i> < .10 (1-tailed), ** <i>p</i> < .05 (1-tailed).											
Intercorrelations among Numeric Variables											
	1	2	3	4	5	6	7	8	9	10	11
1. GPA1											
2. Military Education Year	-0.003										
3. Number of Jobs	-0.052	0.041									
4. Highest Grade (Rank)	.256**	-.100*	.311**								
5. Overall Evaluation	0.041	-0.027	0.053	0.064							
6. Pilot	0.002	-0.001	0.069	0.071	0.032						
7. CSO	-0.056	0.045	.127*	0.033	0.012	.485**					
8. ABM	-0.044	0.036	0.091	-0.007	0.010	.892**	.691**				
9. PCSM	0.023	-0.025	.099*	0.056	0.022	.740**	.323**	.633**			
10. OSM	.118*	0.047	0.054	.118*	0.004	-0.074	-0.013	-0.070	-0.050		
11. Verbal	-.103*	-0.040	0.075	-0.013	0.027	.107*	.533**	.232**	0.082	-0.073	
12. Quant	-.152**	0.041	0.034	-.200**	-0.075	.422**	.371**	.600**	.292**	-0.073	.225**
N = 287, * <i>p</i> < .10 (1-tailed), ** <i>p</i> < .05 (1-tailed).											

Intercorrelations between Numeric and Text Variables												
	GPA1	Military Education Year	Number of Jobs	Highest Grade (Rank)	Overall Evaluation	Pilot	CSO	ABM	PCSM	OSM	Verbal	Quant
Career Achievement	.121*	0.019	.158**	.318**	0.039	-0.029	0.002	-0.035	-0.013	0.071	-0.069	-0.092
Personal Achievement	.119*	.126*	-0.035	-0.090	0.005	-0.037	0.026	0.004	-0.017	0.070	-0.068	0.050
Professional Affiliation	0.064	0.089	.159**	0.086	0.074	0.009	0.040	0.019	0.034	.105*	-0.076	-0.045
Personal Interests	0.039	0.068	-0.049	0.074	0.058	0.019	0.018	0.010	0.010	0.060	-0.053	-0.079
Current Duties	0.013	-0.033	-.225**	0.087	-0.005	-0.088	-0.073	-.107*	-0.050	0.049	0.000	-.123*
Supervisor	-0.010	-0.030	.368**	.228**	-0.002	0.038	-0.026	0.014	-0.003	0.067	-0.004	-0.031
All Jobs	0.057	-0.077	.652**	.336**	0.001	0.089	0.069	0.059	0.078	0.024	0.014	-0.025
All Duties	.127*	0.071	.432**	.392**	0.078	-0.059	0.027	-0.052	-0.046	.141**	0.036	-.153**
Objectives	0.094	0.062	0.028	.099*	-0.008	-0.004	-0.003	0.011	0.013	0.062	-0.058	-0.019
Interview Comments	-0.018	0.083	.102*	0.006	.128*	-0.007	0.070	0.007	-0.030	-0.049	0.084	-0.009
Letters of Recommendation	0.087	0.051	0.057	.100*	0.061	-0.027	-0.093	-0.035	0.005	.183**	-.145**	-0.068
<i>N</i> = 287, * <i>p</i> < .10 (1-tailed), ** <i>p</i> < .05 (1-tailed).												

Table 75. Intercorrelations of Variables in Final Model for Rated, Panel 2

Intercorrelations among Text Variables										
	1	2	3	4	5	6	7	8	9	10
1. Career Achievement										
2. Personal Achievement	.530**									
3. Professional Affiliation	.467**	.468**								
4. Personal Interests	.422**	.551**	.448**							
5. Current Duties	.117*	.153*	0.061	.264**						
6. Supervisor	0.038	0.016	0.032	0.044	.116*					
7. All Jobs	0.11	0.065	0.013	.130*	.261**	.229**				
8. All Duties	.141*	.136*	0.097	.223**	.796**	.200**	.502**			
9. Objectives	0.053	.123*	.126*	0.09	.264**	.127*	0.098	.294**		
10. Interview Comments	-0.057	-0.02	0.044	-0.006	-.115*	0.078	0.012	-0.112	0.089	
11. Letters of Recommendation	.129*	.214**	0.111	.127*	0.105	.175**	0.088	0.111	.211**	.142*
<i>N</i> = 210, * $p < .10$ (1-tailed), ** $p < .05$ (1-tailed).										

Intercorrelations among Numeric Variables									
	1	2	3	4	5	6	7	8	9
1. GPA1									
2. Number of Jobs	0.07								
3. Overall Evaluation	0.101	0.056							
4. Pilot	-0.101	0.035	.168**						
5. CSO	0.095	0.077	0.092	.525**					
6. ABM	0.016	0.079	.142*	.912**	.740**				
7. PCSM	-0.078	0.009	.196**	.852**	.289**	.694**			
8. OSM	0.018	.156*	0.096	0.025	.122*	0.047	-0.052		
9. Verbal	0.101	-0.056	0.077	.174**	.575**	.312**	0.055	0.085	
10. Quant	.161*	0.037	-0.029	.531**	.556**	.711**	.357**	-0.072	.375**
<i>N</i> = 210, * $p < .10$ (1-tailed), ** $p < .05$ (1-tailed).									

Intercorrelations between Numeric and Text Variables										
	GPA1	Number of Jobs	Overall Evaluation	Pilot	CSO	ABM	PCSM	OSM	Verbal	Quant
Career Achievement	.176**	0.047	0.066	0.071	0.103	0.093	0.077	0.041	0.012	0.047
Personal Achievement	.129*	.137*	0.113	0.077	0.045	0.106	0.071	0.015	-0.05	0.033
Professional Affiliation	.130*	0.027	0.077	.127*	0.105	.122*	.148*	0.03	0.032	0.087
Personal Interests	0.096	0.111	0.008	0.095	0.015	0.085	0.059	0.106	-.119*	0.027
Current Duties	0.052	.176**	0.06	0.063	0.098	.150*	0.004	.147*	0.072	.140*
Supervisor	-0.045	.164**	0.073	.125*	-0.028	0.091	.188**	0.062	0.014	-0.014
All Jobs	0.037	.565**	-0.024	0.091	0.107	.139*	0.056	0.091	-0.093	0.06
All Duties	0.099	.460**	0.092	0.097	0.098	.166**	0.07	.199**	-0.022	.154*
Objectives	0.098	0.108	.141*	.168**	.226**	.238**	.176**	.203**	0.113	.167**
Interview Comments	-0.067	-0.071	.121*	0.064	-0.01	0.022	0.032	-0.033	0.005	-0.07
Letters of Recommendation	0.084	-0.005	.120*	.274**	.254**	.289**	.241**	0.034	.205**	.204**
<i>N</i> = 210, * <i>p</i> < .10 (1-tailed), ** <i>p</i> < .05 (1-tailed).										

Table 76. Intercorrelations of Variables in Final Model for Non-Rated, Panel 1

Intercorrelations among Text Variables										
	1	2	3	4	5	6	7	8	9	10
1. Career Achievement										
2. Personal Achievement	.279**									
3. Professional Affiliation	.206**	.182**								
4. Personal Interests	.166**	.230**	.114**							
5. Current Duties	.194**	.106**	.105**	.082**						
6. Supervisor	.143**	.077**	.071*	.069*	0.039					
7. All Jobs	.171**	.065*	.051*	0.037	-0.033	.440**				
8. All Duties	.267**	.098**	.132**	.121**	.497**	.269**	.407**			
9. Objectives	.171**	.080**	.162**	.144**	.129**	.152**	.162**	.201**		
10. Interview Comments	.079**	0.003	-0.007	0.044	0.023	.101**	.083**	.120**	.228**	
11. Letters of Recommendation	.119**	.112**	.057*	.123**	.062*	.090**	.067*	.126**	.181**	.136**
<i>N</i> = 1,057, * <i>p</i> < .10 (1-tailed), ** <i>p</i> < .05 (1-tailed).										

Intercorrelations among Numeric Variables							
	1	2	3	4	5	6	7
1. GPA1							
2. Military Year Education	.089**						
3. Number of Jobs	.130**	.056*					
4. Highest Grade (Rank)	.271**	-.054*	.333**				
5. Overall Evaluation	.084**	0.005	0.043	0.032			
6. OSM	0.029	0.022	-0.023	0.017	0.03		
7. Verbal	0.018	0.01	0.013	0.032	-0.023	-0.02	
8. Quant	-.078**	.066*	-.075**	-.189**	-.100**	-.081**	.325**
<i>N</i> = 1,057, * <i>p</i> < .10 (1-tailed), ** <i>p</i> < .05 (1-tailed).							

Intercorrelations between Numeric and Text Variables								
	GPA1	MEYear	Number of Jobs	Highest Grade (Rank)	Overall Evaluation	OSM	Verbal	Quant
Career Achievement	.181**	0.037	.110**	.306**	.064*	.125**	0.004	-.087**
Personal Achievement	0.041	0.018	0.008	-0.017	.095**	.072**	-.084**	-0.016
Professional Affiliation	.066*	.079**	.074**	.063*	0.035	.059*	-.147**	-.101**
Personal Interests	.068*	0.049	0.002	0.049	-0.004	0.039	-.057*	-0.011
Current Duties	.086**	.052*	-.162**	.082**	0.019	0.018	-0.024	-.064*
Supervisor	.101**	0.011	.304**	.297**	0.014	0.023	-.079**	-.100**
All Jobs	.120**	0.035	.630**	.357**	0.022	-0.032	-0.014	-.095**
All Duties	.181**	.052*	.440**	.336**	.053*	0.021	-0.023	-.151**
Objectives	.070*	.095**	.071*	.074**	0.015	0.045	-.086**	-0.02
Interview Comments	0.041	.076**	.072*	.119**	0.016	-0.011	0.035	0.008
Letters of Recommendation	0.016	0.04	0.026	0.048	.074**	0.021	-0.012	-0.032
<i>N</i> = 1,057, * <i>p</i> < .10 (1-tailed), ** <i>p</i> < .05 (1-tailed).								

Table 77. Intercorrelations of Variables in Final Model for Non-Rated, Panel 2

Intercorrelations among Text Variables										
	1	2	3	4	5	6	7	8	9	10
1. Career Achievement										
2. Personal Achievement	.416**									
3. Professional Affiliation	.361**	.346**								
4. Personal Interests	.311**	.423**	.280**							
5. Current Duties	.121*	0.1	-0.053	.179**						
6. Supervisor	0.004	-0.013	0.019	-0.027	0.084					
7. All Jobs	0.09	.108*	.135*	.173**	.202**	.261**				
8. All Duties	.191**	.135*	.114*	.242**	.700**	.133*	.435**			
9. Objectives	.227**	.223**	.254**	.246**	.206**	0.023	.148**	.316**		
10. Interview Comments	0.025	-0.012	0.049	-0.01	0.01	0.026	0.061	0.028	0.077	
11. Letters of Recommendation	.139*	.192**	.156**	.202**	.106*	-0.007	.162**	.178**	.252**	0.021
<i>N</i> = 274, * <i>p</i> < .10 (1-tailed), ** <i>p</i> < .05 (1-tailed).										

Intercorrelations among Numeric Variables					
	1	2	3	4	5
1. GPA1					
2. Number of Jobs	.127*				
3. Overall Evaluation	.243**	.137*			
4. OSM	.113*	.180**	0.073		
5. Verbal	.127*	0.038	.151**	0.014	
6. Quant	-0.087	-0.082	-0.073	-.146**	.301**
<i>N</i> = 274, * <i>p</i> < .10 (1-tailed), ** <i>p</i> < .05 (1-tailed).					

Intercorrelations between Numeric and Text Variables						
	GPA1	Number of Jobs	Overall Evaluation	OSM	Verbal	Quant
Career Achievement	.239**	0.08	.201**	.102*	0.061	-0.067
Personal Achievement	.114*	.103*	0.099	.121*	0.036	-0.008
Professional Affiliation	.181**	.107*	.150**	.134*	.119*	0.064
Personal Interests	.145**	.174**	0.03	.108*	0.044	0.019
Current Duties	.139*	.147**	0.047	.158**	-0.082	-0.096
Supervisor	-0.095	.215**	0.063	.156**	0.05	-0.056
All Jobs	.128*	.714**	0.07	.209**	0.025	-0.045
All Duties	.208**	.507**	.133*	.220**	-0.067	-.138*
Objectives	.258**	0.099	.106*	.160**	0.044	-0.067
Interview Comments	0.084	0.057	.204**	-0.015	0.076	-0.097
Letters of Recommendation	.204**	0.066	.124*	.135*	.144**	0.063
<i>N</i> = 274, * <i>p</i> < .10 (1-tailed), ** <i>p</i> < .05 (1-tailed).						

MULTIVARIATE RESULTS

Multivariate analyses allow a determination of the overall level of prediction of the OTS Board scores from the application information. They also allow an evaluation of the incremental prediction of the text variables beyond the numeric variables, and vice versa.

Prior research for the Air Force (cited above) revealed that capitalization on chance may be a concern when using multivariate analyses with text variables because the number of variables was very large compared to the sample size, and cross-validation was necessary or methods should be used that do not allow capitalization on chance. The categories extracted by text-mining cross-validated well previously, but the primary concern was that the regression model for combining text categories to predict criteria did not cross-validate well because of the variable-to-sample-size ratio. We demonstrated that using category counts where each category gets an equal weight was superior to differential weighting (such as using regression), which is why we are using category counts here.

However, capitalization on chance will again be an issue when we combine variables here (including both text and numeric variables) to predict the OTS Board scores. We propose three approaches to address capitalization on chance:

1. One approach is to use unit weighted composites that do not capitalize on chance and do not require cross-validation because differential weights are not estimated. In this approach, the variables are standardized and an average is computed. This approach is very common in personnel selection because it is highly robust (generalizable) and not greatly influenced by sampling variation. It is especially useful when the variables combined have similar correlations, but less optimal when the correlations vary widely because the less valid variables dilute the more valid variables.

2. Given that the correlations above indicate that some variables are clearly more predictive, differential weighting will likely increase prediction, so we used multiple regression. We may in this case be able to rely on the estimated “shrunk” multiple correlations to estimate the cross-validities, which are labeled “adjusted” multiple correlations in the tables. They are based on widely accepted statistical estimates of the cross-validated correlations based on the number of variables and the sample size. They could not be used with the text variables because they over-correct then the number of variables is extremely large compared to the sample size. However, in the current situation, the number of variables will not be extreme compared to the sample size, so they provide reasonable estimates, and thus further cross-validation may not be needed.

3. Another approach is to cross-validate the regressions. We had used K-fold cross-validation with the Lackland study because it does not suffer as badly from reduced sample sizes as other approaches do, such as what happens when splitting the sample into development and testing subsamples. The K-fold procedure is time consuming and may not be needed given that the adjusted estimates are likely to be accurate in this context.

Another potential source of capitalization on chance is the variables to include in the model. However, it seems fairly safe to view the four panels as cross-validations. Thus, we will use only those variables that hold up fairly well across samples in our final models to avoid concerns about capitalization on chance by not including the other variables. The variables we

selected from Tables 72 and 73 were summarized in the univariate results section above and are summarized in Table 78. The rules we followed were (a) to include variables that cross-validated in at least 2 of the 4 panels, and (b) to try to use the same variables for both rated and non-rated and for both panel 1 and 2 to the extent possible. We included all 11 significant text variables for all samples. Of the numeric variables, we included GPA1, number of jobs, overall evaluation, OSM, AFOQT Verbal, and Quantitative composites for all jobs. For rated jobs, we also included the flying-related composite scores (Pilot, CSO, ABM, and PCSM). For panels 1s, we also included military education year and highest grade (rank) because they are only relevant to those with Air Force experience. More numeric variables were significant but they were redundant, such as the individual ratings of the interview (which overlap with the overall evaluation) and the AFOQT subtest scores (which overlap with the composites).

Table 79 shows the correlation between the unit-weighted composite of these variables and the OTS Board scores for the 4 panels. They are .448 for rated panel 1, .680 for rated panel 2, .360 for non-rated panel 1, and .425 for non-rated panel 2. These values are better than the best individual predictors, but they might be improved by an approach that takes into account the wide variation in the validity of individual predictors, such as regression.

Tables 80 to 83 show the regressions for the four panels. The multiple correlation is .651 for rated panel 1 (Table 80), .780 for rated panel 2 (Table 81), .529 for non-rated panel 1 (Table 82), and .601 for non-rated panel 2 (Table 83). The tables also show the adjusted *R*-squares (which we converted back to *R*s by taking the square roots). They are .606, .750, .515, and .563, respectively.

Tables 80 to 83 also show the incremental contribution of the text variables beyond the numeric variables because the text variables were entered in step 2. The incremental *R*-squared (and adjusted *R*-squared) values are .080 (.055), .036 (.013), .047 (.039), and .065 (.037), respectively. When the *p* values are recalculated to reflect 1-tailed tests, all are significant at $p < .05$. Thus, the incremental contribution of the text variables averages 5.7% (3.6% adjusted) across samples. Note that 3.6% of variance explained is equivalent to a correlation of $r = .19$, which is often considered a meaningful size in personnel selection. It is noteworthy that the incremental contribution of the text variables is smaller for rated panel 2 perhaps because the overall prediction was greatest there, thus resulting in less room for improvement.

Tables 84 to 87 shows the regressions with the order of the steps reversed, so they show the value of the text variables by themselves. The multiple correlation for just the text variables is .312 (.224 adjusted) for rated panel 1 (Table 84), .436 (.379 adjusted) for rated panel 2 (Table 85), .357 (.342 adjusted) for non-rated panel 1 (Table 86), and .356 (.298 adjusted) for non-rated panel 2 (Table 87). These tables also show the incremental variance predicted by the numeric variables beyond the text variables. The incremental adjusted *R*-squares are .317, .419, .148, and .228, respectively. Thus, the incremental contribution of the numeric variables beyond the text variables averages 27.8%, which is much greater than the reverse.

Table 78. Final Variables in Selected for Multivariate Analyses

	Rated, Panel 1	Rated, Panel 2	Non-Rated Panel 1	Non-Rated, Panel 2
Numeric Variables				
GPA1	X	X	X	X
Military Education Year	X		X	
Number of Jobs	X	X	X	X
Highest Grade (Rank)	X		X	
Overall Evaluation	X	X	X	X
Pilot	X	X		
CSO	X	X		
ABM	X	X		
PCSM	X	X		
OSM	X	X	X	X
Verbal	X	X	X	X
Quant	X	X	X	X
Text Variables				
Career Achievement	X	X	X	X
Personal Achievements	X	X	X	X
Professional Affiliations	X	X	X	X
Personal/Outside Interest	X	X	X	X
Current Duties	X	X	X	X
Supervisor	X	X	X	X
All Jobs	X	X	X	X
All Duties	X	X	X	X
Objectives	X	X	X	X
Interview Comments	X	X	X	X
Letters of Recommendation	X	X	X	X

Table 79. Correlations between Unit-Weighted Composite of Numeric and Text Variables and Board Scores

	Rated		Non-Rated	
	Panel 1	Panel 2	Panel 1	Panel 2
Unit-Weighted Composite Correlation	.448	.680	.360	.425
<i>Note.</i> See Table 4 for the list of variables in each model.				

Table 80. Regression of Board Score onto Numeric Variables (Step 1) and Text Variables (Step 2) for Rated, Panel 1

	Model I					Model II				
	Unstandardized Coefficients		Standardized Coefficients			Unstandardized Coefficients		Standardized Coefficients		
DV = Board Scores	B	Std. Error	Beta	t	p-value	B	Std. Error	Beta	t	p-value
(Constant)	-61.27	40.07		-1.53	0.13	-56.35	39.61		-1.42	0.16
Numeric Variables										
GPA1	0.89	0.13	0.37	6.64	0.00**	0.89	0.13	0.37	6.78	0.00**
Military Education Year	0.04	0.02	0.10	1.93	0.06*	0.04	0.02	0.10	1.82	0.07*
Number of Jobs	-0.01	0.03	-0.02	-0.26	0.80	-0.02	0.04	-0.04	-0.51	0.61
Highest Grade (Rank)	0.09	0.06	0.08	1.40	0.16	-0.01	0.07	-0.01	-0.08	0.94
Overall Evaluation	1.18	0.41	0.15	2.87	0.01**	1.05	0.40	0.13	2.62	0.01**
Pilot	0.01	0.01	0.24	1.56	0.12	0.02	0.01	0.30	1.99	0.05*
CSO	0.01	0.00	0.12	1.26	0.21	0.01	0.00	0.13	1.39	0.17
ABM	-0.01	0.01	-0.13	-0.70	0.49	-0.01	0.01	-0.17	-0.98	0.33
PCSM	0.01	0.00	0.10	1.14	0.26	0.00	0.00	0.08	0.97	0.34
OSM	0.00	0.00	0.03	0.63	0.53	0.00	0.00	0.03	0.58	0.56
Verbal	0.00	0.00	0.07	1.03	0.30	0.00	0.00	0.09	1.45	0.15
Quant	0.01	0.00	0.21	2.91	0.00**	0.01	0.00	0.23	3.23	0.00**
Text Variables										
Career Achievement						0.04	0.01	0.25	4.12	0.00**
Personal Achievement						0.00	0.01	-0.02	-0.39	0.70
Professional Affiliation						-0.02	0.02	-0.05	-0.83	0.41
Personal Interests						-0.01	0.02	-0.04	-0.67	0.51
Current Duties						0.00	0.01	0.01	0.12	0.91
Supervisor						0.13	0.13	0.06	1.04	0.30
All Jobs						0.00	0.03	0.00	-0.06	0.96
All Duties						0.00	0.01	-0.04	-0.49	0.62
Objectives						0.00	0.01	0.04	0.68	0.50

	Model I					Model II				
	Unstandardized Coefficients		Standardized Coefficients			Unstandardized Coefficients		Standardized Coefficients		
DV = Board Scores	B	Std. Error	Beta	t	p-value	B	Std. Error	Beta	t	p-value
Interview Comments						0.01	0.01	0.11	2.14	0.03**
Letters of Recommendation						0.01	0.01	0.10	1.88	0.06*
<i>N</i> = 287. * <i>p</i> < .10 (1-tailed). ** <i>p</i> < .05 (1-tailed).										

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
I	.586	0.344	0.312	0.8067	0.344	10.661	12	244	0
II	.651	0.424	0.367	0.7733	0.08	2.956	11	233	0.001
<i>N</i> = 287.									

Table 81. Regression of Board Score onto Numeric Variables (Step 1) and Text Variables (Step 2) for Rated, Panel 2

	Model I					Model II				
	Unstandardized Coefficients		Standardized Coefficients			Unstandardized Coefficients		Standardized Coefficients		
DV = Board Scores	B	Std. Error	Beta	t	p-value	B	Std. Error	Beta	t	p-value
(Constant)	20.12	0.55		36.75	0.00	20.07	0.57		35.20	0.00
Numeric Variables										
GPA1	0.92	0.13	0.35	7.06	0.00**	0.87	0.13	0.34	6.63	0.00**
Number of Jobs	0.02	0.04	0.03	0.55	0.58	-0.01	0.05	-0.02	-0.25	0.80
Overall Evaluation	0.49	0.07	0.36	7.27	0.00**	0.47	0.07	0.34	6.91	0.00**
Pilot	0.00	0.01	0.08	0.41	0.68	0.01	0.01	0.26	1.23	0.22
CSO	0.00	0.01	0.03	0.27	0.78	0.00	0.01	0.07	0.62	0.53
ABM	0.02	0.01	0.34	1.52	0.13	0.01	0.01	0.17	0.69	0.49
PCSM	0.00	0.00	0.04	0.40	0.69	0.00	0.00	-0.03	-0.31	0.76
OSM	0.00	0.00	0.10	2.08	0.04**	0.00	0.00	0.06	1.16	0.25
Verbal	0.00	0.00	0.05	0.85	0.40	0.00	0.00	0.05	0.76	0.45
Quant	0.00	0.00	-0.01	-0.09	0.93	0.00	0.00	0.00	-0.05	0.96
Text Variables										
Career Achievement						0.02	0.01	0.11	1.96	0.05*
Personal Achievement						0.00	0.01	0.01	0.10	0.92
Professional Affiliation						0.00	0.02	0.00	-0.02	0.98
Personal Interests						-0.01	0.01	-0.03	-0.47	0.64
Current Duties						0.00	0.02	0.02	0.27	0.79
Supervisor						0.10	0.11	0.05	0.90	0.37
All Jobs						-0.02	0.04	-0.02	-0.35	0.73
All Duties						0.01	0.01	0.09	0.95	0.34
Objectives						0.01	0.00	0.10	1.87	0.06*
Interview Comments						0.00	0.01	-0.01	-0.26	0.80
Letters of Recommendation						0.00	0.00	0.01	0.14	0.89

	Model I					Model II				
	Unstandardized Coefficients		Standardized Coefficients			Unstandardized Coefficients		Standardized Coefficients		
DV = Board Scores	B	Std. Error	Beta	t	p-value	B	Std. Error	Beta	t	p-value
N = 210. * $p < .10$ (1-tailed). ** $p < .05$ (1-tailed).										

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
I	.757	0.572	0.55	0.6889	0.572	25.974	10	194	0
II	.780	0.608	0.563	0.679	0.036	1.519	11	183	0.128
N = 210.									

Table 82. Regression of Board Score onto Numeric Variables (Step 1) and Text Variables (Step 2) for Non-Rated, Panel 1

	Model I					Model II				
	Unstandardized Coefficients		Standardized Coefficients			Unstandardized Coefficients		Standardized Coefficients		
DV = Normalized Board Scores	B	Std. Error	Beta	t	p-value	B	Std. Error	Beta	t	p-value
(Constant)	-74.12	31.98		-2.32	0.02	-56.19	31.56		-1.78	0.08
Numeric Variables										
GPA1	0.98	0.11	0.28	9.32	0.00**	0.92	0.10	0.27	8.94	0.00**
Military Education Year	0.04	0.02	0.08	2.69	0.01**	0.03	0.02	0.06	2.17	0.03*
Number of Jobs	-0.01	0.02	-0.01	-0.31	0.76	-0.02	0.03	-0.03	-0.80	0.43
Highest Grade (Rank)	0.35	0.05	0.23	7.32	0.00**	0.23	0.05	0.16	4.63	0.00**
Overall Evaluation	1.13	0.25	0.13	4.59	0.00**	1.03	0.24	0.12	4.27	0.00**
OSM	0.01	0.00	0.11	3.94	0.00**	0.01	0.00	0.09	3.30	0.00**
Verbal	0.01	0.00	0.11	3.55	0.00**	0.01	0.00	0.11	3.61	0.00**
Quant	0.01	0.00	0.10	3.21	0.00**	0.01	0.00	0.10	3.34	0.00**
Text Variables										
Career Achievement						0.07	0.01	0.19	5.99	0.00**
Personal Achievement						0.00	0.01	0.00	-0.06	0.95
Professional Affiliation						0.01	0.01	0.03	0.95	0.34
Personal Interests						-0.01	0.02	-0.02	-0.62	0.54
Current Duties						0.01	0.01	0.04	1.05	0.30
Supervisor						0.05	0.10	0.02	0.50	0.62
All Jobs						0.05	0.02	0.07	1.93	0.05*
All Duties						-0.01	0.00	-0.05	-1.14	0.25
Objectives						0.00	0.01	0.01	0.39	0.70
Interview Comments						0.01	0.00	0.08	2.72	0.01**
Letters of Recommendation						0.00	0.00	0.01	0.38	0.70

	Model I					Model II				
	Unstandardized Coefficients		Standardized Coefficients			Unstandardized Coefficients		Standardized Coefficients		
DV = Normalized Board Scores	B	Std. Error	Beta	t	p-value	B	Std. Error	Beta	t	p-value
N = 1,057. * $p < .10$ (1-tailed). ** $p < .05$ (1-tailed).										

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.482	0.233	0.226	1.204994	0.233	34.917	8	922	0
2	.529	0.28	0.265	1.174117	0.048	5.466	11	911	0
N = 1,057.									

Table 83. Regression of Board Score onto Numeric Variables (Step 1) and Text Variables (Step 2) for Non-Rated, Panel 2

	Model I					Model II				
	Unstandardized Coefficients		Standardized Coefficients			Unstandardized Coefficients		Standardized Coefficients		
DV = Board Scores	B	Std. Error	Beta	t	p-value	B	Std. Error	Beta	t	p-value
(Constant)	21.57	0.57		37.71	0.00	21.50	0.59		36.79	0.00
Numeric Variables										
GPA1	0.80	0.15	0.29	5.36	0.00**	0.74	0.16	0.27	4.74	0.00**
Number of Jobs	0.07	0.05	0.07	1.33	0.18	0.21	0.08	0.23	2.73	0.01**
Overall Evaluation	0.42	0.08	0.29	5.24	0.00**	0.39	0.08	0.27	4.82	0.00**
OSM	0.00	0.00	0.08	1.40	0.16	0.00	0.00	0.07	1.28	0.20
Verbal	0.01	0.00	0.12	2.10	0.04**	0.01	0.00	0.10	1.79	0.07*
Quant	0.01	0.00	0.20	3.46	0.00**	0.01	0.00	0.20	3.60	0.00**
Text Variables										
Career Achievement						0.04	0.02	0.10	1.71	0.09
Personal Achievement						-0.04	0.01	-0.20	-3.38	0.00**
Professional Affiliation						0.03	0.02	0.10	1.66	0.10*
Personal Interests						0.01	0.02	0.04	0.60	0.55
Current Duties						0.05	0.02	0.17	2.19	0.03**
Supervisor						0.13	0.13	0.05	1.00	0.32
All Jobs						-0.13	0.06	-0.16	-2.18	0.03**
All Duties						-0.02	0.01	-0.17	-1.83	0.07*
Objectives						0.01	0.01	0.08	1.35	0.18
Interview Comments						0.00	0.01	0.01	0.19	0.85
Letters of Recommendation						0.00	0.00	0.02	0.33	0.75
<i>N</i> = 274. * <i>p</i> < .10 (1-tailed). ** <i>p</i> < .05 (1-tailed).										

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
I	.545	0.297	0.28	0.972638	0.297	17.934	6	255	0
II	.601	0.362	0.317	0.947301	0.065	2.257	11	244	0.012
<i>N</i> = 274.									

Table 84. Regression of Board Score onto Text Variables (Step 1) and Numeric Variables (Step 2) for Rated, Panel 1

	Model I					Model II				
	Unstandardized Coefficients		Standardized Coefficients			Unstandardized Coefficients		Standardized Coefficients		
DV = Board Score	B	Std. Error	Beta	<i>t</i>	<i>p</i> -value	B	Std. Error	Beta	<i>t</i>	<i>p</i> -value
(Constant)	25.65	0.46		55.92	0.00	-56.35	39.61		-1.42	0.16
Text Variables										
Career Achievement	0.04	0.01	0.24	3.43	0.00**	0.04	0.01	0.25	4.12	0.00**
Personal Achievement	0.01	0.01	0.04	0.56	0.58	0.00	0.01	-0.02	-0.39	0.70
Professional Affiliation	-0.02	0.02	-0.05	-0.74	0.46	-0.02	0.02	-0.05	-0.83	0.41
Personal Interests	-0.01	0.02	-0.02	-0.25	0.80	-0.01	0.02	-0.04	-0.67	0.51
Current Duties	-0.01	0.01	-0.03	-0.42	0.67	0.00	0.01	0.01	0.12	0.91
Supervisor	0.01	0.15	0.00	0.04	0.97	0.13	0.13	0.06	1.04	0.30
All Jobs	0.00	0.03	0.01	0.11	0.91	0.00	0.03	0.00	-0.06	0.96
All Duties	0.00	0.01	-0.01	-0.13	0.90	0.00	0.01	-0.04	-0.49	0.62
Objectives	0.01	0.01	0.04	0.69	0.49	0.00	0.01	0.04	0.68	0.50
Interview Comments	0.01	0.01	0.11	1.66	0.10*	0.01	0.01	0.11	2.14	0.03**
Letters of Recommendation	0.01	0.01	0.09	1.45	0.15	0.01	0.01	0.10	1.88	0.06*
Numeric Variables										
GPA1						0.89	0.13	0.37	6.78	0.00**
Military Education Year						0.04	0.02	0.10	1.82	0.07*
Number of Jobs						-0.02	0.04	-0.04	-0.51	0.61
Highest Grade (Rank)						-0.01	0.07	-0.01	-0.08	0.94
Overall Evaluation						1.05	0.40	0.13	2.62	0.01**
Pilot						0.02	0.01	0.30	1.99	0.05*
CSO						0.01	0.00	0.13	1.39	0.17
ABM						-0.01	0.01	-0.17	-0.98	0.33
PCSM						0.00	0.00	0.08	0.97	0.34

	Model I					Model II				
	Unstandardized Coefficients		Standardized Coefficients			Unstandardized Coefficients		Standardized Coefficients		
DV = Board Score	B	Std. Error	Beta	<i>t</i>	<i>p</i> -value	B	Std. Error	Beta	<i>t</i>	<i>p</i> -value
OSM						0.00	0.00	0.03	0.58	0.56
Verbal						0.00	0.00	0.09	1.45	0.15
Quant						0.01	0.00	0.23	3.23	0.00**
<i>N</i> = 287. * <i>p</i> < .10 (1-tailed). ** <i>p</i> < .05 (1-tailed).										

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
I	.302	0.091	0.05	0.9477	0.091	2.229	11	245	0.014
II	.651	0.424	0.367	0.7733	0.333	11.243	12	233	0
<i>N</i> = 287.									

Table 85. Regression of Board Score onto Text Variables (Step 1) and Numeric Variables (Step 2) for Rated, Panel 2

	Model I					Model II				
	Unstandardized Coefficients		Standardized Coefficients			Unstandardized Coefficients		Standardized Coefficients		
DV = Board Scores	B	Std. Error	Beta	<i>t</i>	<i>p</i> -value	B	Std. Error	Beta	<i>t</i>	<i>p</i> -value
(Constant)	25.63	0.33		77.43	0.00	20.07	0.57		35.20	0.00
Text Variables										
Career Achievement	0.02	0.01	0.17	2.05	0.04**	0.02	0.01	0.11	1.96	0.05*
Personal Achievement	0.00	0.01	0.03	0.29	0.77	0.00	0.01	0.01	0.10	0.92
Professional Affiliation	0.02	0.02	0.06	0.75	0.45	0.00	0.02	0.00	-0.02	0.98
Personal Interests	-0.01	0.02	-0.06	-0.70	0.49	-0.01	0.01	-0.03	-0.47	0.64
Current Duties	0.00	0.02	-0.01	-0.09	0.93	0.00	0.02	0.02	0.27	0.79
Supervisor	0.06	0.15	0.03	0.42	0.67	0.10	0.11	0.05	0.90	0.37
All Jobs	-0.03	0.06	-0.05	-0.59	0.56	-0.02	0.04	-0.02	-0.35	0.73
All Duties	0.02	0.01	0.19	1.50	0.14	0.01	0.01	0.09	0.95	0.34
Objectives	0.02	0.01	0.22	3.13	0.00**	0.01	0.00	0.10	1.87	0.06*
Interview Comments	0.00	0.02	0.01	0.13	0.90	0.00	0.01	-0.01	-0.26	0.80
Letters of Recommendation	0.01	0.00	0.16	2.39	0.02**	0.00	0.00	0.01	0.14	0.89
Numeric Variables										
GPA1						0.87	0.13	0.34	6.63	0.00**
Number of Jobs						-0.01	0.05	-0.02	-0.25	0.80
Overall Evaluation						0.47	0.07	0.34	6.91	0.00**
Pilot						0.01	0.01	0.26	1.23	0.22
CSO						0.00	0.01	0.07	0.62	0.53
ABM						0.01	0.01	0.17	0.69	0.49
PCSM						0.00	0.00	-0.03	-0.31	0.76
OSM						0.00	0.00	0.06	1.16	0.25
Verbal						0.00	0.00	0.05	0.76	0.45
Quant						0.00	0.00	0.00	-0.05	0.96

	Model I					Model II				
	Unstandardized Coefficients		Standardized Coefficients			Unstandardized Coefficients		Standardized Coefficients		
DV = Board Scores	B	Std. Error	Beta	<i>t</i>	<i>p</i> -value	B	Std. Error	Beta	<i>t</i>	<i>p</i> -value
<i>N</i> = 210. * <i>p</i> < .10 (1-tailed). ** <i>p</i> < .05 (1-tailed).										

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics		df1	df2	Sig. F Change
					R Square Change	F Change			
I	.436	0.19	0.144	0.9507	0.19	4.115	11	193	0
II	.780	0.608	0.563	0.679	0.418	19.536	10	183	0
<i>N</i> = 210.									

Table 86. Regression of Board Score onto Text Variables (Step 1) and Numeric Variables (Step 2) for Non-Rated, Panel 1

	Model I					Model II				
	Unstandardized Coefficients		Standardized Coefficients			Unstandardized Coefficients		Standardized Coefficients		
DV = Normalized Board Scores	B	Std. Error	Beta	t	p-value	B	Std. Error	Beta	t	p-value
(Constant)	22.23	0.30		73.38	0.00	-56.19	31.56		-1.78	0.08
Text Variables										
Career Achievement	0.11	0.01	0.29	8.45	0.00**	0.07	0.01	0.19	5.99	0.00**
Personal Achievement	-0.01	0.01	-0.01	-0.43	0.67	0.00	0.01	0.00	-0.06	0.95
Professional Affiliation	0.01	0.01	0.01	0.40	0.69	0.01	0.01	0.03	0.95	0.34
Personal Interests	0.00	0.02	-0.01	-0.15	0.88	-0.01	0.02	-0.02	-0.62	0.54
Current Duties	0.01	0.01	0.04	1.11	0.27	0.01	0.01	0.04	1.05	0.30
Supervisor	0.08	0.11	0.03	0.78	0.44	0.05	0.10	0.02	0.50	0.62
All Jobs	0.06	0.02	0.10	2.67	0.01**	0.05	0.02	0.07	1.93	0.05*
All Duties	0.00	0.00	-0.01	-0.21	0.84	-0.01	0.00	-0.05	-1.14	0.25
Objectives	0.00	0.01	0.02	0.59	0.55	0.00	0.01	0.01	0.39	0.70
Interview Comments	0.02	0.00	0.11	3.39	0.00**	0.01	0.00	0.08	2.72	0.01**
Letters of Recommendation	0.00	0.01	0.02	0.49	0.63	0.00	0.00	0.01	0.38	0.70
Numeric Variables										
GPA1						0.92	0.10	0.27	8.94	0.00**
Military Education Year						0.03	0.02	0.06	2.17	0.03**
Number of Jobs						-0.02	0.03	-0.03	-0.80	0.43
Highest Grade (Rank)						0.23	0.05	0.16	4.63	0.00**
Overall Evaluation						1.03	0.24	0.12	4.27	0.00**
OSM						0.01	0.00	0.09	3.30	0.00**
Verbal						0.01	0.00	0.11	3.61	0.00**

	Model I					Model II				
	Unstandardized Coefficients		Standardized Coefficients			Unstandardized Coefficients		Standardized Coefficients		
DV = Normalized Board Scores	B	Std. Error	Beta	t	p-value	B	Std. Error	Beta	t	p-value
Quant						0.01	0.00	0.10	3.34	0.00**
<i>N</i> = 1,057. * <i>p</i> < .10 (1-tailed). ** <i>p</i> < .05 (1-tailed).										

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
I	.357	0.127	0.117	1.286907	0.127	12.206	11	919	0
II	.529	0.28	0.265	1.174117	0.153	24.131	8	911	0
<i>N</i> = 1,057.									

Table 87. Regression of Board Score onto Text Variables (Step 1) and Numeric Variables (Step 2) for Non-Rated, Panel 2

	Model I					Model II				
	Unstandardized Coefficients		Standardized Coefficients			Unstandardized Coefficients		Standardized Coefficients		
DV = Board Scores	B	Std. Error	Beta	t	p-value	B	Std. Error	Beta	t	p-value
(Constant)	26.08	0.33		79.67	0.00	21.50	0.59		36.79	0.00
Text Variables										
Career Achievement	0.07	0.03	0.17	2.50	0.01**	0.04	0.02	0.10	1.71	0.09*
Personal Achievement	-0.04	0.01	-0.20	-2.87	0.00**	-0.04	0.01	-0.20	-3.38	0.00**
Professional Affiliation	0.05	0.02	0.16	2.31	0.02**	0.03	0.02	0.10	1.66	0.10*
Personal Interests	0.01	0.02	0.04	0.59	0.55	0.01	0.02	0.04	0.60	0.55
Current Duties	0.03	0.03	0.10	1.14	0.26	0.05	0.02	0.17	2.19	0.03**
Supervisor	0.12	0.15	0.05	0.79	0.43	0.13	0.13	0.05	1.00	0.32
All Jobs	-0.02	0.05	-0.02	-0.30	0.76	-0.13	0.06	-0.16	-2.18	0.03**
All Duties	0.00	0.01	-0.04	-0.37	0.72	-0.02	0.01	-0.17	-1.83	0.07*
Objectives	0.01	0.01	0.13	1.99	0.05	0.01	0.01	0.08	1.35	0.18
Interview Comments	0.02	0.02	0.08	1.41	0.16	0.00	0.01	0.01	0.19	0.85
Letters of Recommendation	0.01	0.00	0.11	1.83	0.07*	0.00	0.00	0.02	0.33	0.75
Numeric Variables										
GPA1						0.74	0.16	0.27	4.74	0.00**
Number of Jobs						0.21	0.08	0.23	2.73	0.01**
Overall Evaluation						0.39	0.08	0.27	4.82	0.00**
OSM						0.00	0.00	0.07	1.28	0.20
Verbal						0.01	0.00	0.10	1.79	0.07*
Quant						0.01	0.00	0.20	3.60	0.00**
N = 274.										
* $p < .10$ (1-tailed).										

	Model I					Model II				
	Unstandardized Coefficients		Standardized Coefficients			Unstandardized Coefficients		Standardized Coefficients		
DV = Board Scores	B	Std. Error	Beta	t	p-value	B	Std. Error	Beta	t	p-value
** $p < .05$ (1-tailed).										

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
I	.356	0.127	0.089	1.094489	0.127	3.306	11	250	0
II	.601	0.362	0.317	0.947301	0.235	14.954	6	244	0
N = 274.									

EXPECTANCY TABLES

We created expectancy tables to illustrate the potential value of using the computer models to make selection decisions. Expectancy tables show the expected percentage of successful hires based on performance on the computer models. We defined a successful hire as a candidate that scored above the within-Board score average. We present two types of expectancy tables: “Institutional” tables that show the percentage of all candidates who will be above average at various cutting scores, and “Individual” tables that show the likelihood that individual candidates will be above average based on their scores.

Table 88 shows the Institutional expectancy tables. For each panel, it shows the percentage of candidates who will be above average at cutting scores set at each 10% increment. For example, using the rated panel 1, if everyone is hired, 50% will be above average by definition, if the cutting score eliminated the bottom 30%, then 68% will be above average, and if the cutting score eliminated the bottom 60% of candidates, then 79% will be above average.

Table 88. Institutional Expectancy Tables

Rated, Panel 1		
Potential Passing Score	Count	Percent
Cut off bottom 90%	24	96%
Cut off bottom 80%	44	86%
Cut off bottom 70%	65	84%
Cut off bottom 60%	81	79%
Cut off bottom 50%	97	75%
Cut off bottom 40%	110	71%
Cut off bottom 30%	122	68%
Cut off bottom 20%	135	66%
Cut off bottom 10%	139	60%
Cut off bottom 0%	141	55%
<i>N</i> = 257.		
Rated, Panel 2		
Potential Passing Score	Count	Percent
Cut off bottom 90%	20	100%
Cut off bottom 80%	41	100%
Cut off bottom 70%	59	97%
Cut off bottom 60%	73	89%
Cut off bottom 50%	87	84%
Cut off bottom 40%	95	77%
Cut off bottom 30%	103	72%
Cut off bottom 20%	107	65%
Cut off bottom 10%	109	59%
Cut off bottom 0%	110	54%
<i>N</i> = 205.		

Non-Rated, Panel 1		
Potential Passing Score	Count	Percent
Cut off bottom 90%	82	88%
Cut off bottom 80%	157	84%
Cut off bottom 70%	219	78%
Cut off bottom 60%	274	74%
Cut off bottom 50%	325	70%
Cut off bottom 40%	368	66%
Cut off bottom 30%	410	63%
Cut off bottom 20%	443	59%
Cut off bottom 10%	466	56%
Cut off bottom 0%	482	52%
<i>N</i> = 931.		

Non-Rated, Panel 2		
Potential Passing Score	Count	Percent
Cut off bottom 90%	24	92%
Cut off bottom 80%	43	83%
Cut off bottom 70%	66	85%
Cut off bottom 60%	84	80%
Cut off bottom 50%	95	73%
Cut off bottom 40%	106	68%
Cut off bottom 30%	120	65%
Cut off bottom 20%	128	61%
Cut off bottom 10%	134	57%
Cut off bottom 0%	135	52%
<i>N</i> = 262.		

Table 89 shows the Individual expectancy tables. For each panel, it shows the likelihood that candidates with individual scores on the computer model will be above average on the board scores. For example, using the rated panel 1, those scoring in the bottom 10% have only an 8% chance of being above average, those scoring in the 30-40% have a 46% chance of being above average, those scoring in the 70-80% have an 81% chance of being above average, and those scoring in the 90-100% have a 96% chance of being above average.

In summary, the expectancy tables showed that there can be substantial practical utility of the computer models in predicting which candidates will be successful hires.

Table 89. Individual Expectancy Tables

Rated, Panel 1		
Potential Passing Score Range	Count	Percent
90 - 100%	24	96%
80 - 90%	20	77%
70 - 80%	21	81%
60 - 70%	16	62%
50 - 60%	16	62%
40 - 50%	13	52%
30 - 40%	12	46%
20 - 30%	13	50%
10 - 20%	4	15%
0 - 10%	2	8%
<i>N</i> = 257.		

Rated, Panel 2		
Potential Passing Score Range	Count	Percent
90 - 100%	20	100%
80 - 90%	21	100%
70 - 80%	18	90%
60 - 70%	14	67%
50 - 60%	14	67%
40 - 50%	8	40%
30 - 40%	8	38%
20 - 30%	4	20%
10 - 20%	2	10%
0 - 10%	1	5%
<i>N</i> = 205.		

Non-Rated, Panel 1		
Potential Passing Score Range	Count	Percent
90 - 100%	82	88%
80 - 90%	75	81%
70 - 80%	62	67%
60 - 70%	55	59%
50 - 60%	51	54%
40 - 50%	43	46%
30 - 40%	42	45%
20 - 30%	33	35%

10 - 20%	23	25%
0 - 10%	16	17%
<i>N</i> = 931.		

Non-Rated, Panel 2		
Potential Passing Score Range	Count	Percent
90 - 100%	24	92%
80 - 90%	19	73%
70 - 80%	23	88%
60 - 70%	18	67%
50 - 60%	11	42%
40 - 50%	11	42%
30 - 40%	14	52%
20 - 30%	8	31%
10 - 20%	6	23%
0 - 10%	1	4%
<i>N</i> = 262.		

DIVERSITY DIFFERENCES

We examined diversity differences to estimate whether the use of the computer models would have potential to reduce adverse impact in the hiring of women and minorities. Adverse impact refers to lower hiring rates of protected subgroups according to U.S. employment anti-discrimination laws. Tables 90 to 93 show the *t*-tests between gender and race subgroups on all the variables for all four panels. We combined all the minorities because the numbers per race were too small to analyze separately. The tables show relatively few significant differences on the text variables across panels, and they are sometimes in the opposite direction, favoring the women or minority subgroups. The numeric variables show many more differences, especially the commonly observed race differences on aptitude tests like the AFOQT. Women in these samples also scored less well on the AFOQT, which is not as common with aptitude tests. This could be due to several factors including a smaller number of women candidates or the relatively heavier emphasis on math, science, and aviation in the AFOQT. There were fewer gender differences in rated panel 1, where the opposite was sometimes observed, but the sample was small (*N* = 17). Gender differences were more pronounced in the non-rated samples.

To understand the extent to which these differences might influence selection decisions, we examined differences on the regression models. As shown at the bottom of each table, the regression models ("Predicted Score") only showed significant differences by gender in non-rated panel 1, where women scored higher. On the other hand, there were significant differences by race for 3 of the 4 panels, with rated panel 1 being the exception. However, the differences by race are small, averaging .282 standard deviations across the 4 panels, with a range of .167 to .515. Finally, the results were nearly identical for OTS Board scores. Women scored higher than men on non-rated panel 1, and minorities scored less well on 3 of the 4 panels, with rated

panel 1 again being the exception. The differences were again small but slightly larger, averaging .319 standard deviations across the 4 panels, with a range of .230 to .426.

Table 90. Gender and Races in all Variables for Rated, Panel 1

			Men			Women			Non-Minority			Minority		
Gender Diff.	Race Diff.	Variable	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD
Text Variables														
		Degree1	270	1.08	0.54	17	1.18	0.53	215	1.07	0.53	71	1.14	0.59
		Career Achievement	270	13.05	6.53	17	13.00	4.72	215	12.79	6.08	71	13.73	7.40
		Personal Achievements	270	9.93	6.55	17	11.18	9.06	215	9.80	6.55	71	10.63	7.22
	*	Professional Affiliations	270	3.43	2.75	17	3.29	2.26	215	3.07	2.37	71	4.38	3.24
		Personal Interests	270	7.11	3.33	17	6.24	3.05	215	6.97	3.28	71	7.31	3.44
		Current Job	270	1.26	0.73	17	1.12	0.86	215	1.25	0.70	71	1.23	0.80
		Current Duties	270	12.26	5.72	17	11.76	5.65	215	12.19	5.77	71	12.25	5.53
		Supervisor	270	0.75	0.44	17	0.65	0.49	215	0.75	0.43	71	0.70	0.46
	*	All Jobs	270	5.55	2.90	17	4.76	2.39	215	5.69	2.93	71	4.86	2.55
		All Duties	270	33.06	13.82	17	32.06	18.16	215	33.22	13.53	71	32.00	15.53
		Enlisted Duties	270	1.11	0.71	17	0.82	0.81	215	1.10	0.72	71	1.08	0.73
*		Offenses	270	0.76	1.23	17	0.24	0.44	215	0.78	1.30	71	0.55	0.86
		Objectives	270	52.21	9.20	17	52.59	9.83	215	52.00	7.93	71	52.75	12.34
		Interview Comment	270	27.53	10.36	17	29.00	10.54	215	27.33	10.60	71	28.72	9.39
		Letter of Recommendation	270	33.97	7.87	17	34.59	7.43	215	33.60	6.99	71	35.13	9.93
Numeric Variables														
		Year1	261	2017.27	2.25	17	2016.65	2.26	208	2017.34	2.15	69	2016.90	2.54
	*	GPA1	247	3.55	0.40	13	3.56	0.42	199	3.58	0.40	60	3.45	0.42
		Year2	237	2015.61	2.28	13	2015.62	2.43	190	2015.61	2.30	59	2015.56	2.26
		GPA2	65	3.43	0.47	4	3.89	0.18	44	3.54	0.42	25	3.31	0.52
		Year3	103	2013.77	3.19	6	2013.00	5.22	88	2013.48	3.31	21	2014.76	3.15
		GPA3	37	3.26	0.54	6	3.22	0.43	33	3.30	0.46	10	3.10	0.68
		Military Education Year	267	2015.85	2.79	17	2016.47	2.48	213	2015.78	2.93	70	2016.21	2.23
		Current Job Year Started	269	2015.85	1.93	17	2016.65	1.17	215	2015.88	1.91	70	2015.94	1.90
		Number of Jobs	269	4.84	1.85	17	4.59	2.06	215	4.86	1.86	70	4.71	1.89

			Men			Women			Non-Minority			Minority		
Gender Diff.	Race Diff.	Variable	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD
*		Year Started First Job	269	2010.49	3.30	17	2012.94	2.33	215	2010.44	3.39	70	2011.31	2.86
		JobsperYear	269	0.65	0.38	17	0.80	0.36	215	0.65	0.35	70	0.70	0.45
*	*	HighestGradeNum	270	5.27	0.91	17	4.82	0.95	215	5.33	0.90	71	5.00	0.94
		Pilot License	269	0.04	0.20	17	0.00	0.00	215	0.04	0.20	70	0.03	0.17
*		Previous Application for Commissioned Program (1 = yes, 0 = no)	268	0.27	0.45	17	0.06	0.24	214	0.28	0.45	70	0.20	0.40
*		Number of Applications	268	0.38	0.73	17	0.06	0.24	214	0.39	0.73	70	0.29	0.66
		Active Duty Service Commitment (1 = yes, 0 = no)	234	0.02	0.13	13	0.00	0.00	182	0.01	0.11	64	0.03	0.18
		Eliminated from Course (1 = yes, 0 = no)	267	0.01	0.09	17	0.00	0.00	213	0.01	0.10	70	0.00	0.00
		Number of Previous Enlistments	269	1.31	0.65	17	1.18	0.53	215	1.28	0.60	70	1.37	0.77
*		Number of Violations of Civil or Military Law	269	1.73	1.79	17	1.00	1.06	215	1.74	1.82	70	1.51	1.60
		Latest age	182	23.02	4.14	10	22.30	2.91	143	23.10	4.30	48	22.48	3.23
*		Detained, Confined, or on Probation (1 = yes, 0 = no)	260	0.08	0.28	16	0.00	0.00	206	0.09	0.29	69	0.04	0.21
		Drugs or alcohol (1 = yes, 0 = no)	260	0.12	0.32	16	0.06	0.25	206	0.13	0.33	69	0.07	0.26
		Appearance	268	4.97	0.19	17	5.00	0.00	214	4.97	0.20	70	4.99	0.12
		Confidence, Maturity	268	4.97	0.16	17	5.00	0.00	214	4.98	0.15	70	4.97	0.17
	*	Attitude	268	4.99	0.12	17	5.00	0.00	214	4.98	0.14	70	5.00	0.00
		Motivation	268	5.00	0.06	17	5.00	0.00	214	5.00	0.07	70	5.00	0.00
*		Work Experience	268	4.94	0.26	17	5.00	0.00	214	4.94	0.25	70	4.93	0.26
		Leadership Potential	268	4.97	0.20	17	5.00	0.00	214	4.97	0.20	70	4.97	0.17
		Mental Alertness	268	4.99	0.12	17	5.00	0.00	214	4.99	0.10	70	4.97	0.17
		Communication Skills	268	4.96	0.20	17	5.00	0.00	214	4.96	0.19	70	4.96	0.20
		Potential to Complete Program	268	4.99	0.11	17	5.00	0.00	214	4.99	0.12	70	5.00	0.00
	*	Overall Evaluation	268	4.99	0.12	17	5.00	0.00	214	4.98	0.14	70	5.00	0.00
	*	Pilot	270	68.70	18.16	17	49.53	18.70	215	69.43	18.29	71	61.97	19.12

			Men			Women			Non-Minority			Minority		
Gender Diff.	Race Diff	Variable	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD
	*	CSO	270	71.01	20.28	17	68.76	22.97	215	72.56	19.59	71	65.51	22.02
		ABM	270	66.23	19.24	17	55.47	18.58	215	66.84	19.31	71	61.80	19.19
	*	OSM	270	62.91	25.86	17	63.65	27.96	215	60.51	25.98	71	69.87	24.49
	*	PCSM	270	34.86	20.89	17	23.47	17.41	215	35.53	20.37	71	29.92	21.91
		Acad	270	51.17	20.88	17	55.18	22.16	215	52.65	21.18	71	47.66	20.03
	*	Verbal	270	59.42	23.17	17	65.88	24.94	215	62.41	22.34	71	51.56	24.33
		Quant	270	43.80	22.90	17	44.76	21.86	215	43.54	22.91	71	45.14	22.59
		VerbalAnlog_T	270	50.08	14.28	17	53.94	8.61	215	50.44	15.21	71	49.81	9.81
		ArithReason_T	270	48.69	13.86	17	52.15	5.92	215	48.43	14.45	71	50.50	10.24
		WordKnow_T	270	50.75	14.56	17	55.19	9.39	215	51.47	15.28	71	49.47	11.00
	*	MathKnow_T	270	44.15	12.81	17	46.81	7.63	215	43.51	13.39	71	46.72	9.44
		ReadComp_T	270	50.79	13.88	17	55.75	6.52	215	50.98	14.62	71	51.26	10.06
		PhysScience_T	270	44.79	13.16	17	44.18	7.62	215	44.82	13.90	71	44.63	9.39
		TableRead_T	270	53.78	14.93	17	56.52	7.72	215	53.32	15.82	71	55.82	10.13
		InstruComp_T	270	53.62	14.07	17	46.15	8.08	215	53.27	14.98	71	52.83	10.12
		BlockCount_T	270	55.69	15.54	17	54.86	8.01	215	55.26	16.33	71	56.61	11.07
		AviatInfo_T	270	53.46	14.63	17	50.83	7.91	215	53.54	15.48	71	52.57	10.21
		Predicted Score	244	26.94	.64	13	26.75	.59	196	26.96	.63	60	26.84	.65
		Board Score	270	26.89	0.98	17	26.90	1.29	215	26.94	0.97	71	26.71	1.05

Table 91. Gender and Races in all Variables for Rated, Panel 2

			Men			Women			Non-Minority			Minority		
Gender Diff	Race Diff	Variables	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD
Text Variables														
*		Degree1	165	0.99	0.63	45	1.27	0.69	150	1.07	0.66	51	0.96	0.66
		Career Achievement	165	8.80	7.53	45	9.27	6.95	150	9.31	7.66	51	8.20	6.98
		Personal Achievements	165	10.41	7.51	45	10.71	7.93	150	11.07	7.84	51	8.84	6.98
		Professional Affiliations	165	3.08	3.62	45	2.56	3.38	150	2.91	3.44	51	3.18	4.13
		Personal Interests	165	7.96	4.45	45	6.87	4.82	150	7.83	4.54	51	7.22	4.70
		Current Job	165	0.67	0.59	45	0.73	0.69	150	0.73	0.63	51	0.55	0.54
		Current Duties	165	6.96	5.52	45	8.20	4.88	150	7.13	5.15	51	6.94	5.52
		Supervisor	165	0.29	0.46	45	0.36	0.48	150	0.33	0.47	51	0.25	0.44
		All Jobs	165	2.95	1.47	45	3.40	1.62	150	3.05	1.48	51	2.98	1.63
		All Duties	165	15.88	11.12	45	18.24	9.55	150	16.27	10.56	51	15.69	10.75
		Offenses	165	0.69	1.12	45	0.44	0.76	150	0.69	1.15	51	0.55	0.83
*		Objectives	165	34.91	13.81	45	39.47	12.34	150	36.83	13.29	51	33.57	14.77
		Interview Comments	165	9.15	4.30	45	10.56	4.65	150	9.97	4.50	51	8.06	4.03
	*	Letter of Recommendation	165	60.05	23.85	45	62.24	23.17	150	63.17	22.92	51	54.27	24.90
Numeric Variables														
		Year1	161	2016.79	1.77	44	2016.43	1.93	149	2016.63	1.74	47	2017.09	1.60
*		GPA1	162	3.25	0.39	45	3.38	0.38	149	3.28	0.40	49	3.28	0.38
		Year2	39	2015.74	2.66	16	2015.25	3.07	42	2015.62	2.59	13	2015.54	3.38
		GPA2	29	3.50	0.44	16	3.54	0.40	38	3.55	0.38	7	3.34	0.58
		Year3	2	2014.00	1.41				2	2014.00	1.41			
		GPA3	2	3.61	0.27	1	2.70	.	3	3.31	0.56			
		MEYear	17	2014.47	2.18	3	2015.67	2.52	15	2014.13	2.10	5	2016.20	1.92
		Current Job Year Started	161	2016.75	1.80	45	2016.71	1.91	150	2016.75	1.90	47	2016.68	1.67
		Number of Jobs	161	3.89	1.29	45	4.31	1.20	150	3.97	1.18	47	3.87	1.35
		Year Started First Job	161	2012.57	2.80	45	2012.56	2.42	150	2012.37	2.76	47	2013.19	2.24

Gender Diff	Race Diff	Variables	Men			Women			Non-Minority			Minority		
			N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD
		JobsperYear	161	0.72	0.44	45	0.76	0.33	150	0.71	0.41	47	0.77	0.44
		Number of Violations of Civil or Military Law	112	2.42	1.93	25	1.76	1.30	100	2.43	2.02	32	2.03	1.28
		Latest age	111	21.86	2.96	24	21.92	2.99	99	21.83	3.05	31	21.87	2.75
		Appearance	161	4.59	0.72	45	4.56	0.73	150	4.61	0.72	47	4.60	0.65
		Confidence, Maturity	163	4.40	0.73	45	4.42	0.75	150	4.48	0.67	49	4.31	0.77
		Attitude	163	4.55	0.63	45	4.58	0.58	150	4.60	0.60	49	4.49	0.65
		Motivation	162	4.51	0.77	45	4.60	0.65	149	4.56	0.68	49	4.47	0.89
		Work Experience	163	4.04	0.94	45	4.07	0.89	150	4.09	0.85	49	3.96	1.08
		Leadership Potential	162	4.16	0.88	45	4.27	0.75	149	4.27	0.78	49	4.06	0.92
		Mental Alertness	163	4.36	0.78	45	4.33	0.77	150	4.44	0.72	49	4.20	0.79
		Communication Skills	162	4.35	0.79	45	4.53	0.59	149	4.44	0.66	49	4.37	0.83
		Potential to Complete Program	163	4.48	0.66	45	4.44	0.73	150	4.54	0.62	49	4.35	0.75
		Overall Evaluation	163	4.30	0.77	45	4.33	0.74	150	4.39	0.68	49	4.18	0.83
*	*	Pilot	165	68.02	22.97	45	49.84	22.76	150	67.83	23.35	51	52.37	23.27
		CSO	165	70.36	22.17	45	69.51	18.33	150	71.12	21.05	51	66.37	21.97
*	*	ABM	165	66.70	22.88	45	57.40	21.66	150	67.61	22.45	51	55.65	22.05
		OSM	165	56.58	26.32	45	55.78	27.26	150	56.53	26.36	51	54.67	28.27
*	*	PCSM	165	38.36	26.90	45	16.64	20.79	150	38.48	28.06	51	20.65	21.32
		Acad	165	58.89	24.34	45	55.11	20.22	150	58.46	23.61	51	55.24	23.40
		Verbal	165	63.70	23.46	45	61.47	23.08	150	63.97	24.17	51	59.75	21.59
		Quant	165	52.78	26.87	45	48.42	22.17	150	51.95	25.39	51	50.10	27.31
		VerbalAnlog_T	165	52.35	12.98	45	53.72	13.90	150	52.87	13.69	51	51.48	12.48
		ArithReason_T	165	51.08	13.49	45	49.81	13.48	150	50.61	13.24	51	50.46	14.62
		WordKnow_T	165	53.06	13.43	45	51.36	13.31	150	52.33	13.76	51	52.83	13.18
		MathKnow_T	165	48.33	13.04	45	46.11	12.28	150	47.76	12.94	51	47.34	13.25
		ReadComp_T	165	52.11	12.12	45	49.44	13.66	150	51.94	12.79	51	49.77	12.34
		PhysScience_T	165	47.78	13.08	45	44.45	11.84	150	47.14	13.23	51	46.91	12.35

			Men			Women			Non-Minority			Minority		
Gender Diff	Race Diff	Variables	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD
		TableRead_T	165	53.32	13.84	45	53.23	14.06	150	54.20	14.10	51	50.62	13.46
*		InstruComp_T	165	53.78	12.76	45	46.16	12.43	150	52.77	13.33	51	49.35	12.65
		BlockCount_T	165	55.76	13.81	45	54.35	14.29	150	55.50	14.01	51	54.45	14.24
*	*	AviatInfo_T	165	54.32	14.31	45	46.66	12.49	150	54.03	14.77	51	48.27	12.71
	*	Predicted Score	160	27.11	.81	45	27.03	.77	149	27.19	.80	47	26.88	.74
	*	Board Score	165	27.00	1.27	45	27.18	0.74	150	27.18	1.03	51	26.69	1.48

Table 92. Gender and Races in all Variables for Non-Rated, Panel 1

			Men			Women			Non-Minority			Minority		
Gender Diff	Race Diff	Variables	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD
Text Variables														
		Degree1	883	0.91	0.64	174	0.98	0.71	715	0.90	0.63	339	0.96	0.70
		Career Achievement	883	6.86	3.63	174	6.92	3.53	715	6.98	3.63	339	6.64	3.56
		Personal Achivements	883	5.52	3.89	174	5.86	4.08	715	5.47	3.85	339	5.82	4.09
	*	Professional Affiliations	883	4.07	3.24	174	4.47	3.39	715	3.95	3.09	339	4.48	3.50
		Personal Interests	883	5.96	2.88	174	5.57	2.52	715	5.92	2.86	339	5.83	2.79
		Current Job	883	0.86	0.72	174	0.91	0.76	715	0.84	0.70	339	0.93	0.77
		Current Duties	883	7.36	4.07	174	7.41	4.04	715	7.39	4.04	339	7.32	4.10
		Supervisor	883	0.72	0.45	174	0.75	0.44	715	0.73	0.45	339	0.73	0.45
		All Jobs	883	3.86	2.20	174	3.90	2.24	715	3.86	2.17	339	3.87	2.30
		All Duties	883	31.43	13.37	174	31.57	13.56	715	31.54	13.11	339	31.24	14.00
		Enlisted Duties	883	0.96	0.79	174	0.89	0.71	715	0.93	0.80	339	0.99	0.75
*	*	Offenses	883	0.59	1.01	174	0.40	0.79	715	0.60	1.05	339	0.46	0.81
		Objectives	883	45.33	9.42	174	46.26	8.03	715	45.15	9.35	339	46.19	8.86
		Interview Comment	883	26.57	10.19	174	26.75	10.30	715	26.40	10.20	339	27.06	10.20
		Letter of Recommendation	883	33.97	9.28	174	34.85	9.46	715	33.84	9.07	339	34.66	9.81
Numeric Variables														
		Year1	866	2016.92	2.87	172	2016.87	3.27	701	2016.94	2.84	334	2016.85	3.15
	*	GPA1	788	3.56	0.40	153	3.61	0.37	644	3.60	0.39	294	3.50	0.40
		Year2	803	2015.00	2.69	160	2014.69	2.87	649	2015.00	2.59	311	2014.85	2.98
	*	GPA2	287	3.43	0.44	58	3.47	0.38	206	3.49	0.42	138	3.36	0.44
		Year3	416	2013.70	3.32	96	2013.54	3.84	350	2013.59	3.42	161	2013.88	3.41
		GPA3	140	3.38	0.49	49	3.39	0.41	136	3.40	0.46	52	3.35	0.52
		MEYear	872	2015.98	2.79	171	2016.16	2.76	705	2015.93	2.80	335	2016.19	2.78
*		Current Job Year Started	876	2016.04	1.69	173	2016.45	1.29	710	2016.08	1.66	336	2016.17	1.59
		Number of Jobs	877	5.15	2.07	174	5.34	1.93	711	5.19	2.12	337	5.14	1.90

			Men			Women			Non-Minority			Minority		
Gender Diff	Race Diff	Variables	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD
*		Year Started First Job	877	2009.94	3.31	174	2010.63	3.31	711	2009.93	3.37	337	2010.31	3.19
*		JobsperYear	877	0.63	0.34	174	0.71	0.33	711	0.63	0.33	337	0.66	0.36
*	*	NumHighestGrade	883	5.45	0.91	174	5.26	0.95	715	5.49	0.90	339	5.27	0.96
	*	Pilot License	866	0.01	0.10	171	0.01	0.08	699	0.01	0.12	335	0.00	0.00
		Commercial Pilot License	866	0.00	0.03	171	0.00	0.00	699	0.00	0.04	335	0.00	0.00
		Previous Application for Commissioned Program (1 = yes, 0 = no)	866	0.28	0.45	173	0.23	0.42	700	0.27	0.45	336	0.27	0.45
		Number of Applications	867	0.40	0.74	174	0.32	0.67	702	0.39	0.73	336	0.38	0.72
		Active Duty Service Commitment (1 = yes, 0 = no)	775	0.02	0.14	154	0.01	0.11	612	0.02	0.13	314	0.02	0.14
		Eliminated from Course (1 = yes, 0 = no)	866	0.00	0.05	174	0.00	0.00	701	0.00	0.04	336	0.00	0.06
*		Number of Previous Enlistments	861	1.36	0.69	174	1.23	0.55	700	1.33	0.64	332	1.35	0.73
*		Number of Violations of Civil or Military Law	867	1.74	1.79	174	1.29	1.43	702	1.69	1.81	336	1.60	1.59
	*	Latest age	593	23.85	4.38	109	24.09	4.15	466	23.63	4.50	233	24.34	3.99
*		Detained, Confined, or on Probation (1 = yes, 0 = no)	840	0.08	0.27	169	0.04	0.19	673	0.07	0.26	333	0.06	0.24
*	*	Drugs or alcohol (1 = yes, 0 = no)	840	0.09	0.29	169	0.05	0.21	673	0.10	0.29	333	0.06	0.23
		Appearance	873	4.97	0.21	174	4.96	0.20	707	4.97	0.21	337	4.97	0.19
		Confidence, Maturity	873	4.97	0.17	174	4.97	0.20	707	4.97	0.18	337	4.97	0.18
		Attitude	873	4.99	0.12	174	4.98	0.15	707	4.98	0.13	337	4.99	0.12
		Motivation	873	4.99	0.08	174	4.98	0.13	707	4.99	0.09	337	4.99	0.09
		Work Experience	873	4.93	0.27	174	4.93	0.28	707	4.94	0.26	337	4.91	0.31
		Leadership Potential	873	4.96	0.20	174	4.97	0.20	707	4.97	0.20	337	4.96	0.20
		Mental Alertness	873	4.98	0.14	174	4.98	0.13	707	4.99	0.12	337	4.97	0.18
		Communication Skills	873	4.95	0.22	174	4.95	0.26	707	4.95	0.22	337	4.95	0.24
		Potential to Complete Program	873	4.99	0.11	174	4.99	0.15	707	4.99	0.10	337	4.99	0.14
		Overall Evaluation	873	4.97	0.17	174	4.99	0.11	707	4.97	0.17	337	4.98	0.14
*	*	Pilot	883	52.62	23.76	174	33.70	21.66	715	54.04	23.44	339	39.78	23.71

			Men			Women			Non-Minority			Minority		
Gender Diff	Race Diff	Variables	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD
*	*	CSO	883	62.64	24.32	174	57.24	27.62	715	66.90	22.96	339	50.64	25.39
*	*	ABM	883	53.21	23.93	174	41.78	23.45	715	55.75	23.02	339	41.83	23.99
		OSM	883	60.47	26.63	174	61.39	25.16	715	59.58	26.45	339	62.68	26.16
	*	Acad	883	48.27	21.69	174	45.21	21.18	715	50.66	21.53	339	41.47	20.43
		Verbal	883	58.28	23.99	174	56.89	26.03	715	62.01	23.57	339	49.40	23.62
*		Quant	883	39.85	22.33	174	35.78	19.08	715	40.44	22.10	339	36.48	21.20
		VerbalAnlog_T	791	52.27	8.36	158	52.39	8.59	635	53.41	8.42	311	49.92	7.81
*		ArithReason_T	791	50.16	7.94	158	47.59	7.37	635	50.52	7.77	311	48.11	7.88
		WordKnow_T	791	53.43	8.82	158	53.10	9.44	635	54.75	8.55	311	50.46	8.94
		MathKnow_T	791	45.06	7.44	158	44.46	6.33	635	45.07	7.30	311	44.70	7.25
	*	ReadComp_T	791	52.94	7.46	158	52.09	7.24	635	53.77	7.21	311	50.73	7.46
*	*	PhysScience_T	791	45.14	8.58	158	41.68	7.22	635	45.27	8.32	311	43.09	8.58
	*	TableRead_T	791	53.88	9.03	158	53.62	10.55	635	55.22	8.89	311	51.00	9.50
*	*	InstruComp_T	791	51.73	8.81	158	42.14	7.76	635	51.74	8.96	311	46.82	9.27
*	*	BlockCount_T	791	55.56	9.22	158	51.65	9.43	635	56.16	8.99	311	52.28	9.57
*	*	AviatInfo_T	791	51.67	8.06	158	45.16	6.76	635	51.80	8.19	311	48.01	7.64
	*	Predicted Score	780	23.97	.73	151	23.96	.68	636	24.04	.72	292	23.92	.71
*	*	Normalized Board Score	883	23.88	1.36	174	24.15	1.44	715	24.05	1.34	339	23.66	1.43

Table 93. Gender and Races in all Variables for Non-Rated, Panel 2

			Men			Women			Non-Minority			Minority		
Gender Diff	Race Diff	Variables	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD
Text Variables														
		Degree1	203	1.23	0.67	70	1.07	0.77	182	1.19	0.66	82	1.18	0.74
		Career Achievement	203	3.64	3.06	70	4.03	2.68	182	3.91	3.11	82	3.48	2.68
		Personal Achivements	203	7.80	6.03	70	7.79	5.76	182	8.24	6.25	82	7.09	5.26
		Professional Affiliations	203	2.93	3.58	70	3.36	3.10	182	3.16	3.62	82	2.89	3.15
*		Personal Interests	203	7.72	4.52	70	6.41	3.48	182	7.72	4.53	82	6.66	3.64
		Current Job	203	0.72	0.53	70	0.66	0.59	182	0.70	0.56	82	0.74	0.52
*		Current Duties	203	4.71	3.43	70	5.89	4.30	182	4.92	3.66	82	5.12	3.76
		Supervisor	203	0.30	0.46	70	0.43	0.50	182	0.35	0.48	82	0.30	0.46
*		All Jobs	203	3.11	1.54	70	3.54	1.51	182	3.30	1.54	82	3.04	1.51
*		All Duties	203	17.08	11.31	70	22.26	14.57	182	17.47	11.91	82	19.70	12.41
		Offenses	203	0.54	0.98	70	0.34	0.59	182	0.50	0.87	82	0.50	0.98
*		Objectives	203	29.93	13.01	70	36.10	11.81	182	32.21	11.84	82	30.78	14.56
	*	Interview Comment	203	8.76	4.45	70	9.67	5.36	182	9.43	4.87	82	8.16	4.20
	*	Letter of Recommendation	203	68.73	29.17	70	69.93	26.71	182	71.84	28.64	82	64.16	27.02
Numeric Variables														
		Year1	196	2016.37	2.51	70	2015.80	3.28	180	2016.06	2.89	79	2016.62	2.24
*	*	GPA1	195	3.24	0.43	70	3.38	0.38	179	3.32	0.41	79	3.18	0.42
		Year2	61	2014.18	3.82	26	2015.04	3.32	66	2014.70	3.49	21	2013.62	4.23
		GPA2	54	3.48	0.40	24	3.48	0.44	61	3.52	0.39	17	3.34	0.46
		Year3	8	2012.38	5.18	3	2015.00	1.73	9	2012.89	4.99	2	2014.00	2.83
		GPA3	7	3.62	0.35	5	3.23	0.37	10	3.46	0.42	2	3.45	0.35
		MEYear	26	2013.73	4.74	9	2014.22	3.19	24	2013.17	4.69	11	2015.36	3.20
		Current Job Year Started	199	2016.56	2.04	70	2016.54	1.83	182	2016.49	2.01	79	2016.67	1.99
		Number of Jobs	199	3.72	1.32	70	3.96	1.14	182	3.81	1.20	79	3.58	1.26
		Year Started First Job	199	2011.87	3.47	70	2012.16	3.02	182	2011.76	3.49	79	2012.33	2.93

			Men			Women			Non-Minority			Minority		
Gender Diff	Race Diff	Variables	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD
		JobsperYear	199	0.62	0.37	70	0.68	0.32	182	0.63	0.38	79	0.63	0.30
		Number of Violations of Civil or Military Law	124	2.30	1.83	35	1.86	1.00	113	2.24	1.48	41	2.24	2.22
		Latest age	124	22.48	3.72	34	21.97	3.16	112	22.08	3.49	41	23.22	3.90
		Appearance	194	4.55	0.72	67	4.55	0.80	177	4.56	0.78	76	4.51	0.66
	*	Confidence, Maturity	200	4.34	0.75	68	4.43	0.76	180	4.45	0.71	80	4.18	0.79
		Attitude	200	4.45	0.70	68	4.60	0.65	180	4.54	0.65	80	4.36	0.75
	*	Motivation	200	4.48	0.74	68	4.50	0.74	180	4.58	0.65	80	4.28	0.87
		Work Experience	200	4.04	0.93	68	4.15	0.92	180	4.13	0.91	80	3.93	0.94
		Leadership Potential	199	4.14	0.87	68	4.29	0.79	179	4.26	0.84	80	4.05	0.81
	*	Mental Alertness	199	4.33	0.77	68	4.31	0.85	179	4.42	0.75	80	4.13	0.80
	*	Communication Skills	199	4.30	0.85	68	4.46	0.76	179	4.43	0.77	80	4.18	0.87
		Potential to Complete Program	200	4.38	0.77	68	4.40	0.79	180	4.44	0.76	80	4.26	0.79
	*	Overall Evaluation	200	4.25	0.79	68	4.34	0.86	180	4.35	0.77	80	4.14	0.85
*	*	Pilot	204	61.52	22.96	70	38.61	25.11	183	59.22	25.30	82	47.77	24.41
*	*	CSO	204	69.34	23.37	70	59.57	27.56	183	70.87	23.19	82	57.76	26.18
*	*	ABM	204	64.72	23.33	70	47.19	27.17	183	63.72	24.80	82	52.78	25.74
		OSM	204	53.55	29.69	70	59.29	23.08	183	55.26	27.68	82	54.61	29.65
*	*	Acad	204	64.52	23.14	70	52.51	22.14	183	65.10	22.51	82	53.71	23.72
	*	Verbal	204	63.87	25.52	70	60.54	22.93	183	67.98	23.92	82	52.65	24.19
*		Quant	204	61.69	25.16	70	44.59	23.42	183	59.03	24.78	82	53.62	27.36
	*	VerbalAnlog_T	195	54.07	7.93	68	55.06	8.25	176	55.55	7.94	78	51.65	7.83
*		ArithReason_T	195	54.54	9.28	68	50.00	8.14	176	53.95	8.89	78	52.03	9.79
	*	WordKnow_T	195	54.90	8.96	68	53.66	8.43	176	55.90	8.61	78	51.54	8.82
*		MathKnow_T	195	53.75	8.59	68	47.74	8.14	176	52.62	8.42	78	51.29	9.68
*	*	ReadComp_T	195	54.26	8.06	68	51.86	7.36	176	55.09	7.73	78	50.99	7.21
*		PhysScience_T	195	52.19	9.42	68	44.37	7.75	176	51.02	9.94	78	48.61	8.77
		TableRead_T	195	54.41	8.74	68	52.49	11.79	176	54.64	9.40	78	52.63	9.85

			Men			Women			Non-Minority			Minority		
Gender Diff	Race Diff	Variables	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD
*	*	InstruComp_T	195	52.96	7.84	68	43.93	8.64	176	51.53	8.82	78	48.27	9.03
*	*	BlockCount_T	195	56.80	9.06	68	52.65	9.62	176	56.45	9.17	78	53.73	9.57
*	*	AviatInfo_T	195	51.44	8.67	68	45.69	6.85	176	51.22	8.84	78	47.10	7.19
	*	Predicted Board Score	194	27.23	.70	68	27.29	.65	177	27.36	.66	78	27.01	.70
	*	Board Score	204	27.18	1.19	70	27.10	1.81	183	27.32	1.38	82	26.86	1.35

SUMMARY AND CONCLUSIONS

The summary and conclusions of this report in terms of its three purposes are as follows:

1. Text-Mining Results: First, the number of categories for each text field seems logical in the sense that fields with more variety of responses had more categories. Second, the number of categories for each text field is large, suggesting there is a wide variation in the application information across candidates. Third, the means show that the average candidate is scored on many text categories, suggesting the text categories are measuring many aspects of the candidate's application. From this, we conclude that the text-mining appeared to meaningfully measure the text data in the applications.

2. Univariate Results: The text-mining category counts show significant correlations for about 10 of the 14 text fields in 2 or more of the 4 panels: Career Achievements, Personal Achievements, Professional Affiliations, Personal/Outside Interests, Current Duties, All Jobs, All Duties, Objectives, Interview Comments, and Letters of Recommendation. The computed variable for supervisor jobs is also significant. The correlations are small but useful, averaging about .135 across all samples for these 11 text fields. The correlations are somewhat larger for the panel 2 samples (who lack enlisted experience) than for the panel 1 samples (who are currently or formerly enlisted). In addition, many of the correlations between the numeric application information and the OTS Board scores are significant, including: GPA for most recent degree, number of jobs, all of the interview ratings, and all of the AFOQT scores. The correlations were larger in size, often in the .30s. As with the text variables, the correlations were larger for those without prior Air Force enlisted experience (the panel 2 samples). One potential interpretation is that application information is more meaningful when candidates lack Air Force experience. The differences in the correlations across the variables in all samples appeared to be at least partly due to differences in variance, meaning the OTS Board found that information that varied more widely between candidates was more useful. From all these analyses, we conclude that both the text-mining variables and numeric variables on the applications showed meaningful correlations with the OTS Board scores.

3. Multivariate Results: We conducted multivariate analyses for two purposes. First, they allowed a determination of the overall level of prediction of the OTS Board scores from the application information. The correlation between a unit-weighted composite of the variables that were significant across panels were .448 for rated panel 1, .680 for rated panel 2, .360 for non-rated panel 1, and .425 for non-rated panel 2. The multiple correlation is .651 for rated panel 1, .780 for rated panel 2, .529 for non-rated panel 1, and .601 for non-rated panel 2. The adjusted *R*s are .606, .750, .515, and .563, respectively. Second, multivariate analyses allow an evaluation of the incremental prediction of the text variables beyond the numeric variables. The incremental *R*-squared (and adjusted *R*-squared) values are .080 (.055), .036 (.013), .047 (.039), and .065 (.037), respectively. Thus, the incremental contribution of the text variables averages 5.7% (3.6% adjusted) across samples. Note that 3.6% of variance explained is equivalent to a correlation of .190, which is often considered a meaningful size in personnel selection. From this, we conclude that computer models of application information can predict OTS Board scores fairly well, although differential weighting will be required. We also concluded that the text-

mining variables added sufficiently to the prediction of OTS Board scores beyond the numerical variables to be useful in the computer models.

4. Expectancy Tables: We created expectancy tables to illustrate the potential value of using the computer models to make selection decisions. Expectancy tables show the expected percentage of successful hires based on performance on the computer models. We defined a successful hire as a candidate that scored above the within-Board score average on the OTS Board scores. The tables showed that there can be substantial practical utility of the computer models in predicting which candidates will be successful hires.

5. Diversity Differences: We examined diversity differences to estimate whether the use of the computer models affected adverse impact in the hiring of women and minorities. The tables show relatively few significant differences on the text variables across panels, and they are sometimes in the opposite direction, favoring the women or minority subgroups. The numeric variables showed many more differences, especially the commonly observed race differences on aptitude tests like the AFOQT. Women in these samples also scored less well on the AFOQT, which is not as common with aptitude tests. To understand the extent to which these differences might influence selection decisions, we examined differences on the regression models. The regression models only showed significant differences by gender in non-rated panel 1, where women scored higher. On the other hand, there were significant differences by race for 3 of the 4 panels, with rated panel 1 being the exception. However, the differences by race are small, averaging .282 standard deviations across the 4 panels, with a range of .167 to .515. The results were nearly identical for the OTS Board scores, except the race differences were slightly larger, averaging .319 standard deviations across the 4 panels, with a range of .230 to .426.

4.3 Third Analysis of the Text Mining of Officer Training School Applications

Purposes

The purpose of these analyses are to describe two supplemental analyses including (1) creating expectancy tables showing the incremental value of the text variables to the prediction of success on the OTS Board scores, and (2) examining how the inclusion of text-mined variables affects adverse impact when used in combination with numeric variables to make OTS selection decisions.

METHOD

We used the same data as described in the previous reports. The only addition is that we used the actual OTS Board selections of candidates into OTS for the adverse impact analyses.

Additional Expectancy Tables

In the Revised Second Analysis Report, we created expectancy tables to illustrate the potential value of using the computer models to make selection decisions. Expectancy tables show the expected percentage of successful hires based on performance on the computer models. We defined a successful hire as a candidate that scored above average on the Board scores. We presented two types of expectancy tables: “Institutional” tables that show the percentage of all candidates who will be above average at various cutting scores and above (Table 88 in that previous report), and “Individual” tables that show the likelihood that individual candidates will be above average based on their specific scores (Table 89 in that previous report). For each panel of each table, they show the percentage of candidates who will be above average at cutting scores set at each 10%. The OTS Board Score that split the candidates into above average and below average are noted in each table. The cutoff for each 10% ranking is also presented in each table. Note that the predicted value cutoffs from the computer models will not vary as much as the Board scores because the correlation between them is not 1.0. For example, if the correlation between Board scores and computer scores is .60, then the computer scores will only vary 60% as much as the Board scores.

The additional expectancy tables created for this report show the incremental value of the text variables beyond the numeric variables to the prediction of success on the Board scores. To do this, we show the percentages of successful candidates at each cutting score if we used the numeric variables alone to make hiring decisions, the text variables alone, and both combined (as was shown in the previous tables). This allows the value of each set of variables to be determined individually. Of particular interest is the value of the text variables beyond the numeric variables, which is calculated in the last column.

Table 94 shows the institutional expectancy tables for each panel. As observed in the expectancy tables in the previous report, there is an improvement in the percent of successful candidates with increasing cutting scores for the combined numeric and text data. Table 94 shows that the same trend occurs for the numeric and text variables alone, with the increase steeper for the numeric variables because of their greater validity. Of most interest, the last

column for each panel shows that there is a small incremental improvement by adding the text variables to the numeric variables in each case, with greater improvements with higher cutting scores because of higher selectivity. The improvements differ across panels, and can range as high as 8%, but average is several percent. Table 94 also shows the expectancy tables broken down by cutting scores at every 20% as opposed to every 10%, which smooths out the variation in the percentages due to the small samples at each cutting score, making the improvements easier to observe.

Table 95 shows the individual expectancy tables for each panel. As observed before, there is an improvement in the likelihood that individual candidates will be above average based on their scores. Table 95 shows that the same trend occurs for the numeric and text variables alone, with the increase steeper for the numeric variables because of their greater validity. Again, the last column for each panel shows the incremental improvement by adding the text variables to the numeric variables. Although there are many exceptions, there is a general trend for these percentages to be negative for the lower cutting scores and higher for the higher cutting scores. This is because the addition of the text variables improves prediction, which means there will be fewer successful candidates for the low cutting scores (resulting in negative percents) and a greater number of successful candidates for the higher cutting scales (resulting in positive percents). In other words, candidates with low scores being successful are incorrect selection decisions that should be reduced with more valid selection, and candidates with high scores being successful are correct selection decisions that should increase with more valid selection.

The improvements are not entirely consistent with higher cutting scores and they vary considerably across panels. The percentages are also larger in Table 95 than in Table 94. These wide variations in trends and larger percentages are due to the small number of candidates in the denominators in Table 95. Each percentage is based on only about 20 people, thus there is considerable sampling variation. Table 95 also shows the expectancy tables broken down by scores at every 20% as opposed to every 10%, which smooths out the variation in the percentages due to the small samples at each score range, making the improvements somewhat easier to observe. They still show many exceptions, but the predominant trend is to show negative incremental values for lower score ranges (meaning fewer incorrect selection decisions) and positive incremental values for higher score ranges (meaning a great number of correct selection decisions).

To further reduce the variation due to the small samples in each panel, we created expectancy tables combining all the data across panels. We divided the sample from non-rated panel 1 by 4 so it would be comparable to the other panels (in the 200-250 range), thus estimating an average across panels. These tables are at the bottom of Tables 94 and 95. They show the positive improvement in the percent of successful candidates more clearly. Note that some researchers will use the theoretical expectancy tables as opposed to expectancy tables produced based on the study data in order to reduce the variation in the estimates based on sampling error and depict the potential value more clearly.

In summary, the additional expectancy table analyses showed that use of both the numeric and text variables increases the percentages of estimated successful hires, with greater improvements with higher cutting scores (being more selective). The addition of the text

variables improves prediction to a small but meaningful extent (i.e., several percent) in most panels, depending on the cutting score. For purposes of displaying the expectancy tables to potential users, the institutional tables show the influence of the computer models more clearly than the individual tables, and the tables with cutting scores at each 20% show the trends more clearly than those at each 10%. The tables combining all panels may show the potential improvement most clearly.

Adverse Impact Analyses

This report presents two statistical indicators that are commonly used to analyze adverse impact. One is the Adverse Impact Ratio, which is the passing rate of the focal group divided by the passing rate of the comparison group. It is an index of the size of the difference in the passing rates. Values below the threshold level of .80 are considered preliminary evidence of adverse impact. They indicate that the passing rate of the focal group is less than 80% of the passing rate of the comparison group. The Adverse Impact Ratio is calculated using the following formula:

$$AI\ Ratio = (Number\ of\ minorities\ (or\ women)\ selected / Number\ of\ minority\ (or\ women)\ candidates) / (Number\ of\ non-minorities\ (or\ men)\ selected / Number\ of\ non-minority\ (or\ men)\ candidates)$$

The other statistical indicator of adverse impact is the Standard Deviation Difference, which is the number of standard deviation (i.e., standard error) units the focal group differs from the comparison group. It is an index of the statistical significance of the difference in passing rates. Values larger than 2 or 3 are considered preliminary evidence of adverse impact. They indicate that the difference in passing rates observed would have occurred by chance in only about 5% or 1% of the cases, respectively. The Standard Deviation Difference uses the following formula:

$$SD\ Difference = ((Number\ of\ non-minorities\ (or\ men)\ selected / Number\ of\ non-minorities\ (or\ men)\ candidates) - (Number\ of\ minorities\ (or\ women)\ selected / Number\ of\ minorities\ (or\ women)\ candidates)) / \sqrt{((Total\ number\ selected / Total\ number\ of\ candidates) \times (1 - Total\ number\ selected / Total\ number\ of\ candidates) \times (1 / Number\ of\ minorities\ (or\ women)\ candidates) + 1 / Number\ of\ non-minorities\ (or\ men)\ candidates))}$$

The Standard Deviation (SD) Difference is greatly influenced by the sample sizes. With large sample sizes, the SD Difference will be large for virtually every comparison no matter how small the difference in hiring rates. On the other hand, with small samples, the SD Difference may be small even for large differences in passing rates. Therefore, the observations in this report will focus primarily on the Adverse Impact Ratio since it is an indicator of the size of the actual difference in passing rates, but we caution the interpretation because some of the sample sizes are fairly small for the individual minority groups and will not be significant.

The analyses compare all minority and gender subgroups, including:

- Asian
- Black
- Hispanic
- All Minorities (also including Hawaiian/Pacific Islander and Indian/Alaskan)
- Women

The comparison group for each analysis is non-minorities (for minorities) or men (for women).

Table 96 shows the adverse impact analyses. For each analysis, the tables show the number of candidates and the passing rates for each subgroup, and then the impact ratios and SD differences relative to the comparison group. The Predicted Value cutoff scores are listed in the tables for B – D below. For A, a clear cutoff of Board Scores by board decisions were not evident, so we reported the lowest score that was selected and the highest score that was rejected for each panel. For each of the four panels (rated and non-rated panel 1s and 2s), we present the following tables:

(A) Adverse impact tables based on whether candidates were selected using the board decisions.

(B) Adverse impact tables based on whether candidates were selected using numeric variables only. These were estimated by applying the same passing rate to the scores based on the Board decisions. For example, if the passing rate was 50% for given panel based on the Board decisions for all candidates combined, we applied a 50% passing rate using the numeric variables and then determined the adverse impact (differences in passing rates between subgroups). We used the same approach for C and D below.

(C) Adverse impact tables based on whether candidates were selected using text variables only.

(D) Adverse impact tables based on whether candidates were selected using numeric and text variables combined.

(E) Summary across adverse impact analyses.

The samples used for the adverse impact analyses were modified as follows. We conducted these analyses only on the candidates with complete data in order to ensure all analyses were comparable. This primarily applied to the numeric variables, where some candidates had missing data. We then removed the candidates in the non-rated panels who had been selected by the rated panels because no decision was made on them in the non-rated panels. Finally, we only used data with diversity information, which excluded only a small number of candidates. The resulting samples for racial subgroups are generally small, except for non-rated panel 1. Therefore, we focus more on the analyses with all racial groups combined. The samples for women were reasonably large for all panels, except rated panel 1.

The Board decisions (A) generally do not show any adverse impact for any subgroup for any panel. The exception is that non-rated panel 1 shows some borderline impact (ratio of .84). Likewise, there is generally no adverse impact for women, except non-rated panel 2 where women have an SD above 3 even though the ratio is above .80.

The adverse impact for minorities is greater for the numeric variables (B), but again this is primarily only the case with non-rated panel 1. The text variables (C) generally do not show adverse impact for minorities in any panels. The combination of the numeric and text variables shows the same pattern as the numeric variables, with some adverse impact for non-rated panel 1. They also show SDs greater than 2 for non-rated panel 2, but the ratios are above .90. None of the numeric or text variables show adverse impact for women. The differences in adverse

impact ratios between the Board scores and the various sets of variables can be most easily observed in the summary tables (E).

In interpreting these data, it is important to recognize that the selection ratios are very high for all of the panels except non-rated panel 1, and that panel also has a much larger sample size, thus adverse impact is more likely in that panel. It is also important to recognize that the small differences in impact ratios in the other panels for minorities may reflect different decisions on only a couple of people given the small samples.

The largest difference observed in all of these analyses is in non-rated panel 1 where the adverse impact ratio goes from .84 on the Board scores to .67 on the combination of numeric and text variables for all minorities together. This finding is noteworthy since the previous analyses of subgroup differences on Board scores in the Second Analysis Report showed meaningful differences by race, with a *d*-score of .280 on non-rated panel 1. The average across panels was .319, with a range of .230 to .426. Moreover, more impact for the computer scores is also surprising because they showed smaller mean differences than the Board scores in the Second Analysis Report, with a *d*-score of .167 on non-rated panel 1. The average across panels was .282, with a range of .167 to .515.

Because these findings are contradictory, the relative *d*-score differences must have changed when limited to just those included in the adverse impact analysis. Thus, we recalculated the *d*-scores based on these samples, as shown in Table 97. The *d*-score in non-rated panel 1 was slightly larger for the computer scores (.33) than the board scores (.20), which is in the opposite direction as what we observed previously, but is consistent with the larger adverse impact of the computer scores. A similar trend occurs for the other panels, with the computer scores showing slightly larger *d*-scores than the Board scores. The differences were not large enough to increase the adverse impact perhaps partly because of the high selection ratios in those panels. Plus, the *d*-score differences are relatively small in all panels compared to the research literature on subgroup differences for aptitude tests, where they are often 1.0 for Blacks and slightly less for Hispanics (Hough, Oswald, & Ployhart, 2001; Roth, Bevier, Bobko, Switzer, & Tyler, 2001). The switch in the relative sizes of the *d*-scores between the Board and computer scores is apparently due to excluding those with missing data on the numeric variables and, in the case of the non-rated panels, excluding those who were selected in the rated panels.

In summary, the adverse impact analyses showed that neither the Board scores nor the computer scores had any meaningful impact in three of the four panels for minorities and in all four panels for women. However, the Board scores had borderline impact and the computer scores had moderate impact in the non-rated panel 1. The results were largely due to the high selection ratios in the other three panels, as well as relatively small subgroup mean score differences on any of the panels. The impact appeared to be entirely due to the numeric variables, which consisted largely of aptitude test scores that typically have large subgroup differences. The text variables did not show adverse impact in any analysis.

These results probably overestimate the adverse impact of the computer scores in operational use, depending on how they are used. For example, they might be used only to prescreen out the lowest scoring candidates who would have little chance of passing the Board

review process. Another alternative is to use the computer scores as only one input to the final decision. They could be combined with the ratings of the Boards, such as using the computer scores to replace one Board member. This may also be justified by the fact that the computer scores are as reliable as a single Board member (demonstrated in the Second Analysis Report). Lastly, but not the only other alternative, the scores might be weighted in a manner to reduce impact, such as giving the numeric variables less weight.

Table 94: Institutional Expectancy Tables – Cumulative Count and Percent of Candidates that Will Be Above Average if Hired Based on Each Cutting Score

Rated, Panel 1 (10 potential cutting scores)											
	Selection Based on Numeric Variables Alone			Selection Based on Text Variables Alone			Selection Based on Numeric and Text Variables Combined			Incremental Improvement by Adding Text Variables to Numeric Variables	
Potential Cutting Score	Cumm. Count Above Average	Percent Above Average	Predicted Value Cutoff	Cumm. Count Above Average	Percent Above Average	Predicted Value Cutoff	Cumm. Count Above Average	Percent Above Average	Predicted Value Cutoff	Cumm. Count Above Average	Percent Above Average
Cut off bottom 90%	22	88%	27.62	17	68%	27.33	24	96%	27.67	2	8%
Cut off bottom 80%	42	82%	27.41	32	63%	27.11	44	86%	27.44	2	4%
Cut off bottom 70%	61	79%	27.24	51	66%	27.04	65	84%	27.22	4	5%
Cut off bottom 60%	76	74%	27.10	69	67%	26.95	81	79%	27.09	5	5%
Cut off bottom 50%	92	71%	26.97	85	66%	26.87	97	75%	26.92	5	4%
Cut off bottom 40%	106	69%	26.86	96	62%	26.81	110	71%	26.76	4	3%
Cut off bottom 30%	120	67%	26.65	114	63%	26.74	122	68%	26.65	2	1%
Cut off bottom 20%	129	63%	26.47	126	61%	26.64	135	66%	26.47	6	3%
Cut off bottom 10%	138	59%	26.20	134	58%	26.54	139	60%	26.19	1	0%
Cut off bottom 0%	141	55%	26.05	141	55%	26.39	141	55%	26.16	0	0%
<i>N</i> = 257 Board Scores of 26.9 or greater were above average. Note. <i>Cumm Count</i> is cumulative. Incremental is calculated by taking the Combined Count minus the Numeric Count.											

Rated, Panel 1 (5 potential cutting scores)											
	Selection Based on Numeric Variables Alone			Selection Based on Text Variables Alone			Selection Based on Numeric and Text Variables Combined			Incremental Improvement by Adding Text Variables to Numeric Variables	
Potential Cutting Score	Cumm. Count Above Average	Percent Above Average	Predicted Value Cutoff	Cumm. Count Above Average	Percent Above Average	Predicted Value Cutoff	Cumm. Count Above Average	Percent Above Average	Predicted Value Cutoff	Cumm. Count Above Average	Percent Above Average
Cut off bottom 80%	42	82%	27.41	32	63%	27.11	44	86%	27.44	2	4%
Cut off bottom 60%	76	74%	27.10	69	67%	26.95	81	79%	27.09	5	5%
Cut off bottom 40%	106	69%	26.86	96	62%	26.81	110	71%	26.76	4	3%
Cut off bottom 20%	129	63%	26.47	126	61%	26.64	135	66%	26.47	6	3%
Cut off bottom 0%	141	55%	26.05	141	55%	26.39	141	55%	26.16	0	0%
<i>N</i> = 257 Board Scores of 26.9 or greater were above average. Note. <i>Cumm Count</i> is cumulative. Incremental is calculated by taking the Combined Count minus the Numeric Count.											

Rated, Panel 2 (10 potential cutting scores)											
	Selection Based on Numeric Variables Alone			Selection Based on Text Variables Alone			Selection Based on Numeric and Text Variables Combined			Incremental Improvement by Adding Text Variables to Numeric Variables	
Potential Cutting Score	Cumm. Count Above Average	Percent Above Average	Predicted Value Cutoff	Cumm. Count Above Average	Percent Above Average	Predicted Value Cutoff	Cumm. Count Above Average	Percent Above Average	Predicted Value Cutoff	Cumm. Count Above Average	Percent Above Average
Cut off bottom 90%	20	100%	28.11	19	95%	27.81	20	100%	28.05	0	0%
Cut off bottom 80%	40	98%	27.74	36	88%	27.56	41	100%	27.78	1	2%
Cut off bottom 70%	55	90%	27.54	49	80%	27.35	59	97%	27.55	4	7%
Cut off bottom 60%	73	89%	27.28	64	78%	27.19	73	89%	27.33	0	0%
Cut off bottom 50%	84	82%	27.13	76	74%	27.03	87	84%	27.12	3	3%
Cut off bottom 40%	91	74%	26.91	81	66%	26.87	95	77%	26.96	4	3%
Cut off bottom 30%	101	70%	26.74	92	64%	26.72	103	72%	26.69	2	1%
Cut off bottom 20%	107	65%	26.56	101	62%	26.52	107	65%	26.51	0	0%
Cut off bottom 10%	109	59%	26.22	106	57%	26.31	109	59%	26.26	0	0%
Cut off bottom 0%	110	54%	25.25	110	54%	26.18	110	54%	25.33	0	0%
<i>N</i> = 205 Board Scores of 27.1 or greater were above average. Note. <i>Cumm Count</i> is cumulative. Incremental is calculated by taking the Combined Count minus the Numeric Count.											

Rated, Panel 2 (5 potential cutting scores)											
	Selection Based on Numeric Variables Alone			Selection Based on Text Variables Alone			Selection Based on Numeric and Text Variables Combined			Incremental Improvement by Adding Text Variables to Numeric Variables	
Potential Cutting Score	Cumm. Count Above Average	Percent Above Average	Predicted Value Cutoff	Cumm. Count Above Average	Percent Above Average	Predicted Value Cutoff	Cumm. Count Above Average	Percent Above Average	Predicted Value Cutoff	Cumm. Count Above Average	Percent Above Average
Cut off bottom 80%	40	98%	27.74	36	88%	27.56	41	100%	27.78	1	2%
Cut off bottom 60%	73	89%	27.28	64	78%	27.19	73	89%	27.33	0	0%
Cut off bottom 40%	91	74%	26.91	81	66%	26.87	95	77%	26.96	4	3%
Cut off bottom 20%	107	65%	26.56	101	62%	26.52	107	65%	26.51	0	0%
Cut off bottom 0%	110	54%	25.25	110	54%	26.18	110	54%	25.33	0	0%
<i>N</i> = 205 Board Scores of 27.1 or greater were above average. Note. <i>Cumm Count</i> is cumulative. Incremental is calculated by taking the Combined Count minus the Numeric Count.											

Non-Rated, Panel 1 (10 potential cutting scores)											
	Selection Based on Numeric Variables Alone			Selection Based on Text Variables Alone			Selection Based on Numeric and Text Variables Combined			Incremental Improvement by Adding Text Variables to Numeric Variables	
Potential Cutting Score	Cumm. Count Above Average	Percent Above Average	Predicted Value Cutoff	Cumm. Count Above Average	Percent Above Average	Predicted Value Cutoff	Cumm. Count Above Average	Percent Above Average	Predicted Value Cutoff	Cumm. Count Above Average	Percent Above Average
Cut off bottom 90%	79	85%	24.78	80	80%	24.50	82	88%	24.89	3	3%
Cut off bottom 80%	143	77%	24.54	146	74%	24.29	157	84%	24.58	14	8%
Cut off bottom 70%	204	73%	24.34	201	69%	24.13	219	78%	24.37	15	5%
Cut off bottom 60%	269	72%	24.21	257	67%	23.99	274	74%	24.18	5	1%
Cut off bottom 50%	321	69%	24.02	305	63%	23.88	325	70%	24.00	4	1%
Cut off bottom 40%	367	66%	23.86	349	61%	23.78	368	66%	23.82	1	0%
Cut off bottom 30%	412	63%	23.68	392	59%	23.69	410	63%	23.60	-2	0%
Cut off bottom 20%	436	59%	23.45	431	57%	23.57	443	59%	23.39	7	1%
Cut off bottom 10%	466	56%	23.11	459	54%	23.39	466	56%	23.06	0	0%
Cut off bottom 0%	482	52%	22.22	482	52%	22.97	482	52%	22.23	0	0%
<i>N</i> = 931 Board Scores of 23.92 or greater were above average. Note. <i>Cumm Count</i> is cumulative. Incremental is calculated by taking the Combined Count minus the Numeric Count.											

Non-Rated, Panel 1 (5 potential cutting scores)											
	Selection Based on Numeric Variables Alone			Selection Based on Text Variables Alone			Selection Based on Numeric and Text Variables Combined			Incremental Improvement by Adding Text Variables to Numeric Variables	
Potential Cutting Score	Cumm. Count Above Average	Percent Above Average	Predicted Value Cutoff	Cumm. Count Above Average	Percent Above Average	Predicted Value Cutoff	Cumm. Count Above Average	Percent Above Average	Predicted Value Cutoff	Cumm. Count Above Average	Percent Above Average
Cut off bottom 80%	143	77%	24.54	146	74%	24.29	157	84%	24.58	14	8%
Cut off bottom 60%	269	72%	24.21	257	67%	23.99	274	74%	24.18	5	1%
Cut off bottom 40%	367	66%	23.86	349	61%	23.78	368	66%	23.82	1	0%
Cut off bottom 20%	436	59%	23.45	431	57%	23.57	443	59%	23.39	7	1%
Cut off bottom 0%	482	52%	22.22	482	52%	22.97	482	52%	22.23	0	0%
<i>N</i> = 931 Board Scores of 23.92 or greater were above average. Note. <i>Cumm Count</i> is cumulative. Incremental is calculated by taking the Combined Count minus the Numeric Count.											

Non-Rated, Panel 2 (10 potential cutting scores)											
	Selection Based on Numeric Variables Alone			Selection Based on Text Variables Alone			Selection Based on Numeric and Text Variables Combined			Incremental Improvement by Adding Text Variables to Numeric Variables	
Potential Cutting Score	Cumm. Count Above Average	Percent Above Average	Predicted Value Cutoff	Cumm. Count Above Average	Percent Above Average	Predicted Value Cutoff	Cumm. Count Above Average	Percent Above Average	Predicted Value Cutoff	Cumm. Count Above Average	Percent Above Average
Cut off bottom 90%	24	92%	28.01	23	85%	27.83	24	92%	28.25	0	0%
Cut off bottom 80%	46	88%	27.83	42	76%	27.59	43	83%	27.88	-3	-6%
Cut off bottom 70%	64	82%	27.63	57	70%	27.44	66	85%	27.67	2	3%
Cut off bottom 60%	79	75%	27.41	73	66%	27.30	84	80%	27.45	5	5%
Cut off bottom 50%	95	73%	27.29	84	62%	27.14	95	73%	27.26	0	0%
Cut off bottom 40%	108	69%	27.14	98	60%	27.01	106	68%	27.06	-2	-1%
Cut off bottom 30%	119	65%	27.01	109	58%	26.86	120	65%	26.90	1	1%
Cut off bottom 20%	127	60%	26.65	119	55%	26.74	128	61%	26.67	1	0%
Cut off bottom 10%	131	56%	26.41	129	53%	26.56	134	57%	26.45	3	1%
Cut off bottom 0%	135	52%	25.99	135	52%	26.31	135	52%	26.18	0	0%
<i>N</i> = 262 Board Scores of 27.4 or greater were above average. Note. <i>Cumm Count</i> is cumulative. Incremental is calculated by taking the Combined Count minus the Numeric Count.											

Non-Rated, Panel 2 (5 potential cutting scores)											
	Selection Based on Numeric Variables Alone			Selection Based on Text Variables Alone			Selection Based on Numeric and Text Variables Combined			Incremental Improvement by Adding Text Variables to Numeric Variables	
Potential Cutting Score	Cumm. Count Above Average	Percent Above Average	Predicted Value Cutoff	Cumm. Count Above Average	Percent Above Average	Predicted Value Cutoff	Cumm. Count Above Average	Percent Above Average	Predicted Value Cutoff	Cumm. Count Above Average	Percent Above Average
Cut off bottom 80%	46	88%	27.83	42	76%	27.59	43	83%	27.88	-3	-6%
Cut off bottom 60%	79	75%	27.41	73	66%	27.30	84	80%	27.45	5	5%
Cut off bottom 40%	108	69%	27.14	98	60%	27.01	106	68%	27.06	-2	-1%
Cut off bottom 20%	127	60%	26.65	119	55%	26.74	128	61%	26.67	1	0%
Cut off bottom 0%	135	52%	25.99	135	52%	26.31	135	52%	26.18	0	0%
<i>N</i> = 262 Board Scores of 27.4 or greater were above average. Note. <i>Cumm Count</i> is cumulative. Incremental is calculated by taking the Combined Count minus the Numeric Count.											

Summary Institutional Expectancy Table (10 potential cutting scores)											
	Selection Based on Numeric Variables Alone			Selection Based on Text Variables Alone			Selection Based on Numeric and Text Variables Combined			Incremental Improvement by Adding Text Variables to Numeric Variables	
Potential Cutting Score	Cumm. Count Above Average	Percent Above Average	Predicted Value Cutoff	Cumm. Count Above Average	Percent Above Average	Predicted Value Cutoff	Cumm. Count Above Average	Percent Above Average	Predicted Value Cutoff	Cumm. Count Above Average	Percent Above Average
Cut off bottom 90%	86	91%	27.13	79	81%	26.87	89	94%	27.22	3	3%
Cut off bottom 80%	164	86%	26.88	147	75%	26.64	167	88%	26.92	4	2%
Cut off bottom 70%	231	81%	26.69	207	71%	26.49	245	86%	26.70	14	5%
Cut off bottom 60%	295	77%	26.50	270	69%	26.36	307	80%	26.51	11	3%
Cut off bottom 50%	351	73%	26.35	321	66%	26.23	360	75%	26.33	9	2%
Cut off bottom 40%	397	69%	26.19	362	62%	26.12	403	70%	26.15	6	1%
Cut off bottom 30%	443	66%	26.02	413	61%	26.00	448	67%	25.96	5	1%
Cut off bottom 20%	472	62%	25.78	454	58%	25.87	481	63%	25.76	9	1%
Cut off bottom 10%	495	57%	25.49	484	56%	25.70	499	58%	25.49	4	1%
Cut off bottom 0%	507	53%	24.88	507	53%	25.46	507	53%	24.98	0	0%
$N = \sim 957$ (rounded due to dividing Non-Rated, Panel 1 by 4 to equalize sample size of four samples) Note. <i>Count</i> is cumulative. Incremental is calculated by taking the Combined Count minus the Numeric Count. Predicted Value cutoff estimated by taking average of cutoffs across panels by variable type and combined.											

Summary Institutional Expectancy Table (5 potential cutting scores)											
	Selection Based on Numeric Variables Alone			Selection Based on Text Variables Alone			Selection Based on Numeric and Text Variables Combined			Incremental Improvement by Adding Text Variables to Numeric Variables	
Potential Cutting Score	Cumm. Count Above Average	Percent Above Average	Predicted Value Cutoff	Cumm. Count Above Average	Percent Above Average	Predicted Value Cutoff	Cumm. Count Above Average	Percent Above Average	Predicted Value Cutoff	Cumm. Count Above Average	Percent Above Average
Cut off bottom 80%	164	86%	26.88	147	75%	26.64	167	88%	26.92	4	2%
Cut off bottom 60%	295	77%	26.50	270	69%	26.36	307	80%	26.51	11	3%
Cut off bottom 40%	397	69%	26.19	362	62%	26.12	403	70%	26.15	6	1%
Cut off bottom 20%	472	62%	25.78	454	58%	25.87	481	63%	25.76	9	1%
Cut off bottom 0%	507	53%	24.88	507	53%	25.46	507	53%	24.98	0	0%
<i>N</i> = ~957 (rounded due to dividing Non-Rated, Panel 1 by 4 to equalize sample size of four samples) Note. <i>Count</i> is cumulative. Incremental is calculated by taking the Combined Count minus the Numeric Count.											

Table 95: Individual Expectancy Tables – Count and Percent of Candidates at that Score Who Will be Above Average if Hired

Rated, Panel 1 (10 score bands)											
	Selection Based on Numeric Variables Alone			Selection Based on Text Variables Alone			Selection Based on Numeric and Text Variables Combined			Incremental Improvement by Adding Text Variables to Numeric Variables	
Candidate Score	Count Above Average	Percent Above Average	Predicted Value Cutoff	Count Above Average	Percent Above Average	Predicted Value Cutoff	Count Above Average	Percent Above Average	Predicted Value Cutoff	Count Above Average	Percent Above Average
90 - 100%	22	88%	27.62	17	68%	27.33	24	96%	27.67	2	8%
80 - 90%	20	77%	27.41	15	58%	27.11	20	77%	27.44	0	0%
70 - 80%	19	73%	27.24	19	73%	27.04	21	81%	27.22	2	8%
60 - 70%	15	58%	27.10	18	69%	26.95	16	62%	27.09	1	4%
50 - 60%	16	62%	26.97	16	64%	26.87	16	62%	26.92	0	0%
40 - 50%	14	56%	26.86	11	46%	26.81	13	52%	26.76	-1	-4%
30 - 40%	14	54%	26.65	18	75%	26.74	12	46%	26.65	-2	-8%
20 - 30%	9	35%	26.47	12	48%	26.64	13	50%	26.47	4	16%
10 - 20%	9	35%	26.20	8	31%	26.54	4	15%	26.19	-5	-19%
0 - 10%	3	12%	26.05	7	28%	26.39	2	8%	26.16	-1	-4%
<i>N</i> = 257 Board Scores of 26.9 or greater were above average. <i>Note.</i> The total possible number of people in each range is between 24 and 26 people—the number of people in each range is not even because the total <i>N</i> is not even (ended in 0). 30 people had missing Numeric data. Missing Text data was considered meaningful and therefore not “missing.” However, for all analyses we excluded the people with missing Numeric data, so Text ranges are more uneven. Count is not cumulative. Incremental is calculated by taking the Combined Count minus the Numeric Count. Predicted Value cutoffs are the bottom of the range.											

Rated, Panel 1 (5 score bands)											
	Selection Based on Numeric Variables Alone			Selection Based on Text Variables Alone			Selection Based on Numeric and Text Variables Combined			Incremental Improvement by Adding Text Variables to Numeric Variables	
Candidate Score	Count Above Average	Percent Above Average	Predicted Value Cutoff	Count Above Average	Percent Above Average	Predicted Value Cutoff	Count Above Average	Percent Above Average	Predicted Value Cutoff	Count Above Average	Percent Above Average
80 - 100%	42	82%	27.41	32	63%	27.11	44	86%	27.44	2	4%
60 - 80%	34	65%	27.10	37	71%	26.95	37	71%	27.09	3	6%
40 - 60%	30	59%	26.86	27	55%	26.81	29	57%	26.76	-1	-2%
20 - 40%	23	44%	26.47	30	61%	26.64	25	48%	26.47	2	4%
0 - 20%	12	24%	26.05	15	29%	26.39	6	12%	26.16	-6	-12%
<i>N</i> = 257 <i>Notes.</i> Board Scores of 26.9 or greater were above average. The total possible number of people in each range is between 51-52 people—the number of people in each range is not even because the total <i>N</i> is not even (ended in 0). 30 people had missing Numeric data. Missing Text data was considered meaningful and therefore not “missing.” However, for all analyses we excluded the people with missing Numeric data, so Text ranges are more uneven. Count is not cumulative. Incremental is calculated by taking the Combined Count minus the Numeric Count. Predicted Value cutoffs are the bottom of the range.											

Rated, Panel 2 (10 score bands)											
	Selection Based on Numeric Variables Alone			Selection Based on Text Variables Alone			Selection Based on Numeric and Text Variables Combined			Incremental Improvement by Adding Text Variables to Numeric Variables	
Candidate Score	Count Above Average	Percent Above Average	Predicted Value Cutoff	Count Above Average	Percent Above Average	Predicted Value Cutoff	Count Above Average	Percent Above Average	Predicted Value Cutoff	Count Above Average	Percent Above Average
90 - 100%	20	100%	28.11	19	90%	27.81	20	100%	28.05	0	0%
80 - 90%	20	95%	27.74	17	81%	27.56	21	100%	27.78	1	5%
70 - 80%	15	75%	27.54	13	62%	27.35	18	90%	27.55	3	15%
60 - 70%	18	86%	27.28	15	71%	27.19	14	67%	27.33	-4	-19%
50 - 60%	11	52%	27.13	12	57%	27.03	14	67%	27.12	3	14%
40 - 50%	7	35%	26.91	5	24%	26.87	8	40%	26.96	1	5%
30 - 40%	10	48%	26.74	11	52%	26.72	8	38%	26.69	-2	-10%
20 - 30%	6	30%	26.56	9	43%	26.52	4	20%	26.51	-2	-10%
10 - 20%	2	10%	26.22	5	24%	26.31	2	10%	26.26	0	0%
0 - 10%	1	5%	25.25	4	20%	26.18	1	5%	25.33	0	0%
<i>N</i> = 205 Board Scores of 27.1 or greater were above average. <i>Note.</i> The total possible number of people in each range is 20-21 people—the number of people in each range is not even because the total <i>N</i> is not even (ended in 0). 5 people had missing Numeric data. Missing Text data was considered meaningful and therefore not “missing.” However, for all analyses we excluded the people with missing Numeric data, so Text ranges are more uneven. Count is not cumulative. Incremental is calculated by taking the Combined Count minus the Numeric Count. Predicted Value cutoffs are the bottom of the range.											

Rated, Panel 2 (5 score bands)											
	Selection Based on Numeric Variables Alone			Selection Based on Text Variables Alone			Selection Based on Numeric and Text Variables Combined			Incremental Improvement by Adding Text Variables to Numeric Variables	
Candidate Score	Count Above Average	Percent Above Average	Predicted Value Cutoff	Count Above Average	Percent Above Average	Predicted Value Cutoff	Count Above Average	Percent Above Average	Predicted Value Cutoff	Count Above Average	Percent Above Average
80 - 100%	40	98%	27.74	36	86%	27.56	41	100%	27.78	1	2%
60 - 80%	33	80%	27.28	28	67%	27.19	32	78%	27.33	-1	-2%
40 - 60%	18	44%	26.91	17	40%	26.87	22	54%	26.96	4	10%
20 - 40%	16	39%	26.56	20	48%	26.52	12	29%	26.51	-4	-10%
0 - 20%	3	7%	25.25	9	22%	26.18	3	7%	25.33	0	0%
<i>N</i> = 205 Board Scores of 27.1 or greater were above average. <i>Note.</i> The total possible number of people in each range is 41-42 people—the number of people in each range is not even because the total <i>N</i> is not even (ended in 0). 5 people had missing Numeric data. Missing Text data was considered meaningful and therefore not “missing.” However, for all analyses we excluded the people with missing Numeric data, so Text ranges are more uneven. Count is not cumulative. Incremental is calculated by taking the Combined Count minus the Numeric Count. Predicted Value cutoffs are the bottom of the range.											

Non-Rated, Panel 1 (10 score bands)											
	Selection Based on Numeric Variables Alone			Selection Based on Text Variables Alone			Selection Based on Numeric and Text Variables Combined			Incremental Improvement by Adding Text Variables to Numeric Variables	
Candidate Score	Count Above Average	Percent Above Average	Predicted Value Cutoff	Count Above Average	Percent Above Average	Predicted Value Cutoff	Count Above Average	Percent Above Average	Predicted Value Cutoff	Count Above Average	Percent Above Average
90 - 100%	79	85%	24.78	80	80%	24.50	82	88%	24.89	3	3%
80 - 90%	64	69%	24.54	66	67%	24.29	75	81%	24.58	11	12%
70 - 80%	61	66%	24.34	55	60%	24.13	62	67%	24.37	1	1%
60 - 70%	65	70%	24.21	56	59%	23.99	55	59%	24.18	-10	-11%
50 - 60%	52	55%	24.02	48	49%	23.88	51	54%	24.00	-1	-1%
40 - 50%	46	49%	23.86	44	48%	23.78	43	46%	23.82	-3	-3%
30 - 40%	45	48%	23.68	43	46%	23.69	42	45%	23.60	-3	-3%
20 - 30%	24	26%	23.45	39	42%	23.57	33	35%	23.39	9	10%
10 - 20%	30	32%	23.11	28	32%	23.39	23	25%	23.06	-7	-8%
0 - 10%	16	17%	22.22	23	28%	22.97	16	17%	22.23	0	0%
<i>N</i> = 931 Board Scores of 23.92 or greater were above average. <i>Note.</i> The total possible number of people in the Numeric ranges is 93-94 people and in the Text ranges is 82-100 people—the number of people in each range is not even because the total <i>N</i> is not even (ended in 0). 126 people had missing Numeric data. Missing Text data was considered meaningful and therefore not “missing.” However, for all analyses we excluded the people with missing Numeric data, so Text ranges are more uneven. Count is not cumulative. Incremental is calculated by taking the Combined Count minus the Numeric Count. Predicted Value cutoffs are the bottom of the range.											

Non-Rated, Panel 1 (5 score bands)											
	Selection Based on Numeric Variables Alone			Selection Based on Text Variables Alone			Selection Based on Numeric and Text Variables Combined			Incremental Improvement by Adding Text Variables to Numeric Variables	
Candidate Score	Count Above Average	Percent Above Average	Predicted Value Cutoff	Count Above Average	Percent Above Average	Predicted Value Cutoff	Count Above Average	Percent Above Average	Predicted Value Cutoff	Count Above Average	Percent Above Average
80 - 100%	143	77%	24.54	146	74%	24.29	157	84%	24.58	14	8%
60 - 80%	126	68%	24.21	111	59%	23.99	117	63%	24.18	-9	-5%
40 - 60%	98	52%	23.86	92	49%	23.78	94	50%	23.82	-4	-2%
20 - 40%	69	37%	23.45	82	44%	23.57	75	40%	23.39	6	3%
0 - 20%	46	25%	22.22	51	30%	22.97	39	21%	22.23	-7	-4%
<i>N</i> = 931 Board Scores of 23.92 or greater were above average. <i>Note.</i> The total possible number of people in the Numeric ranges is 186-187 people and in the Text ranges is 170-198 people—the number of people in each range is not even because the total <i>N</i> is not even (ended in 0). 126 people had missing Numeric data. Missing Text data was considered meaningful and therefore not “missing.” However, for all analyses we excluded the people with missing Numeric data, so Text ranges are more uneven. Count is not cumulative. Incremental is calculated by taking the Combined Count minus the Numeric Count. Predicted Value cutoffs are the bottom of the range.											

Non-Rated, Panel 2 (10 score bands)											
	Selection Based on Numeric Variables Alone			Selection Based on Text Variables Alone			Selection Based on Numeric and Text Variables Combined			Incremental Improvement by Adding Text Variables to Numeric Variables	
Candidate Score	Count Above Average	Percent Above Average	Predicted Value Cutoff	Count Above Average	Percent Above Average	Predicted Value Cutoff	Count Above Average	Percent Above Average	Predicted Value Cutoff	Count Above Average	Percent Above Average
90 - 100%	24	92%	28.01	23	85%	27.83	24	92%	28.25	0	0%
80 - 90%	20	77%	27.83	19	68%	27.59	19	73%	27.88	-1	-4%
70 - 80%	17	65%	27.63	15	56%	27.44	23	88%	27.67	6	23%
60 - 70%	15	56%	27.41	16	57%	27.30	18	67%	27.45	3	11%
50 - 60%	15	58%	27.29	11	44%	27.14	11	42%	27.26	-4	-15%
40 - 50%	13	50%	27.14	14	52%	27.01	11	42%	27.06	-2	-8%
30 - 40%	11	41%	27.01	11	41%	26.86	14	52%	26.90	3	11%
20 - 30%	8	31%	26.65	10	37%	26.74	8	31%	26.67	0	0%
10 - 20%	3	12%	26.41	10	38%	26.56	6	23%	26.45	3	12%
0 - 10%	4	15%	25.99	6	30%	26.31	1	4%	26.18	-3	-12%
<i>N</i> = 262 Board Scores of 27.4 or greater were above average. <i>Note.</i> The total possible number of people in each range is 26-27 people and in the Text ranges is 20-28 people —the number of people in each range is not even because the total <i>N</i> is not even (ended in 0). 12 people had missing Numeric data. Missing Text data was considered meaningful and therefore not “missing.” However, for all analyses we excluded the people with missing Numeric data, so Text ranges are more uneven. Count is not cumulative. Incremental is calculated by taking the Combined Count minus the Numeric Count. Predicted Value cutoffs are the bottom of the range.											

Non-Rated, Panel 2 (5 score bands)											
	Selection Based on Numeric Variables Alone			Selection Based on Text Variables Alone			Selection Based on Numeric and Text Variables Combined			Incremental Improvement by Adding Text Variables to Numeric Variables	
Candidate Score	Count Above Average	Percent Above Average	Predicted Value Cutoff	Count Above Average	Percent Above Average	Predicted Value Cutoff	Count Above Average	Percent Above Average	Predicted Value Cutoff	Count Above Average	Percent Above Average
80 - 100%	44	85%	27.83	42	76%	27.59	43	83%	27.88	-1	-2%
60 - 80%	32	60%	27.41	31	56%	27.30	41	77%	27.45	9	17%
40 - 60%	28	54%	27.14	25	48%	27.01	22	42%	27.06	-6	-12%
20 - 40%	19	36%	26.65	21	39%	26.74	22	42%	26.67	3	6%
0 - 20%	7	13%	25.99	16	35%	26.31	7	13%	26.18	0	0%
<i>N</i> = 262 Board Scores of 27.46.9 or greater were above average. <i>Note.</i> The total possible number of people in each range is 52-537 people and in the Text ranges is 46-55 people —the number of people in each range is not even because the total <i>N</i> is not even (ended in 0). 12 people had missing Numeric data. Missing Text data was considered meaningful and therefore not “missing.” However, for all analyses we excluded the people with missing Numeric data, so Text ranges are more uneven. Count is not cumulative. Incremental is calculated by taking the Combined Count minus the Numeric Count. Predicted Value cutoffs are the bottom of the range.											

Summary Individual Expectancy Table (10 score bands)											
	Selection Based on Numeric Variables Alone			Selection Based on Text Variables Alone			Selection Based on Numeric and Text Variables Combined			Incremental Improvement by Adding Text Variables to Numeric Variables	
Candidate Score	Count Above Average	Percent Above Average	Predicted Value Cutoff	Count Above Average	Percent Above Average	Predicted Value Cutoff	Count Above Average	Percent Above Average	Predicted Value Cutoff	Count Above Average	Percent Above Average
90 - 100%	86	91%	27.13	79	81%	26.87	89	94%	27.22	3	3%
80 - 90%	76	79%	26.88	68	68%	26.64	79	82%	26.92	3	3%
70 - 80%	66	70%	26.69	61	63%	26.49	78	81%	26.70	11	12%
60 - 70%	64	66%	26.50	63	64%	26.36	62	63%	26.51	-3	-3%
50 - 60%	55	57%	26.35	51	54%	26.23	54	56%	26.33	-1	-1%
40 - 50%	46	48%	26.19	41	43%	26.12	43	45%	26.15	-3	-3%
30 - 40%	46	48%	26.02	51	53%	26.00	45	46%	25.96	-2	-2%
20 - 30%	29	30%	25.78	41	42%	25.87	33	35%	25.76	4	5%
10 - 20%	22	22%	25.49	30	32%	25.70	18	18%	25.49	-4	-4%
0 - 10%	12	13%	24.88	23	27%	25.46	8	8%	24.98	-4	-4%
<i>N</i> = ~957 (rounded due to dividing Non-Rated, Panel 1 by 4 to equalize sample size of four samples) <i>Note.</i> The total possible number of people in each range is between 86-100 people—the number of people in each range is not even because the total <i>N</i> is not even (ended in 0). Missing data varied by Board and Panel (between 5 and 126). However, for all analyses we excluded the people with missing Numeric data, so Text ranges are more uneven. Count is not cumulative. Incremental is calculated by taking the Combined Count minus the Numeric Count. Predicted Value cutoffs are the bottom of the range.											

Summary Individual Expectancy Table (5 score bands)											
	Selection Based on Numeric Variables Alone			Selection Based on Text Variables Alone			Selection Based on Numeric and Text Variables Combined			Incremental Improvement by Adding Text Variables to Numeric Variables	
Candidate Score	Count Above Average	Percent Above Average	Predicted Value Cutoff	Count Above Average	Percent Above Average	Predicted Value Cutoff	Count Above Average	Percent Above Average	Predicted Value Cutoff	Count Above Average	Percent Above Average
80 - 100%	162	85%	26.88	147	74%	26.64	167	88%	26.92	6	3%
60 - 80%	131	68%	26.50	124	63%	26.36	139	72%	26.51	9	5%
40 - 60%	101	53%	26.19	92	48%	26.12	97	51%	26.15	-4	-2%
20 - 40%	75	39%	25.78	92	48%	25.87	78	40%	25.76	3	1%
0 - 20%	34	18%	24.88	53	29%	25.46	26	14%	24.98	-8	-4%
<i>N</i> = ~957 (rounded due to dividing Non-Rated, Panel 1 by 4 to equalize sample size of four samples) <i>Note.</i> The total possible number of people in each range is between 46-55 people—the number of people in each range is not even because the total <i>N</i> is not even (ended in 0). Missing data varied by Board and Panel (between 5 and 126). However, for all analyses we excluded the people with missing Numeric data, so Text ranges are more uneven. Count is not cumulative. Incremental is calculated by taking the Combined Count minus the Numeric Count. Predicted Value cutoffs are the bottom of the range.											

Table 96: Adverse Impact Analyses

(A) Adverse Impact Tables Based on Whether Candidate was Selected Using the Board Decisions

Rated, Panel 1					
Group	Number Passed	Number of Candidates	Pass Rate	AI Ratio	SD Difference
Racioethnicity					
Asians	7	10	70.00%	0.78	-1.85
Blacks	10	10	100.00%	1.12	1.09
Hispanics	28	36	77.78%	0.87	-1.92
All Minorities	49	60	81.67%	0.91	-1.56
Whites	175	196	89.29%		
Grand Total	224	256	87.50%		
Gender					
Women	11	13	84.62%	0.97	-0.32
Men	213	243	87.65%		
Grand Total	224	256	87.50%		
<i>N</i> = 256 (30 missing Numeric data, 1 missing Racioethnicity data) <i>Note.</i> Candidates eligible to pass four boards: Pilot, RPA, CSO, ABM. All Minorities includes Asians, Blacks, and Hispanics, as well as subgroups without sufficient samples to test individually (American Indian/Alaskan, Native Hawaiian/Pacific Islander). There was no clear passing score, but the lowest score selected was 25.5 and the highest score not selected was 28.7					

Rated, Panel 2					
Group	Number Passed	Number of Candidates	Pass Rate	AI Ratio	SD Difference
Racioethnicity					
Asians	9	11	81.82%	0.95	-0.37
Blacks	8	10	80.00%	0.93	-0.51
Hispanics	21	22	95.45%	1.11	1.25
All Minorities	42	47	89.36%	1.04	0.61
Whites	128	149	85.91%		
Grand Total	170	196	86.73%		
Gender					
Women	39	45	86.67%	1.00	-0.02
Men	131	151	86.75%		
Grand Total	170	196	86.73%		
<i>N</i> = 196 (5 missing Numeric data, 9 missing Racioethnicity data) <i>Note.</i> Candidates eligible to pass four boards: Pilot, RPA, CSO, ABM. All Minorities includes Asians, Blacks, and Hispanics, as well as subgroups without sufficient samples to test individually (American Indian/Alaskan, Native Hawaiian/Pacific Islander). There was no clear passing score, but the lowest score selected was 24.3 and the highest score not selected was 28.6					

Non-Rated, Panel 1					
Group	Number Passed	Number of Candidates	Pass Rate	AI Ratio	SD Difference
Racioethnicity					
Asians	16	44	36.36%	0.72	-1.82
Blacks	33	82	40.24%	0.79	-1.76
Hispanics	55	116	47.41%	0.94	-0.64
All Minorities	109	255	42.75%	0.84	-2.07
Whites	261	515	50.68%		
Grand Total	370	770	48.05%		
Gender					
Women	70	142	49.30%	1.03	0.33
Men	300	628	47.77%		
Grand Total	370	770	48.05%		
<i>N</i> = 770 (126 missing Numeric, 3 missing Racioethnicity data) <i>Note.</i> All Minorities includes Asians, Blacks, and Hispanics, as well as subgroups without sufficient samples to test individually (American Indian/Alaskan, Native Hawaiian/Pacific Islander). Only included those indicated as SEL, SEL2, and SEL CAD in “Status” column. There was no clear passing score, but the lowest score selected was 21.5 and the highest score not selected was 23.9					

Non-Rated, Panel 2					
Group	Number Passed	Number of Candidates	Pass Rate	AI Ratio	SD Difference
Racioethnicity					
Asians	20	20	100.00%	1.05	1.00
Blacks	9	10	90.00%	0.95	-0.71
Hispanics	21	21	100.00%	1.05	1.02
All Minorities	51	52	98.08%	1.03	0.87
Whites	100	105	95.24%		
Grand Total	151	157	96.18%		
Gender					
Women	37	42	88.10%	0.89	-3.19
Men	114	115	99.13%		
Grand Total	151	157	96.18%		
<i>N</i> = 157 (12 missing Numeric, 9 missing Racioethnicity data) <i>Note.</i> All Minorities includes Asians, Blacks, and Hispanics, as well as subgroups without sufficient samples to test individually (American Indian/Alaskan, Native Hawaiian/Pacific Islander). Only included those indicated as SEL in “Status” column. There was no clear passing score, but the lowest score selected was 24.2 and the highest score not selected was 27.2					

(B) Adverse Impact Tables Based on Whether Candidate was Selected Using Numeric Variables Only

Rated, Panel 1					
Group	Number Passed	Number of Candidates	Pass Rate	AI Ratio	SD Difference
Racioethnicity					
Asians	9	10	90.00%	1.01	0.07
Blacks	6	10	60.00%	0.67	-2.77
Hispanics	31	36	86.11%	0.96	-0.55
All Minorities	49	60	81.67%	0.91	-1.56
Whites	175	196	89.29%		
Grand Total	224	256	87.50%		
Gender					
Women	11	13	84.62%	0.97	-0.32
Men	213	243	87.65%		
Grand Total	224	256	87.50%		
<i>N</i> = 256 (30 missing Numeric data, 1 missing Racioethnicity data) Predicted Value cutting score = 26.34 <i>Note.</i> Candidates eligible to pass four boards: Pilot, RPA, CSO, ABM. All Minorities includes Asians, Blacks, and Hispanics, as well as subgroups without sufficient samples to test individually (American Indian/Alaskan, Native Hawaiian/Pacific Islander).					

Rated, Panel 2					
Group	Number Passed	Number of Candidates	Pass Rate	AI Ratio	SD Difference
Racioethnicity					
Asians	9	11	81.82%	0.92	-0.67
Blacks	9	10	90.00%	1.02	0.14
Hispanics	18	22	81.82%	0.92	-0.90
All Minorities	38	47	80.85%	0.91	-1.36
Whites	132	149	88.59%		
Grand Total	170	196	86.73%		
Gender					
Women	37	45	82.22%	0.93	-1.02
Men	133	151	88.08%		
Grand Total	170	196	86.73%		
<i>N</i> = 196 (5 missing Numeric data, 9 missing Racioethnicity data) Predicted Value cutting score = 26.24 <i>Note.</i> Candidates eligible to pass four boards: Pilot, RPA, CSO, ABM. All Minorities includes Asians, Blacks, and Hispanics, as well as subgroups without sufficient samples to test individually (American Indian/Alaskan, Native Hawaiian/Pacific Islander).					

Non-Rated, Panel 1					
Group	Number Passed	Number of Candidates	Pass Rate	AI Ratio	SD Difference
Racioethnicity					
Asians	11	44	25.00%	0.46	-3.72
Blacks	27	82	32.93%	0.61	-3.58
Hispanics	49	116	42.24%	0.78	-2.32
All Minorities	91	255	35.69%	0.66	-4.83
Whites	279	515	54.17%		
Grand Total	370	770	48.05%		
Gender					
Women	63	142	44.37%	0.91	-0.97
Men	307	628	48.89%		
Grand Total	370	770	48.05%		
<i>N</i> = 770 (126 missing Numeric, 3 missing Racioethnicity data) Predicted Value cutting score = 24.06 <i>Note.</i> All Minorities includes Asians, Blacks, and Hispanics, as well as subgroups without sufficient samples to test individually (American Indian/Alaskan, Native Hawaiian/Pacific Islander). Only included those indicated as SEL, SEL2, and SEL CAD in “Status” column.					

Non-Rated, Panel 2					
Group	Number Passed	Number of Candidates	Pass Rate	AI Ratio	SD Difference
Racioethnicity					
Asians	19	20	95.00%	0.97	-0.83
Blacks	8	10	80.00%	0.82	-2.98
Hispanics	20	21	95.24%	0.97	-0.78
All Minorities	48	52	92.31%	0.94	-1.78
Whites	103	105	98.10%		
Grand Total	151	157	96.18%		
Gender					
Women	41	42	97.62%	1.02	0.57
Men	110	115	95.65%		
Grand Total	151	157	96.18%		
<i>N</i> = 157 (12 missing Numeric, 9 missing Racioethnicity data) Predicted Value cutting score = 26.17 <i>Note.</i> All Minorities includes Asians, Blacks, and Hispanics, as well as subgroups without sufficient samples to test individually (American Indian/Alaskan, Native Hawaiian/Pacific Islander). Only included those indicated as SEL in “Status” column.					

(C) Adverse Impact Tables Based on Whether Candidate was Selected Using Text Variables Only

Rated, Panel 1					
Group	Number Passed	Number of Candidates	Pass Rate	AI Ratio	SD Difference
Racioethnicity					
Asians	8	10	80.00%	0.92	-0.66
Blacks	9	10	90.00%	1.03	0.26
Hispanics	33	36	91.67%	1.05	0.75
All Minorities	53	60	88.33%	1.01	0.22
Whites	171	196	87.24%		
Grand Total	224	256	87.50%		
Gender					
Women	12	13	92.31%	1.06	0.54
Men	212	243	87.24%		
Grand Total	224	256	87.50%		
<i>N</i> = 256 (30 missing Numeric data, 1 missing Racioethnicity data) Predicted Value cutting score = 26.57 <i>Note.</i> Candidates eligible to pass four boards: Pilot, RPA, CSO, ABM. All Minorities includes Asians, Blacks, and Hispanics, as well as subgroups without sufficient samples to test individually (American Indian/Alaskan, Native Hawaiian/Pacific Islander).					

Rated, Panel 2					
Group	Number Passed	Number of Candidates	Pass Rate	AI Ratio	SD Difference
Racioethnicity					
Asians	8	11	72.73%	0.81	-1.74
Blacks	7	10	70.00%	0.78	-1.93
Hispanics	17	22	77.27%	0.86	-1.72
All Minorities	36	47	76.60%	0.85	-2.35
Whites	134	149	89.93%		
Grand Total	170	196	86.73%		
Gender					
Women	42	45	93.33%	1.10	1.49
Men	128	151	84.77%		
Grand Total	170	196	86.73%		
<i>N</i> = 196 (5 missing Numeric data, 9 missing Racioethnicity data) Predicted Value cutting score = 26.37 <i>Note.</i> Candidates eligible to pass four boards: Pilot, RPA, CSO, ABM. All Minorities includes Asians, Blacks, and Hispanics, as well as subgroups without sufficient samples to test individually (American Indian/Alaskan, Native Hawaiian/Pacific Islander).					

Non-Rated, Panel 1					
Group	Number Passed	Number of Candidates	Pass Rate	AI Ratio	SD Difference
Racioethnicity					
Asians	19	44	43.18%	0.88	-0.76
Blacks	36	82	43.90%	0.89	-0.88
Hispanics	58	116	50.00%	1.02	0.17
All Minorities	117	255	45.88%	0.93	-0.85
Whites	253	515	49.13%		
Grand Total	370	770	48.05%		
Gender					
Women	68	142	47.89%	1.00	-0.04
Men	302	628	48.09%		
Grand Total	370	770	48.05%		
<i>N</i> = 770 (126 missing Numeric, 3 missing Racioethnicity data) Predicted Value cutting score = 23.95 <i>Note.</i> Gender data not available for Non-Rated, Panel 1. All Minorities includes Asians, Blacks, and Hispanics, as well as subgroups without sufficient samples to test individually (American Indian/Alaskan, Native Hawaiian/Pacific Islander). Only included those indicated as SEL, SEL2, and SEL CAD in “Status” column.					

Non-Rated, Panel 2					
Group	Number Passed	Number of Candidates	Pass Rate	AI Ratio	SD Difference
Racioethnicity					
Asians	20	20	100.00%	1.04	0.89
Blacks	10	10	100.00%	1.04	0.63
Hispanics	19	21	90.48%	0.94	-1.12
All Minorities	50	52	96.15%	1.00	-0.01
Whites	101	105	96.19%		
Grand Total	151	157	96.18%		
Gender					
Women	42	42	100.00%	1.06	1.51
Men	109	115	94.78%		
Grand Total	151	157	96.18%		
<i>N</i> = 157 (12 missing Numeric, 9 missing Racioethnicity data) Predicted Value cutting score = 26.40 <i>Note.</i> All Minorities includes Asians, Blacks, and Hispanics, as well as subgroups without sufficient samples to test individually (American Indian/Alaskan, Native Hawaiian/Pacific Islander). Only included those indicated as SEL in “Status” column.					

(D) Adverse Impact Tables Based on Whether Candidate was Selected Using Numeric and Text Variables Combined

Rated, Panel 1					
Group	Number Passed	Number of Candidates	Pass Rate	AI Ratio	SD Difference
Racioethnicity					
Asians	10	10	100.00%	1.13	1.12
Blacks	7	10	70.00%	0.79	-1.77
Hispanics	31	36	86.11%	0.97	-0.46
All Minorities	50	60	83.33%	0.94	-1.12
Whites	174	196	88.78%		
Grand Total	224	256	87.50%		
Gender					
Women	11	13	84.62%	0.97	-0.32
Men	213	243	87.65%		
Grand Total	224	256	87.50%		
<i>N</i> = 257 (30 missing Numeric data, 1 missing Racioethnicity data) Predicted Value cutting score = 26.30 <i>Note.</i> Candidates eligible to pass four boards: Pilot, RPA, CSO, ABM. All Minorities includes Asians, Blacks, and Hispanics, as well as subgroups without sufficient samples to test individually (American Indian/Alaskan, Native Hawaiian/Pacific Islander).					

Rated, Panel 2					
Group	Number Passed	Number of Candidates	Pass Rate	AI Ratio	SD Difference
Racioethnicity					
Asians	9	11	81.82%	0.92	-0.67
Blacks	8	10	80.00%	0.90	-0.81
Hispanics	18	22	81.82%	0.92	-0.90
All Minorities	38	47	80.85%	0.91	-1.36
Whites	132	149	88.59%		
Grand Total	170	196	86.73%		
Gender					
Women	38	45	84.44%	0.97	-0.52
Men	132	151	87.42%		
Grand Total	170	196	86.73%		
<i>N</i> = 196 (5 missing Numeric data, 9 missing Racioethnicity data) Predicted Value cutting score = 26.26 <i>Note.</i> Candidates eligible to pass four boards: Pilot, RPA, CSO, ABM. All Minorities includes Asians, Blacks, and Hispanics, as well as subgroups without sufficient samples to test individually (American Indian/Alaskan, Native Hawaiian/Pacific Islander).					

Non-Rated, Panel 1					
Group	Number Passed	Number of Candidates	Pass Rate	AI Ratio	SD Difference
Racioethnicity					
Asians	12	44	27.27%	0.51	-3.40
Blacks	24	82	29.27%	0.54	-4.16
Hispanics	52	116	44.83%	0.83	-1.78
All Minorities	92	255	36.08%	0.67	-4.68
Whites	278	515	53.98%		
Grand Total	370	770	48.05%		
Gender					
Women	67	142	47.18%	0.98	-0.23
Men	303	628	48.25%		
Grand Total	370	770	48.05%		
<i>N</i> = 770 (126 missing Numeric, 3 missing Racioethnicity data) Predicted Value cutting score = 24.20 <i>Note.</i> Gender data not available for Non-Rated, Panel 1. All Minorities includes Asians, Blacks, and Hispanics, as well as subgroups without sufficient samples to test individually (American Indian/Alaskan, Native Hawaiian/Pacific Islander). Only included those indicated as SEL, SEL2, and SEL CAD in “Status” column.					

Non-Rated, Panel 2					
Group	Number Passed	Number of Candidates	Pass Rate	AI Ratio	SD Difference
Racioethnicity					
Asians	18	20	90.00%	0.91	-2.42
Blacks	9	10	90.00%	0.91	-2.09
Hispanics	19	21	90.48%	0.91	-2.35
All Minorities	47	52	90.38%	0.91	-2.66
Whites	104	105	99.05%		
Grand Total	151	157	96.18%		
Gender					
Women	41	42	97.62%	1.02	0.57
Men	110	115	95.65%		
Grand Total	151	157	96.18%		
<i>N</i> = 157 (12 missing Numeric, 9 missing Racioethnicity data) Predicted Value cutting score = 26.01 <i>Note.</i> All Minorities includes Asians, Blacks, and Hispanics, as well as subgroups without sufficient samples to test individually (American Indian/Alaskan, Native Hawaiian/Pacific Islander). Only included those indicated as SEL in “Status” column.					

(E) Summary across Adverse Impact Analyses

Rated, Panel 1				
Group	Whether Candidate Selected (Actual Decision)	Numeric Variables	Text Variables	Combined
Racioethnicity				
Asians	0.78	1.01	0.92	1.13
Blacks	1.12	0.67	1.03	0.79
Hispanics	0.87	0.96	1.05	0.97
All Minorities	0.91	0.91	1.01	0.94
Gender				
Women	0.97	0.97	1.06	0.97
<i>N</i> = 256 (30 missing Numeric data, 1 missing Racioethnicity data) <i>Note.</i> Candidates eligible to pass four boards: Pilot, RPA, CSO, ABM. All Minorities includes Asians, Blacks, and Hispanics, as well as subgroups without sufficient samples to test individually (American Indian/Alaskan, Native Hawaiian/Pacific Islander).				

Rated, Panel 2				
Group	Whether Candidate Selected (Actual Decision)	Numeric Variables	Text Variables	Combined
Racioethnicity				
Asians	0.95	0.92	0.81	0.92
Blacks	0.93	1.02	0.78	0.90
Hispanics	1.11	0.92	0.86	0.92
All Minorities	1.04	0.91	0.85	0.91
Gender				
Women	1.00	0.93	1.10	0.97
<i>N</i> = 196 (5 missing Numeric data, 9 missing Racioethnicity data) <i>Note.</i> Candidates eligible to pass four boards: Pilot, RPA, CSO, ABM. All Minorities includes Asians, Blacks, and Hispanics, as well as subgroups without sufficient samples to test individually (American Indian/Alaskan, Native Hawaiian/Pacific Islander).				

Non-Rated, Panel 1				
Group	Whether Candidate Selected (Actual Decision)	Numeric Variables	Text Variables	Combined
Racioethnicity				
Asians	0.72	0.46	0.88	0.51
Blacks	0.79	0.61	0.89	0.54
Hispanics	0.94	0.78	1.02	0.83
All Minorities	0.84	0.66	0.93	0.67
Gender				
Women	1.03	0.91	1.00	0.98
<i>N</i> = 770 (126 missing Numeric, 3 missing Racioethnicity data) <i>Note.</i> All Minorities includes Asians, Blacks, and Hispanics, as well as subgroups without sufficient samples to test individually (American Indian/Alaskan, Native Hawaiian/Pacific Islander). Only included those indicated as SEL, SEL2, and SEL CAD in “Status” column.				

Non-Rated, Panel 2				
Group	Whether Candidate Selected (Actual Decision)	Numeric Variables	Text Variables	Combined
Racioethnicity				
Asians	1.05	0.97	1.04	0.91
Blacks	0.95	0.82	1.04	0.91
Hispanics	1.05	0.97	0.94	0.91
All Minorities	1.03	0.94	1.00	0.91
Gender				
Women	0.89	1.02	1.06	1.02
<i>N</i> = 157 (12 missing Numeric, 9 missing Racioethnicity data) <i>Note.</i> All Minorities includes Asians, Blacks, and Hispanics, as well as subgroups without sufficient samples to test individually (American Indian/Alaskan, Native Hawaiian/Pacific Islander). Only included those indicated as SEL in “Status” column.				

Table 97: Subgroup Mean Differences

Rated, Panel 1																
Significant (p<.05)			Men			Women				Non-Minority			Minority			
Gender Diff	Race Diff	Variables	N	Mean	SD	N	Mean	SD	d-score	N	Mean	SD	N	Mean	SD	d-score
		Board Score	243	26.94	.95	13	26.82	1.35	-.10	196	26.97	.96	60	26.83	1.02	-.14
		Predicted Value (Computer Score)	243	26.95	.64	13	26.75	.59	-.32	196	26.96	.63	60	26.84	.65	-.19
N = 256																
Note. Minority and Women coded as “1.” Calculator used to estimate d-score: https://lbecker.uccs.edu/ . d-scores are Cohen’s d.																

Rated, Panel 2																
Significant (p<.05)			Men			Women				Non-Minority			Minority			
Gender Diff	Race Diff	Variables	N	Mean	SD	N	Mean	SD	d-score	N	Mean	SD	N	Mean	SD	d-score
		Board Score	151	27.10	1.09	45	27.18	.74	.09	149	27.17	1.03	47	26.96	.96	-.21
	*	Predicted Value (Computer Score)	151	27.14	.80	45	27.03	.77	-.14	149	27.19	.80	47	26.88	.74	-.40
N = 196																
Note. Minority and Women coded as “1.” Calculator used to estimate d-score: https://lbecker.uccs.edu/ . d-scores are Cohen’s d.																

Non-Rated, Panel 1																
Significant (p<.05)			Men			Women				Non-Minority			Minority			
Gender Diff	Race Diff	Variables	N	Mean	SD	N	Mean	SD	d-score	N	Mean	SD	N	Mean	SD	d-score
	*	Board Score (Normalized)	628	23.92	1.35	142	24.14	1.44	.16	515	24.05	1.36	255	23.77	1.38	-.20
	*	Predicted Value (Computer Score)	628	23.98	.74	142	23.96	.69	-.03	525	24.06	.73	255	23.82	.71	-.33
N = 770																
Note. Minority and Women coded as “1.” Calculator used to estimate d-score: https://lbecker.uccs.edu/ . d-scores are Cohen’s d.																

Non-Rated, Panel 2																
Significant (p<.05)			Men			Women				Non-Minority			Minority			
Gender Diff	Race Diff	Variables	N	Mean	SD	N	Mean	SD	d-score	N	Mean	SD	N	Mean	SD	d-score
		Board Score	115	27.35	1.07	42	27.25	1.78	-.07	105	27.44	1.39	52	27.09	1.05	-.28
	*	Predicted Value (Computer Score)	115	27.26	.76	42	27.25	.34	-.02	105	27.39	.71	52	26.98	.70	-.58
N = 157																
Note. Minority and Women coded as “1.” Calculator used to estimate d-score: https://lbecker.uccs.edu/ . d-scores are Cohen’s d.																

5.0 CONCLUSIONS & RECOMMENDATIONS

Based on the research studies described in this report, we draw the following conclusions:

1. There are sources of textual data in the Air Force personnel assessment context that are amenable to text analysis, thus there are potential applications of text analysis to improve the effectiveness or efficiency of personnel assessment. Examples explored in this series of studies include efficiently analyzing narrative survey responses from career field subject matter experts, scoring structured interview answers for selection, and scoring Officer Training School applications for selection.
2. Software exists for text analysis that is available and usable by industrial and organizational psychologists who specialize in personnel assessment, including those employed by the Air Force. Examples of software used in this study include SPSS Modeler Premium and the Linguistic Inquiry and Word Count (LIWC).
3. Text analyses of these sources of textual data appear to measure attributes and other information on candidates and employees that is differentiating, reliable, and meaningful.
4. When used to content analyze the narrative responses on surveys, the text analysis did a reasonably good job of reproducing the categories identified by the researchers, and the differences in the categories were no less logical. In addition, a researcher using text analysis could conduct the analyses in a few hours that would take weeks to do manually.
5. When text analysis is used to score candidate information, such as interview responses or application information, the scores show good validity in predicting the scores of human interviewers or OTS selection boards. The text analysis scores correlated about as highly with human scores as human scores do with each other, meaning text analysis is as reliable as individual human scores.
6. The text analysis scores showed construct validity with other assessments, meaning the scores showed correlations with other assessments at the level expected based on the different constructs measured by other assessments. In particular, the text analysis interview scores and application scores correlated with existing tests used by the Air Force for selection, such as low positive correlations with tests of mental ability (Armed Forces Qualification Test [AFQT]) and very low correlations with tests of personality (Tailored Adaptive Personality Assessment System [TAPAS]).
7. The text analysis scores show incremental validity beyond existing tests. For example, the text analysis scores predict OTS Board scores beyond that predicted by existing test scores (e.g., AFOQT).
8. The text analysis scores showed subgroup differences by gender or race similar to or smaller than the human scores, thus using text analysis should not increase adverse impact (i.e., differences in hiring rates). The text analysis scores have much smaller subgroup differences than existing test scores of mental ability (e.g., AFOQT), thus including text analysis scores along with existing tests might reduce adverse impact of the overall hiring process.

9. The use of text analysis would have practical utility for making selection decisions. For example, depending on the passing scores, using the text analysis scores to select out the lowest scoring candidates will result in eliminating few candidates who would have been hired with the structured interviews. In addition, computer models of applications using text analysis are able to substantially predict which candidates will be successful hires, defined as being above average on within-board OTS Board scores.

10. Future research might explore the criterion-related validity of text analysis scores. Possible criteria might include success in training, ratings of job performance, awards, honors, achievements, reenlistments, and other outcomes of importance to the Air Force.

11. Next steps could also reasonably include using text analysis to assist in making operational selection decisions. For example, a text analysis computer model could be used to develop an automated structured employment interview for screening candidates, and a computer model including text analysis of the OTS application process could automate the board selection decisions. In both cases, these scores would probably augment rather than replace human judgment, such as screening out the candidates that are unlikely to be successful, thus saving substantial human scoring time in the hiring process.

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LIST OF ACRONYMS, ABBREVIATIONS, AND SYMBOLS

$\leq$	Less than or equal to
1A8X1	Airborne Cryptologic Language Analyst Air Force Specialty Code
3P0X1	Security Forces Air Force Specialty Code
A, B, C, D.	Air Force Race codes: (A) American Indian/Alaskan; (B) Asian; (C) Black/
ABM	Air Battle Manager
AFB	Air Force Base
AFOQT	Air Force Officer Qualifying Test
AFPC	Air Force Personnel Center
AFQT	Armed Forces Qualifications Test
AF-WIN	Air Force Work Interest Navigator
AF-WIN	Air Force Work Interest Navigator
ANOVA	Analysis of Variance
APAT	Applied Performance Assessment & Testing
ASVAB	Armed Services Vocational Aptitude Battery
B	Beta weight
CATA	Computer-Aided Text Analysis
CF	Career field composites
CSO	Combat Systems Officer
df	Degrees of freedom
d-score	Standardized mean difference score
E, F	African-American; (D) Native Hawaiian/Pacific Islander; (E) White
E-2 – E-9	Enlisted ranks
EFL	English as a Foreign Language
GPA	Grade point average
LIWC	Linguistic Inquiry and Word Count
MAGE	Air Force ASVAB Mechanical, Administrative, General, and Electronics aptitude

N	Sample size
NLP	Natural Language Processing
OSM	Officer Suitability Measure
OTS	Officer Training School
OTS	Officer Training School
p	Probability
PAY-97	Profile of American Youth – 1997
PCSM	Pilot Candidate Selection Method
<i>r</i>	Correlation
R	Multiple correlation
RJP	Realistic Job Preview
RJP	Realistic Job Preview
RPA SO	Remotely Piloted Aircraft Sensor Operator
RPA	Remotely Piloted Aircraft
SD	Standard deviation
SDI	Self-Description Inventory
SF	Security Forces
SO	Sensor Operator
SPSS	Statistical Package for the Social Sciences
<i>t</i>	<i>t</i> statistic
TAPAS	Tailored Adaptive Personality Assessment System
TCO	Test Control Officer
TLA	Text Link Analysis

APPENDIX A: TEXT ANALYSIS STATEMENT OF OBJECTIVES

Text Analysis Tools to Enhance Personnel Assessment

Modification 1

14 January 2020

1.0 INTRODUCTION

Text mining, also referred to as *text data mining*, which is roughly equivalent to text analytics, is the process of deriving high-quality information from text. High-quality information is typically developed through the identification of patterns and trends through means such as statistical pattern learning. Text mining usually involves the process of 1) structuring the input text, 2) deriving patterns within the structured data, and finally 3) evaluation and interpretation of the output. Structuring of the input data usually involves parsing, along with the addition of some derived linguistic features and the removal of others, and subsequent insertion into a database. 'High quality' in text mining usually refers to some combination of relevance, novelty, and interestingness. Typical text mining tasks include text categorization, text clustering, concept/entity extraction, production of granular taxonomies, sentiment analysis, document summarization, and entity relation modeling (*i.e.*, learning relations between named entities).

Text analysis involves information retrieval, lexical analysis to study word frequency distributions, pattern recognition, tagging/annotation, information extraction, data mining techniques including link and association analysis, visualization, and predictive analytics. The overarching goal is, essentially, to turn text into data for analysis, via application of natural language processing and analytical methods.

A typical application is to scan a set of documents written in a natural language and either model the document set for predictive classification purposes or populate a database or search index with the information extracted.

2.0 BACKGROUND

Text analysis has been applied to several areas including social networking and blogging, risk management, knowledge management, cybercrime prevention, customer care service, customer relations, text filtering, and tracking public opinion.

Text analysis methods have sometimes been used in personnel assessment. Campion, Campion, and Reider (2016) suggested that text analysis could be used in lieu of human raters in a personnel selection application. Several studies have been conducted to assess personality characteristics from written text (Agarwal, 2014; Kernot, Bossomaier, & Bradbury, 2017; Litvinova & Seredin, 2016). Personality detection from text means to extract the behavior characteristics of authors who wrote the text. Personality detection models could be very useful in various domains like e-learning, information filtering, collaboration, and e-commerce by a user interface that adapts the interaction according to user's personality. Agarwal (2014) provided a literature review of the application of text analysis to personality assessment.

Agarwal noted that two types of techniques have been employed for detection of personality from the text: 1) a machine learning-based approach based on social network activities, and 2) an approach based on the linguistic properties present in the text. Agarwal concluded that the accuracy of existing text analysis frameworks that rely on psycho-linguistic features and frequency-based analysis at a lexical level can be enhanced by common sense knowledge with affective and sentiment information. For example, rationally-derived data dictionaries can be applied to assess the prevalence of target words (e.g., sad, upset, etc.) in a given text corresponding to a particular domain (e.g., negative emotion). Barron, Carretta, and Rose (2016) used text analysis of written statements in US Air Force officer performance reports to create a measure of officer stratification. These stratification rankings were used in turn as job performance criteria in a predictive validation study involving measures of cognitive ability and personality. Kernot et al. (2017) noted that text analysis techniques have been used to analyze social media content to assess a person's sentiments, mood, and anxiety levels. Kernot et al. noted that many of these mood and anxiety techniques rely on basic statistical correlations, word counts, collected word groups, or keyword density. Kernot et al. provide an example of the application of a multi-faceted text analysis approach to identify subtle personality characteristics based on a person's writing style.

Several commercially viable techniques for automated essay scoring have shown a good correlation of their results with trained human raters. Each product uses slightly different techniques or blends of techniques to arrive at a score. For example, ETS uses an automated writing evaluation engine (*e-rater*) in combination with human raters to score the writing sections of the GRE and TOEFL. The *e-rater* examines several indicators when assessing writing quality; these include grammatical errors, mechanics, vocabulary usage, writing style and coherence.

Burstein, McCaffrey, Klebanov, and Ling (2017) conducted an exploratory study using test-taker essays from a standardized writing assessment of post-secondary student learning outcomes. For the essays, automated writing evaluation features were predictive of college success learning outcomes.

The US Air Force has several text-based measures of human aptitude and job performance. These include written essays completed by officer candidates prior to commissioning as well as officer performance reports (OPRs) and enlisted performance reports (EPRs). Other potential applications include scoring of written responses to occupational surveys and grade sheets from training courses. The purpose of this effort is to examine the utility of these and other written statements for assessing important personnel characteristics including cognitive ability, personality traits, and behavioral intentions.

3.0 OBJECTIVES

The objectives of this task are to 1) conduct a literature review of state-of-the-art text analysis software and analytical techniques and identify best practices, 2) identify where and how text analysis could augment existing US Air Force assessments, and 3) examine the utility of text analysis tools/methods using archival US Air Force data.

3.1 Conduct Literature Review of State-of-the-Art Text Analysis Software and Analytical Techniques and Identify Best Practices

Summarize the literature on the use of text analysis to measure skills, abilities, and other characteristics (e.g., writing skills, level of motivation for a given job or job type, personality, temperament, behavioral intentions). The summary should include a description of the text analysis software/methodology used, psychometric properties of the measured constructs (e.g., reliability, construct validity, adverse impact), and advantages, disadvantages, and special considerations that must be taken into account when implementing text analysis for use in personnel assessment, selection, and classification (e.g., legal, alignment with professional guidelines such as the Society for Industrial and Organizational Psychology's *Principles for the Validation and Use of Personnel Selection Procedures*). Literature review should cover both text samples provided by applicants to an organization for the express purpose of applying for a job or educational admission (e.g., required writing samples, written essays, and/or personal statements describing why the applicant is interested in a given job, university, etc.) and other written text available through social media outlets (e.g., Facebook, Twitter, etc.).

3.2 Identify Where and How Text Analysis Could Augment Existing US Air Force Assessments

3.2.1 Determine whether text analysis could be used to improve measurement (i.e., improve reliability and validity) of aptitudes, knowledge, traits, and work interests designed to be assessed by current US Air Force pre-accession tests (e.g., cognitive ability – Air Force Officer Qualifying Test [AFOQT], Armed Services Vocational Aptitude Battery [ASVAB]; personality – Self-Description Inventory [SDI], Tailored Adaptive Personality Assessment System [TAPAS]; vocational interests – Air Force Work Interest Navigator [AF-WIN]).

3.2.2 Provide recommendations, based on the research literature on personnel selection and/or educational admissions, on writing prompts that could be used pre-accession to generate text (writing samples) from applicants that could be used to assess writing skills and/or level of motivation and suitability for Air Force accessioning and/or specific types of Air Force jobs.

3.2.3 Determine whether text analysis could be used to extract measures of aptitudes, traits, job knowledge, and job performance measures from post-training written statements written either by the person themselves or by supervisors/instructors (i.e., narrative job performance feedback or evaluations).

3.3 Examine the Utility of Text Analysis Tools/Methods using Archival US Air Force Data

3.3.1 Identify existing open-source and commercial software products that provide rationally-based text analysis based on psycho-linguistic features and word frequency dictionaries (e.g., Linguistic Inquiry Word Count, LIWC; Pennebaker, Boyd, Jordan, & Blackburn, 2015) that could be used to score Officer Training School (OTS) candidate applications via a rational/theoretical basis (see Appendix) and quantitatively assess each candidate's application with respect to probability of the following: (a) selection to OTS, (b) OTS trainee performance report scores, (c) completion of OTS, and (d) graduation from OTS as a distinguished graduate.

Provide a theoretical rationale for why each existing data dictionary (sub-dictionary) evaluated may be expected to correspond to criteria identified above. Provide (citations with) all details of the specifications for each scoring method (e.g., all words included in a given dictionary category) where such documentation exists.

3.3.2 Develop a new set of data dictionaries on a rational/theoretical basis to quantitatively assess Officer Training School candidate applications (see Appendix) with respect to probability of the following: (a) selection to OTS, (b) OTS trainee performance reports, (c) completion of OTS, and (d) graduation from OTS as a distinguished graduate. For example, data dictionaries related to high probability of admittance to OTS might include synonyms and expressions related to high school and college-level leadership, athleticism, and prior management-level job experience. Data dictionaries predicting OTS graduation and awarding of distinguished graduate honors might further identify text related to perseverance, sense of duty, and prior enlistment experience. Provide a theoretical rationale for why each new tailored data dictionary (sub-dictionary) developed may be expected to correspond to a high or low probability of OTS acceptance and/or OTS performance, and how the tailored data dictionaries differ from existing data dictionaries available through open-source or other commercial products. Deliver software and all software documentation for use of this tailored, newly developed OTS applicant selection capability to the Air Force.

3.3.3 Apply each of the rationally-based scoring methods (existing and newly developed) to predict the likelihood of a given OTS candidate's (a) selection to OTS, (b) OTS trainee performance report scores, (c) completion of OTS, and (d) graduation from OTS as a distinguished graduate. Document the extent to which each rationally-derived scoring method (existing and newly developed) is predictive within a given year and develop an optimally-weighted composite of those rationally-derived scoring methods. Apply the optimally-weighted composite of rational scoring methods in a cross-validation sample of OTS candidate board applicants from a later year.

3.3.4 Use machine-learning to score the application text of OTS candidates from a given year to determine likelihood of a candidate's a) selection to OTS, (b) OTS trainee performance reports, (c) completion of OTS, and (d) graduation from OTS as a distinguished graduate. Apply the machine-learning scoring in a cross-validation sample of OTS candidate board applicants from a later year. Compare the level of accuracy of the machine-learning approach to the rationally-derived scoring method approach, and evaluate the extent of incremental validity.

3.3.5 Conduct analyses to determine the relationship of pre-accession aptitude measures (e.g., ASVAB, AFOQT, SDI, TAPAS scores) with OTS candidate application outcomes and the relationship of pre-accession measures to scores derived from each of the narrative text-based scoring methods evaluated.

3.3.6 Extract, clean, and organize OTS candidate application materials (see Appendix) into an organized data spreadsheet that facilitates development of project data dictionaries and machine-learning analyses necessary to accomplish tasks 3.3.1 through 3.3.5. Deliver finalized data spreadsheet and any related files/documentation to the Air Force.

4.0 Security and Certification Requirements: US citizenship is required for contractor personnel. A security clearance is not required. The contractor will not have access to Personally Identifiable Information (PII), although they may have access to de-identified archival personnel data.

5.0 Special Qualifications: Contractor personnel are required to have subject matter expertise and hands-on experience in certain areas relating to behavioral and social sciences. Examples will include, but are not limited to, the following:

5.1. Demonstrated experience in managing large-scale behavioral and social science applied research efforts. These may include personnel test development and validation, development of personnel learning systems, personnel policy research, and development of organizational (e.g., unit, team) effectiveness measures. Specialized experience may include analytical project development from inception to conclusion, demonstrated ability to provide guidance and direction, proven expertise in the management and control of funds and resources and demonstrated capability in managing contracts of this type and complexity.

5.2. Appropriate educational degrees/experience in related scientific/technical fields. Example degree fields are Psychology, Psychometrics, Organizational Behavior, and Human Factors.

6.0 REPORTING REQUIREMENTS:

- a. Provide monthly written reports summarizing the technical and financial status of the tasks.
- b. Provide periodic teleconferences with the COR to review project status and discuss any problems encountered. These should occur at least quarterly.
- c. A final technical report in electronic form summarizing the work performed and the research results and conclusions derived shall be submitted to the COR within 30 days after the contract period.

7.0 Use of Human Subjects: It is not anticipated that the effort will require the use of human subjects.

8.0 Period of Performance: Period of performance is 12 months after contract award date.

9.0 Place of Performance: The work will be performed at the contractor's facility.

10.0 Travel: No travel is anticipated for this effort. A contract kick-off meeting, progress review meetings, and final briefing can be done via teleconference. All travel must be in accordance with the Federal Travel Regulations (FTR), Joint Travel Regulations (JTR), and FAR 31.205-46.

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Appendix. Application & Evaluation for Training Leading to a Commission in the USAF (OTS Application, AF Form 56)

APPLICATION & EVALUATION FOR TRAINING LEADING TO A COMMISSION IN THE UNITED STATES AIR FORCE						OMB NO. 0701-0150 Expires 31 Mar 2009	
PRIVACY ACT STATEMENT AUTHORITY: 10 U.S.C., Armed Forces, 2107, Financial Assistance Program for Specially Selected Members; 10 U.S.C. 9411. Establishment and Purpose of Schools and Camps; EO 9397. PRINCIPAL PURPOSE: To document evidence of application for consideration to enter an officer training program leading to a commission and voluntary contractual agreement to serve the period specified. ROUTINE USES: Blanket routine uses. DISCLOSURE IS VOLUNTARY: Failure to furnish the information may result in denial of consideration for training leading to a commission. The public reporting burden for this collection of information is estimated to average 20 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden to: Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports (0701-0150), 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. PLEASE DO NOT RETURN YOUR FORM TO THE ABOVE ADDRESS. RETURN COMPLETED FORM TO YOUR RECRUITER OR BASE EDUCATION SERVICE CENTER.							
INSTRUCTIONS (A) All entries must be typed, except where otherwise indicated. Add the ZIP Code to all addresses. (B) When allotted space is insufficient, continue on page 7 when needed. Provide a complete explanation for each item (Identify each item with the item number.) (C) Enter all dates using year, month and day sequence (i.e., 19950715). (D) Be certain that you understand and agree to the certification in item 23 prior to signing this application. (E) Enter "NA" or "Not Applicable" for any item that does not apply or to which you have no response. (F) Include an official transcript, including transcript key, for each earned degree reflected in item 24. NOTE: Your home of record is the place designated as your home when you are commissioned, reinstated, appointed, reappointed, enlisted, inducted, or ordered to active duty. This address is used to determine travel entitlements when you separate from active duty.							
SECTION I							
1. NAME (Last, First, Middle Initial) (Maiden, if applicable)				6. ACTIVE DUTY MILITARY APPLICANTS ONLY			
2. CURRENT ADDRESS (Complete Mailing Address and Phone Number to Include Area Code)				GRADE		TAFMSD	
3. HOME ADDRESS (Home of Record)				CURRENT DOS			
4. LEGAL STATE OF RESIDENCE (Include Zip Code)				SERVICING MPF (Complete mailing address)			
5. PERSONAL DATA				BASE EDUCATION SERVICE OFFICE (BESO)			
SSN		DATE OF BIRTH		DATE AVAILABLE FOR TRAINING		BESO COML:	
NUMBER OF DEPENDENTS (Other than spouse, completely dependent on you)		BESO TELEPHONES:		DSN:		COML FAX:	
APPLICANT'S E-MAIL ADDRESS:				DSN FAX:			
U.S. CITIZEN:				BESO COUNSELOR'S			
MARITAL STATUS:				E-MAIL ADDRESS:			
☐ YES ☐ NO				CURRENT UNIT OF ASSIGNMENT (Complete Mailing Address)			
☐ SINGLE				AFSC:			
(If Yes, check appropriate item)				Applicant's PAS CODE:			
☐ NATIVE BORN				DATE DEPARTED CONUS:			
☐ BORN ABROAD OF US PARENTS				DATE ELIGIBLE TO RETURN FROM OVERSEAS:			
☐ NATURALIZED				DUTY TELEPHONES:			
☐ SEPARATED ☐ DIVORCED				COML:			
☐ WIDOWED				DSN:			
7A. APPLYING FOR: (Check & initial program & category for which you apply)				7C. NON-RATED LINE AF SPECIALTY CHOICES		7D. VOLUNTEER FOR FLYING DUTY	
☐ OFFICER TRAINING SCHOOL (OTS)				(For AFPS, indicate 3, using utilization field titles not codes. For AFROTC/AECP, indicate 1 desired degree title.)		☐ YES	
☐ AFROTC				(1)		☐ NO	
☐ AIRMAN EDUCATION AND COMMISSIONING PROGRAM (AECP)				(2)			
☐ OTHER (Specify)				(3)			
7B. RATED LINE CATEGORIES (OTS Applicants Only) (List 1st and 2nd Choice)							
☐ PILOT ☐ NAVIGATOR ☐ AIR BATTLE MANAGER							
8. NON-LINE: ☐ PRE-HEALTH ☐ NURSE ☐ OTHER (Specify)							
9. AFOQT SCORES (Most Recent) (Include score printout with application.)							
FORM		VERSION		DATE TESTED		PILOT	
						NAV	
						AA	
						VERBAL	
						QUANTITATIVE	
						# OF TIMES TESTED	

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10. AERONAUTICAL TRAINING						
PRIVATE PILOT LICENSE		☐ YES	☐ NO	LIST OTHER ADVANCED AERONAUTICAL RATINGS YOU HOLD (Use page 7 if needed.)		
COMMERCIAL PILOT LICENSE		☐ YES	☐ NO			
11A. HAVE YOU EVER PREVIOUSLY MADE APPLICATION FOR OR BEEN CONTRACTED IN A PROGRAM LEADING TO A COMMISSION IN ANY COMPONENT OF THE UNIFORMED SERVICES (Include service academies, ROTC programs, Platoon Leaders Course, Officer Training (OCS/OTS), etc.) ☐ YES ☐ NO (If "YES", complete items B and C below. If "CONTRACTED" include a copy of DD Form 785, Record of Disenrollment from Officer Candidate-Type Training, and a waiver request with details explaining the disenrollment)						
B. NAME AND NATURE OF PROGRAM	DATE APPLIED	DATE ENROLLED	RESULTS (DATES) (If marked disqualified/declined or disenrolled, provide a detailed explanation on page 7).			
			SELECTED	NONSELECTED	DISQUALIFIED	DECLINED
C. DID YOU INCUR AN ACTIVE DUTY SERVICE COMMITMENT?						
☐ YES ☐ NO (If "YES", enter the date the commitment was satisfied)						
12. WERE YOU EVER ELIMINATED FROM A COURSE OF INSTRUCTION IN A MILITARY FLYING SCHOOL LEADING TO AN AERONAUTICAL RATING? (Include AFROTC, USAFA, and OTS Light Plane Training; AVROC; Navy ACOCs; etc.)						
☐ YES ☐ NO (If "YES" complete the information below.)						
TYPE OF TRAINING	REASON FOR ELIMINATION		SCHOOL	CLASS	DATE	
13. HAVE YOU EVER PREVIOUSLY MADE APPLICATION FOR OR BEEN ENLISTED IN ANY COMPONENT OF THE UNIFORMED SERVICES?						
☐ YES ☐ NO (If "YES", complete the statement below in chronological order)						
DATES		HIGHEST GRADE	COMPONENT	PRIMARY AFSC	ACTIVE DUTY, GUARD, OR RESERVE	DUTY TITLE
FROM	TO					
14. HAVE YOU EVER RECEIVED SEVERANCE PAY, SEPARATION PAY, READJUSTMENT PAY, VOLUNTARY SEPARATION INCENTIVE (VSI), OR SPECIAL SEPARATION BENEFIT (SSB) PAY WHEN RELEASED FROM ACTIVE DUTY OR DISCHARGED FROM ANY UNIFORMED SERVICE?						
☐ YES ☐ NO (If "YES", explain on page 7.)						
15. HAVE YOU EVER BEEN INVOLVED IN, ARRESTED, INDICTED, OR CONVICTED OF ANY VIOLATION OF CIVIL OR MILITARY LAW, INCLUDING NONJUDICIAL PUNISHMENT PURSUANT TO ARTICLE 15 OF THE UCMJ, OR MINOR TRAFFIC VIOLATIONS? (Any incident other than minor nontraffic must be explained (use page 7) and may require corroboration, see AFI 36-2002, Regular Air Force and Special Category Accessions.)						
☐ YES ☐ NO (If "YES", explain below. List all offenses charged against you regardless of final disposition, including such situations where the involvement has not been recorded locally or the record has been ordered sealed or expunged by the court)						
OFFENSE	DATE	PLACE	AGE	DISPOSITION OF CHARGE		COURT
A. WERE YOU DETAINED, CONFINED, OR PLACED ON PROBATION FOR ANY OF THE ABOVE?						
☐ YES ☐ NO						
B. WAS THERE USE OF DRUGS OR ALCOHOL CITED?						
☐ YES ☐ NO						
16. ARE YOU A CONSCIENTIOUS OBJECTOR? (A conscientious objector is defined as: one who has or had a firm, fixed, and sincere objection to participation in war in any form or to bearing of arms because of religious training or belief, which includes solely moral or ethical beliefs.)						
☐ YES ☐ NO						
17. Are you now or have you ever been affiliated with any organization or movement that seeks to alter our form of government by unconstitutional means, or sympathetically associated with any such organization, movement, or members, or members thereof? (If "YES", explain on page 7.)						
☐ YES ☐ NO						
18. HAVE YOU EVER FILED FOR BANKRUPTCY? (If "YES", explain on page 7.)						
☐ YES ☐ NO						

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J. (AFROTC/AECP Applicants Only) If I am medically disqualified from the career field for which selected, I may be eliminated from AFROTC/AECP unless my academic background and experience can be utilized in another career field.		☐
K. (AECP Applicants Only) As a condition of receiving advanced education as defined in Title 10, United States Code, Section 2005, I understand and agree:		☐
(1) To complete the academic and military requirements specified in AFI 36-2013, <i>Officer Training School (OTS) and Airman Commissioning Programs</i> , and to serve on Active Duty for the period specified in this agreement.		☐
(2) Should I fail to complete the academic or military requirements of AFI 36-2013, or refuse to accept an appointment in the United States Air Force, I agree to serve on Active Duty for the remaining portion of my enlistment contract, IF OFFERED .		☐
(3) Should I voluntarily or because of misconduct, fail to complete either period of Active Duty, or should I fail to fulfill any term or condition specified in this agreement, I will reimburse the United States for the percentage of the cost of my education. <i>(The reimbursement amount will be based on the unfulfilled portion of the commitment(s) incurred.)</i>		☐
(4) Only the Secretary of the Air Force or designee may excuse me from my obligation to serve on Active Duty for the period specified in this agreement.		☐
(5) A final decree of discharge in bankruptcy under Title 11, United States Code, if obtained within a period of five years after the last day of the specified period which I had agreed to serve, will not release me from my obligation to reimburse the United States as specified in this agreement.		☐
L. (ASCP/POC-ERP Applicants only) I understand if I am selected for an AFROTC scholarship under the provisions of AFI 36-2013 and separated early from Active Duty to accept an AFROTC scholarship and my scholarship is terminated for any reason, I will not be relieved of my obligation to AFROTC and the Air Force. Upon termination of my scholarship and at the discretion of the AFROTC Commander, I may be required to continue training in the AFROTC program or be disenrolled. Specifically:		☐
(1) If disenrolled in my AS200, sophomore year, AS300, junior year, or AS400 senior year, I may either be returned to Active Duty in an enlisted status for a period of two years or be required to reimburse the United States for all scholarship monies expended on my behalf.		☐
(2) If disenrolled in my freshman year, my ADSC shall be equivalent to the time not served on my original enlistment contract when separated to accept the AFROTC scholarship. If my service commitment is less than 1 year at the time of release to enter AFROTC, I may be discharged and not returned to Active Duty unless I specifically request to do so from the AFROTC Commander.		☐
22. WHAT ARE YOUR OBJECTIVES AND REASONS FOR DESIRING AN AIR FORCE COMMISSION? <i>(Include what you have to offer the Air Force. Confine comments to this space. Attachments ARE NOT authorized) (MUST BE TYPED).</i>		
A. NON-RATED AGE STATEMENT I am submitting my application with the understanding, if selected and physically qualified, I must enter Basic Officer Training (BOT) early enough to be commissioned prior to my 35th birthday. If the Air Force is unable to place me in a BOT class that graduates before my 35th birthday, my selection to BOT will be withdrawn.		APPLICANT'S WRITTEN INITIALS
B. RATED AGE STATEMENT: I am submitting my application with the understanding, if selected and physically qualified, I must enter BOT early enough to follow on and enter UPT, UNT, or ABM training prior to age 30. If the Air Force is unable to place me in a BOT class that would facilitate the same, my selection as a (Pilot/Navigator/ABM) will be withdrawn.		APPLICANT'S WRITTEN INITIALS
23. I CERTIFY THAT THE FOREGOING ENTRIES ARE TRUE, CORRECT, AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF.		
DATE	TYPED NAME AND GRADE OF APPLICANT	SIGNATURE

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SECTION II			
24. COMPUTING THE DATA			
INSTRUCTIONS: Use the quality-point system (A+, A, A- =4, B+, B, B- =3, C+, C, C- =2, D+, D, D- =1, and F=0). Using AFI 36-2305, <i>Educational Classification and Coding Procedures</i> , convert quarter hours to semester hours (one quarter hour equals two thirds of one semester hour). Include credit hours and quality points for all courses taken where a grade was received. For incompletes, use an "F" as the grade awarded. If courses were retaken, figure both into the average. Do not include credit hours or quality points for withdrawals, courses that were audited, or pass-fail. List each college or university separately. (You must list all colleges and universities you have attended in Column (a).) Total Columns (b) and (c); then, divide the total of (b) by the total of (c) to determine the cumulative GPA. For AFRS applicants only: For graduate and above course work or degrees, list name of institution, type of program (i.e., MS, MBA, PhD...) and cumulative institution GPA on page 7, Continuation Sheet.			
NAME OF INSTITUTION (a)	TOTAL QUALITY POINTS (b)	TOTAL CREDIT HOURS (c)	
TOTAL:	0.00	divided by 0.00	= CUMULATIVE GPA
25. BASE EDUCATION OFFICE/RECRUITING SQUADRON REVIEW			
I have reviewed this application, and I am responsible for its accuracy.			
DATE	TYPED NAME AND GRADE OF REVIEWING OFFICIAL	SIGNATURE	
SECTION III (USAF Recruiting Service Interviewing Official or Unit Commander must complete this section. You must evaluate all factors.)			
26. NON-NATIVE ENGLISH-SPEAKING (NES) IDENTIFICATION STATEMENT			
A. ☐ This applicant is not NES. ☐ This applicant is NES, and during the course of my interview I have determined this applicant does ☐ does not ☐ demonstrate English speaking and/or comprehension abilities at a level that will allow the applicant to function effectively as an Air Force officer.			
B. (For NES identified applicants only) I have advised the applicant of this NES determination, and if selected for a commissioning program, he/she must attain a score of 90 or above on the English Comprehension Level Test. He/she must also achieve a score of 2+/2 on a Defense Language Institute English Language Center interview. I have also advised the applicant that failure to achieve qualifications within 45 days of selection notification will result in withdrawal of the selection.			
27. DEPENDENT CARE RESPONSIBILITY STATEMENT (Military applicants only) (Civilian applicants use AF IMT 3010, USAF Statement of Understanding Dependent Care Responsibilities).			
I have reviewed AF IMT 357, Family Care Certification , and briefed the applicant on the contents of AFI 36-2908, <i>Family Care Plans</i> . The applicant fully understands Air Force policy on the relationship between dependent care responsibilities and military duties and obligations, both in peacetime and during contingencies. The applicant's entry into a commissioning program would not adversely affect dependent care.			Cmdr Initials
28. INTERVIEW			
A. WAIVERS REQUIRED NONE ☐ AGE ☐ MORAL ☐ DD 785 ☐ R.E. CODE ☐ DRUG ☐ OTHER (Specify) ☐			
B. ASSIGNMENT LIMITATIONS (If YES, please explain (Non-US citizen relatives, CHAP Deprn, Peace Corps, etc.)			
C. AF ACTIVE DUTY, AF RESERVE OR ANG MANDATORY COMMANDER STATEMENTS (AFRS Applicant)			Cmdr Initials
(1) I certify that I am the applicant's squadron commander (equivalent if assigned to group or higher).			
(2) I have reviewed the applicant's service record and it does ☐ does not ☐ contain derogatory information.			
(3) Attached letter of recommendation is within the applicant's chain-of-command (no higher than senior rater of applicant's organization).			

28. INTERVIEW (Continued)					
EVALUATION FACTORS	BELOW AVERAGE	FAIR	AVERAGE	EXCELLENT	OUTSTANDING
A. APPEARANCE: (Grooming, posture, physique, etc.)	☐	☐	☐	☐	☐
B. CONFIDENCE, MATURITY (Sincerity, social adjustment, etc.)	☐	☐	☐	☐	☐
C. ATTITUDE (Adaptability to military life, travel, remote assignment, etc.)	☐	☐	☐	☐	☐
D. MOTIVATION (Enthusiasm, worked way through school, effort to make interview, etc.)	☐	☐	☐	☐	☐
E. WORK EXPERIENCE (Positions held, responsibility, supervision, etc.)	☐	☐	☐	☐	☐
F. LEADERSHIP POTENTIAL (Team captain, project officer, community activities, volunteer work, chairperson, etc.)	☐	☐	☐	☐	☐
G. MENTAL ALERTNESS (Ability to present and understand ideas, etc.)	☐	☐	☐	☐	☐
H. COMMUNICATION SKILLS (Grammar, vocabulary, articulation, etc.)	☐	☐	☐	☐	☐
I. POTENTIAL TO COMPLETE PROGRAM (Interest in program, reaction to program, etc.)	☐	☐	☐	☐	☐
J. OVERALL EVALUATION	☐	☐	☐	☐	☐
K. COMMENTS AND RECOMMENDATIONS (MANDATORY) (Use Bullet Format. Include comments on applicant's officer potential.)					
DATE	TYPED NAME, GRADE, TITLE, ORGANIZATION AND TELEPHONE NUMBER OF INTERVIEWING OFFICIAL			SIGNATURE	
SECTION IV					
29. COMMENTS (If item 28 was signed by a captain or below, a field grade officer in the applicant's chain of command must provide an endorsement).					
DATE	TYPED NAME, GRADE, AND TITLE			SIGNATURE	

AF Form 56, 20061030

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30. Continuation Sheet for Items 10, 11, 13, 14, 15, 17, 18, 19 and 24.

AF Form 56, 20061030

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APPENDIX B: POTENTIAL TEXT SOURCES FOR TEXT ANALYSIS

Potential Sources of Text for **Enlisted** Text Analysis

Airforce.com Chat Logs (160127-190124)

Highlights

- Up to 2,019 potential unique enlisted recruit chat logs spanning from 27-Jan-16 to 24-Jan-19; all of which should have accessed into Air Force (and would therefore have ASVAB, TAPAS, etc.)
- Text source is in-hand and readily available to analyze

Constraints

- Text content tends to be basic question and answer format between AF.com recruiter and potential recruit (e.g., “where is my nearest recruiter?”). There may be little variation in text content from potential recruit
- Recruit response length varies widely depending on context of chat session
- Significant amount of “noise” (i.e., HTML, Recruiter text) to clean before analyzing final text

Campion Comments

- These data would be useful if the Air Force was interested in a basic content analysis of the questions that potential recruits have. As such, it may have value for recruiting purposes.
- It probably has little value for personnel selection or other HR administrative decision-making process.
- Regarding the noise, we might be able to write macros to remove it. Or we might just mine it too and erase the variables that reflect the noise.

APAT Testing Center Trainee Data

Highlights

- Up to two hours/week dedicated testing time at Lackland AFB; two flights of 5th week BMT trainees (approx. 100 trainees per week)
- Flexibility to implement a wide variety of question prompts to target wide range of potential constructs
- Ability to administer other measures concurrently (AF-WIN, SDI, Supervisory/Peer Ratings, etc.)
- High level of control over response quality and quantity

Constraints

- Time required to 1) identify, refine, finalize question prompts and 2) program prompt GUI into APAT testing stations
- Time required to collect data (potential N-size of ~400 per month)

- Peer ratings will significantly cut onto 2-hour test administration time, and is not focus of contract
 - Supervisory ratings may provide good alternative and are not constrained to 2-hour testing window

Campion Comments

- Despite the constraints, this source seems like a good way to collect focused text data that could be mined to measure job-related psychological constructs, construct validate the measures against test scores, and explore criterion-related validity to predict outcomes like supervisor ratings.
- The potential administrative purposes are a little less clear. Could these data be used to evaluate their training performance, select or place them into jobs, provide guidance to them on job choice, or other such uses?
- Peer ratings might be worth the extra time because they could provide more accurate assessments of personality traits and emergent leadership behaviors to serve as criteria to text mine against.

Realistic Job Preview (RJP) Thematic Data

Highlights

- Potential to select response text from a number of enlisted Air Force Specialty Codes (AFSCs) who had RJP survey data collected on them since 2016
 - Have AFSC-level and Cluster-level (several similar AFSCs) responses available
 - See “RJP Orientation Doc” document for more information
- Diversity of responses range a variety of topics from career-field challenges, rewards, career fit, etc.
- Data are collected and ready for analysis

Constraints

- Unable to link participant response to potential personnel (i.e., criteria) data as responses do not contain identifiers (may focus analyses here on “exploratory” text analysis)

Campion Comments

- Unclear value of using text mining for content analysis because a content analysis has already been conducted and it appears well done for the purpose of creating videos.
- Text mining is probably most useful for content analysis when the volumes are too great or you want to extract metrics or score the comments for some purpose. Does the Air Force have some purpose in mind?

Air Force Form 56 Essays

Highlights

- Form is required for Officer Training School commissioning application (potentially for other accessions sources), which means there should be a large number of text files to use
- If entire form can be obtained, additional information can be analyzed (e.g., employment history, offense history, scholarships, student organizations, etc.)
- Form 56 should be loaded into AFRISS-TF, the Air Force Recruiting Service (AFRS) database. This would mean records exist linking participant Form 56 to personnel record and potential criteria data

Constraints

- If AF Form 56 is only required by OTS, potential for available criteria data is reduced (OTS is where medical and advanced degree candidates access, and may have exemptions from requiring candidates complete the AFOQT/SDI)
- Forms currently unavailable to AFPC/DSYX. AFRS is amenable to providing Form 56 data for OTS; still following up with USAFA and AFROTC POCs to determine access to similar type data

Campion Comments

- If these data are available, they appear to be an excellent source of a range of text files (e.g., work experience, educational history, achievements, personal statements, etc.).
- The applications are very detailed and standardized across candidates, which are major advantages.
- The two examples had test scores and interview ratings in them.
- In terms of criteria to predict to develop the algorithm, aside from the interview scores, are other assessor or recruiter evaluations available or could they be collected on a sample? It would not require a large sample (e.g., 500). Perhaps a panel of SMEs could be convened for this purpose. The result might be a useful tool for prescreening.

Air Force ROTC Personal Statements

Highlights

- 3,392 personal statements available from AFROTC on-line college scholarship applications from 2010-2011
- Personal statements include social security number which would allow easy linking to Air Force databases and potential criteria (AFOQT, SDI, etc)
- AFROTC accessions are required to take the AFOQT, meaning high percentage of personal statements have linked criteria data available

Constraints

- All 3,392 personal statements are hand-written and scanned in as PDF documents. Currently trying to identify if a similar set of more recent personal statements can be obtained, and if so, how many of those are typed versus written
- Data are relatively outdated (2010-2011), but may provide potential for time-based criteria (e.g., promotion rate, awards, OPR ratings, recommission rate)

Campion Comments

- We may be able to convert the handwriting to text using an Optical Character Recognition (OCR) tool.
- The availability of so many criterion measures is also a major advantage, especially since they include career success and not just skewed performance ratings.
- This seems like a potential opportunity to develop a tool for prescreening candidates.

Air Force Officer Performance Reports (OPRs)

Highlights

- Approximately 16,300 individuals with 1-5 OPRs ranging from 2006-2014
- Provides supervisory report of individual's job tasks, accomplishments during performance review year from two supervisors

Constraints

- Data are in .XFD files which can only be read by a handful of software applications; would need to have entire catalog of OPRs converted to PDF or TXT form
 - Currently only 20-24 OPRs available in PDF form, rest are in .XFD
- Text statements are provided by individuals other than the subject (supervisors); may have limited use outside of an external supervisory rating
- We are unable to get open-ended text samples from any of the officers themselves (i.e., those being rated in the OPRs)

Campion Comments

- Highly similar data are available on the Enlisted Performance Reports (ERPs). A copy was included.
- Text mining could possibly be used to analyze the comments boxes in the OPRs and ERPs to attempt to extract additional measurement of job performance beyond the ratings. This could be valuable since the ratings are usually highly skewed, thus limiting their usefulness.
- The text mined data could be evaluated by correlating it with selection test scores or other data that reflect job performance.
- Assuming the data could be converted to text that could be read by the text mining software, these data could be useful.

APPENDIX C: CONTENT ANALYSIS INSTRUCTIONS FOR INTERNS

Click the paper clip in the panel on the left to open the Appendix C spreadsheet in Excel.

APPENDIX D: MEASUREMENT OF ATTRIBUTES CURRENTLY ASSESSED

Table D1. Objective 3.2.1: Determine Whether Text Analysis Could Be Used to Improve the Measurement of Attributes Assessed by Current US Air Force Tests

Attributes Assessed by Current US Air Force Tests	Possible Corpus (text data to mine)	Possible Criteria (to predict or validate mined data)	Evaluation and Recommendation
1. Personality – Self-Description Inventory (SDI) and Tailored Adaptive Personality Assessment System (TAPAS)	- Text data to be collected from recruits at Lackland as part of objective 3.2.2. - Text from post-training written documents (see objective 3.2.3). - Text from Enlisted Performance Report (EPR).	- Scores on SDI and TAPAS. - Ratings of training performance collected as part of objective 3.2.2. - Ratings on the Enlisted Performance Reports (EPR).	- Should be feasible to mine the text data collected from recruits using the SDI and TAPAS scores to construct validate. This would require that some of the prompts are focused on personality. - The training ratings could be used to evaluate criterion validity. Might also examine validity with EPR ratings, but their skew may be a problem. - Value of the text in the post training documents and the EPRs will depend on what they contain.
2. Vocational interests – Air Force Work Interest Navigator (AF-WIN)	Application information on past jobs, education, hobbies, clubs, other memberships, special skills, other activities, etc.	- Scores on AF-WIN. - Ratings of training performance collected as part of objective 3.2.2. - Ratings on the Enlisted	Should be able to text mine application information and new text collected from recruits (if it is focused on vocational interests) using AF-

	• Text data to be collected from recruits at Lackland as part of objective 3.2.2. • Text from post-training written documents (see objective 3.2.3).	Performance Reports (EPR).	WIN scores to construct validate. • Unclear if training performance is useful for criterion validation because it is not occupation specific. • Value of ERP for validation has skew limitation again. • Value of text from post-training will depend on what is collected.
3. Cognitive ability – Air Force Officer Qualifying Test (AFOQT) and Armed Services Vocational Aptitude Battery (ASVAB)	• Application information on education level, past jobs, honors, clubs, other achievements, etc. • Text data to be collected from recruits at Lackland as part of objective 3.2.2 if relevant to cognitive ability (e.g., writing skill, past intellectual achievements, etc.). • Text from Enlisted Performance Report (EPR) if likely to bear on cognitive ability.	• Scores on AFOQT and ASVAB. • Ratings of training performance collected as part of objective 3.2.2. • Ratings on the Enlisted Performance Reports (EPR).	• Cognitive ability tests are probably the best measures of these abilities. • Application information could be mined to predict test scores. • Text data from recruits may be of value if cognitively oriented. • Value of EPR test to be determined.

APPENDIX E: ILLUSTRATION OF INITIAL TRAINING AND RELABELING

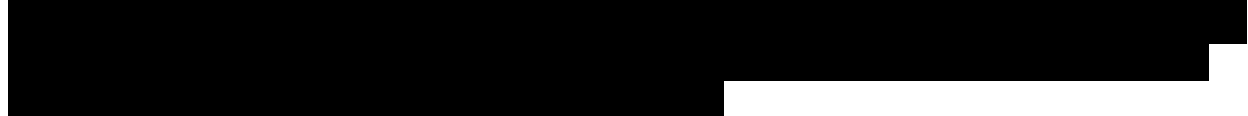
Table E1. Objective 3.2 - Illustration of Initial Training and Relabeling to Enhance Job Relatedness (Content Validity)

The skill measured and the question are:

Type: Behavioral

Item: Adapting to Stress and Change (Adaptability)

Facet: Ability to adapt to new and changing tasks and situations



Note that the categories below are in alphabetical order, while other tables of these categories may be in order of size.

Category	No. Docs.	Training/Relabeling
academics	87	
academics/academic year	2	Eliminate, too small, count in main category.
academics/faculty	2	Eliminate, too small, count in main category.
academics/grade	28	
academics/library	2	Eliminate, too small, count in main category.
academics/research	18	
academics/research/study	17	
academics/research/study/study habits	2	Eliminate, too small, count in main category.
academics/students	53	
academics/students/graduation	17	
academics/students/sophomore	20	
academics/students/sophomore/freshman	15	
academics/test	6	
action	1	Eliminate, too small.
action/course of action	1	Eliminate, too small.
america	39	
america/u.s.	37	
america/u.s./us states	32	
america/u.s./us states/illinois	1	Eliminate, too small, count in main category.

america/u.s./us states/ohio	3	Eliminate, too small, count in main category.
america/u.s./us states/texas	15	
anatomy	40	Eliminate, mostly figurative uses.
anatomy/blood	2	Eliminate, mostly figurative uses.
anatomy/body regions	16	Eliminate, mostly figurative uses.
anatomy/body regions/extremities	15	Eliminate, mostly figurative uses.
anatomy/body regions/extremities/arm	10	Eliminate, mostly figurative uses.
anatomy/body regions/extremities/arm/hand	9	Eliminate, mostly figurative uses.
anatomy/body regions/extremities/leg	5	Eliminate, mostly figurative uses.
anatomy/body regions/extremities/leg/foot	3	Eliminate, mostly figurative uses.
anatomy/body regions/extremities/leg/knees	2	Eliminate, mostly figurative uses.
anatomy/brain	0	Eliminate, mostly figurative uses.
anatomy/eyes	3	Eliminate, mostly figurative uses.
anatomy/head	19	Eliminate, mostly figurative uses.
anatomy/head/face	7	Eliminate, mostly figurative uses.
behavior and behavior mechanisms	52	
behavior and behavior mechanisms/emotion	37	
behavior and behavior mechanisms/emotion/anger	8	
behavior and behavior mechanisms/emotion/anxiety	2	Eliminate, too small, count in main category.
behavior and behavior mechanisms/emotion/fear	2	Eliminate, too small, count in main category.
behavior and behavior mechanisms/emotion/grief	3	Eliminate, too small, count in main category.
behavior and behavior mechanisms/emotion/love	2	Eliminate, too small, count in main category.
behavior and behavior mechanisms/social psychology	13	
behavior and behavior mechanisms/social psychology/lifestyle	11	
behavior mechanisms	30	
behavior mechanisms/attitude	19	
behavior mechanisms/behavior	5	
change	293	
change/big change	22	
change/change schools	8	

change/cirriculum change	1	Eliminate, too small, count in main category.
change/drastic change	5	
change/huge change	7	
change/major change	149	
classes	37	
college	50	
college/college classes	2	Eliminate, too small, count in main category.
communication	3	Eliminate, too small, count in main category.
complexity	0	Eliminate, no documents
criticism	0	Eliminate, no documents
criticism/constructive criticism	0	Eliminate, no documents
day	82	
details	0	Eliminate, no documents
dwelling	135	
dwelling/apartment	12	
dwelling/apartment/apartment complex	3	Eliminate, too small, count in main category.
dwelling/household	59	
dwelling/household/man of the house	2	Eliminate, too small, count in main category.
dwelling/shelter	5	
dwelling/shelter/camp	2	Eliminate, too small, count in main category.
dwelling/stay home	2	Eliminate, too small, count in main category.
economics	24	
economics/cooperation	0	Eliminate, no documents
economics/land use	6	
economics/land use/farm	2	Eliminate, too small, count in main category.
economics/land use/rent	4	
economics/property	16	
economics/property/assignment	0	Eliminate, no documents
economics/property/boundaries	2	Eliminate, too small, count in main category.
economics/property/remainder	1	Eliminate, too small, count in main category.
economics/property/transfer	7	
economics/property/wreck	2	Eliminate, too small, count in main category.
economics/waste	0	Eliminate, no documents

effect	5	
factors	20	
family	265	
family/family structure	206	
family/family structure/child	91	
family/family structure/child/brother and sister	37	
family/family structure/child/brother and sister/brother	24	
family/family structure/child/brother and sister/sister	17	
family/family structure/child/child care	3	Eliminate, too small, count in main category.
family/family structure/child/daughter	9	
family/family structure/child/new child	5	
family/family structure/child/son	2	Eliminate, too small, count in main category.
family/family structure/grandparents	21	
family/family structure/grandparents/grandfather	5	
family/family structure/grandparents/grandma	10	
family/family structure/parents	166	
family/family structure/parents/father	68	
family/family structure/parents/mother	90	
family/family structure/parents/parents divorce	3	Eliminate, too small, count in main category.
family/family structure/spouse	10	
family/family structure/spouse/wife	7	
family/marital status	32	
family/marital status/divorce	17	
family/marital status/single person	10	
feedback	2	Eliminate, too small.
finance	51	
finance/charge	0	Eliminate, no documents
finance/check	3	Eliminate, too small, count in main category.
finance/cost	2	Eliminate, too small, count in main category.
finance/credit	0	Eliminate, no documents
finance/gain	3	Eliminate, too small, count in main category.
finance/investments	12	
finance/investments/future	11	Eliminate, same as main category.

finance/money	27	
finance/trust	6	
finances	46	
finances/check	2	Eliminate, too small, count in main category.
finances/credit	2	Eliminate, too small, count in main category.
finances/fees and charges	4	
finances/fees and charges/tuition	2	Eliminate, too small, count in main category.
finances/funds	1	Eliminate, too small, count in main category.
finances/gain	3	Eliminate, too small, count in main category.
finances/insurance	5	
finances/investments	7	
finances/investments/future	5	Combine with future investments above.
finances/investments/stock	2	Eliminate, too small, count in main category.
finances/loans	4	
finances/loans/scholarship	3	Eliminate, too small, count in main category.
finances/loss	6	
finances/money	8	
finances/payments	3	Eliminate, too small, count in main category.
food	27	
food/animal origin	3	Eliminate, too small, count in main category.
food/animal origin/dairy products	2	Eliminate, too small, count in main category.
food/meals	9	
food/meals/lunch	3	Eliminate, too small, count in main category.
food/pizzas	3	Eliminate, too small, count in main category.
friends	121	
friends/new friends	32	
geometry	15	Eliminate, count below.
geometry/angle	0	Eliminate, no documents
geometry/complex	2	Eliminate, too small, count in main category.
geometry/complex/complex situation	0	Eliminate, no documents
geometry/holes	0	Eliminate, no documents

geometry/perspective	9	Relabel as perspective
geometry/perspective/drawing	0	Eliminate, no documents
geometry/shapes	4	Relabel as in shape
geometry/shapes/shape	2	Eliminate, too small, count in main category.
goal	16	
greatness	23	
greatness/great people	5	
hardship	6	
help	71	
human resources	87	
human resources/benefit	2	Eliminate, too small, count in main category.
human resources/career	37	
human resources/career/hiring	6	
human resources/career/hiring/interview	3	Eliminate, too small, count in main category.
human resources/career/relocation	2	Eliminate, too small, count in main category.
human resources/career/skill	17	
human resources/career/skill/management	7	
human resources/career/skill/management/service management	1	Eliminate, too small, count in main category.
human resources/career/skill/university	7	
human resources/career/skill/university/arizona state university	1	Eliminate, too small, count in main category.
human resources/education, training and development	56	
human resources/education, training and development/challenge	19	
human resources/education, training and development/education	30	
human resources/education, training and development/education/basic training	19	
human resources/education, training and development/education/basic training/basic military training	10	Eliminate, count in main category.
human resources/education, training and development/knowledge	1	Eliminate, too small, count in main category.

human resources/education, training and development/program	6	Eliminate, count in main category.
human resources/skill	0	Eliminate, no documents
idea	22	
individual	7	
information	7	
issue	5	
issues	0	Eliminate, no documents
job	90	
job/better job	3	Eliminate, too small, count in main category.
learning	26	
learning/reinforcements	0	Eliminate, no documents
life	192	
life/day life	2	Eliminate, too small, count in main category.
life/new life	6	
life/normal life	5	
life/social life	8	
literature	9	Eliminate, too heterogeneous
literature/drama	2	Eliminate, too small, count in main category.
literature/letter	6	Eliminate, too heterogeneous
military	71	
military/air force	48	
military/air force/united states air force	4	Eliminate, counted above.
military/army	4	
military/captain	2	Eliminate, too small, count in main category.
mind	11	Eliminate, counted below.
mind/open mind	7	
months	52	
months/months of waiting	2	Eliminate, too small, count in main category.
national service	0	Eliminate, no documents
national service/draft	0	Eliminate, no documents
occupation	93	
occupation/cashier	3	Eliminate, too small, count in main category.
occupation/desk	2	Eliminate, too small, count in main category.
occupation/guide	0	Eliminate, no documents
occupation/instructor	7	

occupation/manager	22	
occupation/manager/new manager	3	Eliminate, too small, count in main category.
occupation/manager/old manager	2	Eliminate, too small, count in main category.
occupation/medical personnel	7	
occupation/medical personnel/nursing	5	
occupation/medical personnel/physicians	2	Eliminate, too small, count in main category.
occupation/recruiter	8	
occupation/supervisor	12	
occupation/tailor	0	Eliminate, no documents
occupation/teacher	13	
occupation/teacher/new teachers	4	
occupation/white collar workers	28	
occupation/white collar workers/employee	13	
occupation/white collar workers/employee/new staff	3	Eliminate, too small, count in main category.
occupation/white collar workers/executives	7	
occupation/white collar workers/executives/leadership skills	2	Eliminate, too small, count in main category.
occupation/white collar workers/leadership	12	
office workers	33	
office workers/colleague	0	Eliminate, no documents
office workers/crew	15	
office workers/team	24	
office workers/team/team members	0	Eliminate, no documents
opinion	3	Eliminate, too small, count in main category.
options	6	
outcome	111	
part	25	
people	89	
people/approach people	2	Eliminate, too small, count in main category.
people/new people	17	
person	56	
person/new person	4	
person/personal opinion	1	Eliminate, too small, count in main category.

person/single person	2	Eliminate, too small, count in main category.
physics	18	Eliminate, counted below.
physics/mechanics	10	
physics/mechanics/power	6	
physics/mechanics/shock	4	
physics/perspective	2	Eliminate, too small, count in main category.
place of business	34	
place of business/clubs	5	
place of business/office	6	
place of business/store	19	
place of business/store/mall	4	
place of business/store/mall/grocery store	2	Eliminate, too small, count in main category.
place of business/store/shop	7	
plan	33	
plan/lesson plans	1	Eliminate, too small, count in main category.
point	24	
population	2	Eliminate, too small, count in main category.
position	18	
problem	24	
process	21	
process/manufacturing process	4	
process/small processes	0	Eliminate, no documents
project	4	
property	0	Eliminate, no documents
prosecution of law	9	
prosecution of law/evidence	1	Eliminate, too small, count in main category.
prosecution of law/evidence/reputation	0	Eliminate, no documents
prosecution of law/mistakes	4	
prosecution of law/procedure	1	Eliminate, too small, count in main category.
prosecution of law/venue	1	Eliminate, too small, count in main category.
questions	13	
reason	15	
recipient	0	Eliminate, no documents
report	5	
report/mock reports	0	Eliminate, no documents

report/solution report	0	Eliminate, no documents
report/thorough report	0	Eliminate, no documents
research	6	
research/data	1	Eliminate, too small, count in main category.
research/scientific method	1	Eliminate, too small, count in main category.
resources	3	Eliminate, too small, count in main category.
respons	0	Eliminate, no documents
review	0	Eliminate, no documents
school	192	
school/k 12	104	
school/k 12/middle school	13	
school/new school	26	
school/switch schools	7	
school/transfer schools	3	Eliminate, too small, count in main category.
simpley	0	Eliminate, no documents
situation	185	
society	12	
solution	8	
solution/new solution	0	Eliminate, no documents
sports	79	
sports/play sports	3	Eliminate, too small, count in main category.
sports/sports by type	63	
sports/sports by type/athletics	3	Eliminate, too small, count in main category.
sports/sports by type/ball games	22	
sports/sports by type/ball games/baseball	3	Eliminate, too small, count in main category.
sports/sports by type/ball games/baseball/softball	1	Eliminate, too small, count in main category.
sports/sports by type/ball games/football	17	
sports/sports by type/ball games/football/football season	2	Eliminate, too small, count in main category.
sports/sports by type/ball games/football/passion	7	
sports/sports by type/ball games/football/soccer	3	Eliminate, too small, count in main category.
sports/sports by type/bicycle	2	Eliminate, too small, count in main category.

sports/sports by type/flying	3	Eliminate, too small, count in main category.
sports/sports by type/gym	6	
sports/sports by type/gym/juggling	2	Eliminate, too small, count in main category.
sports/sports by type/horse sports	6	
sports/sports by type/horse sports/jumping	5	Eliminate, count above.
sports/sports by type/running	9	
sports/sports by type/sports team	6	
sports/sports by type/sports team/basketball team	2	Eliminate, too small, count in main category.
sports/sports by type/sports team/soccer team	2	Eliminate, too small, count in main category.
sports/sports by type/walking	8	
sports/sports clothes	1	Eliminate, too small, count in main category.
sports/sports day	1	Eliminate, too small, count in main category.
sports/sports personnel	9	
sports/sports personnel/coach	8	
sports/sports personnel/coach/new coach	4	
standards	2	Eliminate, too small, count in main category.
state	31	
state/united states postal service	1	Eliminate, too small, count in main category.
step	2	Eliminate, too small, count in main category.
steps	0	Eliminate, no documents
structural engineering	24	Eliminate, count below.
structural engineering/building	24	
structural engineering/building/door	2	Eliminate, too small, count in main category.
structural engineering/building/floor	4	
structural engineering/building/roofing	3	Eliminate, too small, count in main category.
structural engineering/building/wall	1	Eliminate, too small, count in main category.
task	13	
time	174	
time/hard time	6	

time/multiple times	2	Eliminate, too small, count in main category.
time/time frame	3	Eliminate, too small, count in main category.
understanding	6	
vehicle	24	
vehicle/car	15	
vehicle/truck	5	
vehicle/truck/semi truck	2	Eliminate, too small, count in main category.
weather	40	
weather/disasters	3	Eliminate, too small, count in main category.
weather/precipitation	4	
weather/precipitation/snow	3	Eliminate, too small, count in main category.
weather/season	33	
weather/season/fall	13	
weather/season/spring	3	Eliminate, too small, count in main category.
weather/season/spring/spring season	1	Eliminate, too small, count in main category.
weather/season/summer	11	
weather/season/winter	6	
week	55	
words	1	Eliminate, too small, count in main category.
work	162	
work/college work	3	Eliminate, too small, count in main category.
work/work enviroment	2	Eliminate, too small, count in main category.
work/work force	1	Eliminate, too small, count in main category.
work/work hours	2	Eliminate, too small, count in main category.
work/work part time	2	Eliminate, too small, count in main category.
work/work place	6	
work/working together	2	Eliminate, too small, count in main category.
year	86	

APPENDIX F: INITIAL TEST MINING OF INTERVIEW QUESTIONS

Objective 3.2 – Initial Text Mining of Interview Question from Lackland and Correlations with AFQT

Table F1: Form A, Question 1

Type: Behavioral

Item: Adapting to Stress and Change (Adaptability)

Facet: Ability to adapt to new and changing tasks and situations



Category by Size	Mean	Correlations with AFQT
change	0.63	-0.034
family	0.57	0.034
family/family structure	0.44	0.020
life	0.41	0.042
school	0.41	-0.003
situation	0.40	0.033
time	0.38	0.013
family/family structure/parents	0.36	0.005
work	0.35	.120*
change/major change	0.32	-.094*
dwelling	0.29	0.009
friends	0.26	-0.020
outcome	0.24	-0.047
school/k 12	0.22	0.053
occupation	0.20	-0.002
family/family structure/child	0.20	0.054
family/family structure/parents/mother	0.19	-0.052
job	0.19	0.054
people	0.19	-0.039
academics	0.19	0.091
human resources	0.19	-0.014
year	0.19	0.050
day	0.18	0.038
sports	0.17	-0.070

help	0.15	-0.037
military	0.15	-0.003
family/family structure/parents/father	0.15	0.034
sports/sports by type	0.14	-0.026
dwelling/household	0.13	-0.002
human resources/education, training and development	0.12	-0.083
person	0.12	0.020
week	0.12	.127**
academics/students	0.11	-0.010
behavior and behavior mechanisms	0.11	0.017
months	0.11	0.034
finance	0.11	-0.009
college	0.11	0.091
military/air force	0.10	0.023
finances	0.10	0.069
anatomy	0.09	0.067
weather	0.09	.146**
america	0.08	0.071
america/u.s.	0.08	.094*
behavior and behavior mechanisms/emotion	0.08	0.009
classes	0.08	0.006
family/family structure/child/brother and sister	0.08	0.011
human resources/career	0.08	0.083
place of business	0.07	0.001
office workers	0.07	0.016
plan	0.07	0.048
weather/season	0.07	.129**
america/u.s./us states	0.07	0.072
family/marital status	0.07	-0.028
friends/new friends	0.07	-0.002
state	0.07	0.023
behavior mechanisms	0.06	0.019
human resources/education, training and development/education	0.06	-0.066
academics/grade	0.06	0.066
occupation/white collar workers	0.06	0.047
finance/money	0.06	-0.037
food	0.06	0.055
learning	0.06	0.037
school/new school	0.06	-0.019
part	0.05	0.066
economics	0.05	0.063
family/family structure/child/brother and sister/brother	0.05	0.019

office workers/team	0.05	-0.005
point	0.05	0.043
problem	0.05	-0.002
structural engineering	0.05	0.031
structural engineering/building	0.05	0.031
vehicle	0.05	-0.009
greatness	0.05	-0.023
change/big change	0.05	0.012
idea	0.05	0.045
occupation/manager	0.05	-0.078
sports/sports by type/ball games	0.05	0.006
family/family structure/grandparents	0.05	0.030
process	0.05	0.040
academics/students/sophomore	0.04	-0.016
factors	0.04	0.013
anatomy/head	0.04	0.068
behavior mechanisms/attitude	0.04	0.055
human resources/education, training and development/challenge	0.04	-0.011
human resources/education, training and development/education/basic training	0.04	-0.029
place of business/store	0.04	-.096*
academics/research	0.04	.099*
physics	0.04	-0.006
position	0.04	0.068
academics/research/study	0.04	.095*
academics/students/graduation	0.04	0.016
family/family structure/child/brother and sister/sister	0.04	-0.049
family/marital status/divorce	0.04	-0.039
human resources/career/skill	0.04	.093*
people/new people	0.04	0.082
sports/sports by type/ball games/football	0.04	0.016
anatomy/body regions	0.03	0.034
economics/property	0.03	0.046
goal	0.03	0.013
academics/students/sophomore/freshman	0.03	-0.015
america/u.s./us states/texas	0.03	0.061
anatomy/body regions/extremities	0.03	0.036
geometry	0.03	-0.002
office workers/crew	0.03	0.045
reason	0.03	-0.034
vehicle/car	0.03	-0.059
behavior and behavior mechanisms/social psychology	0.03	0.044
occupation/teacher	0.03	0.026

occupation/white collar workers/employee	0.03	0.063
questions	0.03	0.043
school/k 12/middle school	0.03	-0.011
task	0.03	0.016
weather/season/fall	0.03	.121**
dwelling/apartment	0.03	0.006
finance/investments	0.03	0.015
occupation/supervisor	0.03	0.046
occupation/white collar workers/leadership	0.03	-0.002
society	0.03	-0.022
behavior and behavior mechanisms/social psychology/lifestyle	0.02	0.074
finance/investments/future	0.02	-0.009
mind	0.02	-0.043
weather/season/summer	0.02	0.065
anatomy/body regions/extremities/arm	0.02	0.088
family/family structure/grandparents/grandma	0.02	0.033
family/family structure/spouse	0.02	0.002
family/marital status/single person	0.02	0.021
human resources/education, training and development/education/basic training/basic military training	0.02	0.011
physics/mechanics	0.02	-0.020
anatomy/body regions/extremities/arm/hand	0.02	.094*
family/family structure/child/daughter	0.02	-0.008
food/meals	0.02	.110*
geometry/perspective	0.02	0.058
literature	0.02	0.026
prosecution of law	0.02	0.002
sports/sports by type/running	0.02	-.131**
sports/sports personnel	0.02	-0.019
behavior and behavior mechanisms/emotion/anger	0.02	0.040
change/change schools	0.02	-0.051
finances/money	0.02	-0.018
life/social life	0.02	0.041
occupation/recruiter	0.02	-0.067
solution	0.02	0.053
sports/sports by type/walking	0.02	-0.076
sports/sports personnel/coach	0.02	-0.027
anatomy/head/face	0.02	0.001
change/huge change	0.02	0.023
economics/property/transfer	0.02	-0.017
family/family structure/spouse/wife	0.02	0.008
finances/investments	0.02	-0.014
human resources/career/skill/management	0.02	0.073

human resources/career/skill/university	0.02	0.074
individual	0.02	-0.020
information	0.02	0.030
mind/open mind	0.02	-0.012
occupation/instructor	0.02	0.047
occupation/medical personnel	0.02	0.009
occupation/white collar workers/executives	0.02	0.025
place of business/store/shop	0.02	-.096*
school/switch schools	0.02	-0.007
sports/sports by type/ball games/football/passion	0.02	-0.015
academics/test	0.01	0.052
economics/land use	0.01	0.028
finance/trust	0.01	0.029
finances/loss	0.01	0.046
hardship	0.01	0.036
human resources/career/hiring	0.01	0.078
human resources/education, training and development/program	0.01	0.037
life/new life	0.01	-0.014
literature/letter	0.01	0.045
options	0.01	0.061
physics/mechanics/power	0.01	-0.034
place of business/office	0.01	0.009
research	0.01	.101*
sports/sports by type/gym	0.01	0.064
sports/sports by type/horse sports	0.01	-0.018
sports/sports by type/sports team	0.01	-0.021
time/hard time	0.01	-.094*
understanding	0.01	0.047
weather/season/winter	0.01	-0.005
work/work place	0.01	0.022
anatomy/body regions/extremities/leg	0.01	-0.063
behavior mechanisms/behavior	0.01	0.011
change/drastic change	0.01	-.108*
dwelling/shelter	0.01	0.061
effect	0.01	0.077
family/family structure/child/new child	0.01	0.009
family/family structure/grandparents/grandfather	0.01	0.021
finances/insurance	0.01	-0.012
finances/investments/future	0.01	0.013
greatness/great people	0.01	-0.066
issue	0.01	-0.028
life/normal life	0.01	0.060

occupation/medical personnel/nursing	0.01	0.032
place of business/clubs	0.01	0.021
report	0.01	-0.002
sports/sports by type/horse sports/jumping	0.01	0.019
vehicle/truck	0.01	0.070
economics/land use/rent	0.01	0.058
finances/fees and charges	0.01	0.075
finances/loans	0.01	.102*
geometry/shapes	0.01	-0.039
military/air force/united states air force	0.01	-0.047
military/army	0.01	0.028
occupation/teacher/new teachers	0.01	0.022
person/new person	0.01	-0.023
physics/mechanics/shock	0.01	0.010
place of business/store/mall	0.01	-0.063
process/manufacturing process	0.01	-0.042
project	0.01	0.067
prosecution of law/mistakes	0.01	-0.023
sports/sports personnel/coach/new coach	0.01	0.000
structural engineering/building/floor	0.01	.096*
weather/precipitation	0.01	-0.011
Count	14.70	.140**
** Correlation is significant at the 0.01 level (2-tailed).		
* Correlation is significant at the 0.05 level (2-tailed).		

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.720a	0.519	0.103	16.394	0.519	1.248	211	244	0.047

Table F2: Form A, Question 2

Type: Situational

Item: Adapting to Stress and Change (Accepts Feedback)

Facet: Accepting criticism



Category by Size	Mean	Correlations with AFQT
report	1.07	0.024
situation	1.04	-0.007
work	1.04	.132**
recipient	0.97	.203**
issues	0.95	0.082
solution	0.93	.233**
problem	0.76	.129**
outcome	0.75	-0.056
options	0.68	0.046
factors	0.64	0.052
time	0.62	-0.018
feedback	0.60	0.067
geometry	0.49	.201**
action	0.45	.150**
steps	0.44	0.062
geometry/complex	0.39	.163**
help	0.37	-0.012
person	0.37	-0.005
action/course of action	0.34	.113*
resources	0.34	0.082
idea	0.28	0.036
occupation	0.26	.133**
people	0.23	-0.014
information	0.23	0.010
change	0.22	0.061
questions	0.21	0.065
finance	0.19	-0.008
prosecution of law	0.19	-0.038
opinion	0.18	0.076

prosecution of law/mistakes	0.17	-0.065
reason	0.17	.142**
research	0.17	.112*
point	0.16	-0.026
details	0.14	0.012
job	0.14	0.003
review	0.14	0.085
understanding	0.13	-0.014
respons	0.13	-0.014
anatomy	0.12	0.018
criticism	0.12	.097*
human resources	0.12	0.030
standards	0.11	0.038
economics	0.11	0.085
individual	0.11	.097*
mind	0.11	.106*
task	0.11	-0.028
geometry/perspective	0.10	.105*
project	0.10	.112*
goal	0.09	0.083
human resources/education, training and development	0.09	0.055
process	0.09	.094*
complexity	0.08	-0.041
effect	0.08	-0.067
occupation/supervisor	0.08	0.032
behavior and behavior mechanisms	0.07	0.070
economics/property	0.07	0.004
part	0.07	-0.035
communication	0.07	0.058
solution/new solution	0.07	0.039
criticism/constructive criticism	0.06	0.036
finance/check	0.06	-0.045
anatomy/eyes	0.06	0.002
occupation/white collar workers	0.06	0.013
occupation/white collar workers/leadership	0.06	0.009
anatomy/head	0.05	-0.002
behavior and behavior mechanisms/emotion	0.05	0.025
behavior mechanisms	0.05	-0.027
structural engineering	0.05	0.045
geometry/angle	0.04	0.086
human resources/education, training and development/knowledge	0.04	0.032
structural engineering/building	0.04	0.038

words	0.04	0.065
learning	0.04	-0.010
office workers	0.04	0.058
research/data	0.03	0.090
family	0.03	-0.014
finance/trust	0.03	-0.037
human resources/education, training and development/challenge	0.03	0.027
national service	0.03	0.069
office workers/team	0.03	0.029
anatomy/head/face	0.03	0.048
behavior mechanisms/attitude	0.03	-0.006
finance/gain	0.03	0.013
national service/draft	0.03	0.068
simpley	0.03	-0.041
economics/property/assignment	0.02	-0.074
finance/investments	0.02	0.018
geometry/complex/complex situation	0.02	-0.047
person/personal opinion	0.02	0.035
propery	0.02	-0.001
finance/cost	0.02	0.071
finance/investments/future	0.02	0.010
geometry/holes	0.02	0.033
human resources/benefit	0.02	0.030
research/scientific method	0.02	0.025
Count	20.15	.284**
** Correlation is significant at the 0.01 level (2-tailed).		
* Correlation is significant at the 0.05 level (2-tailed).		

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.599a	0.358	0.187	15.61	0.358	2.089	96	359	0

Table F3: Form A, Question 3

Type: Situational

Item: Displaying Integrity, Ethical Behavior, and Professionalism (Integrity)

Facet: Accepts responsibility for own actions



Category by Size	Mean	Correlations with AFQT
situation	0.66	0.065
actions	0.48	0.066
task	0.45	0.081
people	0.44	-0.037
problem	0.35	0.045
integrity	0.33	.106*
behavior and behavior mechanisms	0.33	0.067
help	0.30	0.068
behavior and behavior mechanisms/emotion	0.29	.094*
work	0.24	-0.007
outcome	0.23	.100*
consequences	0.23	0.054
finance	0.21	0.067
team	0.18	.118*
person	0.18	-.120*
job	0.15	-.101*
physics	0.15	0.071
occupation	0.14	0.041
feel	0.13	-0.005
physics/constraints	0.13	0.074
negatives	0.12	-0.001
military	0.12	.100*
military/air force	0.11	.106*
values	0.11	.101*
impact	0.10	.106*
time	0.10	.094*
values/core values	0.09	.107*
behavior and behavior mechanisms/emotion/frustration	0.09	.135**
life	0.09	-0.058

negatives/negative impact	0.08	-0.012
finance/trust	0.08	0.046
occupation/supervisor	0.08	0.041
human resources	0.08	-0.061
factors	0.08	0.049
learning	0.08	0.046
anatomy	0.08	0.038
prosecution of law	0.08	0.062
solution	0.08	0.068
anatomy/head	0.07	0.037
behavior and behavior mechanisms/emotion/frustration/increase frustration	0.06	.093*
part	0.06	0.001
military/air force/air force value	0.06	.151**
family	0.05	-0.057
prosecution of law/mistake	0.05	.094*
anatomy/head/face	0.04	0.030
occupation/white collar workers	0.04	-0.027
behavior and behavior mechanisms/social psychology	0.04	0.041
error	0.04	.184**
individual	0.04	0.016
behavior and behavior mechanisms/emotion/guilt	0.04	-0.017
effect	0.04	0.044
feedback	0.04	0.019
finance/accountability	0.04	0.073
human resources/career	0.04	-0.062
increase	0.04	.110*
position	0.04	0.002
behavior and behavior mechanisms/social psychology/morals	0.03	0.050
finance/investments	0.03	0.037
measuring instrument	0.03	0.012
finance/investments/future	0.03	0.061
wronge	0.03	-0.015
learning/reinforcement	0.03	0.057
occupation/white collar workers/leadership	0.03	-0.015
house furnishings	0.03	-0.007
learning/reinforcement/punishment	0.03	0.052
family/family structure	0.02	-0.025
human resources/education, training and development	0.02	-0.046
idea	0.02	0.064
measuring instrument/measure	0.02	0.019
building	0.02	0.028
family/family structure/parents	0.02	-0.005

measuring instrument/measure/rules	0.02	0.004
economics	0.02	0.014
house furnishings/furniture	0.02	-0.013
sports	0.02	0.049
behavior and behavior mechanisms/emotion/anger	0.02	-0.064
finance/check	0.02	0.042
human resources/education, training and development/education	0.02	-0.038
issue	0.02	0.048
level	0.02	0.059
sports/sports by type	0.02	0.053
task/incorrect task	0.02	0.032
behavior and behavior mechanisms/character	0.02	-0.041
behavior and behavior mechanisms/emotion/fear	0.02	0.065
house furnishings/furniture/handle	0.02	-0.007
human resources/benefit	0.02	-0.033
information	0.02	0.067
learning/learning experience	0.02	0.054
occupation/white collar workers/employee	0.02	-0.026
prosecution of law/evidence	0.02	-0.025
prosecution of law/evidence/reputation	0.02	-0.025
team/team members	0.02	0.043
completey	0.01	0.016
finance/charge	0.01	-0.025
finance/gain	0.01	0.080
food	0.01	-0.050
literature	0.01	-0.065
people/impact people	0.01	0.031
report	0.01	-0.001
actions/disciplinary actions	0.01	0.009
finance/cost	0.01	-0.054
finance/money	0.01	-0.017
human resources/career/skill	0.01	-0.064
behavior and behavior mechanisms/social psychology/morals/ethics	0.01	-0.017
family/family structure/parents/father	0.01	-0.032
human resources/education, training and development/knowledge	0.01	-0.015
human resources/skill	0.01	.112*
integrity/value integrity	0.01	-0.001
literature/drama	0.01	-0.066
military/air force/air force core	0.01	-0.064
sports/sports by type/walking	0.01	0.075
Count	9.16	.208**
** Correlation is significant at the 0.01 level (2-tailed).		

* Correlation is significant at the 0.05 level (2-tailed).

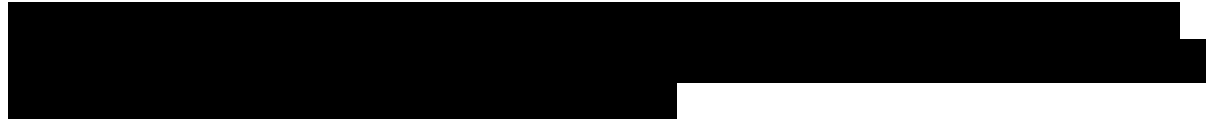
Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.547 ^a	0.299	0.073	16.664	0.299	1.325	111	344	0.03

Table F4: Form A, Question 4

Type: Behavioral

Item: Openness (Openness to Alternative Views)

Facet: Having a willingness to overcome one's own interests for the needs of others



Category by Size	Mean	Correlations with AFQT
situation	0.38	0.040
work	0.30	0.082
school	0.30	-0.067
occupation	0.28	.194**
time	0.27	0.020
people	0.24	-0.058
outcome	0.24	-0.069
family	0.20	-0.029
opinions	0.19	.155**
family/family structure	0.16	-0.027
idea	0.16	-0.004
school/k 12	0.16	-0.009
person	0.15	-0.015
human resources	0.15	0.048
sports	0.15	-0.031
academics	0.14	0.090
class	0.13	0.012
project	0.13	.126**
sports/sports by type	0.13	-0.043
anatomy	0.12	0.038
job	0.12	-0.049
group	0.11	.206**
behavior mechanisms	0.11	0.013
family/family structure/parents	0.10	-0.055
home	0.10	-0.058
finance	0.10	.096*
human resources/education, training and development	0.10	0.076
occupation/white collar workers	0.10	.111*
behavior mechanisms/personality	0.10	0.017
finances	0.09	-0.028

military	0.09	-0.044
office workers	0.09	0.058
office workers/crew	0.09	0.046
family/family structure/child	0.08	-0.048
geometry	0.08	-0.044
help	0.08	-0.019
side	0.08	-0.004
occupation/white collar workers/leadership	0.08	.112*
food	0.08	-0.004
structural engineering	0.08	0.091
geometry/perspective	0.07	-0.025
structural engineering/building	0.07	0.077
place of business	0.07	0.015
problem	0.07	-0.078
sports/sports by type/ball games	0.07	-0.032
human resources/education, training and development/education	0.07	0.050
religion	0.06	0.025
topic	0.06	0.068
clothes	0.06	-0.083
academics/students	0.06	0.043
anatomy/body regions	0.06	0.065
family/family structure/parents/mother	0.06	-0.041
human resources/career	0.05	-0.043
vehicles	0.05	-0.026
arts, design & crafts	0.05	-0.051
geographical location	0.05	-0.020
part	0.05	0.047
project/group project	0.05	0.091
economics	0.05	0.002
game	0.05	-0.030
psychology	0.05	0.085
finance/money	0.05	0.032
psychology/behavior and behavior mechanisms	0.05	0.088
anatomy/body regions/extremities	0.05	0.036
solution	0.05	.110*
home/household	0.04	-0.009
position	0.04	0.060
religion/christianity	0.04	0.037
politics	0.04	.093*
vehicles/car	0.04	-0.011
place of business/retail store	0.04	-0.050
anatomy/body regions/extremities/arm	0.03	0.025

military/air force	0.03	0.017
occupation/manager	0.03	0.009
physics	0.03	0.051
sports/sports by type/ball games/football	0.03	0.028
anatomy/head	0.03	0.024
arts, design & crafts/picture	0.03	-0.077
clothes/shirt	0.03	-0.059
family/family structure/child/brother and sister	0.03	-0.040
academics/grade	0.03	0.077
anatomy/sense organs	0.03	0.010
factors	0.03	0.029
family/family structure/parents/father	0.03	-0.034
geographical location/america	0.03	0.018
military/battalion	0.03	-0.018
anatomy/body regions/extremities/arm/hand	0.03	0.040
anatomy/sense organs/eye	0.03	0.007
family/family structure/spouse	0.03	0.001
academics/research	0.03	0.084
information	0.03	0.073
occupation/drivers	0.03	0.059
prosecution of law	0.03	0.019
research	0.03	-0.011
behavior and behavior mechanisms	0.02	-0.001
economics/property	0.02	-0.016
geographical location/america/united states	0.02	0.064
military/battalion/officers	0.02	-0.024
occupation/white collar workers/employee	0.02	0.037
sports/sports by type/walking	0.02	-.130**
academics/testing	0.02	-0.038
human resources/career/skill	0.02	-0.036
human resources/education, training and development/education/basic training	0.02	0.057
religion/christianity/missionary	0.02	.106*
religion/god	0.02	-.106*
academics/research/study	0.02	0.055
family/family structure/child/brother and sister/sister	0.02	-0.019
finance/investments	0.02	-0.061
finance/investments/future	0.02	-0.061
finances/money	0.02	-0.018
place of business/restaurant	0.02	0.091
psychology/behavior and behavior mechanisms/social psychology	0.02	.099*
sports/coach	0.02	-0.075
academics/students/graduation	0.02	-0.016

anatomy/body regions/head	0.02	0.045
behavior and behavior mechanisms/emotion	0.02	0.001
clothes/shirt/flight shirt	0.02	-0.038
details	0.02	0.024
feedback	0.02	0.067
geographical location/america/united states/us states	0.02	0.040
place of business/retail store/shop	0.02	-0.053
family/family structure/child/brother and sister/brother	0.02	-0.065
family/marital status	0.02	0.023
food/meals	0.02	-0.049
human resources/career/hiring	0.02	0.026
occupation/supervisor	0.02	-0.015
occupation/teacher	0.02	0.032
sports/sports by type/ball games/football/passions	0.02	-0.018
sports/sports by type/running	0.02	0.007
family/family structure/child/daughter	0.01	-0.022
family/marital status/marriage	0.01	0.002
finance/cost	0.01	.113*
finances/investments	0.01	-0.003
finances/scholarships	0.01	-0.002
geographical location/asia	0.01	-0.033
human resources/education, training and development/program	0.01	-0.034
military/battalion/officers/captain	0.01	-0.044
occupation/artist	0.01	0.043
occupation/recruiter	0.01	0.016
occupation/white collar workers/leadership/element leader	0.01	.112*
politics/ideology	0.01	0.015
psychology/behavior and behavior mechanisms/emotion	0.01	0.003
psychology/behavior and behavior mechanisms/social	0.01	.107*
psychology/morals		
sports/sports by type/ball games/baseball	0.01	-0.080
vehicles/truck	0.01	-0.013
anatomy/body regions/extremities/leg	0.01	0.028
arts, design & crafts/graphic arts	0.01	0.009
class/government class	0.01	0.040
finance/trust	0.01	.130**
food/meals/dinner	0.01	0.008
geographical location/europe	0.01	-0.009
idea/ideas conflict	0.01	.132**
issue	0.01	0.066
occupation/coworker	0.01	0.032
occupation/engineer	0.01	0.050
occupation/film crew	0.01	-0.001

physics/heat	0.01	0.039
physics/optics	0.01	-0.026
psychology/behavior and behavior mechanisms/characters	0.01	0.007
sports/sports by type/ball games/basketball	0.01	0.008
structural engineering/building/flooring	0.01	0.014
work/work load	0.01	.113*
arts, design & crafts/graphic arts/painting	0.01	0.011
clothes/shirt/shirt design	0.01	-0.010
clothes/shoes	0.01	0.044
economics/commerce	0.01	0.005
economics/property/assignment	0.01	0.009
economics/property/real property	0.01	-0.034
economics/statistics	0.01	0.024
finance/charge	0.01	0.060
finances/credit	0.01	-0.004
finances/funding	0.01	0.047
finances/investments/security	0.01	-0.002
food/animal origin	0.01	-0.081
food/meals/lunch	0.01	-0.054
food/snacks	0.01	0.063
geometry/perspective/drawing	0.01	-0.006
human resources/career/skill/communication skills	0.01	-0.072
human resources/education, training and development/knowledge	0.01	0.030
occupation/film crew/director	0.01	-0.005
occupation/medical personnel	0.01	-0.019
occupation/white collar workers/leadership/student leaders	0.01	.109*
prosecution of law/evidence	0.01	-0.026
psychology/behavior and behavior mechanisms/social	0.01	0.071
psychology/morals/ethics		
report	0.01	0.017
school/school project	0.01	0.018
sports/sports by type/ball games/football/soccer	0.01	0.028
structural engineering/building/wall	0.01	0.019
time/waste time	0.01	-0.015
Count	20.15	.117*
** Correlation is significant at the 0.01 level (2-tailed).		
* Correlation is significant at the 0.05 level (2-tailed).		

Model Summary								
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics			

					R Square Change	F Change	df1	df2	Sig. F Change
1	.686a	0.471	0.098	16.441	0.471	1.263	188	267	0.04

Table F5: Form A, Question 5

Type: Situational

Item: High Drive (High Motivation/Drive)

Facet: Setting and accomplishing challenging goals



Category by Size	Mean	Correlations with AFQT
work	0.81	0.048
goal	0.62	-.122**
time	0.50	0.084
issues	0.46	0.024
employee assessments	0.41	.317**
situation	0.41	0.016
factors	0.40	0.081
increas	0.38	.114*
outcome	0.36	-0.068
employee assessments/productivity	0.35	.264**
work/work productivity	0.29	0.077
day	0.22	0.012
help	0.21	-0.088
task	0.21	.160**
job	0.19	-0.002
economics	0.14	.157**
occupation	0.14	0.049
plan	0.14	0.040
people	0.13	-0.044
employee assessments/increasing productivity	0.13	.221**
family	0.13	-.112*
areas	0.12	.151**
human resources	0.12	0.004
person	0.12	0.052
life	0.11	-0.030
step	0.11	.105*
measuring instrument	0.11	0.065
health and well being	0.10	.103*
schedule	0.10	0.008
goal/personal goal	0.09	0.057

economics/property	0.07	.094*
finance	0.07	0.041
food	0.07	0.054
measuring instrument/balance	0.07	0.038
pointer	0.07	0.020
academics	0.07	0.020
breaks	0.06	-0.007
place of business	0.06	0.090
place of business/office	0.06	.108*
work/work productivity/increase work productivity	0.06	0.075
human resources/education, training and development	0.06	0.008
food/meals	0.05	0.048
psychological phenomena and processes	0.05	.115*
sports	0.05	-0.049
time/personal time	0.05	-0.051
amount	0.05	.128**
place of business/office/office worker	0.05	.095*
psychological phenomena and processes/mental processes	0.05	.097*
sports/sports by type	0.05	-0.032
work/work place	0.05	0.065
psychological phenomena and processes/mental processes/learning	0.05	0.082
anatomy	0.05	-0.024
behavior mechanisms	0.05	-0.053
occupation/supervisor	0.05	0.009
occupation/white collar workers	0.05	-0.016
place of business/office/office worker/crew	0.05	.095*
problem	0.05	-0.018
anatomy/head	0.05	-0.022
food/meals/lunch	0.05	0.046
human resources/career	0.05	0.036
work/work day	0.04	.140**
quality	0.04	0.080
work/work load	0.04	0.054
academics/study	0.04	-0.056
health	0.04	0.021
health and well being/sleep	0.04	0.030
hours	0.04	0.042
occupation/white collar workers/leadership	0.04	-0.023
prosecution of law	0.04	0.077
health and well being/personal life	0.04	0.073
position	0.04	0.039
behavior and behavior mechanisms	0.03	-0.028

feedback	0.03	0.029
economics/properties	0.03	0.046
finances	0.03	-0.025
academics/testing	0.03	0.085
behavior mechanisms/motivation	0.03	-0.004
family/family structure	0.03	-.110*
measuring instrument/measure	0.03	.123**
occupation/planning	0.03	0.071
part	0.03	0.024
produce	0.03	0.061
time/waste time	0.03	0.089
geometry	0.03	0.019
goal/small goals	0.03	0.070
finance/money	0.02	-0.016
greatness	0.02	0.038
psychological phenomena and processes/mental processes/learning/practice	0.02	0.056
behavior and behavior mechanisms/emotion	0.02	-0.060
economics/properties/improvement	0.02	0.078
human resources/education, training and development/education	0.02	-0.063
resources	0.02	.110*
solution	0.02	0.086
time/time frame	0.02	0.012
economics/statistics	0.02	-0.016
goal/set goals	0.02	-0.076
human resources/benefit	0.02	-0.019
prosecution of law/mistakes	0.02	-0.082
research	0.02	0.049
sports/sports by type/gym	0.02	-0.003
work/work time	0.02	0.049
behavior mechanisms/attitude	0.02	-0.073
economics/statistics/graduation	0.02	-0.012
family/family structure/child	0.02	-.112*
geometry/perspective	0.02	-0.019
health/healthy lifestyle	0.02	0.008
human resources/career/performance reviews	0.02	0.020
human resources/education, training and development/knowledge	0.02	0.050
sports/sports by type/walking	0.02	-0.031
anatomy/head/face	0.02	-0.015
day/daily tasks	0.02	-0.057
finance/check	0.02	0.089
health and well being/exercise	0.02	0.030
human resources/career/performance reviews/promotion	0.02	0.020

idea	0.02	0.019
psychological phenomena and processes/mental processes/learning/reinforcements	0.02	0.029
work/work hours	0.02	0.086
economics/waste	0.01	.154**
finance/investments	0.01	-0.086
finance/investments/future	0.01	-0.086
goal/setting goals	0.01	-0.004
human resources/career/skill	0.01	0.015
human resources/education, training and development/challenge	0.01	0.009
human resources/education, training and development/education/basic training	0.01	-0.035
information	0.01	-0.004
work/work at home	0.01	-.095*
employee assessments/productivity/overall productivity	0.01	.114*
family/family structure/spouse	0.01	0.002
health and well being/diet	0.01	0.050
human resources/wellness	0.01	0.010
occupation/manager	0.01	-0.036
occupation/mentor	0.01	0.060
prosecution of law/trial	0.01	.109*
time/time management	0.01	-0.028
work/better work	0.01	0.008
work/work schedule	0.01	0.026
breaks/break down	0.01	0.029
employee assessments/productivity/productivity rate	0.01	-0.023
family/family structure/parents	0.01	-0.086
family/marital status	0.01	0.032
finance/cost	0.01	0.082
finances/check	0.01	0.034
food/meals/lunch/shorter lunch	0.01	-0.025
goal/weekly goals	0.01	-0.017
health/physical health	0.01	0.028
occupation/white collar workers/employee	0.01	0.011
person/productive person	0.01	0.010
plan/game plan	0.01	0.005
work/work goals	0.01	0.009
work/work space	0.01	0.007
Count	22.73	.286**
** Correlation is significant at the 0.01 level (2-tailed).		
* Correlation is significant at the 0.05 level (2-tailed).		

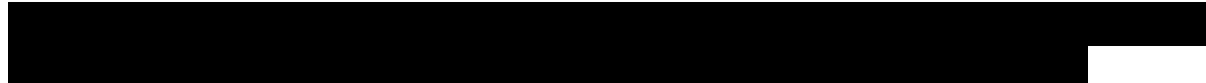
Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.708a	0.501	0.26	14.887	0.501	2.082	148	307	0

Table F6: Form A, Question 6

Type: Behavioral

Item: Perseverance (Perseverance)

Facet: Persisting in the face of obstacles



Category by Size	Mean	Correlations with AFQT
human resources	0.54	-0.067
human resources/education, training and development	0.47	-0.077
human resources/education, training and development/challenge	0.43	-0.085
work	0.42	.141**
school	0.41	0.055
time	0.40	.114*
occupation	0.37	0.080
sports	0.36	0.001
sports/sports by type	0.30	0.020
family	0.30	-0.021
school/k 12	0.27	0.007
year	0.27	.132**
academics	0.23	.105*
day	0.23	-0.010
life	0.22	0.030
occupation/white collar workers	0.22	.093*
situation	0.22	-0.044
job	0.21	0.044
family/family structure	0.21	0.029
outcome	0.19	-0.061
crew	0.19	-0.030
occupation/white collar workers/staffing	0.18	0.070
help	0.18	-0.009
home	0.17	-0.034
military	0.16	0.005
anatomy	0.16	-.101*
economics	0.16	0.038
friends	0.15	-0.066
class	0.15	.144**
family/family structure/parents	0.14	0.048
learning	0.14	0.001
sports/sports by type/ball games	0.12	-0.022

finance	0.12	0.020
military/air force	0.12	0.013
weather	0.11	0.042
hours	0.11	.097*
college	0.11	.144**
weather/season	0.11	0.032
year/senior year	0.10	0.062
human resources/career	0.10	0.070
family/family structure/child	0.10	-0.033
finances	0.10	0.044
learning/practice	0.09	-0.006
place of business	0.09	0.042
problem	0.09	-0.003
academics/grade	0.09	.109*
sports/sports by type/running	0.08	-0.008
anatomy/body regions	0.08	-0.070
family/family structure/parents/mother	0.08	0.005
food	0.08	0.070
academics/research	0.08	.125**
academics/research/study	0.08	.125**
economics/property	0.07	0.072
human resources/education, training and development/education	0.07	-0.003
person	0.07	-0.059
academics/students	0.07	0.008
anatomy/head	0.07	-.104*
building	0.07	.102*
sports/sports personnel	0.07	-0.060
vehicle	0.07	0.057
academics/exam	0.07	0.011
anatomy/body regions/extremities	0.06	-0.057
economics/graduation	0.06	-0.012
finance/money	0.06	0.016
sports/sports by type/ball games/football	0.06	0.032
sports/sports personnel/coach	0.06	-0.075
occupation/manager	0.06	0.040
sales	0.06	0.056
outdoor activities	0.06	-0.025
place of business/retail store	0.06	-0.028
state	0.06	0.005
physics	0.05	0.081
family/family structure/parents/father	0.05	0.073
sales/order	0.05	0.064

factors	0.05	-.116*
occupation/white collar workers/leadership	0.05	0.041
behavior and behavior mechanisms	0.05	0.011
human resources/career/skill	0.05	0.071
outdoor activities/game	0.05	-0.038
home/household	0.04	-0.021
human resources/career/hiring	0.04	0.061
behavior and behavior mechanisms/emotion	0.04	0.008
movies	0.04	0.052
position	0.04	-0.005
movies/film genres	0.04	0.040
clothes	0.04	-0.017
economics/property/real property	0.04	0.030
family/family structure/child/brother and sister	0.04	-0.073
occupation/white collar workers/staffing/work environment	0.04	0.072
sports/sports by type/gym	0.04	-0.013
vehicle/car	0.04	0.022
economics/property/real property/betterment	0.03	0.047
human resources/career/hiring/full time	0.03	.100*
academics/students/freshmen	0.03	-0.047
anatomy/body regions/extremities/arm	0.03	-.102*
anatomy/body regions/extremities/legs	0.03	0.026
geometry	0.03	-0.054
place of business/retail store/shop	0.03	0.054
weather/season/summer	0.03	0.054
finance/investments	0.03	0.053
sports/sports by type/walking	0.03	-0.011
anatomy/head/face	0.03	-0.051
military/troop	0.03	-0.030
movies/film genres/musical	0.03	0.005
sports/sports by type/ball games/basketball	0.03	-0.036
finance/investments/future	0.03	0.055
food/meals	0.03	-0.021
members	0.03	.100*
sports/championship	0.03	-0.078
academics/students/freshmen/freshmen year	0.02	-0.032
geometry/shapes	0.02	-0.039
human resources/career/skill/management	0.02	0.079
human resources/education, training and development/education/military training	0.02	-0.089
place of business/club	0.02	0.039
sports/sports by type/combat sports	0.02	.095*
time/hard time	0.02	-0.025

weather/season/fall	0.02	0.005
academics/exam/pt test	0.02	0.000
anatomy/body regions/extremities/arm/hand	0.02	-0.056
family/family structure/child/brother and sister/sister	0.02	-0.010
family/marital status	0.02	0.019
food/meals/lunch	0.02	0.013
human resources/benefit	0.02	0.046
human resources/education, training and development/education/military training/basic military training	0.02	-0.087
idea	0.02	0.071
occupation/supervisor	0.02	0.040
occupation/white collar workers/staffing/work environment/communication	0.02	.115*
sports/sports by type/ball games/baseball	0.02	-0.049
sports/sports by type/combat sports/wrestling	0.02	0.081
sports/sports by type/horse sports	0.02	-0.021
time/run time	0.02	-0.029
family/family structure/child/brother and sister/brother	0.02	-.094*
family/family structure/grandparents	0.02	0.076
human resources/education, training and development/education/basic training	0.02	-0.056
issue	0.02	-0.004
sports/sports by type/ball games/football/passing	0.02	0.040
sports/sports by type/ball games/football/soccer	0.02	0.005
sports/sports by type/horse sports/cross country	0.02	-0.042
anatomy/body regions/extremities/legs/foot	0.02	0.067
anatomy/body regions/head	0.02	0.000
behavior and behavior mechanisms/emotion/fear	0.02	-0.011
clothes/shorts	0.02	0.023
economics/property/transfer	0.02	0.067
family/family structure/spouse	0.02	0.011
family/marital status/single person	0.02	-0.021
finances/credit	0.02	0.004
human resources/education, training and development/knowledge	0.02	-0.028
information	0.02	0.007
occupation/medical personnel	0.02	-0.008
occupation/teacher	0.02	0.028
occupation/white collar workers/staffing/work environment/company events	0.02	-0.051
occupation/writer	0.02	-0.026
vehicle/truck	0.02	-0.048
finance/gain	0.01	0.054
human resources/career/skill/university	0.01	-0.012

job/old job	0.01	0.051
military/air force/united states air force	0.01	-0.008
military/troop/officer	0.01	-0.081
place of business/restaurant	0.01	.098*
school/community college	0.01	0.072
solution	0.01	0.031
sports/sports by type/lift weights	0.01	0.052
building/floor	0.01	.117*
crew/team members	0.01	0.007
economics/rent	0.01	0.063
family/family structure/grandparents/grandma	0.01	0.036
finances/fees and charges	0.01	-0.037
finances/investments	0.01	0.003
human resources/career/skill/management/business management	0.01	0.067
human resources/education, training and development/program	0.01	0.042
military/troop/officer/captain	0.01	-.096*
occupation/medical personnel/nursing	0.01	-0.010
occupation/white collar workers/staffing/time work	0.01	0.071
occupation/white collar workers/staffing/work load	0.01	-0.003
physics/force and energy	0.01	-0.090
school/school year	0.01	0.003
sports/sports by type/athletic	0.01	0.027
sports/sports by type/sports team	0.01	0.013
weather/season/spring	0.01	0.075
weather/season/winter	0.01	0.037
anatomy/body regions/extremities/arm/shoulder	0.01	-0.024
anatomy/body regions/extremities/legs/knee	0.01	0.019
anatomy/body regions/hair	0.01	-0.084
clothes/clothing accessories	0.01	-0.028
crew/varsity team	0.01	-0.050
economics/property/real property/betterment/better player	0.01	0.005
economics/property/transfer/assignment	0.01	0.041
feedback	0.01	0.045
finances/scholarship	0.01	0.015
home/apartment	0.01	0.045
hours/extra hours	0.01	-0.010
human resources/career/hiring/full time/school full time	0.01	0.079
human resources/education, training and development/challenge/challenge part	0.01	-0.019
mathematics	0.01	0.024
movies/film genres/musical films	0.01	0.040
occupation/director	0.01	-0.010
occupation/instructor	0.01	-0.078

outdoor activities/backpacks	0.01	0.029
sports/sports by type/aquatic sports	0.01	0.032
sports/sports by type/ball games/baseball/softball	0.01	-0.002
sports/sports by type/ball games/basketball/play basketball	0.01	0.006
sports/sports by type/ball games/football/football season	0.01	0.041
sports/sports by type/ball games/volleyball	0.01	-0.031
sports/sports by type/shooting	0.01	-0.016
vehicle/trailer	0.01	.096*
Count	29.34	.128**
** Correlation is significant at the 0.01 level (2-tailed).		
* Correlation is significant at the 0.05 level (2-tailed).		

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.720a	0.518	0.13	16.146	0.518	1.335	203	252	0.015

APPENDIX G: VALIDITY OF TEXT MINING OF INTERVIEWS

Table G1: Form A, Question 1 (V17.0) with Human Ratings—Untrained

Type: Behavioral

Item: Adapting to Stress and Change (Adaptability)

Facet: Ability to adapt to new and changing tasks and situations



Category by Size	Mean	Correlation with Avg. Human Ratings
change	0.63	0.049
family	0.57	0.001
family/family structure	0.44	0.035
life	0.41	0.034
school	0.41	0.03
situation	0.4	0.082
time	0.38	.125**
family/family structure/parents	0.36	-0.014
work	0.35	.286**
change/major change	0.32	0.026
dwelling	0.29	0.016
friends	0.26	-0.053
outcome	0.24	-0.035
school/k 12	0.22	-0.021
occupation	0.2	.189**
family/family structure/child	0.2	0.048
family/family structure/parents/mother	0.19	-0.018
job	0.19	.181**
people	0.19	-0.02
academics	0.19	.107*
human resources	0.19	0.091
year	0.19	0.04
day	0.18	0.034
sports	0.17	0.052
help	0.15	.211**
military	0.15	0.016
family/family structure/parents/father	0.15	-0.037

sports/sports by type	0.14	0.058
dwelling/household	0.13	-0.057
human resources/education, training and development	0.12	0.008
person	0.12	.093*
week	0.12	0.072
academics/students	0.11	0.055
behavior and behavior mechanisms	0.11	-0.088
months	0.11	0.054
finance	0.11	0.086
college	0.11	0.05
military/air force	0.1	0.054
finances	0.1	0.072
anatomy	0.09	-0.058
weather	0.09	.100*
america	0.08	0.03
america/u.s.	0.08	0.042
behavior and behavior mechanisms/emotion	0.08	-.099*
classes	0.08	0.089
family/family structure/child/brother and sister	0.08	-0.068
human resources/career	0.08	.167**
place of business	0.07	0.052
office workers	0.07	.183**
plan	0.07	.108*
weather/season	0.07	0.042
america/u.s./us states	0.07	0.049
family/marital status	0.07	0.024
friends/new friends	0.07	-0.085
state	0.07	-0.081
behavior mechanisms	0.06	-0.05
human resources/education, training and development/education	0.06	-0.033
academics/grade	0.06	0.05
occupation/white collar workers	0.06	.103*
finance/money	0.06	0.039
food	0.06	.157**
learning	0.06	0.028
school/new school	0.06	-0.028
part	0.05	.119*
economics	0.05	.128**
family/family structure/child/brother and sister/brother	0.05	-0.054
office workers/team	0.05	.176**
point	0.05	0.042
problem	0.05	0.071
structural engineering	0.05	0.09

structural engineering/building	0.05	0.09
vehicle	0.05	.195**
greatness	0.05	-0.068
change/big change	0.05	-0.022
idea	0.05	0.027
occupation/manager	0.05	.127**
sports/sports by type/ball games	0.05	0.087
family/family structure/grandparents	0.05	0.005
process	0.05	-0.006
academics/students/sophomore	0.04	0.043
factors	0.04	0.022
anatomy/head	0.04	-0.066
behavior mechanisms/attitude	0.04	-0.045
human resources/education, training and development/challenge	0.04	0.009
human resources/education, training and development/education/basic training	0.04	-0.013
place of business/store	0.04	0.03
academics/research	0.04	.127**
physics	0.04	.149**
position	0.04	0.017
academics/research/study	0.04	.138**
academics/students/graduation	0.04	0.002
family/family structure/child/brother and sister/sister	0.04	-0.043
family/marital status/divorce	0.04	-0.054
human resources/career/skill	0.04	.104*
people/new people	0.04	0.014
sports/sports by type/ball games/football	0.04	0.048
anatomy/body regions	0.03	-0.013
economics/property	0.03	.139**
goal	0.03	0.069
academics/students/sophomore/freshman	0.03	0.007
america/u.s./us states/texas	0.03	-0.005
anatomy/body regions/extremities	0.03	-0.005
geometry	0.03	0.007
office workers/crew	0.03	.139**
reason	0.03	-0.089
vehicle/car	0.03	.103*
behavior and behavior mechanisms/social psychology	0.03	-0.026
occupation/teacher	0.03	0.09
occupation/white collar workers/employee	0.03	0.077
questions	0.03	.129**
school/k 12/middle school	0.03	0.013
task	0.03	0.051

weather/season/fall	0.03	.103*
dwelling/apartment	0.03	0.023
finance/investments	0.03	-0.004
occupation/supervisor	0.03	.183**
occupation/white collar workers/leadership	0.03	0.009
society	0.03	0.009
behavior and behavior mechanisms/social psychology/lifestyle	0.02	-0.009
finance/investments/future	0.02	-0.023
mind	0.02	-0.079
weather/season/summer	0.02	-0.037
anatomy/body regions/extremities/arm	0.02	-0.014
family/family structure/grandparents/grandma	0.02	0.001
family/family structure/spouse	0.02	.133**
family/marital status/single person	0.02	0.089
human resources/education, training and development/education/basic training/basic military training	0.02	-0.014
physics/mechanics	0.02	.103*
anatomy/body regions/extremities/arm/hand	0.02	-0.004
family/family structure/child/daughter	0.02	0.073
food/meals	0.02	.181**
geometry/perspective	0.02	-0.019
literature	0.02	-0.004
prosecution of law	0.02	.104*
sports/sports by type/running	0.02	-0.034
sports/sports personnel	0.02	0.058
behavior and behavior mechanisms/emotion/anger	0.02	-0.074
change/change schools	0.02	-0.074
finances/money	0.02	.138**
life/social life	0.02	.219**
occupation/recruiter	0.02	0.007
solution	0.02	.138**
sports/sports by type/walking	0.02	-0.058
sports/sports personnel/coach	0.02	0.056
anatomy/head/face	0.02	-0.032
change/huge change	0.02	0.055
economics/property/transfer	0.02	0.003
family/family structure/spouse/wife	0.02	.107*
finances/investments	0.02	0.003
human resources/career/skill/management	0.02	.177**
human resources/career/skill/university	0.02	0.003
individual	0.02	.142**
information	0.02	-0.015
mind/open mind	0.02	-0.067

occupation/instructor	0.02	.107*
occupation/medical personnel	0.02	0.072
occupation/white collar workers/executives	0.02	.142**
place of business/store/shop	0.02	0.055
school/switch schools	0.02	-0.05
sports/sports by type/ball games/football/passion	0.02	0.055
academics/test	0.01	0.053
economics/land use	0.01	0.053
finance/trust	0.01	0.016
finances/loss	0.01	-0.022
hardship	0.01	-0.078
human resources/career/hiring	0.01	0.072
human resources/education, training and development/program	0.01	0.072
life/new life	0.01	0.035
literature/letter	0.01	-0.022
options	0.01	0.053
physics/mechanics/power	0.01	.147**
place of business/office	0.01	0.053
research	0.01	.129**
sports/sports by type/gym	0.01	.166**
sports/sports by type/horse sports	0.01	-0.059
sports/sports by type/sports team	0.01	-0.003
time/hard time	0.01	-0.059
understanding	0.01	0.035
weather/season/winter	0.01	0.072
work/work place	0.01	0.072
anatomy/body regions/extremities/leg	0.01	0.011
behavior mechanisms/behavior	0.01	0.011
change/drastic change	0.01	-0.071
dwelling/shelter	0.01	0.073
effect	0.01	-0.03
family/family structure/child/new child	0.01	-0.051
family/family structure/grandparents/grandfather	0.01	0.032
finances/insurance	0.01	0.073
finances/investments/future	0.01	-0.01
greatness/great people	0.01	-0.071
issue	0.01	0.052
life/normal life	0.01	-0.01
occupation/medical personnel/nursing	0.01	0.073
place of business/clubs	0.01	0.052
report	0.01	0.052
sports/sports by type/horse sports/jumping	0.01	-0.051
vehicle/truck	0.01	.134**

economics/land use/rent	0.01	.097*
finances/fees and charges	0.01	0.005
finances/loans	0.01	.120*
geometry/shapes	0.01	-0.018
military/air force/united states air force	0.01	-0.018
military/army	0.01	0.005
occupation/teacher/new teachers	0.01	0.005
person/new person	0.01	-0.018
physics/mechanics/shock	0.01	-0.018
place of business/store/mall	0.01	-0.018
process/manufacturing process	0.01	0.028
project	0.01	.097*
prosecution of law/mistakes	0.01	0.051
sports/sports personnel/coach/new coach	0.01	.097*
structural engineering/building/floor	0.01	.143**
weather/precipitation	0.01	0.028
Count	14.7	.347**
** Correlation is significant at the 0.01 level (2-tailed).		
* Correlation is significant at the 0.05 level (2-tailed).		

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.807a	0.652	0.347	0.4157	0.652	2.137	211	241	0

Table G2: Form A, Question 2 (V17.0) with Human Ratings—Untrained

Type: Situational

Item: Adapting to Stress and Change (Accepts Feedback)

Facet: Accepting criticism



Category by Size	Mean	Correlation with Avg. Human Ratings
report	0.54	.125**
situation	0.52	0.009
work	0.52	.142**
recipient	0.49	.125**
issues	0.48	0.053
solution	0.47	.115*
problem	0.38	.122**
outcome	0.37	0.024
options	0.34	.095*
factors	0.32	0.082
time	0.31	0.001
feedback	0.3	.190**
geometry	0.24	.153**
action	0.23	.174**
steps	0.22	0.071
geometry/complex	0.19	0.082
help	0.19	0.084
person	0.19	0.033
action/course of action	0.17	.120*
resources	0.17	0.088
idea	0.14	.164**
occupation	0.13	0.034
people	0.12	0.007
information	0.11	.157**
change	0.11	0.071
questions	0.11	0.087
finance	0.1	.098*
prosecution of law	0.1	0.038
opinion	0.09	0.041

prosecution of law/mistakes	0.09	0.006
reason	0.08	-0.001
research	0.08	.136**
point	0.08	-0.029
details	0.07	-0.029
job	0.07	-0.045
review	0.07	.096*
understanding	0.07	0.074
respons	0.06	-0.078
anatomy	0.06	0.088
criticism	0.06	0.013
human resources	0.06	0.047
standards	0.06	-0.003
economics	0.05	0.085
individual	0.05	-0.003
mind	0.05	.191**
task	0.05	0.032
geometry/perspective	0.05	.199**
project	0.05	0.062
goal	0.05	0.075
human resources/education, training and development	0.04	0.039
process	0.04	0.068
complexity	0.04	-0.06
effect	0.04	-0.01
occupation/supervisor	0.04	0.021
behavior and behavior mechanisms	0.04	0.054
economics/property	0.04	0.033
part	0.04	0.086
communication	0.03	0.089
solution/new solution	0.03	0.056
criticism/constructive criticism	0.03	-0.02
finance/check	0.03	0.025
anatomy/eyes	0.03	0.073
occupation/white collar workers	0.03	-0.032
occupation/white collar workers/leadership	0.03	-0.044
anatomy/head	0.03	0.055
behavior and behavior mechanisms/emotion	0.02	-0.021
behavior mechanisms	0.02	0.005
structural engineering	0.02	-0.008
geometry/angle	0.02	0.075
human resources/education, training and development/knowledge	0.02	0.088
structural engineering/building	0.02	0.006
words	0.02	0.006

learning	0.02	0.051
office workers	0.02	.108*
research/data	0.02	-0.006
family	0.02	-0.071
finance/trust	0.02	0.059
human resources/education, training and development/challenge	0.02	-0.022
national service	0.02	.157**
office workers/team	0.02	.124**
anatomy/head/face	0.01	0.012
behavior mechanisms/attitude	0.01	0.047
finance/gain	0.01	0.065
national service/draft	0.01	.153**
simpley	0.01	0.03
economics/property/assignment	0.01	-0.082
finance/investments	0.01	-0.024
geometry/complex/complex situation	0.01	-0.024
person/personal opinion	0.01	0.014
propery	0.01	-0.044
finance/cost	0.01	.124**
finance/investments/future	0.01	-0.005
geometry/holes	0.01	0.06
human resources/benefit	0.01	0.038
research/scientific method	0.01	-0.005
Count	10.1	.355**
** Correlation is significant at the 0.01 level (2-tailed).		
* Correlation is significant at the 0.05 level (2-tailed).		

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.620a	0.385	0.218	0.4874	0.385	2.305	96	354	0

Table G3: Form A, Question 3 (V17.0) with Human Ratings—Untrained

Type: Situational

Item: Displaying Integrity, Ethical Behavior, and Professionalism (Integrity)

Facet: Accepts responsibility for own actions



Category by Size	Mean	Correlation with Avg. Human Ratings
situation	0.66	-0.059
actions	0.48	.198**
task	0.45	.205**
people	0.44	0.037
problem	0.35	.153**
integrity	0.33	0.022
behavior and behavior mechanisms	0.33	.177**
help	0.3	.146**
behavior and behavior mechanisms/emotion	0.29	.164**
work	0.24	.107*
outcome	0.23	.153**
consequences	0.23	.131**
finance	0.21	.220**
team	0.18	.180**
person	0.18	-0.009
job	0.15	0.042
physics	0.15	0.039
occupation	0.14	.129**
feel	0.13	-0.062
physics/constraints	0.13	0.049
negatives	0.12	0.036
military	0.12	-0.013
military/air force	0.11	-0.023
values	0.11	-0.012
impact	0.1	0.088
time	0.1	0.059
values/core values	0.09	-0.011
behavior and behavior mechanisms/emotion/frustration	0.09	.151**

life	0.09	0.064
negatives/negative impact	0.08	0.062
finance/trust	0.08	.134**
occupation/supervisor	0.08	.150**
human resources	0.08	.109*
factors	0.08	0
learning	0.08	0.067
anatomy	0.08	-0.019
prosecution of law	0.08	0.057
solution	0.08	0.049
anatomy/head	0.07	0
behavior and behavior mechanisms/emotion/frustration/increase frustration	0.06	.177**
part	0.06	0.076
military/air force/air force value	0.06	0.024
family	0.05	-.104*
prosecution of law/mistake	0.05	0.056
anatomy/head/face	0.04	0
occupation/white collar workers	0.04	0
behavior and behavior mechanisms/social psychology	0.04	0.064
error	0.04	0.075
individual	0.04	0.04
behavior and behavior mechanisms/emotion/guilt	0.04	0.003
effect	0.04	.110*
feedback	0.04	.110*
finance/accountability	0.04	0.074
human resources/career	0.04	0.062
increase	0.04	.110*
position	0.04	0.039
behavior and behavior mechanisms/social psychology/morals	0.03	0.037
finance/investments	0.03	.171**
measuring instrument	0.03	-0.024
finance/investments/future	0.03	.186**
wronge	0.03	-0.003
learning/reinforcement	0.03	-0.032
occupation/white collar workers/leadership	0.03	0.007
house furnishings	0.03	0.028
learning/reinforcement/punishment	0.03	-0.028
family/family structure	0.02	-0.033
human resources/education, training and development	0.02	0.084
idea	0.02	-0.004
measuring instrument/measure	0.02	0.011
building	0.02	0.008

family/family structure/parents	0.02	-0.023
measuring instrument/measure/rules	0.02	0.023
economics	0.02	0.036
house furnishings/furniture	0.02	0.069
sports	0.02	0.004
behavior and behavior mechanisms/emotion/anger	0.02	0.086
finance/check	0.02	0.086
human resources/education, training and development/education	0.02	0.051
issue	0.02	0.086
level	0.02	0.051
sports/sports by type	0.02	0.017
task/incorrect task	0.02	.120*
behavior and behavior mechanisms/character	0.02	0.014
behavior and behavior mechanisms/emotion/fear	0.02	0.014
house furnishings/furniture/handle	0.02	0.087
human resources/benefit	0.02	-0.004
information	0.02	0.032
learning/learning experience	0.02	0.05
occupation/white collar workers/employee	0.02	-0.023
prosecution of law/evidence	0.02	-0.023
prosecution of law/evidence/reputation	0.02	-0.023
team/team members	0.02	.160**
completey	0.01	-0.089
finance/charge	0.01	0.069
finance/gain	0.01	0.03
food	0.01	0.01
literature	0.01	-0.01
people/impact people	0.01	-0.01
report	0.01	0.03
actions/disciplinary actions	0.01	0.049
finance/cost	0.01	0.005
finance/money	0.01	0.005
human resources/career/skill	0.01	0.092
behavior and behavior mechanisms/social psychology/morals/ethics	0.01	-0.072
family/family structure/parents/father	0.01	-0.024
human resources/education, training and development/knowledge	0.01	0.072
human resources/skill	0.01	0.048
integrity/value integrity	0.01	0.024
literature/drama	0.01	-0.072
military/air force/air force core	0.01	-0.048
sports/sports by type/walking	0.01	0.072
Count	9.16	.393**

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

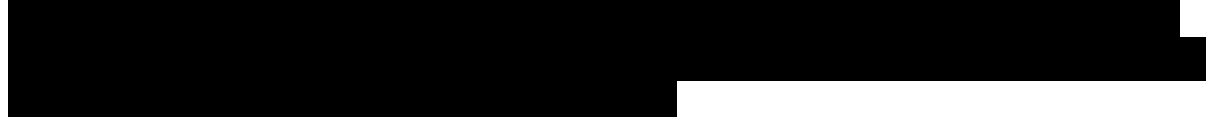
Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.669 a	0.447	0.269	0.4188	0.447	2.501	111	343	0

Table G4: Form A, Question 4 (V17.0) with Human Ratings—Untrained

Type: Behavioral

Item: Openness (Openness to Alternative Views)

Facet: Having a willingness to overcome one's own interests for the needs of others



Category by Size	Mean	Correlation with Avg. Human Ratings
situation	0.38	0.037
work	0.3	0.082
school	0.3	0.085
occupation	0.28	-0.035
time	0.27	0.003
people	0.24	-0.048
outcome	0.24	0.086
family	0.2	-.095*
opinions	0.19	0.088
family/family structure	0.16	-0.077
idea	0.16	.137**
school/k 12	0.16	0.05
person	0.15	0.066
human resources	0.15	-0.001
sports	0.15	-0.012
academics	0.14	0.037
class	0.13	0.066
project	0.13	.207**
sports/sports by type	0.13	-0.012
anatomy	0.12	-0.039
job	0.12	-0.07
group	0.11	.160**
behavior mechanisms	0.11	-0.037
family/family structure/parents	0.1	-.123**
home	0.1	-.149**
finance	0.1	-.093*
human resources/education, training and development	0.1	-0.034
occupation/white collar workers	0.1	-.093*
behavior mechanisms/personality	0.1	-0.015
finances	0.09	-0.05
military	0.09	-.094*

office workers	0.09	0.08
office workers/crew	0.09	0.073
family/family structure/child	0.08	-0.019
geometry	0.08	.123**
help	0.08	0.002
side	0.08	-0.034
occupation/white collar workers/leadership	0.08	-0.079
food	0.08	-0.036
structural engineering	0.08	0.06
geometry/perspective	0.07	.120**
structural engineering/building	0.07	0.06
place of business	0.07	-0.002
problem	0.07	0.006
sports/sports by type/ball games	0.07	-0.057
human resources/education, training and development/education	0.07	-0.082
religion	0.06	-0.02
topic	0.06	.101*
clothes	0.06	0.004
academics/students	0.06	0.012
anatomy/body regions	0.06	-0.071
family/family structure/parents/mother	0.06	-0.067
human resources/career	0.05	0.036
vehicles	0.05	-0.008
arts, design & crafts	0.05	0.027
geographical location	0.05	-0.017
part	0.05	0.036
project/group project	0.05	.134**
economics	0.05	0.018
game	0.05	0.018
psychology	0.05	0.045
finance/money	0.05	-.131**
psychology/behavior and behavior mechanisms	0.05	0.045
anatomy/body regions/extremities	0.05	-.106*
solution	0.05	.188**
home/household	0.04	-0.071
position	0.04	0.007
religion/christianity	0.04	-0.022
politics	0.04	0.016
vehicles/car	0.04	-0.035
place of business/retail store	0.04	-0.006
anatomy/body regions/extremities/arm	0.03	-0.083
military/air force	0.03	-0.05

occupation/manager	0.03	0.004
physics	0.03	0.026
sports/sports by type/ball games/football	0.03	-0.061
anatomy/head	0.03	0.014
arts, design & crafts/picture	0.03	-0.008
clothes/shirt	0.03	0.07
family/family structure/child/brother and sister	0.03	-0.086
academics/grade	0.03	0.037
anatomy/sense organs	0.03	0.071
factors	0.03	-0.079
family/family structure/parents/father	0.03	-.113*
geographical location/america	0.03	-0.032
military/battalion	0.03	-0.09
anatomy/body regions/extremities/arm/hand	0.03	-0.058
anatomy/sense organs/eye	0.03	0.085
family/family structure/spouse	0.03	0.001
academics/research	0.03	0.05
information	0.03	0.013
occupation/drivers	0.03	0.05
prosecution of law	0.03	0.075
research	0.03	-0.012
behavior and behavior mechanisms	0.02	-0.053
economics/property	0.02	0.025
geographical location/america/united states	0.02	-0.027
military/battalion/officers	0.02	-0.066
occupation/white collar workers/employee	0.02	-0.027
sports/sports by type/walking	0.02	0.038
academics/testing	0.02	-0.002
human resources/career/skill	0.02	0.039
human resources/education, training and development/education/basic training	0.02	-0.016
religion/christianity/missionary	0.02	0.039
religion/god	0.02	-0.056
academics/research/study	0.02	-0.003
family/family structure/child/brother and sister/sister	0.02	-0.061
finance/investments	0.02	-0.032
finance/investments/future	0.02	-0.032
finances/money	0.02	-0.046
place of business/restaurant	0.02	0.011
psychology/behavior and behavior mechanisms/social psychology	0.02	0.025
sports/coach	0.02	-0.003
academics/students/graduation	0.02	0.041

anatomy/body regions/head	0.02	-0.02
behavior and behavior mechanisms/emotion	0.02	-0.02
clothes/shirt/flight shirt	0.02	0.071
details	0.02	0.086
feedback	0.02	0.071
geographical location/america/united states/us states	0.02	-0.035
place of business/retail store/shop	0.02	-0.035
family/family structure/child/brother and sister/brother	0.02	-0.071
family/marital status	0.02	0.042
food/meals	0.02	-0.087
human resources/career/hiring	0.02	-0.039
occupation/supervisor	0.02	-0.071
occupation/teacher	0.02	-0.039
sports/sports by type/ball games/football/passions	0.02	-0.039
sports/sports by type/running	0.02	-0.055
family/family structure/child/daughter	0.01	0.009
family/marital status/marriage	0.01	0.044
finance/cost	0.01	0.079
finances/investments	0.01	-0.026
finances/scholarships	0.01	0.009
geographical location/asia	0.01	-0.043
human resources/education, training and development/program	0.01	0.061
military/battalion/officers/captain	0.01	-0.043
occupation/artist	0.01	0.044
occupation/recruiter	0.01	-0.061
occupation/white collar workers/leadership/element leader	0.01	-0.061
politics/ideology	0.01	0.009
psychology/behavior and behavior mechanisms/emotion	0.01	0.009
psychology/behavior and behavior mechanisms/social	0.01	0.044
psychology/morals		
sports/sports by type/ball games/baseball	0.01	-0.026
vehicles/truck	0.01	0.026
anatomy/body regions/extremities/leg	0.01	-0.068
arts, design & crafts/graphic arts	0.01	0.027
class/government class	0.01	0.085
finance/trust	0.01	0.027
food/meals/dinner	0.01	-0.068
geographical location/europe	0.01	0.046
idea/ideas conflict	0.01	0.027
issue	0.01	0.008
occupation/coworker	0.01	0.008
occupation/engineer	0.01	.123**
occupation/film crew	0.01	-0.068

physics/heat	0.01	0.085
physics/optics	0.01	-0.03
psychology/behavior and behavior mechanisms/characters	0.01	0.046
sports/sports by type/ball games/basketball	0.01	-0.03
structural engineering/building/flooring	0.01	0.008
work/work load	0.01	0.027
arts, design & crafts/graphic arts/painting	0.01	0.029
clothes/shirt/shirt design	0.01	0.029
clothes/shoes	0.01	-0.035
economics/commerce	0.01	-0.014
economics/property/assignment	0.01	0.029
economics/property/real property	0.01	0.007
economics/statistics	0.01	0.007
finance/charge	0.01	-0.035
finances/credit	0.01	-0.035
finances/funding	0.01	-0.078
finances/investments/security	0.01	-0.014
food/animal origin	0.01	-0.057
food/meals/lunch	0.01	-0.057
food/snacks	0.01	-0.035
geometry/perspective/drawing	0.01	0.007
human resources/career/skill/communication skills	0.01	0.029
human resources/education, training and development/knowledge	0.01	0.05
occupation/film crew/director	0.01	-0.057
occupation/medical personnel	0.01	-0.035
occupation/white collar workers/leadership/student leaders	0.01	-0.035
prosecution of law/evidence	0.01	.093*
psychology/behavior and behavior mechanisms/social psychology/morals/ethics	0.01	0.007
report	0.01	-0.035
school/school project	0.01	0.071
sports/sports by type/ball games/football/soccer	0.01	-0.014
structural engineering/building/wall	0.01	0.05
time/waste time	0.01	-0.014
Count	10.1	0.009
* Correlation is significant at the 0.05 level (2-tailed).		
** Correlation is significant at the 0.01 level (2-tailed).		

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change

1	.701 a	0.491	0.134	0.5128	0.491	1.374	188	268	0.009

Table G5: Form A, Question 5 (V17.0) with Human Ratings—Untrained

Type: Situational

Item: High Drive (High Motivation/Drive)

Facet: Setting and accomplishing challenging goals



Category by Size	Mean	Correlation with Avg. Human Ratings
work	0.81	0.064
goal	0.62	0.053
time	0.5	0.066
issues	0.46	0.054
employee assessments	0.41	.217**
situation	0.41	0.009
factors	0.4	0.069
increas	0.38	.106*
outcome	0.36	0.07
employee assessments/productivity	0.35	.182**
work/work productivity	0.29	0.063
day	0.22	.116*
help	0.21	0.044
task	0.21	.173**
job	0.19	-0.031
economics	0.14	0.029
occupation	0.14	0.042
plan	0.14	.097*
people	0.13	-0.039
employee assessments/increasing productivity	0.13	.217**
family	0.13	-.114*
areas	0.12	.257**
human resources	0.12	0.03
person	0.12	0.013
life	0.11	-0.039
step	0.11	.237**
measuring instrument	0.11	-0.019
health and well being	0.1	-0.053
schedule	0.1	.097*
goal/personal goal	0.09	0.078

economics/property	0.07	0.078
finance	0.07	0.002
food	0.07	0.017
measuring instrument/balance	0.07	-0.06
pointer	0.07	0.067
academics	0.07	.109*
breaks	0.06	.108*
place of business	0.06	.189**
place of business/office	0.06	.180**
work/work productivity/increase work productivity	0.06	0.022
human resources/education, training and development	0.06	-0.018
food/meals	0.05	0.008
psychological phenomena and processes	0.05	.124**
sports	0.05	-0.07
time/personal time	0.05	-0.031
amount	0.05	0.084
place of business/office/office worker	0.05	.163**
psychological phenomena and processes/mental processes	0.05	.094*
sports/sports by type	0.05	-0.074
work/work place	0.05	-0.015
psychological phenomena and processes/mental processes/learning	0.05	0.063
anatomy	0.05	-0.041
behavior mechanisms	0.05	0.02
occupation/supervisor	0.05	0.031
occupation/white collar workers	0.05	-0.011
place of business/office/office worker/crew	0.05	.165**
problem	0.05	-0.052
anatomy/head	0.05	-0.066
food/meals/lunch	0.05	0.039
human resources/career	0.05	0.039
work/work day	0.04	0.08
quality	0.04	0.002
work/work load	0.04	.134**
academics/study	0.04	-0.001
health	0.04	0.01
health and well being/sleep	0.04	-0.047
hours	0.04	0.078
occupation/white collar workers/leadership	0.04	0.021
prosecution of law	0.04	.112*
health and well being/personal life	0.04	-0.074
position	0.04	-0.004
behavior and behavior mechanisms	0.03	-0.008
feedback	0.03	0.088

economics/properties	0.03	-0.024
finances	0.03	0.075
academics/testing	0.03	.164**
behavior mechanisms/motivation	0.03	0.023
family/family structure	0.03	-.099*
measuring instrument/measure	0.03	0.087
occupation/planning	0.03	.100*
part	0.03	0.034
produce	0.03	0.047
time/waste time	0.03	.127**
geometry	0.03	0.073
goal/small goals	0.03	.114*
finance/money	0.02	0.043
greatness	0.02	0.029
psychological phenomena and processes/mental processes/learning/practice	0.02	0.043
behavior and behavior mechanisms/emotion	0.02	0.026
economics/properties/improvement	0.02	0.026
human resources/education, training and development/education	0.02	-0.034
resources	0.02	.177**
solution	0.02	0.026
time/time frame	0.02	0.056
economics/statistics	0.02	-0.088
goal/set goals	0.02	0.071
human resources/benefit	0.02	0.007
prosecution of law/mistakes	0.02	-0.009
research	0.02	0.039
sports/sports by type/gym	0.02	-0.072
work/work time	0.02	0.039
behavior mechanisms/attitude	0.02	0.003
economics/statistics/graduation	0.02	-.098*
family/family structure/child	0.02	-0.064
geometry/perspective	0.02	0.053
health/healthy lifestyle	0.02	0.003
human resources/career/performance reviews	0.02	-0.064
human resources/education, training and development/knowledge	0.02	.104*
sports/sports by type/walking	0.02	-0.081
anatomy/head/face	0.02	-0.02
day/daily tasks	0.02	.142**
finance/check	0.02	0.088
health and well being/exercise	0.02	.106*
human resources/career/performance reviews/promotion	0.02	-0.056
idea	0.02	.106*

psychological phenomena and processes/mental processes/learning/reinforcements	0.02	-0.02
work/work hours	0.02	0.07
economics/waste	0.01	0.051
finance/investments	0.01	-0.065
finance/investments/future	0.01	-0.065
goal/setting goals	0.01	-0.007
human resources/career/skill	0.01	0.09
human resources/education, training and development/challenge	0.01	-0.046
human resources/education, training and development/education/basic training	0.01	-0.065
information	0.01	0.051
work/work at home	0.01	-0.027
employee assessments/productivity/overall productivity	0.01	0.071
family/family structure/spouse	0.01	-0.035
health and well being/diet	0.01	0.029
human resources/wellness	0.01	0.029
occupation/manager	0.01	-0.014
occupation/mentor	0.01	0.029
prosecution of law/trial	0.01	.114*
time/time management	0.01	0.05
work/better work	0.01	-0.035
work/work schedule	0.01	-0.035
breaks/break down	0.01	.121**
employee assessments/productivity/productivity rate	0.01	-0.022
family/family structure/parents	0.01	-0.022
family/marital status	0.01	0.026
finance/cost	0.01	0.002
finances/check	0.01	.097*
food/meals/lunch/shorter lunch	0.01	-0.022
goal/weekly goals	0.01	.144**
health/physical health	0.01	0.002
occupation/white collar workers/employee	0.01	-0.069
person/productive person	0.01	0.026
plan/game plan	0.01	0.026
work/work goals	0.01	0.002
work/work space	0.01	0.002
Count	11.39	.340**
** Correlation is significant at the 0.01 level (2-tailed).		
* Correlation is significant at the 0.05 level (2-tailed).		

Model Summary								

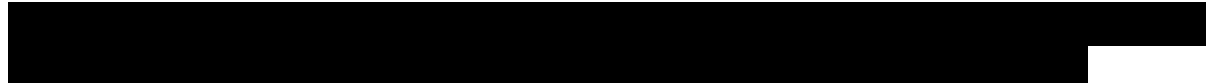
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.749 a	0.562	0.351	0.3985	0.562	2.665	149	310	0

Table G6: Form A, Question 6 (V17.0) with Human Ratings—Untrained

Type: Behavioral

Item: Perseverance (Perseverance)

Facet: Persisting in the face of obstacles



Category by Size	Mean	Correlation with Avg. Human Ratings
human resources	0.54	0.025
human resources/education, training and development	0.47	0.008
human resources/education, training and development/challenge	0.43	-0.011
work	0.42	.140**
school	0.41	0.051
time	0.4	.152**
occupation	0.37	.098*
sports	0.36	0.067
sports/sports by type	0.3	0.073
family	0.3	0.032
school/k 12	0.27	0.042
year	0.27	0.053
academics	0.23	.120*
day	0.23	.113*
life	0.22	-0.023
occupation/white collar workers	0.22	0.049
situation	0.22	-0.021
job	0.21	0.065
family/family structure	0.21	0.05
outcome	0.19	0.044
crew	0.19	0.07
occupation/white collar workers/staffing	0.18	0.067
help	0.18	-0.047
home	0.17	-0.068
military	0.16	-0.04
anatomy	0.16	0.02
economics	0.16	-0.015
friends	0.15	-0.028
class	0.15	0.052
family/family structure/parents	0.14	-0.015
learning	0.14	0.089

sports/sports by type/ball games	0.12	0.011
finance	0.12	0.083
military/air force	0.12	-0.016
weather	0.11	0.053
hours	0.11	.152**
college	0.11	0.078
weather/season	0.11	0.049
year/senior year	0.1	0.074
human resources/career	0.1	.131**
family/family structure/child	0.1	0.046
finances	0.1	.098*
learning/practice	0.09	0.087
place of business	0.09	.159**
problem	0.09	0.063
academics/grade	0.09	-0.021
sports/sports by type/running	0.08	0.058
anatomy/body regions	0.08	0.031
family/family structure/parents/mother	0.08	-.122**
food	0.08	0.079
academics/research	0.08	.129**
academics/research/study	0.08	.129**
economics/property	0.07	.092*
human resources/education, training and development/education	0.07	-0.004
person	0.07	-0.034
academics/students	0.07	.098*
anatomy/head	0.07	-0.019
building	0.07	.116*
sports/sports personnel	0.07	0.071
vehicle	0.07	.125**
academics/exam	0.07	0.087
anatomy/body regions/extremities	0.06	0.067
economics/graduation	0.06	-.099*
finance/money	0.06	0.077
sports/sports by type/ball games/football	0.06	0.04
sports/sports personnel/coach	0.06	0.077
occupation/manager	0.06	.140**
sales	0.06	-0.022
outdoor activities	0.06	-0.065
place of business/retail store	0.06	0.08
state	0.06	0.07
physics	0.05	.128**
family/family structure/parents/father	0.05	0.064
sales/order	0.05	-0.03

factors	0.05	-0.013
occupation/white collar workers/leadership	0.05	-0.024
behavior and behavior mechanisms	0.05	0.038
human resources/career/skill	0.05	.093*
outdoor activities/game	0.05	-0.06
home/household	0.04	-0.02
human resources/career/hiring	0.04	0.058
behavior and behavior mechanisms/emotion	0.04	0.056
movies	0.04	-0.001
position	0.04	0.01
movies/film genres	0.04	0.007
clothes	0.04	0.015
economics/property/real property	0.04	0.052
family/family structure/child/brother and sister	0.04	-0.021
occupation/white collar workers/staffing/work environment	0.04	0.015
sports/sports by type/gym	0.04	0.088
vehicle/car	0.04	0.064
economics/property/real property/betterment	0.03	0.037
human resources/career/hiring/full time	0.03	0.037
academics/students/freshmen	0.03	0.034
anatomy/body regions/extremities/arm	0.03	-0.005
anatomy/body regions/extremities/legs	0.03	.098*
geometry	0.03	0.085
place of business/retail store/shop	0.03	0.085
weather/season/summer	0.03	-0.043
finance/investments	0.03	0.031
sports/sports by type/walking	0.03	0.004
anatomy/head/face	0.03	0.014
military/troop	0.03	-0.013
movies/film genres/musical	0.03	0.042
sports/sports by type/ball games/basketball	0.03	0
finance/investments/future	0.03	0.039
food/meals	0.03	0.068
members	0.03	-0.033
sports/championship	0.03	-0.018
academics/students/freshmen/freshmen year	0.02	0.048
geometry/shapes	0.02	0.048
human resources/career/skill/management	0.02	0.064
human resources/education, training and development/education/military training	0.02	-0.046
place of business/club	0.02	0.064
sports/sports by type/combat sports	0.02	0.001
time/hard time	0.02	0.048

weather/season/fall	0.02	-0.014
academics/exam/pt test	0.02	0.029
anatomy/body regions/extremities/arm/hand	0.02	0.013
family/family structure/child/brother and sister/sister	0.02	0.029
family/marital status	0.02	0.079
food/meals/lunch	0.02	.095*
human resources/benefit	0.02	0.013
human resources/education, training and development/education/military training/basic military training	0.02	-0.053
idea	0.02	-0.02
occupation/supervisor	0.02	.161**
occupation/white collar workers/staffing/work environment/communication	0.02	0.029
sports/sports by type/ball games/baseball	0.02	-0.037
sports/sports by type/combat sports/wrestling	0.02	-0.02
sports/sports by type/horse sports	0.02	0.062
time/run time	0.02	0.013
family/family structure/child/brother and sister/brother	0.02	-0.062
family/family structure/grandparents	0.02	0.008
human resources/education, training and development/education/basic training	0.02	-0.027
issue	0.02	-0.062
sports/sports by type/ball games/football/passing	0.02	.096*
sports/sports by type/ball games/football/soccer	0.02	-0.044
sports/sports by type/horse sports/cross country	0.02	0.078
anatomy/body regions/extremities/legs/foot	0.02	.115*
anatomy/body regions/head	0.02	-0.034
behavior and behavior mechanisms/emotion/fear	0.02	-0.053
clothes/shorts	0.02	0.059
economics/property/transfer	0.02	0.059
family/family structure/spouse	0.02	0.078
family/marital status/single person	0.02	0.022
finances/credit	0.02	0.059
human resources/education, training and development/knowledge	0.02	0.059
information	0.02	0.059
occupation/medical personnel	0.02	0.003
occupation/teacher	0.02	0.078
occupation/white collar workers/staffing/work environment/company events	0.02	0.003
occupation/writer	0.02	0.022
vehicle/truck	0.02	0.04
finance/gain	0.01	0.078
human resources/career/skill/university	0.01	-0.023

job/old job	0.01	-0.023
military/air force/united states air force	0.01	0.058
military/troop/officer	0.01	-0.023
place of business/restaurant	0.01	.158**
school/community college	0.01	0.017
solution	0.01	-0.003
sports/sports by type/lift weights	0.01	0.037
building/floor	0.01	0.078
crew/team members	0.01	.166**
economics/rent	0.01	0.012
family/family structure/grandparents/grandma	0.01	-0.032
finances/fees and charges	0.01	-0.076
finances/investments	0.01	0.078
human resources/career/skill/management/business management	0.01	-0.032
human resources/education, training and development/program	0.01	-0.01
military/troop/officer/captain	0.01	-0.01
occupation/medical personnel/nursing	0.01	0.012
occupation/white collar workers/staffing/time work	0.01	0.012
occupation/white collar workers/staffing/work load	0.01	0.034
physics/force and energy	0.01	-0.032
school/school year	0.01	0.034
sports/sports by type/athletic	0.01	0.056
sports/sports by type/sports team	0.01	0.012
weather/season/spring	0.01	0.078
weather/season/winter	0.01	0.056
anatomy/body regions/extremities/arm/shoulder	0.01	0.006
anatomy/body regions/extremities/legs/knee	0.01	0.006
anatomy/body regions/hair	0.01	-0.068
clothes/clothing accessories	0.01	0.006
crew/varsity team	0.01	-0.019
economics/property/real property/betterment/better player	0.01	0.08
economics/property/transfer/assignment	0.01	0.03
feedback	0.01	.154**
finances/scholarship	0.01	-0.019
home/apartment	0.01	-0.043
hours/extra hours	0.01	0.03
human resources/career/hiring/full time/school full time	0.01	0.006
human resources/education, training and development/challenge/challenge part	0.01	-0.019
mathematics	0.01	0.08
movies/film genres/musical films	0.01	-0.043
occupation/director	0.01	-0.043
occupation/instructor	0.01	0.006

outdoor activities/backpacks	0.01	-0.019
sports/sports by type/aquatic sports	0.01	-0.019
sports/sports by type/ball games/baseball/softball	0.01	-0.019
sports/sports by type/ball games/basketball/play basketball	0.01	-0.019
sports/sports by type/ball games/football/football season	0.01	0.03
sports/sports by type/ball games/volleyball	0.01	-0.043
sports/sports by type/shooting	0.01	-0.019
vehicle/trailer	0.01	0.08
Cout	14.7	.283**
** Correlation is significant at the 0.01 level (2-tailed).		
* Correlation is significant at the 0.05 level (2-tailed).		

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.722 a	0.522	0.141	0.4417	0.522	1.371	203	255	0.009

Table G7: Form A, Question 1 (V17.0) with AFQT—Untrained

Type: Behavioral

Item: Adapting to Stress and Change (Adaptability)

Facet: Ability to adapt to new and changing tasks and situations



Category by Size	Mean	Correlations with AFQT
change	0.63	-0.034
family	0.57	0.034
family/family structure	0.44	0.020
life	0.41	0.042
school	0.41	-0.003
situation	0.40	0.033
time	0.38	0.013
family/family structure/parents	0.36	0.005
work	0.35	.120*
change/major change	0.32	-.094*
dwelling	0.29	0.009
friends	0.26	-0.020
outcome	0.24	-0.047
school/k 12	0.22	0.053
occupation	0.20	-0.002
family/family structure/child	0.20	0.054
family/family structure/parents/mother	0.19	-0.052
job	0.19	0.054
people	0.19	-0.039
academics	0.19	0.091
human resources	0.19	-0.014
year	0.19	0.050
day	0.18	0.038
sports	0.17	-0.070
help	0.15	-0.037
military	0.15	-0.003
family/family structure/parents/father	0.15	0.034
sports/sports by type	0.14	-0.026
dwelling/household	0.13	-0.002
human resources/education, training and development	0.12	-0.083

person	0.12	0.020
week	0.12	.127**
academics/students	0.11	-0.010
behavior and behavior mechanisms	0.11	0.017
months	0.11	0.034
finance	0.11	-0.009
college	0.11	0.091
military/air force	0.10	0.023
finances	0.10	0.069
anatomy	0.09	0.067
weather	0.09	.146**
america	0.08	0.071
america/u.s.	0.08	.094*
behavior and behavior mechanisms/emotion	0.08	0.009
classes	0.08	0.006
family/family structure/child/brother and sister	0.08	0.011
human resources/career	0.08	0.083
place of business	0.07	0.001
office workers	0.07	0.016
plan	0.07	0.048
weather/season	0.07	.129**
america/u.s./us states	0.07	0.072
family/marital status	0.07	-0.028
friends/new friends	0.07	-0.002
state	0.07	0.023
behavior mechanisms	0.06	0.019
human resources/education, training and development/education	0.06	-0.066
academics/grade	0.06	0.066
occupation/white collar workers	0.06	0.047
finance/money	0.06	-0.037
food	0.06	0.055
learning	0.06	0.037
school/new school	0.06	-0.019
part	0.05	0.066
economics	0.05	0.063
family/family structure/child/brother and sister/brother	0.05	0.019
office workers/team	0.05	-0.005
point	0.05	0.043
problem	0.05	-0.002
structural engineering	0.05	0.031
structural engineering/building	0.05	0.031
vehicle	0.05	-0.009

greatness	0.05	-0.023
change/big change	0.05	0.012
idea	0.05	0.045
occupation/manager	0.05	-0.078
sports/sports by type/ball games	0.05	0.006
family/family structure/grandparents	0.05	0.030
process	0.05	0.040
academics/students/sophomore	0.04	-0.016
factors	0.04	0.013
anatomy/head	0.04	0.068
behavior mechanisms/attitude	0.04	0.055
human resources/education, training and development/challenge	0.04	-0.011
human resources/education, training and development/education/basic training	0.04	-0.029
place of business/store	0.04	-.096*
academics/research	0.04	.099*
physics	0.04	-0.006
position	0.04	0.068
academics/research/study	0.04	.095*
academics/students/graduation	0.04	0.016
family/family structure/child/brother and sister/sister	0.04	-0.049
family/marital status/divorce	0.04	-0.039
human resources/career/skill	0.04	.093*
people/new people	0.04	0.082
sports/sports by type/ball games/football	0.04	0.016
anatomy/body regions	0.03	0.034
economics/property	0.03	0.046
goal	0.03	0.013
academics/students/sophomore/freshman	0.03	-0.015
america/u.s./us states/texas	0.03	0.061
anatomy/body regions/extremities	0.03	0.036
geometry	0.03	-0.002
office workers/crew	0.03	0.045
reason	0.03	-0.034
vehicle/car	0.03	-0.059
behavior and behavior mechanisms/social psychology	0.03	0.044
occupation/teacher	0.03	0.026
occupation/white collar workers/employee	0.03	0.063
questions	0.03	0.043
school/k 12/middle school	0.03	-0.011
task	0.03	0.016
weather/season/fall	0.03	.121**
dwelling/apartment	0.03	0.006

finance/investments	0.03	0.015
occupation/supervisor	0.03	0.046
occupation/white collar workers/leadership	0.03	-0.002
society	0.03	-0.022
behavior and behavior mechanisms/social psychology/lifestyle	0.02	0.074
finance/investments/future	0.02	-0.009
mind	0.02	-0.043
weather/season/summer	0.02	0.065
anatomy/body regions/extremities/arm	0.02	0.088
family/family structure/grandparents/grandma	0.02	0.033
family/family structure/spouse	0.02	0.002
family/marital status/single person	0.02	0.021
human resources/education, training and development/education/basic training/basic military training	0.02	0.011
physics/mechanics	0.02	-0.020
anatomy/body regions/extremities/arm/hand	0.02	.094*
family/family structure/child/daughter	0.02	-0.008
food/meals	0.02	.110*
geometry/perspective	0.02	0.058
literature	0.02	0.026
prosecution of law	0.02	0.002
sports/sports by type/running	0.02	-.131**
sports/sports personnel	0.02	-0.019
behavior and behavior mechanisms/emotion/anger	0.02	0.040
change/change schools	0.02	-0.051
finances/money	0.02	-0.018
life/social life	0.02	0.041
occupation/recruiter	0.02	-0.067
solution	0.02	0.053
sports/sports by type/walking	0.02	-0.076
sports/sports personnel/coach	0.02	-0.027
anatomy/head/face	0.02	0.001
change/huge change	0.02	0.023
economics/property/transfer	0.02	-0.017
family/family structure/spouse/wife	0.02	0.008
finances/investments	0.02	-0.014
human resources/career/skill/management	0.02	0.073
human resources/career/skill/university	0.02	0.074
individual	0.02	-0.020
information	0.02	0.030
mind/open mind	0.02	-0.012
occupation/instructor	0.02	0.047
occupation/medical personnel	0.02	0.009

occupation/white collar workers/executives	0.02	0.025
place of business/store/shop	0.02	-.096*
school/switch schools	0.02	-0.007
sports/sports by type/ball games/football/passion	0.02	-0.015
academics/test	0.01	0.052
economics/land use	0.01	0.028
finance/trust	0.01	0.029
finances/loss	0.01	0.046
hardship	0.01	0.036
human resources/career/hiring	0.01	0.078
human resources/education, training and development/program	0.01	0.037
life/new life	0.01	-0.014
literature/letter	0.01	0.045
options	0.01	0.061
physics/mechanics/power	0.01	-0.034
place of business/office	0.01	0.009
research	0.01	.101*
sports/sports by type/gym	0.01	0.064
sports/sports by type/horse sports	0.01	-0.018
sports/sports by type/sports team	0.01	-0.021
time/hard time	0.01	-.094*
understanding	0.01	0.047
weather/season/winter	0.01	-0.005
work/work place	0.01	0.022
anatomy/body regions/extremities/leg	0.01	-0.063
behavior mechanisms/behavior	0.01	0.011
change/drastic change	0.01	-.108*
dwelling/shelter	0.01	0.061
effect	0.01	0.077
family/family structure/child/new child	0.01	0.009
family/family structure/grandparents/grandfather	0.01	0.021
finances/insurance	0.01	-0.012
finances/investments/future	0.01	0.013
greatness/great people	0.01	-0.066
issue	0.01	-0.028
life/normal life	0.01	0.060
occupation/medical personnel/nursing	0.01	0.032
place of business/clubs	0.01	0.021
report	0.01	-0.002
sports/sports by type/horse sports/jumping	0.01	0.019
vehicle/truck	0.01	0.070
economics/land use/rent	0.01	0.058

finances/fees and charges	0.01	0.075
finances/loans	0.01	.102*
geometry/shapes	0.01	-0.039
military/air force/united states air force	0.01	-0.047
military/army	0.01	0.028
occupation/teacher/new teachers	0.01	0.022
person/new person	0.01	-0.023
physics/mechanics/shock	0.01	0.010
place of business/store/mall	0.01	-0.063
process/manufacturing process	0.01	-0.042
project	0.01	0.067
prosecution of law/mistakes	0.01	-0.023
sports/sports personnel/coach/new coach	0.01	0.000
structural engineering/building/floor	0.01	.096*
weather/precipitation	0.01	-0.011
Count	14.70	.140**
** Correlation is significant at the 0.01 level (2-tailed).		
* Correlation is significant at the 0.05 level (2-tailed).		

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.720a	0.519	0.103	16.394	0.519	1.248	211	244	0.047

Table G8: Form A, Question 2 (V17.0) with AFQT—Untrained

Type: Situational

Item: Adapting to Stress and Change (Accepts Feedback)

Facet: Accepting criticism



Category by Size	Mean	Correlations with AFQT
report	1.07	0.024
situation	1.04	-0.007
work	1.04	.132**
recipient	0.97	.203**
issues	0.95	0.082
solution	0.93	.233**
problem	0.76	.129**
outcome	0.75	-0.056
options	0.68	0.046
factors	0.64	0.052
time	0.62	-0.018
feedback	0.60	0.067
geometry	0.49	.201**
action	0.45	.150**
steps	0.44	0.062
geometry/complex	0.39	.163**
help	0.37	-0.012
person	0.37	-0.005
action/course of action	0.34	.113*
resources	0.34	0.082
idea	0.28	0.036
occupation	0.26	.133**
people	0.23	-0.014
information	0.23	0.010
change	0.22	0.061
questions	0.21	0.065
finance	0.19	-0.008
prosecution of law	0.19	-0.038
opinion	0.18	0.076

prosecution of law/mistakes	0.17	-0.065
reason	0.17	.142**
research	0.17	.112*
point	0.16	-0.026
details	0.14	0.012
job	0.14	0.003
review	0.14	0.085
understanding	0.13	-0.014
respons	0.13	-0.014
anatomy	0.12	0.018
criticism	0.12	.097*
human resources	0.12	0.030
standards	0.11	0.038
economics	0.11	0.085
individual	0.11	.097*
mind	0.11	.106*
task	0.11	-0.028
geometry/perspective	0.10	.105*
project	0.10	.112*
goal	0.09	0.083
human resources/education, training and development	0.09	0.055
process	0.09	.094*
complexity	0.08	-0.041
effect	0.08	-0.067
occupation/supervisor	0.08	0.032
behavior and behavior mechanisms	0.07	0.070
economics/property	0.07	0.004
part	0.07	-0.035
communication	0.07	0.058
solution/new solution	0.07	0.039
criticism/constructive criticism	0.06	0.036
finance/check	0.06	-0.045
anatomy/eyes	0.06	0.002
occupation/white collar workers	0.06	0.013
occupation/white collar workers/leadership	0.06	0.009
anatomy/head	0.05	-0.002
behavior and behavior mechanisms/emotion	0.05	0.025
behavior mechanisms	0.05	-0.027
structural engineering	0.05	0.045
geometry/angle	0.04	0.086
human resources/education, training and development/knowledge	0.04	0.032
structural engineering/building	0.04	0.038

words	0.04	0.065
learning	0.04	-0.010
office workers	0.04	0.058
research/data	0.03	0.090
family	0.03	-0.014
finance/trust	0.03	-0.037
human resources/education, training and development/challenge	0.03	0.027
national service	0.03	0.069
office workers/team	0.03	0.029
anatomy/head/face	0.03	0.048
behavior mechanisms/attitude	0.03	-0.006
finance/gain	0.03	0.013
national service/draft	0.03	0.068
simply	0.03	-0.041
economics/property/assignment	0.02	-0.074
finance/investments	0.02	0.018
geometry/complex/complex situation	0.02	-0.047
person/personal opinion	0.02	0.035
property	0.02	-0.001
finance/cost	0.02	0.071
finance/investments/future	0.02	0.010
geometry/holes	0.02	0.033
human resources/benefit	0.02	0.030
research/scientific method	0.02	0.025
Count	20.15	.284**
** Correlation is significant at the 0.01 level (2-tailed).		
* Correlation is significant at the 0.05 level (2-tailed).		

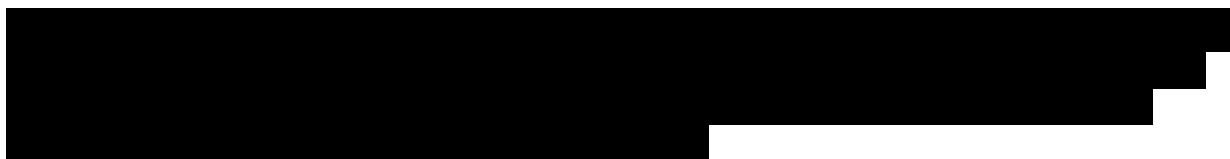
Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.599a	0.358	0.187	15.61	0.358	2.089	96	359	0

Table G9: Form A, Question 3 (V17.0) with AFQT—Untrained

Type: Situational

Item: Displaying Integrity, Ethical Behavior, and Professionalism (Integrity)

Facet: Accepts responsibility for own actions



Category by Size	Mean	Correlations with AFQT
situation	0.66	0.065
actions	0.48	0.066
task	0.45	0.081
people	0.44	-0.037
problem	0.35	0.045
integrity	0.33	.106*
behavior and behavior mechanisms	0.33	0.067
help	0.30	0.068
behavior and behavior mechanisms/emotion	0.29	.094*
work	0.24	-0.007
outcome	0.23	.100*
consequences	0.23	0.054
finance	0.21	0.067
team	0.18	.118*
person	0.18	-.120*
job	0.15	-.101*
physics	0.15	0.071
occupation	0.14	0.041
feel	0.13	-0.005
physics/constraints	0.13	0.074
negatives	0.12	-0.001
military	0.12	.100*
military/air force	0.11	.106*
values	0.11	.101*
impact	0.10	.106*
time	0.10	.094*
values/core values	0.09	.107*
behavior and behavior mechanisms/emotion/frustration	0.09	.135**
life	0.09	-0.058

negatives/negative impact	0.08	-0.012
finance/trust	0.08	0.046
occupation/supervisor	0.08	0.041
human resources	0.08	-0.061
factors	0.08	0.049
learning	0.08	0.046
anatomy	0.08	0.038
prosecution of law	0.08	0.062
solution	0.08	0.068
anatomy/head	0.07	0.037
behavior and behavior mechanisms/emotion/frustration/increase frustration	0.06	.093*
part	0.06	0.001
military/air force/air force value	0.06	.151**
family	0.05	-0.057
prosecution of law/mistake	0.05	.094*
anatomy/head/face	0.04	0.030
occupation/white collar workers	0.04	-0.027
behavior and behavior mechanisms/social psychology	0.04	0.041
error	0.04	.184**
individual	0.04	0.016
behavior and behavior mechanisms/emotion/guilt	0.04	-0.017
effect	0.04	0.044
feedback	0.04	0.019
finance/accountability	0.04	0.073
human resources/career	0.04	-0.062
increase	0.04	.110*
position	0.04	0.002
behavior and behavior mechanisms/social psychology/morals	0.03	0.050
finance/investments	0.03	0.037
measuring instrument	0.03	0.012
finance/investments/future	0.03	0.061
wronge	0.03	-0.015
learning/reinforcement	0.03	0.057
occupation/white collar workers/leadership	0.03	-0.015
house furnishings	0.03	-0.007
learning/reinforcement/punishment	0.03	0.052
family/family structure	0.02	-0.025
human resources/education, training and development	0.02	-0.046
idea	0.02	0.064
measuring instrument/measure	0.02	0.019
building	0.02	0.028
family/family structure/parents	0.02	-0.005

measuring instrument/measure/rules	0.02	0.004
economics	0.02	0.014
house furnishings/furniture	0.02	-0.013
sports	0.02	0.049
behavior and behavior mechanisms/emotion/anger	0.02	-0.064
finance/check	0.02	0.042
human resources/education, training and development/education	0.02	-0.038
issue	0.02	0.048
level	0.02	0.059
sports/sports by type	0.02	0.053
task/incorrect task	0.02	0.032
behavior and behavior mechanisms/character	0.02	-0.041
behavior and behavior mechanisms/emotion/fear	0.02	0.065
house furnishings/furniture/handle	0.02	-0.007
human resources/benefit	0.02	-0.033
information	0.02	0.067
learning/learning experience	0.02	0.054
occupation/white collar workers/employee	0.02	-0.026
prosecution of law/evidence	0.02	-0.025
prosecution of law/evidence/reputation	0.02	-0.025
team/team members	0.02	0.043
completey	0.01	0.016
finance/charge	0.01	-0.025
finance/gain	0.01	0.080
food	0.01	-0.050
literature	0.01	-0.065
people/impact people	0.01	0.031
report	0.01	-0.001
actions/disciplinary actions	0.01	0.009
finance/cost	0.01	-0.054
finance/money	0.01	-0.017
human resources/career/skill	0.01	-0.064
behavior and behavior mechanisms/social psychology/morals/ethics	0.01	-0.017
family/family structure/parents/father	0.01	-0.032
human resources/education, training and development/knowledge	0.01	-0.015
human resources/skill	0.01	.112*
integrity/value integrity	0.01	-0.001
literature/drama	0.01	-0.066
military/air force/air force core	0.01	-0.064
sports/sports by type/walking	0.01	0.075
Count	9.16	.208**
** Correlation is significant at the 0.01 level (2-tailed).		

* Correlation is significant at the 0.05 level (2-tailed).

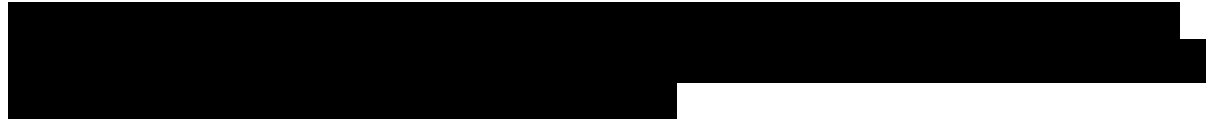
Model Summary								
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics			
					R Square Change	F Change	df1	Sig. F Change
1	.547 ^a	0.299	0.073	16.664	0.299	1.325	111	0.03

Table G10: Form A, Question 4 (V17.0) with AFQT—Untrained

Type: Behavioral

Item: Openness (Openness to Alternative Views)

Facet: Having a willingness to overcome one's own interests for the needs of others



Category by Size	Mean	Correlations with AFQT
situation	0.38	0.040
work	0.30	0.082
school	0.30	-0.067
occupation	0.28	.194**
time	0.27	0.020
people	0.24	-0.058
outcome	0.24	-0.069
family	0.20	-0.029
opinions	0.19	.155**
family/family structure	0.16	-0.027
idea	0.16	-0.004
school/k 12	0.16	-0.009
person	0.15	-0.015
human resources	0.15	0.048
sports	0.15	-0.031
academics	0.14	0.090
class	0.13	0.012
project	0.13	.126**
sports/sports by type	0.13	-0.043
anatomy	0.12	0.038
job	0.12	-0.049
group	0.11	.206**
behavior mechanisms	0.11	0.013
family/family structure/parents	0.10	-0.055
home	0.10	-0.058
finance	0.10	.096*
human resources/education, training and development	0.10	0.076
occupation/white collar workers	0.10	.111*
behavior mechanisms/personality	0.10	0.017
finances	0.09	-0.028

military	0.09	-0.044
office workers	0.09	0.058
office workers/crew	0.09	0.046
family/family structure/child	0.08	-0.048
geometry	0.08	-0.044
help	0.08	-0.019
side	0.08	-0.004
occupation/white collar workers/leadership	0.08	.112*
food	0.08	-0.004
structural engineering	0.08	0.091
geometry/perspective	0.07	-0.025
structural engineering/building	0.07	0.077
place of business	0.07	0.015
problem	0.07	-0.078
sports/sports by type/ball games	0.07	-0.032
human resources/education, training and development/education	0.07	0.050
religion	0.06	0.025
topic	0.06	0.068
clothes	0.06	-0.083
academics/students	0.06	0.043
anatomy/body regions	0.06	0.065
family/family structure/parents/mother	0.06	-0.041
human resources/career	0.05	-0.043
vehicles	0.05	-0.026
arts, design & crafts	0.05	-0.051
geographical location	0.05	-0.020
part	0.05	0.047
project/group project	0.05	0.091
economics	0.05	0.002
game	0.05	-0.030
psychology	0.05	0.085
finance/money	0.05	0.032
psychology/behavior and behavior mechanisms	0.05	0.088
anatomy/body regions/extremities	0.05	0.036
solution	0.05	.110*
home/household	0.04	-0.009
position	0.04	0.060
religion/christianity	0.04	0.037
politics	0.04	.093*
vehicles/car	0.04	-0.011
place of business/retail store	0.04	-0.050
anatomy/body regions/extremities/arm	0.03	0.025

military/air force	0.03	0.017
occupation/manager	0.03	0.009
physics	0.03	0.051
sports/sports by type/ball games/football	0.03	0.028
anatomy/head	0.03	0.024
arts, design & crafts/picture	0.03	-0.077
clothes/shirt	0.03	-0.059
family/family structure/child/brother and sister	0.03	-0.040
academics/grade	0.03	0.077
anatomy/sense organs	0.03	0.010
factors	0.03	0.029
family/family structure/parents/father	0.03	-0.034
geographical location/america	0.03	0.018
military/battalion	0.03	-0.018
anatomy/body regions/extremities/arm/hand	0.03	0.040
anatomy/sense organs/eye	0.03	0.007
family/family structure/spouse	0.03	0.001
academics/research	0.03	0.084
information	0.03	0.073
occupation/drivers	0.03	0.059
prosecution of law	0.03	0.019
research	0.03	-0.011
behavior and behavior mechanisms	0.02	-0.001
economics/property	0.02	-0.016
geographical location/america/united states	0.02	0.064
military/battalion/officers	0.02	-0.024
occupation/white collar workers/employee	0.02	0.037
sports/sports by type/walking	0.02	-.130**
academics/testing	0.02	-0.038
human resources/career/skill	0.02	-0.036
human resources/education, training and development/education/basic training	0.02	0.057
religion/christianity/missionary	0.02	.106*
religion/god	0.02	-.106*
academics/research/study	0.02	0.055
family/family structure/child/brother and sister/sister	0.02	-0.019
finance/investments	0.02	-0.061
finance/investments/future	0.02	-0.061
finances/money	0.02	-0.018
place of business/restaurant	0.02	0.091
psychology/behavior and behavior mechanisms/social psychology	0.02	.099*
sports/coach	0.02	-0.075
academics/students/graduation	0.02	-0.016

anatomy/body regions/head	0.02	0.045
behavior and behavior mechanisms/emotion	0.02	0.001
clothes/shirt/flight shirt	0.02	-0.038
details	0.02	0.024
feedback	0.02	0.067
geographical location/america/united states/us states	0.02	0.040
place of business/retail store/shop	0.02	-0.053
family/family structure/child/brother and sister/brother	0.02	-0.065
family/marital status	0.02	0.023
food/meals	0.02	-0.049
human resources/career/hiring	0.02	0.026
occupation/supervisor	0.02	-0.015
occupation/teacher	0.02	0.032
sports/sports by type/ball games/football/passions	0.02	-0.018
sports/sports by type/running	0.02	0.007
family/family structure/child/daughter	0.01	-0.022
family/marital status/marriage	0.01	0.002
finance/cost	0.01	.113*
finances/investments	0.01	-0.003
finances/scholarships	0.01	-0.002
geographical location/asia	0.01	-0.033
human resources/education, training and development/program	0.01	-0.034
military/battalion/officers/captain	0.01	-0.044
occupation/artist	0.01	0.043
occupation/recruiter	0.01	0.016
occupation/white collar workers/leadership/element leader	0.01	.112*
politics/ideology	0.01	0.015
psychology/behavior and behavior mechanisms/emotion	0.01	0.003
psychology/behavior and behavior mechanisms/social	0.01	.107*
psychology/morals		
sports/sports by type/ball games/baseball	0.01	-0.080
vehicles/truck	0.01	-0.013
anatomy/body regions/extremities/leg	0.01	0.028
arts, design & crafts/graphic arts	0.01	0.009
class/government class	0.01	0.040
finance/trust	0.01	.130**
food/meals/dinner	0.01	0.008
geographical location/europe	0.01	-0.009
idea/ideas conflict	0.01	.132**
issue	0.01	0.066
occupation/coworker	0.01	0.032
occupation/engineer	0.01	0.050
occupation/film crew	0.01	-0.001

physics/heat	0.01	0.039
physics/optics	0.01	-0.026
psychology/behavior and behavior mechanisms/characters	0.01	0.007
sports/sports by type/ball games/basketball	0.01	0.008
structural engineering/building/flooring	0.01	0.014
work/work load	0.01	.113*
arts, design & crafts/graphic arts/painting	0.01	0.011
clothes/shirt/shirt design	0.01	-0.010
clothes/shoes	0.01	0.044
economics/commerce	0.01	0.005
economics/property/assignment	0.01	0.009
economics/property/real property	0.01	-0.034
economics/statistics	0.01	0.024
finance/charge	0.01	0.060
finances/credit	0.01	-0.004
finances/funding	0.01	0.047
finances/investments/security	0.01	-0.002
food/animal origin	0.01	-0.081
food/meals/lunch	0.01	-0.054
food/snacks	0.01	0.063
geometry/perspective/drawing	0.01	-0.006
human resources/career/skill/communication skills	0.01	-0.072
human resources/education, training and development/knowledge	0.01	0.030
occupation/film crew/director	0.01	-0.005
occupation/medical personnel	0.01	-0.019
occupation/white collar workers/leadership/student leaders	0.01	.109*
prosecution of law/evidence	0.01	-0.026
psychology/behavior and behavior mechanisms/social	0.01	0.071
psychology/morals/ethics		
report	0.01	0.017
school/school project	0.01	0.018
sports/sports by type/ball games/football/soccer	0.01	0.028
structural engineering/building/wall	0.01	0.019
time/waste time	0.01	-0.015
Count	20.15	.117*
** Correlation is significant at the 0.01 level (2-tailed).		
* Correlation is significant at the 0.05 level (2-tailed).		

Model Summary								
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics			

					R Square Change	F Change	df1	df2	Sig. F Change
1	.686a	0.471	0.098	16.441	0.471	1.263	188	267	0.04

Table G11: Form A, Question 5 (V17.0) with AFQT—Untrained

Type: Situational

Item: High Drive (High Motivation/Drive)

Facet: Setting and accomplishing challenging goals



Category by Size	Mean	Correlations with AFQT
work	0.81	0.048
goal	0.62	-.122**
time	0.50	0.084
issues	0.46	0.024
employee assessments	0.41	.317**
situation	0.41	0.016
factors	0.40	0.081
increas	0.38	.114*
outcome	0.36	-0.068
employee assessments/productivity	0.35	.264**
work/work productivity	0.29	0.077
day	0.22	0.012
help	0.21	-0.088
task	0.21	.160**
job	0.19	-0.002
economics	0.14	.157**
occupation	0.14	0.049
plan	0.14	0.040
people	0.13	-0.044
employee assessments/increasing productivity	0.13	.221**
family	0.13	-.112*
areas	0.12	.151**
human resources	0.12	0.004
person	0.12	0.052
life	0.11	-0.030
step	0.11	.105*
measuring instrument	0.11	0.065
health and well being	0.10	.103*
schedule	0.10	0.008
goal/personal goal	0.09	0.057

economics/property	0.07	.094*
finance	0.07	0.041
food	0.07	0.054
measuring instrument/balance	0.07	0.038
pointer	0.07	0.020
academics	0.07	0.020
breaks	0.06	-0.007
place of business	0.06	0.090
place of business/office	0.06	.108*
work/work productivity/increase work productivity	0.06	0.075
human resources/education, training and development	0.06	0.008
food/meals	0.05	0.048
psychological phenomena and processes	0.05	.115*
sports	0.05	-0.049
time/personal time	0.05	-0.051
amount	0.05	.128**
place of business/office/office worker	0.05	.095*
psychological phenomena and processes/mental processes	0.05	.097*
sports/sports by type	0.05	-0.032
work/work place	0.05	0.065
psychological phenomena and processes/mental processes/learning	0.05	0.082
anatomy	0.05	-0.024
behavior mechanisms	0.05	-0.053
occupation/supervisor	0.05	0.009
occupation/white collar workers	0.05	-0.016
place of business/office/office worker/crew	0.05	.095*
problem	0.05	-0.018
anatomy/head	0.05	-0.022
food/meals/lunch	0.05	0.046
human resources/career	0.05	0.036
work/work day	0.04	.140**
quality	0.04	0.080
work/work load	0.04	0.054
academics/study	0.04	-0.056
health	0.04	0.021
health and well being/sleep	0.04	0.030
hours	0.04	0.042
occupation/white collar workers/leadership	0.04	-0.023
prosecution of law	0.04	0.077
health and well being/personal life	0.04	0.073
position	0.04	0.039
behavior and behavior mechanisms	0.03	-0.028

feedback	0.03	0.029
economics/properties	0.03	0.046
finances	0.03	-0.025
academics/testing	0.03	0.085
behavior mechanisms/motivation	0.03	-0.004
family/family structure	0.03	-.110*
measuring instrument/measure	0.03	.123**
occupation/planning	0.03	0.071
part	0.03	0.024
produce	0.03	0.061
time/waste time	0.03	0.089
geometry	0.03	0.019
goal/small goals	0.03	0.070
finance/money	0.02	-0.016
greatness	0.02	0.038
psychological phenomena and processes/mental processes/learning/practice	0.02	0.056
behavior and behavior mechanisms/emotion	0.02	-0.060
economics/properties/improvement	0.02	0.078
human resources/education, training and development/education	0.02	-0.063
resources	0.02	.110*
solution	0.02	0.086
time/time frame	0.02	0.012
economics/statistics	0.02	-0.016
goal/set goals	0.02	-0.076
human resources/benefit	0.02	-0.019
prosecution of law/mistakes	0.02	-0.082
research	0.02	0.049
sports/sports by type/gym	0.02	-0.003
work/work time	0.02	0.049
behavior mechanisms/attitude	0.02	-0.073
economics/statistics/graduation	0.02	-0.012
family/family structure/child	0.02	-.112*
geometry/perspective	0.02	-0.019
health/healthy lifestyle	0.02	0.008
human resources/career/performance reviews	0.02	0.020
human resources/education, training and development/knowledge	0.02	0.050
sports/sports by type/walking	0.02	-0.031
anatomy/head/face	0.02	-0.015
day/daily tasks	0.02	-0.057
finance/check	0.02	0.089
health and well being/exercise	0.02	0.030
human resources/career/performance reviews/promotion	0.02	0.020

idea	0.02	0.019
psychological phenomena and processes/mental processes/learning/reinforcements	0.02	0.029
work/work hours	0.02	0.086
economics/waste	0.01	.154**
finance/investments	0.01	-0.086
finance/investments/future	0.01	-0.086
goal/setting goals	0.01	-0.004
human resources/career/skill	0.01	0.015
human resources/education, training and development/challenge	0.01	0.009
human resources/education, training and development/education/basic training	0.01	-0.035
information	0.01	-0.004
work/work at home	0.01	-.095*
employee assessments/productivity/overall productivity	0.01	.114*
family/family structure/spouse	0.01	0.002
health and well being/diet	0.01	0.050
human resources/wellness	0.01	0.010
occupation/manager	0.01	-0.036
occupation/mentor	0.01	0.060
prosecution of law/trial	0.01	.109*
time/time management	0.01	-0.028
work/better work	0.01	0.008
work/work schedule	0.01	0.026
breaks/break down	0.01	0.029
employee assessments/productivity/productivity rate	0.01	-0.023
family/family structure/parents	0.01	-0.086
family/marital status	0.01	0.032
finance/cost	0.01	0.082
finances/check	0.01	0.034
food/meals/lunch/shorter lunch	0.01	-0.025
goal/weekly goals	0.01	-0.017
health/physical health	0.01	0.028
occupation/white collar workers/employee	0.01	0.011
person/productive person	0.01	0.010
plan/game plan	0.01	0.005
work/work goals	0.01	0.009
work/work space	0.01	0.007
Count	22.73	.286**
** Correlation is significant at the 0.01 level (2-tailed).		
* Correlation is significant at the 0.05 level (2-tailed).		

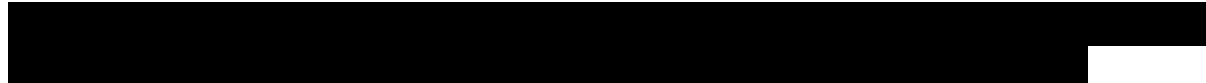
Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.708a	0.501	0.26	14.887	0.501	2.082	148	307	0

Table G12: Form A, Question 6 (V17.0) with AFQT—Untrained

Type: Behavioral

Item: Perseverance (Perseverance)

Facet: Persisting in the face of obstacles



Category by Size	Mean	Correlations with AFQT
human resources	0.54	-0.067
human resources/education, training and development	0.47	-0.077
human resources/education, training and development/challenge	0.43	-0.085
work	0.42	.141**
school	0.41	0.055
time	0.40	.114*
occupation	0.37	0.080
sports	0.36	0.001
sports/sports by type	0.30	0.020
family	0.30	-0.021
school/k 12	0.27	0.007
year	0.27	.132**
academics	0.23	.105*
day	0.23	-0.010
life	0.22	0.030
occupation/white collar workers	0.22	.093*
situation	0.22	-0.044
job	0.21	0.044
family/family structure	0.21	0.029
outcome	0.19	-0.061
crew	0.19	-0.030
occupation/white collar workers/staffing	0.18	0.070
help	0.18	-0.009
home	0.17	-0.034
military	0.16	0.005
anatomy	0.16	-.101*
economics	0.16	0.038
friends	0.15	-0.066
class	0.15	.144**
family/family structure/parents	0.14	0.048
learning	0.14	0.001
sports/sports by type/ball games	0.12	-0.022

finance	0.12	0.020
military/air force	0.12	0.013
weather	0.11	0.042
hours	0.11	.097*
college	0.11	.144**
weather/season	0.11	0.032
year/senior year	0.10	0.062
human resources/career	0.10	0.070
family/family structure/child	0.10	-0.033
finances	0.10	0.044
learning/practice	0.09	-0.006
place of business	0.09	0.042
problem	0.09	-0.003
academics/grade	0.09	.109*
sports/sports by type/running	0.08	-0.008
anatomy/body regions	0.08	-0.070
family/family structure/parents/mother	0.08	0.005
food	0.08	0.070
academics/research	0.08	.125**
academics/research/study	0.08	.125**
economics/property	0.07	0.072
human resources/education, training and development/education	0.07	-0.003
person	0.07	-0.059
academics/students	0.07	0.008
anatomy/head	0.07	-.104*
building	0.07	.102*
sports/sports personnel	0.07	-0.060
vehicle	0.07	0.057
academics/exam	0.07	0.011
anatomy/body regions/extremities	0.06	-0.057
economics/graduation	0.06	-0.012
finance/money	0.06	0.016
sports/sports by type/ball games/football	0.06	0.032
sports/sports personnel/coach	0.06	-0.075
occupation/manager	0.06	0.040
sales	0.06	0.056
outdoor activities	0.06	-0.025
place of business/retail store	0.06	-0.028
state	0.06	0.005
physics	0.05	0.081
family/family structure/parents/father	0.05	0.073
sales/order	0.05	0.064

factors	0.05	-.116*
occupation/white collar workers/leadership	0.05	0.041
behavior and behavior mechanisms	0.05	0.011
human resources/career/skill	0.05	0.071
outdoor activities/game	0.05	-0.038
home/household	0.04	-0.021
human resources/career/hiring	0.04	0.061
behavior and behavior mechanisms/emotion	0.04	0.008
movies	0.04	0.052
position	0.04	-0.005
movies/film genres	0.04	0.040
clothes	0.04	-0.017
economics/property/real property	0.04	0.030
family/family structure/child/brother and sister	0.04	-0.073
occupation/white collar workers/staffing/work environment	0.04	0.072
sports/sports by type/gym	0.04	-0.013
vehicle/car	0.04	0.022
economics/property/real property/betterment	0.03	0.047
human resources/career/hiring/full time	0.03	.100*
academics/students/freshmen	0.03	-0.047
anatomy/body regions/extremities/arm	0.03	-.102*
anatomy/body regions/extremities/legs	0.03	0.026
geometry	0.03	-0.054
place of business/retail store/shop	0.03	0.054
weather/season/summer	0.03	0.054
finance/investments	0.03	0.053
sports/sports by type/walking	0.03	-0.011
anatomy/head/face	0.03	-0.051
military/troop	0.03	-0.030
movies/film genres/musical	0.03	0.005
sports/sports by type/ball games/basketball	0.03	-0.036
finance/investments/future	0.03	0.055
food/meals	0.03	-0.021
members	0.03	.100*
sports/championship	0.03	-0.078
academics/students/freshmen/freshmen year	0.02	-0.032
geometry/shapes	0.02	-0.039
human resources/career/skill/management	0.02	0.079
human resources/education, training and development/education/military training	0.02	-0.089
place of business/club	0.02	0.039
sports/sports by type/combat sports	0.02	.095*
time/hard time	0.02	-0.025

weather/season/fall	0.02	0.005
academics/exam/pt test	0.02	0.000
anatomy/body regions/extremities/arm/hand	0.02	-0.056
family/family structure/child/brother and sister/sister	0.02	-0.010
family/marital status	0.02	0.019
food/meals/lunch	0.02	0.013
human resources/benefit	0.02	0.046
human resources/education, training and development/education/military training/basic military training	0.02	-0.087
idea	0.02	0.071
occupation/supervisor	0.02	0.040
occupation/white collar workers/staffing/work environment/communication	0.02	.115*
sports/sports by type/ball games/baseball	0.02	-0.049
sports/sports by type/combat sports/wrestling	0.02	0.081
sports/sports by type/horse sports	0.02	-0.021
time/run time	0.02	-0.029
family/family structure/child/brother and sister/brother	0.02	-.094*
family/family structure/grandparents	0.02	0.076
human resources/education, training and development/education/basic training	0.02	-0.056
issue	0.02	-0.004
sports/sports by type/ball games/football/passing	0.02	0.040
sports/sports by type/ball games/football/soccer	0.02	0.005
sports/sports by type/horse sports/cross country	0.02	-0.042
anatomy/body regions/extremities/legs/foot	0.02	0.067
anatomy/body regions/head	0.02	0.000
behavior and behavior mechanisms/emotion/fear	0.02	-0.011
clothes/shorts	0.02	0.023
economics/property/transfer	0.02	0.067
family/family structure/spouse	0.02	0.011
family/marital status/single person	0.02	-0.021
finances/credit	0.02	0.004
human resources/education, training and development/knowledge	0.02	-0.028
information	0.02	0.007
occupation/medical personnel	0.02	-0.008
occupation/teacher	0.02	0.028
occupation/white collar workers/staffing/work environment/company events	0.02	-0.051
occupation/writer	0.02	-0.026
vehicle/truck	0.02	-0.048
finance/gain	0.01	0.054
human resources/career/skill/university	0.01	-0.012

job/old job	0.01	0.051
military/air force/united states air force	0.01	-0.008
military/troop/officer	0.01	-0.081
place of business/restaurant	0.01	.098*
school/community college	0.01	0.072
solution	0.01	0.031
sports/sports by type/lift weights	0.01	0.052
building/floor	0.01	.117*
crew/team members	0.01	0.007
economics/rent	0.01	0.063
family/family structure/grandparents/grandma	0.01	0.036
finances/fees and charges	0.01	-0.037
finances/investments	0.01	0.003
human resources/career/skill/management/business management	0.01	0.067
human resources/education, training and development/program	0.01	0.042
military/troop/officer/captain	0.01	-.096*
occupation/medical personnel/nursing	0.01	-0.010
occupation/white collar workers/staffing/time work	0.01	0.071
occupation/white collar workers/staffing/work load	0.01	-0.003
physics/force and energy	0.01	-0.090
school/school year	0.01	0.003
sports/sports by type/athletic	0.01	0.027
sports/sports by type/sports team	0.01	0.013
weather/season/spring	0.01	0.075
weather/season/winter	0.01	0.037
anatomy/body regions/extremities/arm/shoulder	0.01	-0.024
anatomy/body regions/extremities/legs/knee	0.01	0.019
anatomy/body regions/hair	0.01	-0.084
clothes/clothing accessories	0.01	-0.028
crew/varsity team	0.01	-0.050
economics/property/real property/betterment/better player	0.01	0.005
economics/property/transfer/assignment	0.01	0.041
feedback	0.01	0.045
finances/scholarship	0.01	0.015
home/apartment	0.01	0.045
hours/extra hours	0.01	-0.010
human resources/career/hiring/full time/school full time	0.01	0.079
human resources/education, training and development/challenge/challenge part	0.01	-0.019
mathematics	0.01	0.024
movies/film genres/musical films	0.01	0.040
occupation/director	0.01	-0.010
occupation/instructor	0.01	-0.078

outdoor activities/backpacks	0.01	0.029
sports/sports by type/aquatic sports	0.01	0.032
sports/sports by type/ball games/baseball/softball	0.01	-0.002
sports/sports by type/ball games/basketball/play basketball	0.01	0.006
sports/sports by type/ball games/football/football season	0.01	0.041
sports/sports by type/ball games/volleyball	0.01	-0.031
sports/sports by type/shooting	0.01	-0.016
vehicle/trailer	0.01	.096*
Count	29.34	.128**
** Correlation is significant at the 0.01 level (2-tailed).		
* Correlation is significant at the 0.05 level (2-tailed).		

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.720a	0.518	0.13	16.146	0.518	1.335	203	252	0.015

Table G13: Correlations and Regression Model Summary of Interview Ratings Using Text Variables from Modeler V18.2.1 Using Stream Developed in V17.0 (Form A, Question 2) — Untrained

Type: Situational

Item: Adapting to Stress and Change (Accepts Feedback)

Facet: Accepting criticism



Category by Size	Mean	Correlation with Avg. Human Ratings
report	0.54	.125**
situation	0.52	0.009
work	0.51	.135**
recipient	0.49	.125**
issues	0.48	0.053
solution	0.46	.107*
problem	0.38	.122**
outcome	0.37	0.024
options	0.34	.095*
factors	0.32	0.082
time	0.31	0.001
feedback	0.3	.186**
steps	0.22	0.071
geometry/complex	0.19	.093*
help	0.19	0.084
person	0.17	0.025
action/course of action	0.17	.120*
resources	0.17	0.088
idea	0.14	.164**
people	0.12	0.007
information	0.11	.157**
change	0.11	0.071
questions	0.11	0.087
opinion	0.09	0.041
prosecution of law/mistakes	0.09	0.006
reason	0.08	-0.001
point	0.08	-0.037

details	0.07	-0.029
review	0.07	.096*
understanding	0.07	0.074
job	0.06	-0.045
occupation	0.06	0.036
respons	0.06	-0.078
action	0.06	.152**
research	0.06	.171**
standards	0.06	-0.003
individual	0.05	-0.003
task	0.05	0.032
project	0.05	0.062
geometry/perspective	0.05	.213**
mind	0.05	.195**
goal	0.05	0.075
complexity	0.04	-0.06
process	0.04	0.04
effect	0.04	-0.01
occupation/supervisor	0.04	0.021
part	0.04	0.086
communication	0.03	0.089
finance/check	0.03	0.013
solution/new solution	0.03	0.056
criticism/constructive criticism	0.03	-0.02
anatomy/eyes	0.03	0.073
criticism	0.03	0.049
occupation/white collar workers/leadership	0.03	-0.044
economics/property	0.03	0.092
geometry/angle	0.02	0.075
words	0.02	0.006
behavior and behavior mechanisms/emotion	0.02	-0.007
anatomy/head/face	0.02	0.009
research/data	0.02	-0.006
family	0.02	-0.071
finance/trust	0.02	0.059
learning	0.02	0.059
structural engineering/building	0.02	-0.022
anatomy/head	0.01	0.065
behavior and behavior mechanisms	0.01	.117*
behavior mechanisms/attitude	0.01	0.047
finance/gain	0.01	0.065
national service/draft	0.01	.153**
office workers/team	0.01	.153**

simply	0.01	0.03
behavior mechanisms	0.01	-0.044
economics/property/assignment	0.01	-0.082
geometry/complex/complex situation	0.01	-0.024
person/personal opinion	0.01	0.014
property	0.01	-0.044
economics	0.01	.124**
finance/cost	0.01	.124**
finance/investments/future	0.01	-0.005
geometry/holes	0.01	0.06
human resources/benefit	0.01	0.038
research/scientific method	0.01	-0.005
Count	8.73	.356**
** Correlation is significant at the 0.01 level (2-tailed).		
* Correlation is significant at the 0.05 level (2-tailed).		

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.605 a	0.366	0.225	0.4851	0.366	2.595	82	368	0

From Version 17:

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.620a	0.385	0.218	0.4874	0.385	2.305	96	354	0

Table G14: Correlations and Regression Model Summary of AFQT Using Text Variables from Modeler V18.2.1 Using Stream Developed in V17.0 (Form A, Question 2) —Untrained

Type: Situational

Item: Adapting to Stress and Change (Accepts Feedback)

Facet: Accepting criticism



Category by Size	Mean	Correlation with AFQT
report	0.54	0.045
situation	0.52	-0.01
work	0.51	.123**
recipient	0.49	.202**
issues	0.48	0.062
solution	0.46	.208**
problem	0.38	.129**
outcome	0.37	-0.073
options	0.34	0.03
factors	0.32	0.049
time	0.31	0.001
feedback	0.3	0.022
steps	0.22	0.064
geometry/complex	0.19	.158**
help	0.19	-0.025
person	0.17	-0.017
action/course of action	0.17	.105*
resources	0.17	.097*
idea	0.14	0.052
people	0.12	-0.017
information	0.11	0.003
change	0.11	0.049
questions	0.11	0.076
opinion	0.09	0.066
prosecution of law/mistakes	0.09	-0.069
reason	0.08	.144**
point	0.08	0
details	0.07	0.005
review	0.07	0.09
understanding	0.07	0.009

job	0.06	-0.009
occupation	0.06	.123**
respons	0.06	0
action	0.06	.093*
research	0.06	0.07
standards	0.06	0.014
individual	0.05	0.031
task	0.05	-0.014
project	0.05	.113*
geometry/perspective	0.05	.101*
mind	0.05	.102*
goal	0.05	0.05
complexity	0.04	-0.063
process	0.04	0.086
effect	0.04	-0.087
occupation/supervisor	0.04	0.039
part	0.04	-0.022
communication	0.03	0.062
finance/check	0.03	-0.04
solution/new solution	0.03	0.045
criticism/constructive criticism	0.03	-0.001
anatomy/eyes	0.03	0.011
criticism	0.03	0.08
occupation/white collar workers/leadership	0.03	0.017
economics/property	0.03	0.056
geometry/angle	0.02	0.085
words	0.02	0.066
behavior and behavior mechanisms/emotion	0.02	0.03
anatomy/head/face	0.02	0.034
research/data	0.02	0.089
family	0.02	-0.066
finance/trust	0.02	-0.027
learning	0.02	-0.016
structural engineering/building	0.02	-0.003
anatomy/head	0.01	-0.041
behavior and behavior mechanisms	0.01	0.081
behavior mechanisms/attitude	0.01	0
finance/gain	0.01	0.017
national service/draft	0.01	0.068
office workers/team	0.01	0.028
simply	0.01	-0.031
behavior mechanisms	0.01	-0.024
economics/property/assignment	0.01	-0.062

geometry/complex/complex situation	0.01	-0.038
person/personal opinion	0.01	0.037
properly	0.01	0.004
economics	0.01	0.082
finance/cost	0.01	0.069
finance/investments/future	0.01	-0.067
geometry/holes	0.01	0.035
human resources/benefit	0.01	0.032
research/scientific method	0.01	0.027
Count	8.73	.237**
** Correlation is significant at the 0.01 level (2-tailed).		
* Correlation is significant at the 0.05 level (2-tailed).		

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.548 a	0.3	0.149	17.405	0.3	1.986	82	380	0

From Version 17:

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.599a	0.358	0.187	15.61	0.358	2.089	96	359	0

Table G15: Correlations between Human Raters by Question—Untrained

	N (AD)	N (AM)	Mean (AD)	Mean (AN)	Correlation
Question 1	452	452	1.34	1.35	.751**
Question 2	451	449	1.49	1.57	.766**
Question 3	455	455	1.34	1.41	.642**
Question 4	457	456	1.41	1.50	.758**
Question 5	460	460	1.38	1.35	.623**
Question 6	459	459	1.36	1.33	.665**
** Correlation is significant at the 0.01 level (2-tailed).					
* Correlation is significant at the 0.05 level (2-tailed).					

Table G16: Form A, Question 1 (V18.2.1) with Human Ratings—Untrained

Type: Behavioral

Item: Adapting to Stress and Change (Adaptability)

Facet: Ability to adapt to new and changing tasks and situations



Category by Size	Mean	Correlation with Avg. Human Ratings
life	0.44	0.039
situation	0.4	0.085
time	0.38	.177**
changesd/major change	0.32	0.018
work	0.29	.295**
school	0.28	0.054
friends	0.27	-0.059
family	0.25	0.011
school/high school	0.24	-0.018
news	0.2	0.091
job	0.19	.189**
people	0.19	-0.003
family/family structure/parents	0.18	0.043
home	0.17	0.078
family/family structure/parents/mom	0.14	-0.068
military/air force	0.11	0.047
person	0.11	0.067
changesd	0.11	-0.052
home/house	0.1	-0.018
family/family structure/parents/dad	0.08	-0.031
family/family structure/parents/father	0.08	-0.034
family/family structure/parents/mother	0.08	0.054
america/united states/u.s.	0.07	0.044
finances/money	0.07	0.074
news/new friends	0.07	-0.085
office workers/team	0.06	.183**
academics/grade	0.06	0.05
academics/students	0.06	0.059
news/new school	0.06	-0.03
family/family structure/child	0.06	.111*
family/family structure/children/brother and sister/brother	0.05	-0.035

military	0.05	-0.006
changesd/big change	0.05	-0.019
starting	0.05	0.04
mental processes/learning	0.05	0.027
occupation/hotel personnel/manager	0.05	.127**
behavior and behavior mechanisms/emotions/love	0.05	-0.077
anatomy/body regions/head	0.04	-0.072
finances	0.04	0.084
vehicle/car	0.04	.116*
behavior and behavior mechanisms/emotions	0.04	-0.077
family/family structure/children/brother and sister/sister	0.04	-0.043
news/new people	0.04	0.014
greatness	0.03	-0.013
academics/students/sophomore/freshman	0.03	-0.009
academics/research	0.03	0.051
behavior and behavior mechanisms/social psychology/role	0.03	0.077
family/family structure/child/childhood	0.03	-0.013
human resources/career	0.03	0.09
news/new place	0.03	-0.013
occupation/educators	0.03	-0.052
school/school year	0.03	-0.077
sports	0.03	-0.064
house rooms/room	0.03	0.023
occupation/supervisor	0.03	.183**
school/middle school	0.03	0.009
commercial establishment/store	0.02	0.005
family/family structure/grandparents	0.02	0.005
life/lifestyle	0.02	-0.009
news/new house	0.02	-0.065
human resources/career/skills	0.02	0.045
mental processes/learning/practice	0.02	0.045
military/basic military training	0.02	-0.014
anatomy/body regions/extremities/arm/hand	0.02	-0.004
family/family structure/children/daughter	0.02	0.073
occupation/educators/instructor	0.02	.104*
occupation/white collar workers/employees	0.02	0.058
physics/perspective	0.02	-0.019
home/apartment	0.02	0.024
life/social life	0.02	.219**
occupation/white collar workers/leader	0.02	.219**
sports/sports by type/running	0.02	-0.042
changesd/huge change	0.02	0.055
house rooms/room/classroom	0.02	0.037

human resources/benefits	0.02	0.09
mental processes/learning/memories	0.02	-0.067
occupation	0.02	0.055
physics/mechanics/surface/surface preparation	0.02	0.09
school/switching schools	0.02	-0.05
sports/coach	0.02	0.037
work/work place	0.02	0.055
academics/students/sophomore	0.01	0.072
academics/test	0.01	0.053
anatomy/heart	0.01	-0.022
commercial establishment/store/shop	0.01	0.053
family/family members	0.01	-0.041
human resources/career/skills/management	0.01	.185**
news/new life	0.01	0.035
physics/mechanics/power	0.01	.147**
sports/sports by type	0.01	-0.041
sports/sports by type/ball games/football	0.01	0.016
time/hard time	0.01	-0.059
time/job times	0.01	0.035
america/united states	0.01	0.052
changesd/drastic change	0.01	-0.071
commercial establishment/office	0.01	0.073
home/house/household	0.01	-0.01
mental processes	0.01	0.011
news/new coach	0.01	.093*
news/new kid	0.01	-0.051
occupation/medical personnel/nurse	0.01	0.073
physics	0.01	-0.03
school/transfer schools	0.01	-0.03
sports/sports by type/ball games/basketball	0.01	-0.051
vehicle	0.01	.155**
vehicle/car/car accident	0.01	0.032
work/working with	0.01	.114*
life/normal life	0.01	-0.041
military/army	0.01	0.005
news/new enviroment	0.01	-0.018
news/new person	0.01	-0.018
news/new teachers	0.01	0.005
occupation/hotel personnel/server	0.01	0.051
physics/mechanics/shock	0.01	-0.018
school/school district	0.01	0.051
sports/cross	0.01	-0.018
sports/sports by type/ball games/football/soccer	0.01	0.051

sports/sports by type/gym	0.01	.097*
time/overtime	0.01	0.074
vehicle/truck	0.01	.120*
Count	6.94	.283**
** Correlation is significant at the 0.01 level (2-tailed).		
* Correlation is significant at the 0.05 level (2-tailed).		

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.706a	0.499	0.318	0.4248	0.499	2.757	120	332	0

Table G17: Form A, Question 2 (V18.2.1) with Human Ratings—Untrained

Type: Situational

Item: Adapting to Stress and Change (Accepts Feedback)

Facet: Accepting criticism



Category by Size	Mean	Correlation with Avg. Human Ratings
situation	0.52	0.013
recipient	0.48	.121*
issues	0.48	0.045
solution	0.46	.115*
problem	0.44	.106*
outcome	0.38	0.011
options	0.35	.103*
time	0.32	0.009
factors	0.3	0.072
feed/feedback	0.3	.190**
person	0.18	0.039
resources	0.17	0.084
working	0.16	-0.016
reporting	0.15	.123**
idea	0.13	.150**
details	0.07	-0.021
academics/research	0.07	.162**
going	0.06	-0.08
complex	0.06	0.066
job	0.06	-0.021
physics/perspective	0.05	.213**
goal	0.05	0.075
occupation/supervisor	0.04	0.021
occupation	0.04	-0.02
communication	0.03	0.089
solution/new solution	0.03	0.056
feed	0.03	0.07
anatomy/head/face/eyes	0.03	0.073
economics/improvement	0.03	0.092
anatomy/head/face	0.02	-0.007

behavior and behavior mechanisms/emotion	0.02	-0.007
time/timeline	0.02	-0.05
anatomy/brain/brainstorm	0.02	.131**
behavior and behavior mechanisms	0.02	.100*
family	0.02	-0.071
academics	0.01	0.047
anatomy/head	0.01	0.065
occupation/hotel personnel/guide	0.01	0.012
worker/team	0.01	.153**
working/workplace	0.01	-0.023
situation/complex situation	0.01	-0.024
anatomy/heart	0.01	-0.005
economics	0.01	.124**
Count	5.65	.279**
* Correlation is significant at the 0.05 level (2-tailed).		
** Correlation is significant at the 0.01 level (2-tailed).		

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.506a	0.256	0.177	0.4999	0.256	3.256	43	407	0

Table G18: Form A, Question 3 (V18.2.1) with Human Ratings—Untrained

Type: Situational

Item: Displaying Integrity, Ethical Behavior, and Professionalism (Integrity)

Facet: Accepts responsibility for own actions



Category by Size	Mean	Correlation with Avg. Human Ratings
situation	0.67	-0.057
prosecution of law/mistake	0.52	.151**
actions	0.47	.196**
task	0.45	.207**
people	0.44	0.034
outcome	0.37	.196**
problem	0.35	.154**
integrity	0.33	0.016
help	0.3	.146**
consequences	0.23	.131**
behavior and behavior mechanisms/emotions/frustration	0.23	.140**
work	0.21	.107*
team	0.18	.180**
person	0.18	-0.009
issue	0.15	.121**
values/core values	0.14	0.003
occupation/hotel personnel/guide/guidelines	0.14	.188**
physics/constraints	0.13	0.027
behavior and behavior mechanisms/social psychology/role	0.1	-0.024
impact	0.1	0.087
negatives/negative impact	0.08	0.062
occupation/supervisor	0.08	.150**
negatives	0.07	0.025
military/air force	0.06	-0.065
anatomy/head/face	0.05	0.026
timing	0.05	-0.019
work/coworkers	0.04	.110*
behavior and behavior mechanisms/social psychology/morals	0.04	0.04

mental processes/learning	0.04	.098*
behavior and behavior mechanisms/emotions/guilt	0.04	0.003
effect	0.04	.110*
finance/accountability	0.04	0.074
increase	0.04	.110*
values	0.03	0.061
behavior and behavior mechanisms/emotions	0.03	.192**
finance	0.03	0.057
anatomy/head	0.02	0.011
mental processes/learning/reinforcement/punishment	0.02	-0.018
work/workplace	0.02	0.04
human resources/career	0.02	0.038
human resources/career/skill	0.02	.101*
future	0.02	.171**
task/incorrect task	0.02	.120*
behavior and behavior mechanisms/character	0.02	0.014
behavior and behavior mechanisms/emotions/fear	0.02	0.014
human resources/benefit	0.02	-0.004
mental processes/learning/learning experience	0.02	0.05
physics	0.02	-0.023
team/team members	0.02	.160**
work/teamwork	0.02	0.032
behavior and behavior mechanisms/leadership	0.01	-0.049
behavior and behavior mechanisms/social psychology/morale	0.01	0.069
finance/charge	0.01	0.069
physics/mechanic	0.01	0.089
prosecution of law	0.01	0.01
team/teammates	0.01	-0.01
actions/disciplinary actions	0.01	0.049
human resources/benefit/compensation	0.01	0.005
human resources/benefit/compensation/performance	0.01	0.07
occupation/white collar workers/employee	0.01	-0.059
prosecution of law/form	0.01	0.027
anatomy	0.01	-0.072
behavior and behavior mechanisms/social psychology/morals/ethics	0.01	-0.072
military/air force/air force core	0.01	-0.048
occupation/white collar workers	0.01	0.048
timing/timeline	0.01	.120*
work/work environment	0.01	0.024
Count	6.88	.456**

Model Summary								

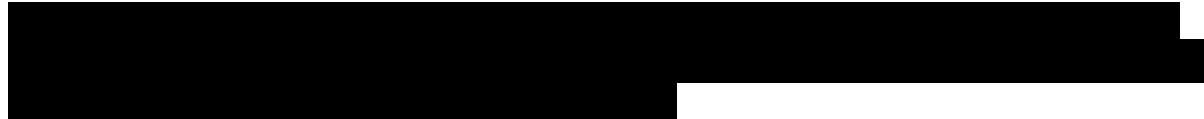
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.650a	0.422	0.322	0.4031	0.422	4.224	67	387	0

Table G19: Form A, Question 4 (V18.2.1) with Human Ratings—Untrained

Type: Behavioral

Item: Openness (Openness to Alternative Views)

Facet: Having a willingness to overcome one's own interests for the needs of others



Category by Size	Mean	Correlation with Avg. Human Ratings
time	0.28	0.014
people	0.24	-0.04
person	0.23	0.09
school	0.18	0.067
idead	0.17	.166**
school/high school	0.16	0.056
class	0.12	0.053
working	0.12	-0.027
project	0.11	.221**
office workers/team	0.08	0.059
point	0.08	0.03
family	0.07	-0.084
home	0.07	-.121**
topic	0.06	.101*
academics/students	0.06	0.012
occupation	0.06	0.02
family/family structure/parents	0.05	-.107*
project/group project	0.05	.134**
finances/money	0.05	-.137**
home/house	0.05	-0.021
news	0.05	0.027
outdoor activities/game	0.05	-0.002
military	0.04	-0.022
occupation/white collar workers/leadership	0.04	-0.014
anatomy/body regions/head	0.04	0.005
academics/research	0.04	0.068
family/family structure/parents/mom	0.04	-0.09
occupation/hotel personnel/manager	0.04	-0.027
sports	0.04	-0.016
vehicles/car	0.04	-0.016

anatomy	0.03	0.026
class/classmates	0.03	.123**
food	0.03	0.004
military/air force	0.03	-0.05
anatomy/body regions/extremities/leg/feet	0.03	-0.019
family/family structure/child	0.03	0.014
occupation/white collar workers/employees	0.03	-0.042
human resources/benefits	0.03	-0.032
anatomy/body regions/extremities/arm/hand	0.03	-0.058
clothes/shirt	0.03	0.075
family/family structure/parents/mother	0.03	-0.025
finances	0.02	-0.027
academics	0.02	-0.043
family/family structure/spouse	0.02	0.012
mental processes/learning	0.02	0.066
mental processes/learning/practice	0.02	0.039
clothes	0.02	-0.046
clothes/shirt/flight shirt/flight t-shirt	0.02	0.054
family/family structure/children/brother and sister/sister	0.02	-0.061
behavior and behavior mechanisms/emotions/love	0.02	0.01
behavior and behavior mechanisms/social psychology/role	0.02	-0.005
commercial establishment/restaurant	0.02	-0.02
economics/cost	0.02	0.041
human resources/career	0.02	0.026
occupation/artists	0.02	0.01
point/view points	0.02	0.071
vehicles/truck	0.02	-0.005
anatomy/body regions/head/face	0.02	-0.039
commercial establishment/store	0.02	0.026
commercial establishment/store/shop	0.02	-0.023
family/family structure/children/brother and sister/brother	0.02	-0.071
occupation/supervisor	0.02	-0.071
sports/sports by type	0.02	0.01
clothes/shirt/tshirt	0.01	0.026
commercial establishment	0.01	-0.061
economics	0.01	-0.009
economics/property/assignment	0.01	0.061
family/family structure/children/daughter	0.01	0.009
family/family structure/parents/dad	0.01	-.096*
human resources/career/skills	0.01	.131**
occupation/white collar workers/leaders	0.01	-0.043
sports/sports by type/ball games	0.01	-0.009
sports/sports by type/walking	0.01	0.061

working/work load	0.01	0.009
working/work place	0.01	-0.026
class/government class	0.01	0.085
economics/statistics	0.01	0.008
human resources/knowledge	0.01	0.027
mental processes/learning/memory/recall	0.01	0.008
military/battalion/officers/captain	0.01	-0.03
occupation/co-workers	0.01	0.065
occupation/film crew/props	0.01	0.027
occupation/instructor	0.01	0.008
sports/sports by type/ball games/basketball	0.01	-0.011
sports/sports by type/bat-and-ball/baseball	0.01	-0.011
vehicles	0.01	-0.011
working/teamwork	0.01	0.027
working/work environments/communication	0.01	-0.011
behavior and behavior mechanisms/emotions	0.01	0.007
behavior and behavior mechanisms/social psychology/morals	0.01	0.007
behavior and behavior mechanisms/social psychology/morals/ethics	0.01	0.007
class/classmates/fellow classmates	0.01	0.029
clothes/shoes	0.01	-0.035
economics/property/real property/waste	0.01	-0.014
food/meals	0.01	-0.057
food/meals/lunch	0.01	-0.057
human resources/benefits/vision	0.01	0.007
military/battalion/officers	0.01	-0.035
occupation/engineer	0.01	.135**
office workers/team/teammates	0.01	-0.014
sports/sports by type/swimming	0.01	0.029
working/work environments/communication/communication skills	0.01	0.029
Count	3.86	.093*
** Correlation is significant at the 0.01 level (2-tailed).		
* Correlation is significant at the 0.05 level (2-tailed).		

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.525a	0.276	0.067	0.5321	0.276	1.322	102	354	0.034

Table G20: Form A, Question 5 (V18.2.1) with Human Ratings—Untrained

Type: Situational

Item: High Drive (High Motivation/Drive)

Facet: Setting and accomplishing challenging goals



Category by Size	Mean	Correlations with Human Ratings
goal	0.58	0.027
issues	0.47	0.045
increase	0.4	.125**
factors	0.39	0.07
outcome	0.37	0.077
economics/supply and demand/productivity	0.34	.172**
working	0.34	-0.002
working/work productivity	0.23	0.071
task	0.21	.192**
job	0.19	-0.032
timee	0.18	-0.033
people	0.13	-0.044
life	0.12	-0.064
economics/supply and demand/productivity/increase productivity	0.11	.189**
step	0.11	.230**
day	0.11	-0.001
family	0.11	-.105*
schedule	0.09	.126**
economics/properties/improvement	0.09	.108*
goal/personal goal	0.09	0.085
family/family structure/children/son/person	0.07	-0.082
working/coworkers	0.06	-0.001
working/increasing work/increase work productivity	0.06	0.033
amount	0.06	.115*
breaks	0.06	0.067
planning	0.05	0.035
working/work place	0.05	-0.015
occupation/supervisor	0.05	0.031
timee/timeline	0.05	.165**
timee/time management	0.05	.113*
production	0.04	0.026

working/work load	0.04	.123**
commercial establishment/office/office worker/team	0.04	.157**
working/hard work	0.04	0.024
working/work day	0.04	.112*
academics/research/study	0.04	-0.001
health and well-being/sleep	0.04	-0.047
life/personal life	0.04	-0.081
pointer	0.04	.180**
timee/free time	0.04	-0.016
compensation/performance	0.03	0.074
compensation/pay	0.03	-0.046
helpers	0.03	.113*
timee/waste time	0.03	.127**
goal/smaller goals	0.03	.114*
position	0.03	0.031
working/work time	0.03	0.017
occupation	0.02	0.071
timee/extra time	0.02	-0.004
timee/time frame	0.02	0.056
working/overworking	0.02	-.095*
academics/test	0.02	.182**
current	0.02	.198**
goal/set goals	0.02	0.071
human resources/benefit	0.02	0.007
life/lifestyle/healthy lifestyle	0.02	-0.009
working/quality work	0.02	0.007
working/work hours	0.02	0.07
human resources/career/performance reviews/promotion	0.02	-0.056
planning/game plan	0.02	0.016
timee/time limit	0.02	-0.002
academics/research	0.01	-0.007
breaks/lunch break	0.01	-0.027
economics/properties/real property/waste	0.01	0.051
economics/statistics/graduation	0.01	-0.085
goal/big goal	0.01	0.032
goal/setting goals	0.01	-0.007
life/lifestyle	0.01	-0.007
occupation/white collar workers/employees	0.01	0.07
working/better work	0.01	-0.027
commercial establishment/office	0.01	0.05
economics/supply and demand/productivity/productivity rate	0.01	0.008
health and well-being/diet	0.01	0.029
human resources/career/skills	0.01	0.05

human resources/wellness	0.01	0.029
occupation/white collar workers	0.01	0.029
timee/overtime	0.01	0.008
working/extra work	0.01	0.071
working/teamwork	0.01	0.029
working/work environment	0.01	0.05
working/work environment/communication	0.01	.177**
working/work schedule	0.01	-0.035
breaks/break down	0.01	.121**
commercial establishment/office/office worker/team/team member	0.01	.097*
economics/cost	0.01	0.002
family/family structure/parents	0.01	-0.022
goal/final goal	0.01	0.049
health and well-being/exercise/fitness	0.01	0.026
human resources/career	0.01	0.026
human resources/career/skills/management	0.01	-0.022
position/positive mind	0.01	-0.022
production/productive person	0.01	0.026
working/current work	0.01	.192**
working/work 10%	0.01	-0.069
working/work production	0.01	.097*
working/work space	0.01	0.002
working/workflow	0.01	0.049
Count	6.45	.340**
** Correlation is significant at the 0.01 level (2-tailed).		
* Correlation is significant at the 0.05 level (2-tailed).		

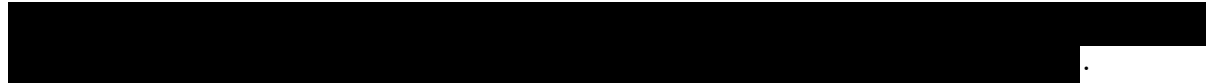
Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.676a	0.456	0.311	0.4106	0.456	3.134	97	362	0

Table G21: Form A, Question 6 (V18.2.1) with Human Ratings—Untrained

Type: Behavioral

Item: Perseverance (Perseverance)

Facet: Persisting in the face of obstacles



Category by Size	Mean	Correlations with Human Ratings
time	0.42	.146**
work	0.38	.149**
school/k-12/high school	0.3	0.016
school	0.25	0.076
life	0.24	-0.034
job	0.21	0.046
office workers/team	0.17	0.06
friends	0.16	-0.052
family	0.14	0.003
year	0.14	-0.01
home	0.13	-0.076
day	0.12	.107*
military/air force	0.12	-0.016
college	0.1	0.081
year/senior year	0.1	0.074
class	0.1	0.02
news	0.09	0.022
academics/grades	0.09	0.027
occupation	0.07	0.082
person	0.07	-0.055
finances/money	0.07	0.069
sports/coach	0.07	0.078
sports/sports by type/running	0.07	0.087
sports	0.06	-0.025
anatomy/body regions/head	0.06	-0.028
academics/research/study	0.06	.139**
family/family structure/parents/mom	0.05	-0.083
food	0.05	0.058
sales/order	0.05	-0.043
academics/students/graduate	0.05	-0.049
academics/test	0.04	0.09
family/family structure/parents	0.04	0.033

occupation/educators/teacher	0.04	0.054
vehicle/car	0.04	0.054
work/homework	0.04	0.066
finances	0.04	.124**
geographical location/america/united states/u.s.	0.04	-0.021
physics	0.04	.124**
academics/students	0.03	0.074
anatomy/body regions/head/face	0.03	0.037
human resources/career	0.03	0.062
military	0.03	-0.063
academics/students/freshman	0.03	0.034
family/family structure/parents/mother	0.03	-.095*
home/house	0.03	0.021
sports/sports by type/gym	0.03	.098*
human resources/career/skills	0.03	.098*
occupation/white collar workers/employees	0.03	0.084
time/full time	0.03	0.004
commercial establishment/store	0.03	0
family/family structure/parents/father	0.03	-0.013
family/family structure/children	0.03	0.025
family/family structure/parents/dad	0.03	0.082
human resources/career/skills/management	0.03	.168**
behavior and behavior mechanisms/emotions	0.02	0.006
clothes/shorts	0.02	0.006
commercial establishment/club	0.02	0.066
commercial establishment/store/shop	0.02	0.051
anatomy/body regions/extremities/legs/foot	0.02	.158**
military/military training	0.02	-0.046
sports/sports by type/ball games/football	0.02	0.048
time/free time	0.02	0.033
academics/test/pt test	0.02	0.029
anatomy/body regions/extremities/arm/hand	0.02	-0.004
family/family structure/children/brother and sister/sister	0.02	0.029
food/meals/lunch	0.02	.095*
sports/championship	0.02	-0.004
sports/sports by type/ball games/basketball	0.02	0.013
sports/sports by type/combat sports/wrestling	0.02	-0.02
sports/sports by type/ball games/football/soccer	0.02	-0.044
time/run time	0.02	-0.009
time/time management	0.02	0.061
work/workplace	0.02	-0.044
anatomy/body regions/extremities/legs	0.02	-0.016
anatomy/heart	0.02	-0.053

behavior and behavior mechanisms/social psychology/role	0.02	0.022
family/family structure/children/brother and sister	0.02	-0.053
occupation/white collar workers	0.02	0.04
office workers/team/teammates	0.02	0.059
time/time working	0.02	-0.034
clothes	0.01	0.037
human resources/benefit	0.01	0.037
job/old job	0.01	-0.023
sales	0.01	0.017
school/community college	0.01	0.017
school/k-12	0.01	0.058
sports/sports by type/weight lifting	0.01	0.037
vehicle	0.01	0.078
vehicle/truck	0.01	0.058
work/co-workers	0.01	-0.023
behavior and behavior mechanisms/emotions/love	0.01	0.078
commercial establishment/restaurant	0.01	.100*
geographical location/america/united states	0.01	0.056
human resources/career/skills/management/business management	0.01	-0.032
military/battalion/officer/captain	0.01	-0.01
occupation/athlete	0.01	0.056
occupation/instructor	0.01	-0.054
occupation/nurse	0.01	0.012
office workers/team/team members	0.01	.166**
school/school year	0.01	0.034
sports/sports by type/athletic	0.01	0.012
sports/sports by type/bat-and-ball/baseball	0.01	-0.032
sports/sports by type/bat-and-ball/softball	0.01	0.012
sports/sports by type/walking	0.01	0.056
sports/sports by type/water sports/swimming	0.01	0.056
work/work load	0.01	0.034
academics/research	0.01	0.055
anatomy/body regions/extremities/arm	0.01	-0.043
anatomy/body regions/extremities/arm/shoulder	0.01	0.006
anatomy/body regions/extremities/legs/knee	0.01	0.006
anatomy/body regions/hair	0.01	-0.019
family/family member	0.01	-0.068
finances/accounting	0.01	.104*
finances/security	0.01	0.03
occupation/educators	0.01	.129**
office workers/team/varsity team	0.01	-0.019
sports/sports by type/ball games	0.01	-0.019
sports/sports by type/ball games/basketball/playing basketball	0.01	-0.019

sports/sports by type/ball games/football/football season	0.01	0.03
sports/sports by type/ball games/football/highschool football	0.01	-0.043
sports/sports by type/shooting	0.01	-0.019
time/full time/full time student	0.01	0.055
time/good time	0.01	-0.019
time/time working/work full time	0.01	0.03
vehicle/ships	0.01	0.006
Count	5.75	.237**
** Correlation is significant at the 0.01 level (2-tailed).		
* Correlation is significant at the 0.05 level (2-tailed).		

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.601a	0.362	0.122	0.4465	0.362	1.51	125	333	0.002

Table G22: Form A, Question 1 (V18.2.1) with AFQT—Untrained

Type: Behavioral

Item: Adapting to Stress and Change (Adaptability)

Facet: Ability to adapt to new and changing tasks and situations



Category by Size	Mean	Correlation with the AFQT
life	0.44	0.052
situation	0.4	0.044
time	0.38	0.03
changesd/major change	0.32	-.099*
work	0.29	.129**
school	0.28	-0.01
friends	0.27	0.025
family	0.25	0.038
school/high school	0.24	0.014
news	0.2	0.062
job	0.19	0.05
people	0.19	-0.069
family/family structure/parents	0.18	0.054
home	0.17	0.051
family/family structure/parents/mom	0.14	-.115*
military/air force	0.11	0.029
person	0.11	0.012
changesd	0.11	-0.002
home/house	0.1	0.02
family/family structure/parents/dad	0.08	-0.021
family/family structure/parents/father	0.08	0.056
family/family structure/parents/mother	0.08	0.048
america/united states/u.s.	0.07	0.091
finances/money	0.07	-0.039
news/new friends	0.07	-0.002
office workers/team	0.06	-0.016
academics/grade	0.06	0.066
academics/students	0.06	0.004
news/new school	0.06	-0.014
family/family structure/child	0.06	.103*
family/family structure/children/brother and sister/brother	0.05	0.041

military	0.05	-0.028
changesd/big change	0.05	0.03
starting	0.05	0.022
mental processes/learning	0.05	-0.021
occupation/hotel personnel/manager	0.05	-0.078
behavior and behavior mechanisms/emotions/love	0.05	-0.083
anatomy/body regions/head	0.04	0.056
finances	0.04	0.071
vehicle/car	0.04	-0.057
behavior and behavior mechanisms/emotions	0.04	-0.019
family/family structure/children/brother and sister/sister	0.04	-0.049
news/new people	0.04	0.082
greatness	0.03	0.005
academics/students/sophomore/freshman	0.03	0
academics/research	0.03	0.09
behavior and behavior mechanisms/social psychology/role	0.03	0.055
family/family structure/child/childhood	0.03	-0.014
human resources/career	0.03	0.018
news/new place	0.03	.106*
occupation/educators	0.03	0.043
school/school year	0.03	0.024
sports	0.03	-.142**
house rooms/room	0.03	-0.006
occupation/supervisor	0.03	0.046
school/middle school	0.03	-0.016
commercial establishment/store	0.02	-0.041
family/family structure/grandparents	0.02	0.023
life/lifestyle	0.02	0.074
news/new house	0.02	-0.013
human resources/career/skills	0.02	0.053
mental processes/learning/practice	0.02	0.018
military/basic military training	0.02	0.011
anatomy/body regions/extremities/arm/hand	0.02	.094*
family/family structure/children/daughter	0.02	-0.008
occupation/educators/instructor	0.02	0.012
occupation/white collar workers/employees	0.02	0.013
physics/perspective	0.02	0.058
home/apartment	0.02	0.032
life/social life	0.02	0.041
occupation/white collar workers/leader	0.02	0.02
sports/sports by type/running	0.02	-.138**
changesd/huge change	0.02	0.023
house rooms/room/classroom	0.02	0.055

human resources/benefits	0.02	-0.013
mental processes/learning/memories	0.02	0.002
occupation	0.02	-0.062
physics/mechanics/surface/surface preparation	0.02	0.062
school/switching schools	0.02	-0.007
sports/coach	0.02	-0.056
work/work place	0.02	0.032
academics/students/sophomore	0.01	0.022
academics/test	0.01	0.052
anatomy/heart	0.01	-0.036
commercial establishment/store/shop	0.01	-0.076
family/family members	0.01	0.033
human resources/career/skills/management	0.01	0.046
news/new life	0.01	-0.014
physics/mechanics/power	0.01	-0.034
sports/sports by type	0.01	-0.04
sports/sports by type/ball games/football	0.01	0.054
time/hard time	0.01	-.094*
time/job times	0.01	0.021
america/united states	0.01	0.063
changesd/drastic change	0.01	-.108*
commercial establishment/office	0.01	0.049
home/house/household	0.01	-0.02
mental processes	0.01	-0.008
news/new coach	0.01	-0.026
news/new kid	0.01	0.009
occupation/medical personnel/nurse	0.01	0.032
physics	0.01	-0.041
school/transfer schools	0.01	0.053
sports/sports by type/ball games/basketball	0.01	-0.056
vehicle	0.01	-0.034
vehicle/car/car accident	0.01	0.042
work/working with	0.01	0.043
life/normal life	0.01	0.041
military/army	0.01	0.028
news/new enviroment	0.01	-0.02
news/new person	0.01	-0.023
news/new teachers	0.01	0.022
occupation/hotel personnel/server	0.01	0.067
physics/mechanics/shock	0.01	0.01
school/school district	0.01	0.034
sports/cross	0.01	-0.055
sports/sports by type/ball games/football/soccer	0.01	-0.035

sports/sports by type/gym	0.01	0.058
time/overtime	0.01	-0.006
vehicle/truck	0.01	0.082
Count	6.94	.093*
* Correlation is significant at the 0.05 level (2-tailed).		
** Correlation is significant at the 0.01 level (2-tailed).		

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.561a	0.314	0.069	16.705	0.314	1.28	120	335	0.045

Table G23: Form A, Question 2 (V18.2.1) with AFQT—Untrained

Type: Situational

Item: Adapting to Stress and Change (Accepts Feedback)

Facet: Accepting criticism



Category by Size	Mean	Correlation with the AFQT
situation	0.52	-0.008
recipient	0.48	.209**
issues	0.48	0.081
solution	0.46	.231**
problem	0.44	.181**
outcome	0.38	-0.05
options	0.35	0.047
time	0.32	-0.024
factors	0.3	0.048
feed/feedback	0.3	0.067
person	0.18	-0.002
resources	0.17	0.088
working	0.16	0.07
reporting	0.15	.093*
idea	0.13	0.016
details	0.07	0.015
academics/research	0.07	0.056
gossiping	0.06	-0.074
complex	0.06	0.074
job	0.06	0.032
physics/perspective	0.05	.099*
goal	0.05	0.083
occupation/supervisor	0.04	0.032
occupation	0.04	0.073
communication	0.03	0.058
solution/new solution	0.03	0.039
feed	0.03	-0.072
anatomy/head/face/eyes	0.03	0.002
economics/improvement	0.03	0.053
anatomy/head/face	0.02	0
behavior and behavior mechanisms/emotion	0.02	0.025

time/timeline	0.02	-0.049
anatomy/brain/brainstorm	0.02	0.028
behavior and behavior mechanisms	0.02	0.076
family	0.02	-0.014
academics	0.01	0.005
anatomy/head	0.01	-0.051
occupation/hotel personnel/guide	0.01	0.034
worker/team	0.01	0.025
working/workplace	0.01	-0.018
situation/complex situation	0.01	-0.047
anatomy/heart	0.01	0.049
economics	0.01	0.085
Count	5.65	.219**
** Correlation is significant at the 0.01 level (2-tailed).		
* Correlation is significant at the 0.05 level (2-tailed).		

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.445a	0.198	0.114	16.294	0.198	2.362	43	412	0

Table G24: Form A, Question 3 (V18.2.1) with AFQT—Untrained

Type: Situational

Item: Displaying Integrity, Ethical Behavior, and Professionalism (Integrity)

Facet: Accepts responsibility for own actions



Category by Size	Mean	Correlation with the AFQT
situation	0.67	0.061
prosecution of law/mistake	0.52	0.077
actions	0.47	0.05
task	0.45	0.082
people	0.44	-0.028
outcome	0.37	0.048
problem	0.35	0.049
integrity	0.33	.103*
help	0.3	0.068
consequences	0.23	0.054
behavior and behavior mechanisms/emotions/frustration	0.23	.115*
work	0.21	-0.001
team	0.18	.115*
person	0.18	-.120*
issue	0.15	0.091
values/core values	0.14	.180**
occupation/hotel personnel/guide/guidelines	0.14	.138**
physics/constraints	0.13	.093*
behavior and behavior mechanisms/social psychology/role	0.1	0
impact	0.1	.099*
negatives/negative impact	0.08	-0.012
occupation/supervisor	0.08	0.041
negatives	0.07	0.073
military/air force	0.06	0.064
anatomy/head/face	0.05	0.035
timing	0.05	0.054
work/coworkers	0.04	.118*
behavior and behavior mechanisms/social psychology/morals	0.04	0.022
mental processes/learning	0.04	0.004
behavior and behavior mechanisms/emotions/guilt	0.04	-0.017

effect	0.04	0.044
finance/accountability	0.04	0.073
increase	0.04	.110*
values	0.03	0.035
behavior and behavior mechanisms/emotions	0.03	-0.065
finance	0.03	-0.053
anatomy/head	0.02	-0.026
mental processes/learning/reinforcement/punishment	0.02	0.036
work/workplace	0.02	0.066
human resources/career	0.02	-0.062
human resources/career/skill	0.02	0.027
future	0.02	-0.005
task/incorrect task	0.02	0.032
behavior and behavior mechanisms/character	0.02	-0.041
behavior and behavior mechanisms/emotions/fear	0.02	0.065
human resources/benefit	0.02	-0.033
mental processes/learning/learning experience	0.02	0.054
physics	0.02	-0.002
team/team members	0.02	0.043
work/teamwork	0.02	0.033
behavior and behavior mechanisms/leadership	0.01	-0.031
behavior and behavior mechanisms/social psychology/morale	0.01	.119*
finance/charge	0.01	-0.025
physics/mechanic	0.01	0.046
prosecution of law	0.01	-0.048
team/teammates	0.01	0.051
actions/disciplinary actions	0.01	0.009
human resources/benefit/compensation	0.01	0.053
human resources/benefit/compensation/performance	0.01	0.039
occupation/white collar workers/employee	0.01	-0.071
prosecution of law/form	0.01	0.053
anatomy	0.01	-0.009
behavior and behavior mechanisms/social psychology/morals/ethics	0.01	-0.017
military/air force/air force core	0.01	-0.064
occupation/white collar workers	0.01	0.007
timing/timeline	0.01	0.059
work/work environment	0.01	0
Count	6.88	.243**
* Correlation is significant at the 0.05 level (2-tailed).		
** Correlation is significant at the 0.01 level (2-tailed).		

Model Summary								

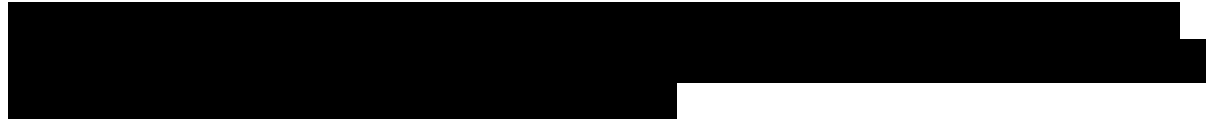
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.454a	0.206	0.069	16.703	0.206	1.504	67	388	0.01

Table G25: Form A, Question 4 (V18.2.1) with AFQT—Untrained

Type: Behavioral

Item: Openness (Openness to Alternative Views)

Facet: Having a willingness to overcome one's own interests for the needs of others



Category by Size	Mean	Correlation with the AFQT
time	0.28	0.022
people	0.24	-0.046
person	0.23	0.041
school	0.18	-.095*
idead	0.17	-0.006
school/high school	0.16	0.008
class	0.12	0.016
working	0.12	.121**
project	0.11	.116*
office workers/team	0.08	0.069
point	0.08	0.048
family	0.07	-0.019
home	0.07	-0.053
topic	0.06	0.068
academics/students	0.06	0.084
occupation	0.06	.131**
family/family structure/parents	0.05	-0.015
project/group project	0.05	0.091
finances/money	0.05	0.018
home/house	0.05	0
news	0.05	-0.044
outdoor activities/game	0.05	-0.029
military	0.04	-0.001
occupation/white collar workers/leadership	0.04	0.078
anatomy/body regions/head	0.04	0.039
academics/research	0.04	0.01
family/family structure/parents/mom	0.04	-.119*
occupation/hotel personnel/manager	0.04	0.026
sports	0.04	-0.041
vehicles/car	0.04	0.043
anatomy	0.03	-0.04

class/classmates	0.03	-0.012
food	0.03	-0.004
military/air force	0.03	0.017
anatomy/body regions/extremities/leg/feet	0.03	.093*
family/family structure/child	0.03	-0.017
occupation/white collar workers/employees	0.03	0.055
human resources/benefits	0.03	0.027
anatomy/body regions/extremities/arm/hand	0.03	0.034
clothes/shirt	0.03	-0.062
family/family structure/parents/mother	0.03	0.027
finances	0.02	0.081
academics	0.02	0.012
family/family structure/spouse	0.02	0.017
mental processes/learning	0.02	0.023
mental processes/learning/practice	0.02	-0.013
clothes	0.02	-0.087
clothes/shirt/flight shirt/flight t-shirt	0.02	-0.017
family/family structure/children/brother and sister/sister	0.02	-0.019
behavior and behavior mechanisms/emotions/love	0.02	0.002
behavior and behavior mechanisms/social psychology/role	0.02	0.029
commercial establishment/restaurant	0.02	0.046
economics/cost	0.02	.093*
human resources/career	0.02	-0.072
occupation/artists	0.02	0.045
point/view points	0.02	0.029
vehicles/truck	0.02	-0.014
anatomy/body regions/head/face	0.02	-0.004
commercial establishment/store	0.02	-0.02
commercial establishment/store/shop	0.02	-0.047
family/family structure/children/brother and sister/brother	0.02	-0.065
occupation/supervisor	0.02	-0.015
sports/sports by type	0.02	0.054
clothes/shirt/tshirt	0.01	-0.014
commercial establishment	0.01	-0.015
economics	0.01	-0.001
economics/property/assignment	0.01	0.021
family/family structure/children/daughter	0.01	-0.022
family/family structure/parents/dad	0.01	-.129**
human resources/career/skills	0.01	0.016
occupation/white collar workers/leaders	0.01	0.047
sports/sports by type/ball games	0.01	-0.005
sports/sports by type/walking	0.01	-0.078
working/work load	0.01	.119*

working/work place	0.01	-0.021
class/government class	0.01	0.04
economics/statistics	0.01	0.059
human resources/knowledge	0.01	0.036
mental processes/learning/memory/recall	0.01	0.032
military/battalion/officers/captain	0.01	-0.021
occupation/co-workers	0.01	0.05
occupation/film crew/props	0.01	-0.003
occupation/instructor	0.01	0.063
sports/sports by type/ball games/basketball	0.01	0.033
sports/sports by type/bat-and-ball/baseball	0.01	-0.07
vehicles	0.01	-0.003
working/teamwork	0.01	0.042
working/work environments/communication	0.01	0.07
behavior and behavior mechanisms/emotions	0.01	0.045
behavior and behavior mechanisms/social psychology/morals	0.01	0.037
behavior and behavior mechanisms/social psychology/morals/ethics	0.01	0.071
class/classmates/fellow classmates	0.01	-0.001
clothes/shoes	0.01	0.044
economics/property/real property/waste	0.01	-0.004
food/meals	0.01	0
food/meals/lunch	0.01	-0.054
human resources/benefits/vision	0.01	0.044
military/battalion/officers	0.01	-0.015
occupation/engineer	0.01	0.089
office workers/team/teammates	0.01	-0.061
sports/sports by type/swimming	0.01	0.029
working/work environments/communication/communication skills	0.01	-0.072
Count	3.86	.098*
* Correlation is significant at the 0.05 level (2-tailed).		
** Correlation is significant at the 0.01 level (2-tailed).		

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.501a	0.251	0.034	17.014	0.251	1.157	102	353	0.169

Table G26: Form A, Question 5 (V18.2.1) with AFQT—Untrained

Type: Situational

Item: High Drive (High Motivation/Drive)

Facet: Setting and accomplishing challenging goals



Category by Size	Mean	Correlation with the AFQT
goal	0.58	-.171**
issues	0.47	0.019
increase	0.4	.107*
factors	0.39	0.069
outcome	0.37	-0.082
economics/supply and demand/productivity	0.34	.264**
working	0.34	-0.001
working/work productivity	0.23	0.047
task	0.21	.135**
job	0.19	-0.004
timee	0.18	0.065
people	0.13	-0.045
life	0.12	-0.041
economics/supply and demand/productivity/increase productivity	0.11	.210**
step	0.11	.113*
day	0.11	0.049
family	0.11	-0.086
schedule	0.09	0.024
economics/properties/improvement	0.09	.146**
goal/personal goal	0.09	0.073
family/family structure/children/son/person	0.07	-0.009
working/coworkers	0.06	0.002
working/increasing work/increase work productivity	0.06	0.085
amount	0.06	.142**
breaks	0.06	-0.027
planning	0.05	0.051
working/work place	0.05	0.065
occupation/supervisor	0.05	0.009
timee/timeline	0.05	.107*
timee/time management	0.05	0.058
production	0.04	0.075

working/work load	0.04	0.051
commercial establishment/office/office worker/team	0.04	0.068
working/hard work	0.04	-0.05
working/work day	0.04	.118*
academics/research/study	0.04	-0.056
health and well-being/sleep	0.04	0.022
life/personal life	0.04	0.075
pointer	0.04	0.05
timee/free time	0.04	0.044
compensation/performance	0.03	0.043
compensation/pay	0.03	-0.076
helpers	0.03	0.013
timee/waste time	0.03	0.089
goal/smaller goals	0.03	0.07
position	0.03	0.047
working/work time	0.03	0.055
occupation	0.02	-0.006
timee/extra time	0.02	0.003
timee/time frame	0.02	0.012
working/overworking	0.02	0.02
academics/test	0.02	0.07
current	0.02	.112*
goal/set goals	0.02	-0.076
human resources/benefit	0.02	-0.019
life/lifestyle/healthy lifestyle	0.02	0.02
working/quality work	0.02	0.07
working/work hours	0.02	0.081
human resources/career/performance reviews/promotion	0.02	0.02
planning/game plan	0.02	0.005
timee/time limit	0.02	-0.008
academics/research	0.01	-0.009
breaks/lunch break	0.01	0.017
economics/properties/real property/waste	0.01	.154**
economics/statistics/graduation	0.01	-0.018
goal/big goal	0.01	-0.077
goal/setting goals	0.01	-0.004
life/lifestyle	0.01	0.08
occupation/white collar workers/employees	0.01	0.029
working/better work	0.01	-0.042
commercial establishment/office	0.01	0.083
economics/supply and demand/productivity/productivity rate	0.01	-0.04
health and well-being/diet	0.01	0.05
human resources/career/skills	0.01	0.028

human resources/wellness	0.01	0.01
occupation/white collar workers	0.01	0.052
timee/overtime	0.01	0.025
working/extra work	0.01	-.098*
working/teamwork	0.01	0.054
working/work environment	0.01	-0.001
working/work environment/communication	0.01	0.083
working/work schedule	0.01	0.026
breaks/break down	0.01	0.029
commercial establishment/office/office worker/team/team member	0.01	.141**
economics/cost	0.01	.102*
family/family structure/parents	0.01	-0.086
goal/final goal	0.01	-0.039
health and well-being/exercise/fitness	0.01	0.019
human resources/career	0.01	-0.021
human resources/career/skills/management	0.01	0
position/positive mind	0.01	-0.015
production/productive person	0.01	0.01
working/current work	0.01	.151**
working/work 10%	0.01	0.051
working/work production	0.01	0.033
working/work space	0.01	0.007
working/workflow	0.01	.094*
Count	6.45	.248**
** Correlation is significant at the 0.01 level (2-tailed).		
* Correlation is significant at the 0.05 level (2-tailed).		

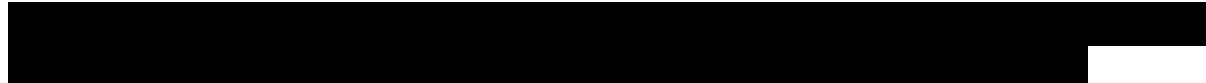
Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.615a	0.378	0.21	15.388	0.378	2.245	97	358	0

Table G27: Form A, Question 6 (V18.2.1) with AFQT—Untrained

Type: Behavioral

Item: Perseverance (Perseverance)

Facet: Persisting in the face of obstacles



Category by Size	Mean	Correlation with the AFQT
time	0.42	.125**
work	0.38	.122**
school/k-12/high school	0.3	0.022
school	0.25	0.007
life	0.24	0.056
job	0.21	0.044
office workers/team	0.17	-0.017
friends	0.16	-.115*
family	0.14	-0.03
year	0.14	0.079
home	0.13	-0.043
day	0.12	0.002
military/air force	0.12	0.013
college	0.1	.146**
year/senior year	0.1	0.062
class	0.1	.154**
news	0.09	-0.004
academics/grades	0.09	0.092
occupation	0.07	0.004
person	0.07	-0.037
finances/money	0.07	0.019
sports/coach	0.07	-0.075
sports/sports by type/running	0.07	-0.012
sports	0.06	-0.012
anatomy/body regions/head	0.06	-0.085
academics/research/study	0.06	0.09
family/family structure/parents/mom	0.05	-0.072
food	0.05	0.079
sales/order	0.05	0.077
academics/students/graduate	0.05	-0.009
academics/test	0.04	-0.003
family/family structure/parents	0.04	-0.012

occupation/educators/teacher	0.04	-0.07
vehicle/car	0.04	0.002
work/homework	0.04	0.002
finances	0.04	0.015
geographical location/america/united states/u.s.	0.04	0.016
physics	0.04	0.048
academics/students	0.03	0.062
anatomy/body regions/head/face	0.03	-0.06
human resources/career	0.03	0.032
military	0.03	0.055
academics/students/freshman	0.03	-0.047
family/family structure/parents/mother	0.03	0.072
home/house	0.03	0.003
sports/sports by type/gym	0.03	0.019
human resources/career/skills	0.03	0.018
occupation/white collar workers/employees	0.03	-0.051
time/full time	0.03	.103*
commercial establishment/store	0.03	-.093*
family/family structure/parents/father	0.03	0.042
family/family structure/children	0.03	0.07
family/family structure/parents/dad	0.03	0.067
human resources/career/skills/management	0.03	.106*
behavior and behavior mechanisms/emotions	0.02	0.012
clothes/shorts	0.02	0.046
commercial establishment/club	0.02	0.035
commercial establishment/store/shop	0.02	0.043
anatomy/body regions/extremities/legs/foot	0.02	.110*
military/military training	0.02	-0.089
sports/sports by type/ball games/football	0.02	0.015
time/free time	0.02	0.081
academics/test/pt test	0.02	0
anatomy/body regions/extremities/arm/hand	0.02	-0.068
family/family structure/children/brother and sister/sister	0.02	-0.01
food/meals/lunch	0.02	0.013
sports/championship	0.02	-0.06
sports/sports by type/ball games/basketball	0.02	-0.049
sports/sports by type/combat sports/wrestling	0.02	0.081
sports/sports by type/ball games/football/soccer	0.02	0.005
time/run time	0.02	-0.008
time/time management	0.02	0.087
work/workplace	0.02	0.017
anatomy/body regions/extremities/legs	0.02	-0.032
anatomy/heart	0.02	-0.045

behavior and behavior mechanisms/social psychology/role	0.02	-0.01
family/family structure/children/brother and sister	0.02	-0.083
occupation/white collar workers	0.02	-0.022
office workers/team/teammates	0.02	-0.016
time/time working	0.02	0.079
clothes	0.01	0.004
human resources/benefit	0.01	-0.018
job/old job	0.01	0.051
sales	0.01	0.007
school/community college	0.01	0.072
school/k-12	0.01	-0.041
sports/sports by type/weight lifting	0.01	0.052
vehicle	0.01	0.081
vehicle/truck	0.01	-0.033
work/co-workers	0.01	-0.04
behavior and behavior mechanisms/emotions/love	0.01	-0.014
commercial establishment/restaurant	0.01	0.081
geographical location/america/united states	0.01	-0.002
human resources/career/skills/management/business management	0.01	0.067
military/battalion/officer/captain	0.01	-.096*
occupation/athlete	0.01	0.078
occupation/instructor	0.01	-0.08
occupation/nurse	0.01	-0.01
office workers/team/team members	0.01	0.007
school/school year	0.01	0.003
sports/sports by type/athletic	0.01	0.039
sports/sports by type/bat-and-ball/baseball	0.01	-0.063
sports/sports by type/bat-and-ball/softball	0.01	0
sports/sports by type/walking	0.01	0.025
sports/sports by type/water sports/swimming	0.01	0.022
work/work load	0.01	-0.003
academics/research	0.01	0.006
anatomy/body regions/extremities/arm	0.01	-0.066
anatomy/body regions/extremities/arm/shoulder	0.01	-0.024
anatomy/body regions/extremities/legs/knee	0.01	0.019
anatomy/body regions/hair	0.01	-0.047
family/family member	0.01	-0.004
finances/accounting	0.01	0.039
finances/security	0.01	0.033
occupation/educators	0.01	0.052
office workers/team/varsity team	0.01	-0.05
sports/sports by type/ball games	0.01	0.063
sports/sports by type/ball games/basketball/playing basketball	0.01	0.006

sports/sports by type/ball games/football/football season	0.01	0.041
sports/sports by type/ball games/football/highschool football	0.01	0.03
sports/sports by type/shooting	0.01	-0.017
time/full time/full time student	0.01	0.06
time/good time	0.01	0.007
time/time working/work full time	0.01	0.078
vehicle/ships	0.01	0.043
Count	5.75	.132**
** Correlation is significant at the 0.01 level (2-tailed).		
* Correlation is significant at the 0.05 level (2-tailed).		

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.580a	0.337	0.085	16.557	0.337	1.339	125	330	0.021

Table G28: Comparison of Rs between V17.0 Stream and V18.2.1 Stream for Human Ratings and AFQT—Untrained

	N	Human Ratings				AFQT			
		V17.0	# of Variables	V18.2.1	# of Variables	V17.0	# of Variables	V18.2.1	# of Variables
Question 1		.807	214	.706	121	.720	214	.561	121
Question 2		.620	96	.506	44	.599	96	.445	44
Question 3		.669	112	.617	68	.547	112	.454	68
Question 4		.701	190	.525	103	.686	190	.501	103
Question 5		.749	151	.676	98	.708	151	.615	98
Question 6		.722	206	.601	126	.720	206	.580	126
<i>Note.</i> “Count” variable included as # of variables.									

Table G29: Form A, Question 2 (V18.2.1) with Human Ratings—Trained

Type: Situational

Item: Adapting to Stress and Change (Accepts Feedback)

Facet: Accepting criticism



Category by Size	Mean	Correlation with Human Ratings
situation	0.52	0.013
recipient	0.48	.121*
issues	0.48	0.045
solution	0.46	.115*
problem	0.44	.106*
outcome	0.38	0.011
options	0.35	.103*
time	0.32	0.009
factors	0.3	0.072
feed/feedback	0.3	.190**
steps	0.2	0.08
person	0.18	0.039
help	0.17	.093*
course of action	0.17	.126**
resources	0.17	0.084
working	0.16	-0.016
reporting	0.15	.132**
idea	0.13	.150**
questions	0.1	0.082
mistakes	0.08	0.007
criticism	0.08	0
details	0.07	-0.021
academics/research	0.07	.162**
review	0.06	.096*
gossiping	0.06	-0.08
advice	0.06	0.031
complex	0.06	0.066
job	0.06	-0.021
standards	0.05	-0.002
physics/perspective	0.05	.213**

areas	0.05	0.056
goal	0.05	0.075
reason	0.05	-0.011
occupation/supervisor	0.04	0.021
occupation	0.04	-0.02
worker/team/team members	0.04	.096*
communication	0.03	0.089
corrections	0.03	0.013
solution/new solution	0.03	0.056
understanding	0.03	0.034
complexity	0.03	-0.065
feed	0.03	0.07
reasoning	0.03	0.036
worker/colleague	0.03	0.047
anatomy/head/face/eyes	0.03	0.073
view	0.03	0.073
economics/improvement	0.03	0.092
input	0.03	0.092
better understanding	0.02	0.018
clarification	0.02	0.071
errors	0.02	0.018
chance	0.02	0.02
conversation	0.02	.116*
page	0.02	0.034
redone	0.02	0.061
anatomy/head/face	0.02	-0.007
behavior and behavior mechanisms/emotion	0.02	-0.007
compromise	0.02	0.065
direction	0.02	.108*
finding	0.02	.094*
parties	0.02	0.051
reread	0.02	0.008
suggestions	0.02	0.065
time/timeline	0.02	-0.05
anatomy/brain/brainstorm	0.02	.131**
approach	0.02	.116*
behavior and behavior mechanisms	0.02	.100*
finish	0.02	-0.022
flaws	0.02	0.039
friends	0.02	-0.037
plan	0.02	0.055
reworking	0.02	0.07
angle	0.02	0.059

attempt	0.02	0.01
best efforts	0.02	-0.039
conclusion	0.02	.108*
data	0.02	-0.022
double check	0.02	0.059
family	0.02	-0.071
notes	0.02	0.059
resolution	0.02	0.059
respect	0.02	0.01
sense	0.02	0.043
side	0.02	-0.039
stay	0.02	0.01
thoughts	0.02	0.01
academics	0.01	0.047
address	0.01	-0.006
anatomy/head	0.01	0.065
check	0.01	-0.006
expectations	0.01	.100*
gain	0.01	0.065
occupation/hotel personnel/guide	0.01	0.012
reporting/better report	0.01	-0.006
scenario	0.01	-0.006
tips	0.01	0.03
worker/team	0.01	.153**
working/workplace	0.01	-0.023
act	0.01	.130**
adjustments	0.01	-0.005
assignment	0.01	-0.082
best course	0.01	0.091
build	0.01	0.014
course	0.01	-0.024
deadline	0.01	0.014
insight	0.01	0.014
miscommunication	0.01	.130**
motivation	0.01	-0.044
reading	0.01	0.072
room	0.01	0.091
second time	0.01	-0.005
situation/complex situation	0.01	-0.024
trust	0.01	0.072
write down	0.01	0.053
agreement	0.01	0.081
anatomy/heart	0.01	-0.005

argument	0.01	-0.069
at the end of the day	0.01	0.038
back up	0.01	-0.048
care	0.01	0.081
date	0.01	0.038
economics	0.01	.124**
feeling	0.01	-0.026
fight	0.01	-0.048
guidance	0.01	-0.005
misunderstanding	0.01	0.06
open mind	0.01	0.06
opportunity	0.01	0.081
outside source	0.01	.103*
quality	0.01	0.06
relationship	0.01	.124**
relook	0.01	0.038
request	0.01	-0.005
track	0.01	0.081
tweak	0.01	0.017
Count	7.96	.368**
* Correlation is significant at the 0.05 level (2-tailed).		
** Correlation is significant at the 0.01 level (2-tailed).		

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.690a	0.476	0.251	0.4768	0.476	2.119	135	315	0

Table G30: Form A, Question 2 (V18.2.1) with AFQT—Trained

Type: Situational

Item: Adapting to Stress and Change (Accepts Feedback)

Facet: Accepting criticism



Category by Size	Mean	Correlation with AFQT
situation	0.52	-0.008
recipient	0.48	.209**
issues	0.48	0.081
solution	0.46	.231**
problem	0.44	.181**
outcome	0.38	-0.05
options	0.35	0.047
time	0.32	-0.024
factors	0.3	0.048
feed/feedback	0.3	0.067
steps	0.2	0.061
person	0.18	-0.002
help	0.17	-0.013
course of action	0.17	.117*
resources	0.17	0.088
working	0.16	0.07
reporting	0.15	.110*
idea	0.13	0.016
questions	0.1	0.049
mistakes	0.08	-0.05
criticism	0.08	0.075
details	0.07	0.015
academics/research	0.07	0.056
review	0.06	0.084
going	0.06	-0.074
advice	0.06	-0.091
complex	0.06	0.074
job	0.06	0.032
standards	0.05	0.033
physics/perspective	0.05	.099*
areas	0.05	.130**

goal	0.05	0.083
reason	0.05	0.088
occupation/supervisor	0.04	0.032
occupation	0.04	0.073
worker/team/team members	0.04	0.046
communication	0.03	0.058
corrections	0.03	0.002
solution/new solution	0.03	0.039
understanding	0.03	-0.035
complexity	0.03	-0.024
feed	0.03	-0.072
reasoning	0.03	.147**
worker/colleague	0.03	0.088
anatomy/head/face/eyes	0.03	0.002
view	0.03	0.035
economics/improvement	0.03	0.053
input	0.03	.095*
better understanding	0.02	-0.033
clarification	0.02	0.057
errors	0.02	0.039
chance	0.02	0.006
conversation	0.02	.134**
page	0.02	0.074
redone	0.02	0.003
anatomy/head/face	0.02	0
behavior and behavior mechanisms/emotion	0.02	0.025
compromise	0.02	.199**
direction	0.02	0.056
finding	0.02	0
parties	0.02	0.016
reread	0.02	0
suggestions	0.02	0.031
time/timeline	0.02	-0.049
anatomy/brain/brainstorm	0.02	0.028
approach	0.02	-0.023
behavior and behavior mechanisms	0.02	0.076
finish	0.02	0.04
flaws	0.02	0.055
friends	0.02	0.046
plan	0.02	-0.011
reworking	0.02	0.04
angle	0.02	0.042
attempt	0.02	0.056

best efforts	0.02	-0.007
conclusion	0.02	0.008
data	0.02	0.075
double check	0.02	-0.027
family	0.02	-0.014
notes	0.02	-0.014
resolution	0.02	-0.028
respect	0.02	-0.028
sense	0.02	0.089
side	0.02	0.062
stay	0.02	-0.006
thoughts	0.02	0.079
academics	0.01	0.005
address	0.01	0.025
anatomy/head	0.01	-0.051
check	0.01	-0.02
expectations	0.01	0.086
gain	0.01	0.013
occupation/hotel personnel/guide	0.01	0.034
reporting/better report	0.01	-0.053
scenario	0.01	0.026
tips	0.01	-0.018
worker/team	0.01	0.025
working/workplace	0.01	-0.018
act	0.01	0.085
adjustments	0.01	0.008
assignment	0.01	-0.074
best course	0.01	0.064
build	0.01	0.016
course	0.01	-0.046
deadline	0.01	0.044
insight	0.01	0.085
miscommunication	0.01	.126**
motivation	0.01	-0.032
reading	0.01	0.064
room	0.01	0.035
second time	0.01	-0.042
situation/complex situation	0.01	-0.047
trust	0.01	0
write down	0.01	-0.052
agreement	0.01	-0.005
anatomy/heart	0.01	0.049
argument	0.01	-0.019

at the end of the day	0.01	0.03
back up	0.01	-.125**
care	0.01	0.051
date	0.01	-0.059
economics	0.01	0.085
feeling	0.01	-0.051
fight	0.01	0.017
guidance	0.01	0.075
misunderstanding	0.01	0.045
open mind	0.01	0.005
opportunity	0.01	0.026
outside source	0.01	0.089
quality	0.01	0.011
relationship	0.01	.109*
relook	0.01	-0.023
request	0.01	0.058
track	0.01	0.041
tweak	0.01	0
Count	7.96	.273**
** Correlation is significant at the 0.01 level (2-tailed).		
* Correlation is significant at the 0.05 level (2-tailed).		

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.643a	0.414	0.167	15.801	0.414	1.675	135	320	0

Table G31: Form A, Question 2 (V18.2.1) with Human Ratings “Built” Twice—Untrained

Type: Situational

Item: Adapting to Stress and Change (Accepts Feedback)

Facet: Accepting criticism



*For comparison, see the results of the Untrained Model for the responses to this question only “Built” once (Table 17).

Category by Size	Mean	Correlation with Human Ratings
situation	0.52	0.013
recipient	0.48	.121*
issues	0.48	0.045
solution	0.46	.115*
problem	0.44	.106*
outcome	0.38	0.011
options	0.35	.103*
time	0.32	0.009
factors	0.3	0.072
feed/feedback	0.3	.190**
steps	0.22	0.066
help	0.19	0.084
person	0.18	0.039
course/course of action	0.17	.120*
resources	0.17	0.084
working	0.16	-0.016
reporting	0.15	.132**
idea	0.13	.150**
people	0.12	0
change	0.11	0.071
information	0.11	.161**
opinion	0.09	0.041
prosecution of law/mistakes	0.08	-0.001
details	0.07	-0.021
academics/research	0.07	.162**
understanding	0.07	0.074
gossiping	0.06	-0.08

complex	0.06	0.066
job	0.06	-0.021
task	0.05	0.032
individual	0.05	0.006
project	0.05	0.062
physics/perspective	0.05	.213**
goal	0.05	0.075
process	0.04	0.04
reasoning	0.04	0.01
occupation/supervisor	0.04	0.021
part	0.04	.093*
occupation	0.04	-0.02
check	0.03	0.013
communication	0.03	0.089
solution/new solution	0.03	0.056
criticism	0.03	0.036
criticism/constructive criticism	0.03	-0.02
feed	0.03	0.07
anatomy/head/face/eyes	0.03	0.073
course	0.03	.117*
economics/improvement	0.03	0.092
ground	0.02	-0.034
notes	0.02	.102*
anatomy/head/face	0.02	-0.007
behavior and behavior mechanisms/emotion	0.02	-0.007
time/timeline	0.02	-0.05
anatomy/brain/brainstorm	0.02	.131**
behavior and behavior mechanisms	0.02	.100*
family	0.02	-0.071
level	0.02	0.043
piece	0.02	-0.039
academics	0.01	0.047
anatomy/head	0.01	0.065
behavior mechanisms/attitude	0.01	0.047
engineering design	0.01	0.012
national service/draft	0.01	.153**
occupation/guide	0.01	0.012
reporting/better report	0.01	-0.006
worker/team	0.01	.153**
working/workplace	0.01	-0.023
behavior mechanisms	0.01	-0.044
finance	0.01	0.072
minor/open mind	0.01	0.072

pointers	0.01	-0.024
properly	0.01	-0.044
situation/complex situation	0.01	-0.024
anatomy/heart	0.01	-0.005
economics	0.01	.124**
light	0.01	-0.026
minor	0.01	0.017
pointers/viewpoint	0.01	0.038
Count	7.41	.331**
* Correlation is significant at the 0.05 level (2-tailed).		
** Correlation is significant at the 0.01 level (2-tailed).		

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.583a	0.34	0.202	0.4923	0.34	2.461	78	372	0

Table G32: Form A, Question 2 (V18.2.1) with AFQT “Built” Twice—Untrained

Type: Situational

Item: Adapting to Stress and Change (Accepts Feedback)

Facet: Accepting criticism



*For comparison, see the results of the Untrained Model for the responses to this question only “Built” once (Table 23).

Category by Size	Mean	Correlation with AFQT
situation	0.52	-0.008
recipient	0.48	.209**
issues	0.48	0.081
solution	0.46	.231**
problem	0.44	.181**
outcome	0.38	-0.05
options	0.35	0.047
time	0.32	-0.024
factors	0.3	0.048
feed/feedback	0.3	0.067
steps	0.22	0.063
help	0.19	-0.012
person	0.18	-0.002
course/course of action	0.17	.113*
resources	0.17	0.088
working	0.16	0.07
reporting	0.15	.110*
idea	0.13	0.016
people	0.12	-0.03
change	0.11	0.061
information	0.11	0.013
opinion	0.09	0.076
prosecution of law/mistakes	0.08	-0.061
details	0.07	0.015
academics/research	0.07	0.056
understanding	0.07	-0.014
going	0.06	-0.074
complex	0.06	0.074

job	0.06	0.032
task	0.05	-0.028
individual	0.05	.096*
project	0.05	.112*
physics/perspective	0.05	.099*
goal	0.05	0.083
process	0.04	0.083
reasoning	0.04	.125**
occupation/supervisor	0.04	0.032
part	0.04	-0.017
occupation	0.04	0.073
check	0.03	-0.054
communication	0.03	0.058
solution/new solution	0.03	0.039
criticism	0.03	0.079
criticism/constructive criticism	0.03	0.036
feed	0.03	-0.072
anatomy/head/face/eyes	0.03	0.002
course	0.03	0.031
economics/improvement	0.03	0.053
ground	0.02	0.008
notes	0.02	0.025
anatomy/head/face	0.02	0
behavior and behavior mechanisms/emotion	0.02	0.025
time/timeline	0.02	-0.049
anatomy/brain/brainstorm	0.02	0.028
behavior and behavior mechanisms	0.02	0.076
family	0.02	-0.014
level	0.02	0.064
piece	0.02	0.023
academics	0.01	0.005
anatomy/head	0.01	-0.051
behavior mechanisms/attitude	0.01	-0.006
engineering design	0.01	0.064
national service/draft	0.01	0.068
occupation/guide	0.01	0.034
reporting/better report	0.01	-0.053
worker/team	0.01	0.025
working/workplace	0.01	-0.018
behavior mechanisms	0.01	-0.032
finance	0.01	0.033
minor/open mind	0.01	-0.014
pointers	0.01	0.039

property	0.01	-0.001
situation/complex situation	0.01	-0.047
anatomy/heart	0.01	0.049
economics	0.01	0.085
light	0.01	0.009
minor	0.01	-0.047
pointers/viewpoint	0.01	-0.069
Count	7.41	.234**
** Correlation is significant at the 0.01 level (2-tailed).		
* Correlation is significant at the 0.05 level (2-tailed).		

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.512a	0.262	0.109	16.337	0.262	1.716	78	377	0.001

**Table G33: Form A, Question 2 (V18.2.1) with Human Ratings “Built” Three Times—
Untrained**

Type: Situational

Item: Adapting to Stress and Change (Accepts Feedback)

Facet: Accepting criticism



*For comparison, see the results of the Untrained Model for the responses to this question only “Built” once (Table 17) and twice (Table 31).

Category by Size	Mean	Correlation with Human Ratings
situation	0.52	0.013
recipient	0.48	.121*
issues	0.48	0.045
solution	0.46	.115*
problem	0.44	.106*
outcome	0.38	0.011
options	0.35	.103*
time	0.32	0.009
factors	0.3	0.072
feed/feedback	0.3	.190**
steps	0.22	0.066
help	0.19	0.084
person	0.18	0.039
course/course of action	0.17	.120*
resources	0.17	0.084
working	0.16	-0.016
reporting	0.15	.132**
idea	0.13	.150**
effort	0.12	0.036
people	0.12	0
change	0.11	0.071
comments	0.11	0.059
information	0.11	.161**
opinion	0.09	0.041
prosecution of law/mistakes	0.08	-0.001
details	0.07	-0.021

academics/research	0.07	.162**
understanding	0.07	0.074
action	0.06	.152**
standards	0.06	-0.021
gooing	0.06	-0.08
complex	0.06	0.066
job	0.06	-0.021
response	0.06	-0.064
task	0.05	0.032
answer	0.05	0.033
individual	0.05	0.006
areas	0.05	0.062
project	0.05	0.062
physics/perspective	0.05	.213**
goal	0.05	0.075
corrections	0.04	0.05
process	0.04	0.04
reasoning	0.04	0.01
occupation/supervisor	0.04	0.021
part	0.04	.093*
complexity	0.04	-0.052
occupation	0.04	-0.02
check	0.03	0.013
communication	0.03	0.089
solution/new solution	0.03	0.056
criticism	0.03	0.036
criticism/constructive criticism	0.03	-0.02
feed	0.03	0.07
anatomy/head/face/eyes	0.03	0.073
clarification	0.03	0.061
consideration	0.03	.100*
errors	0.03	0.04
course	0.03	.117*
economics/improvement	0.03	0.092
experience	0.02	0.084
ground	0.02	-0.034
angle	0.02	0.075
notes	0.02	.102*
respect	0.02	-0.007
anatomy/head/face	0.02	-0.007
behavior and behavior mechanisms/emotion	0.02	-0.007
time/timeline	0.02	-0.05
anatomy/brain/brainstorm	0.02	.131**

behavior and behavior mechanisms	0.02	.100*
wingman	0.02	0.039
adjustments	0.02	-0.039
command	0.02	-0.006
critism	0.02	0.043
family	0.02	-0.071
level	0.02	0.043
piece	0.02	-0.039
academics	0.01	0.047
anatomy/head	0.01	0.065
behavior mechanisms/attitude	0.01	0.047
engineering design	0.01	0.012
house rooms/room	0.01	.135**
national service/draft	0.01	.153**
occupation/hotel personnel/guide	0.01	0.012
reporting/better report	0.01	-0.006
starting	0.01	-0.023
worker/team	0.01	.153**
working/workplace	0.01	-0.023
behavior mechanisms	0.01	-0.044
end	0.01	-0.024
finance	0.01	0.072
hand	0.01	-0.063
minor/open mind	0.01	0.072
pointers	0.01	-0.024
propery	0.01	-0.044
reviewd	0.01	0.014
situation/complex situation	0.01	-0.024
anatomy/heart	0.01	-0.005
aspects	0.01	.124**
economics	0.01	.124**
light	0.01	-0.026
minor	0.01	0.017
mission	0.01	-0.048
pointers/viewpoint	0.01	0.038
Count	8.29	.354**
* Correlation is significant at the 0.05 level (2-tailed).		
** Correlation is significant at the 0.01 level (2-tailed).		

Model Summary								

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.632a	0.399	0.219	0.4871	0.399	2.211	104	346	0

Table G34: Form A, Question 2 (V18.2.1) with AFQT “Built” Three Times—Untrained

Type: Situational

Item: Adapting to Stress and Change (Accepts Feedback)

Facet: Accepting criticism



*For comparison, see the results of the Untrained Model for the responses to this question only “Built” once (Table 23) and twice (Table 32).

Category by Size	Mean	Correlation with AFQT
situation	0.48	-0.008
recipient	0.48	.209**
issues	0.46	0.081
solution	0.44	.231**
problem	0.38	.181**
outcome	0.35	-0.05
options	0.32	0.047
time	0.3	-0.024
factors	0.3	0.048
feed/feedback	0.22	0.067
steps	0.19	0.063
help	0.18	-0.012
person	0.17	-0.002
course/course of action	0.17	.113*
resources	0.16	0.088
working	0.15	0.07
reporting	0.13	.110*
idea	0.12	0.016
effort	0.12	0.03
people	0.11	-0.03
change	0.11	0.061
comments	0.11	0.004
information	0.09	0.013
opinion	0.08	0.076
prosecution of law/mistakes	0.07	-0.061
details	0.07	0.015
academics/research	0.07	0.056
understanding	0.06	-0.014

action	0.06	0.088
standards	0.06	0.021
gooing	0.06	-0.074
complex	0.06	0.074
job	0.06	0.032
response	0.05	0.012
task	0.05	-0.028
answer	0.05	-0.038
individual	0.05	.096*
areas	0.05	.132**
project	0.05	.112*
physics/perspective	0.05	.099*
goal	0.04	0.083
corrections	0.04	0.023
process	0.04	0.083
reasoning	0.04	.125**
occupation/supervisor	0.04	0.032
part	0.04	-0.017
complexity	0.04	-0.029
occupation	0.03	0.073
check	0.03	-0.054
communication	0.03	0.058
solution/new solution	0.03	0.039
criticism	0.03	0.079
criticism/constructive criticism	0.03	0.036
feed	0.03	-0.072
anatomy/head/face/eyes	0.03	0.002
clarification	0.03	0.054
consideration	0.03	-0.001
errors	0.03	0.028
course	0.03	0.031
economics/improvement	0.02	0.053
experience	0.02	0.044
ground	0.02	0.008
angle	0.02	0.086
notes	0.02	0.025
respect	0.02	-0.019
anatomy/head/face	0.02	0
behavior and behavior mechanisms/emotion	0.02	0.025
time/timeline	0.02	-0.049
anatomy/brain/brainstorm	0.02	0.028
behavior and behavior mechanisms	0.02	0.076
wingman	0.02	0.035

adjustments	0.02	0.019
command	0.02	-0.049
critism	0.02	-0.077
family	0.02	-0.014
level	0.02	0.064
piece	0.01	0.023
academics	0.01	0.005
anatomy/head	0.01	-0.051
behavior mechanisms/attitude	0.01	-0.006
engineering design	0.01	0.064
house rooms/room	0.01	0.036
national service/draft	0.01	0.068
occupation/hotel personnel/guide	0.01	0.034
reporting/better report	0.01	-0.053
starting	0.01	0.016
worker/team	0.01	0.025
working/workplace	0.01	-0.018
behavior mechanisms	0.01	-0.032
end	0.01	-0.075
finance	0.01	0.033
hand	0.01	-0.074
minor/open mind	0.01	-0.014
pointers	0.01	0.039
propery	0.01	-0.001
reviewd	0.01	0
situation/complex situation	0.01	-0.047
anatomy/heart	0.01	0.049
aspects	0.01	.134**
economics	0.01	0.085
light	0.01	0.009
minor	0.01	-0.047
mission	0.01	-0.043
pointers/viewpoint	8.29	-0.069
Count		.241**
** Correlation is significant at the 0.01 level (2-tailed).		
* Correlation is significant at the 0.05 level (2-tailed).		

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.580a	0.336	0.14	16.057	0.336	1.71	104	351	0

Table G35: Form A, Question 2 (V18.2.1) with Human Ratings “Built” Four Times in Subsample 1 and Tested on Subsample 1—Untrained

Type: Situational

Item: Adapting to Stress and Change (Accepts Feedback)

Facet: Accepting criticism



Category by Size	Mean	Correlation with Human Ratings
report	0.51	0.129
situation	0.49	-0.012
recipient	0.47	.206**
solution	0.47	0.108
issues	0.46	-0.048
problem	0.45	0.09
outcome	0.37	-0.052
options	0.34	0.064
time	0.32	-0.033
feed/feedback	0.28	.306**
steps	0.23	-0.048
fix	0.21	0.028
person	0.19	-0.058
resources	0.19	0.088
help	0.18	0.057
working	0.16	-0.043
course/course of action	0.15	0.102
change	0.13	0.033
comments	0.12	0.107
people	0.12	-0.017
information	0.12	.133*
prosecution of law/mistakes	0.11	0.032
questions	0.11	0.097
idea	0.1	.138*
effort	0.1	0.099
ability	0.08	0.046
complex	0.08	0.046
criticism	0.07	-0.017
job	0.06	-0.068

review	0.06	0.08
understanding	0.06	0.13
reason	0.06	-0.055
standards	0.06	-0.02
action	0.06	.207**
task	0.06	0.101
areas	0.05	0.086
going	0.05	-0.079
project	0.05	0.104
solution/new solution	0.05	0.086
advice	0.05	0.012
academics/research	0.04	.151*
complexity	0.04	-0.068
economics	0.04	.131*
individual	0.04	0.071
check	0.04	0.095
goal	0.04	0.032
perspective	0.04	.179**
clarification	0.03	0.032
communication	0.03	.210**
explanation	0.03	0.099
feed	0.03	0.055
ground	0.03	-0.012
occupation/white collar workers	0.03	-0.057
response	0.03	-0.101
attempt	0.03	0.081
corrections	0.03	-0.038
course	0.03	0.057
eyes	0.03	0.128
fact	0.03	0.009
input	0.03	.223**
occupation/supervisor	0.03	-0.014
build	0.03	0.009
experience	0.03	0.034
family	0.03	-0.068
friends	0.03	-0.042
part	0.03	0.034
pointers	0.03	-0.017
process	0.03	-0.042
anatomy/head/face	0.02	-0.02
errors	0.02	0.036
key	0.02	0.092
know how	0.02	-0.048

level	0.02	0.036
life	0.02	-0.048
mental processes/learning	0.02	0.12
occupation	0.02	-0.048
offer	0.02	0.036
side	0.02	-0.02
wingman	0.02	-0.02
finish	0.02	0.069
form	0.02	0.038
geology	0.02	-0.055
house rooms	0.02	0.069
minor	0.02	0.007
quality	0.02	-0.055
reaction	0.02	0.038
sense	0.02	0.007
soultion	0.02	0.007
working/workplace	0.02	-0.024
Count	8.59	.322**
** Correlation is significant at the 0.01 level (2-tailed).		
* Correlation is significant at the 0.05 level (2-tailed).		

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.724a	0.525	0.218	0.4753	0.525	1.71	89	138	0.002

Table G36: Form A, Question 2 (V18.2.1) with AFQT “Built” Four Times in Subsample 1 and Tested on Subsample 1—Untrained

Type: Situational

Item: Adapting to Stress and Change (Accepts Feedback)

Facet: Accepting criticism

Category by Size	Mean	Correlation with AFQT
report	0.51	0.006
situation	0.49	-0.063
recipient	0.47	.240**
solution	0.47	.218**
issues	0.46	-0.012
problem	0.45	.132*
outcome	0.37	-0.08
options	0.34	0
time	0.32	-0.043
feed/feedback	0.28	0.086
steps	0.23	-0.007
fix	0.21	-.178**
person	0.19	-0.014
resources	0.19	0.104
help	0.18	-0.051
working	0.16	0.078
course/course of action	0.15	0.064
change	0.13	0.06
comments	0.12	-0.065
people	0.12	-0.008
information	0.12	0.031
prosecution of law/mistakes	0.11	-0.049
questions	0.11	0.063
idea	0.1	0.072
effort	0.1	0.056
ability	0.08	0.063
complex	0.08	0.072
criticism	0.07	0.059
job	0.06	-0.033
review	0.06	0.02

understanding	0.06	0.04
reason	0.06	0.067
standards	0.06	0.042
action	0.06	.137*
task	0.06	-0.007
areas	0.05	.151*
gooing	0.05	-0.08
project	0.05	0.124
solution/new solution	0.05	0.058
advice	0.05	-0.106
academics/research	0.04	0.12
complexity	0.04	-0.004
economics	0.04	0.129
individual	0.04	.195**
check	0.04	-0.065
goal	0.04	.136*
perspective	0.04	0.11
clarification	0.03	0.108
communication	0.03	0.058
explanation	0.03	.153*
feed	0.03	-.169*
ground	0.03	0.015
occupation/white collar workers	0.03	0.044
response	0.03	0.003
attempt	0.03	0.074
corrections	0.03	0.026
course	0.03	0.027
eyes	0.03	0.054
fact	0.03	0.043
input	0.03	.178**
occupation/supervisor	0.03	-0.065
build	0.03	-0.007
experience	0.03	0.025
family	0.03	-0.002
friends	0.03	0.082
part	0.03	-0.117
pointers	0.03	0.006
process	0.03	0.047
anatomy/head/face	0.02	-0.033
errors	0.02	0.086
key	0.02	-0.087
know how	0.02	0.079
level	0.02	0.059

life	0.02	-0.038
mental processes/learning	0.02	0.026
occupation	0.02	0.108
offer	0.02	0.052
side	0.02	0.115
wingman	0.02	-0.016
finish	0.02	0.061
form	0.02	0.024
geology	0.02	-0.103
house rooms	0.02	-0.036
minor	0.02	0.016
quality	0.02	-0.065
reaction	0.02	-0.072
sense	0.02	0.038
soulution	0.02	-.131*
working/workplace	0.02	-0.052
Count	8.59	.200**
** Correlation is significant at the 0.01 level (2-tailed).		
* Correlation is significant at the 0.05 level (2-tailed).		

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.702a	0.492	0.165	15.738	0.492	1.503	89	138	0.016

Table G37: Form A, Question 2 (V18.2.1) with Human Ratings “Built” Four Times in Subsample 1 and Tested on Subsample 2—Untrained

Type: Situational

Item: Adapting to Stress and Change (Accepts Feedback)

Facet: Accepting criticism



Category by Size	Mean	Correlation with Human Ratings
report	0.56	0.119
situation	0.55	0.025
recipient	0.5	0.056
issues	0.49	.145*
solution	0.43	.158*
problem	0.42	0.127
outcome	0.39	0.067
options	0.35	.138*
time	0.34	0.041
feed/feedback	0.32	0.073
fix	0.28	-0.016
steps	0.2	.189**
course/course of action	0.19	0.125
help	0.19	0.108
idea	0.16	.193**
resources	0.16	0.096
person	0.16	0.066
effort	0.15	-0.029
working	0.13	0.056
people	0.12	0.043
information	0.11	.201**
questions	0.11	0.087
change	0.1	0.13
comments	0.1	0
academics/research	0.08	.156*
response	0.08	-0.045
advice	0.07	0.048
review	0.07	0.114
action	0.06	0.056

individual	0.06	-0.072
part	0.06	.152*
understanding	0.06	0.04
complex	0.06	0.077
prosecution of law/mistakes	0.06	-0.005
job	0.06	0.032
perspective	0.06	.237**
standards	0.06	-0.003
areas	0.05	0.053
corrections	0.05	0.107
criticism	0.05	0.053
goal	0.05	0.107
reason	0.05	0
occupation/supervisor	0.05	0.04
process	0.05	0.022
project	0.05	0.022
task	0.05	-0.015
complexity	0.04	0.007
errors	0.04	0.045
fact	0.04	-0.03
communication	0.03	-0.029
explanation	0.03	0.036
life	0.03	-.136*
anatomy/brain	0.03	.157*
economics	0.03	0.042
feed	0.03	0.088
check	0.03	-0.074
clarification	0.03	0.099
eyes	0.03	0.05
gooing	0.03	-0.049
input	0.03	-0.025
soulution	0.03	0.099
data	0.02	-0.022
experience	0.02	.140*
key	0.02	0.059
occupation/white collar workers	0.02	-0.022
agreement	0.02	0.01
anatomy/head	0.02	0.04
anatomy/head/face	0.02	0.01
behavior mechanisms/attitude	0.02	-0.08
commander	0.02	-0.05
course	0.02	0.131
critism	0.02	0.04

finish	0.02	-0.111
form	0.02	.161*
national service/draft	0.02	.191**
professional	0.02	0.04
quality	0.02	0.04
sense	0.02	0.04
side	0.02	-0.05
solution/new solution	0.02	0.04
Count	8.65	.410**
* Correlation is significant at the 0.05 level (2-tailed).		
** Correlation is significant at the 0.01 level (2-tailed).		

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.688a	0.473	0.176	0.5088	0.473	1.591	80	142	0.008

Table G38: Form A, Question 2 (V18.2.1) with AFQT “Built” Four Times in Subsample 1 and Tested on Subsample 2—Untrained

Type: Situational

Item: Adapting to Stress and Change (Accepts Feedback)

Facet: Accepting criticism

Category by Size	Mean	Correlation with AFQT
report	0.56	0.04
situation	0.55	0.043
recipient	0.5	.155*
issues	0.49	.172**
solution	0.43	.249**
problem	0.42	.233**
outcome	0.39	-0.022
options	0.35	0.091
time	0.34	-0.029
feed/feedback	0.32	0.047
fix	0.28	-0.093
steps	0.2	0.123
course/course of action	0.19	.154*
help	0.19	0.023
idea	0.16	-0.023
resources	0.16	0.062
person	0.16	-0.035
effort	0.15	0.005
working	0.13	0.121
people	0.12	-0.061
information	0.11	0
questions	0.11	0.054
change	0.1	0.081
comments	0.1	0.082
academics/research	0.08	0.002
response	0.08	0.036
advice	0.07	-0.078
review	0.07	0.129
action	0.06	0.04
individual	0.06	0.016

part	0.06	0.055
understanding	0.06	-0.055
complex	0.06	0.059
prosecution of law/mistakes	0.06	-0.08
job	0.06	0.086
perspective	0.06	0.088
standards	0.06	0.01
areas	0.05	0.108
corrections	0.05	0.017
criticism	0.05	.141*
goal	0.05	0.035
reason	0.05	0.103
occupation/supervisor	0.05	0.107
process	0.05	0.116
project	0.05	0.1
task	0.05	-0.055
complexity	0.04	-0.039
errors	0.04	-0.06
fact	0.04	0.057
communication	0.03	0.058
explanation	0.03	0.031
life	0.03	-0.041
anatomy/brain	0.03	0.039
economics	0.03	0.022
feed	0.03	0.032
check	0.03	0.008
clarification	0.03	-0.004
eyes	0.03	-0.004
going	0.03	-0.02
input	0.03	0.008
solution	0.03	-0.091
data	0.02	0.053
experience	0.02	0.06
key	0.02	-0.015
occupation/white collar workers	0.02	-0.032
agreement	0.02	-0.069
anatomy/head	0.02	-0.04
anatomy/head/face	0.02	0.037
behavior mechanisms/attitude	0.02	-0.082
commander	0.02	-0.015
course	0.02	0.031
criticism	0.02	-0.125
finish	0.02	0.02

form	0.02	.135*
national service/draft	0.02	0.108
professional	0.02	0.089
quality	0.02	-0.044
sense	0.02	0.091
side	0.02	0.029
solution/new solution	0.02	0.02
Count	8.65	.252**
* Correlation is significant at the 0.05 level (2-tailed).		
** Correlation is significant at the 0.01 level (2-tailed).		

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.669a	0.448	0.148	16.083	0.448	1.492	80	147	0.019

Table G39: Form A, Question 2 (V18.2.1) with Human Ratings “Built” Four Times in Subsample 2 and Tested on Subsample 2—Untrained

Type: Situational

Item: Adapting to Stress and Change (Accepts Feedback)

Facet: Accepting criticism



Category by Size	Mean	Correlation with Human Ratings
situation	0.55	0.025
recipient	0.5	0.03
issues	0.49	.145*
solution	0.45	.167*
problem	0.42	0.127
outcome	0.39	0.067
options	0.35	.138*
time	0.33	0.054
feed/feedback	0.32	0.073
factors	0.3	.152*
fix	0.28	-0.016
course	0.2	.140*
person	0.18	.137*
ideas	0.17	.181**
reporting	0.17	0.037
working	0.17	0.016
resources	0.16	0.096
effort	0.15	-0.029
use	0.11	0.034
information	0.11	.201**
questions	0.1	0.078
change	0.1	0.121
comments	0.1	0.016
look	0.1	0.005
academics/research	0.09	.158*
opinion	0.09	0.007
response	0.08	-0.059
advice	0.07	0.048
point	0.07	-0.088

action	0.07	0.099
prosecution of law	0.07	0.052
understanding	0.07	0.021
details	0.06	-0.024
individual	0.06	-0.072
job	0.06	0.008
complex	0.06	0.011
answer	0.06	-0.037
geometry/perspective	0.06	.237**
mind	0.06	.220**
corrections	0.05	0.107
goal	0.05	0.107
process	0.05	0.107
occupation/supervisor	0.05	0.04
project	0.05	0.022
parties	0.04	0.065
peers	0.04	0.026
view	0.04	.133*
criticism	0.03	0.036
errors	0.03	0.036
geometry/angle	0.03	0.036
working/work environment/communication	0.03	-0.029
anatomy/heads/face/eyes	0.03	0.019
behavior and behavior mechanisms/emotion	0.03	-0.027
conversation	0.03	.180**
feed	0.03	0.088
occupation	0.03	0.042
reasoning	0.03	0.065
respect	0.03	-0.05
starting	0.03	-0.027
approach	0.03	0.124
check	0.03	-0.074
clarification	0.03	0.099
finding	0.03	.149*
notes	0.03	0.074
piece	0.03	-0.049
results	0.03	.174**
soulution	0.03	0.099
command	0.02	-0.077
consideration	0.02	.167*
expectations	0.02	.167*
feelings	0.02	-0.05
occupation/guide	0.02	-0.022

academics	0.02	0.131
adjustments	0.02	-0.05
agreement	0.02	0.01
anatomy/heads	0.02	0.04
anatomy/heads/face	0.02	0.01
behavior mechanisms/attitude	0.02	-0.08
criticism/constructive criticism	0.02	0.04
discussion	0.02	.161*
draft	0.02	.191**
geometry/holes	0.02	0.071
holdfast	0.02	0.01
key	0.02	0.04
side	0.02	-0.05
time/timeline	0.02	-0.08
Count	8.56	.403**
* Correlation is significant at the 0.05 level (2-tailed).		
** Correlation is significant at the 0.01 level (2-tailed).		

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.722a	0.521	0.219	0.4953	0.521	1.722	86	136	0.002

Table G40: Form A, Question 2 (V18.2.1) with AFQT “Built” Four Times in Subsample 2 and Tested on Subsample 2—Untrained

Type: Situational

Item: Adapting to Stress and Change (Accepts Feedback)

Facet: Accepting criticism



Category by Size	Mean	Correlation with AFQT
situation	0.55	0.043
recipient	0.5	.178**
issues	0.49	.172**
solution	0.45	.260**
problem	0.42	.233**
outcome	0.39	-0.022
options	0.35	0.091
time	0.33	-0.047
feed/feedback	0.32	0.047
factors	0.3	0.07
fix	0.28	-0.093
course	0.2	.154*
person	0.18	0.025
ideas	0.17	-0.006
reporting	0.17	0.123
working	0.17	0.088
resources	0.16	0.062
effort	0.15	0.005
use	0.11	0.116
information	0.11	0
questions	0.1	0.067
change	0.1	0.065
comments	0.1	0.081
look	0.1	0
academics/research	0.09	0.008
opinion	0.09	0.064
response	0.08	0.014
advice	0.07	-0.078
point	0.07	-0.047
action	0.07	0.044

prosecution of law	0.07	-0.049
understanding	0.07	-0.068
details	0.06	-0.002
individual	0.06	0.016
job	0.06	0.069
complex	0.06	0.043
answer	0.06	-0.007
geometry/perspective	0.06	0.088
mind	0.06	0.082
corrections	0.05	0.017
goal	0.05	0.035
process	0.05	.147*
occupation/supervisor	0.05	0.107
project	0.05	0.1
parties	0.04	0.01
peers	0.04	-0.023
view	0.04	0.019
criticism	0.03	0.106
errors	0.03	-0.008
geometry/angle	0.03	0.054
working/work environment/communication	0.03	0.058
anatomy/heads/face/eyes	0.03	-0.049
behavior and behavior mechanisms/emotion	0.03	-0.012
conversation	0.03	0.12
feed	0.03	0.032
occupation	0.03	0.065
reasoning	0.03	0.105
respect	0.03	-0.06
starting	0.03	0.018
approach	0.03	-0.001
check	0.03	0.008
clarification	0.03	-0.004
finding	0.03	-0.004
notes	0.03	0.007
piece	0.03	-0.004
results	0.03	0.029
soulution	0.03	-0.091
command	0.02	-0.052
consideration	0.02	-0.121
expectations	0.02	0.099
feelings	0.02	-0.032
occupation/guide	0.02	0.063
academics	0.02	-0.013

adjustments	0.02	-0.015
agreement	0.02	-0.069
anatomy/heads	0.02	-0.04
anatomy/heads/face	0.02	0.037
behavior mechanisms/attitude	0.02	-0.082
criticism/constructive criticism	0.02	0.091
discussion	0.02	.187**
draft	0.02	0.108
geometry/holes	0.02	0.043
holdfast	0.02	0.039
key	0.02	-0.015
side	0.02	0.029
time/timeline	0.02	0.027
Count	8.56	.263**
** Correlation is significant at the 0.01 level (2-tailed).		
* Correlation is significant at the 0.05 level (2-tailed).		

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.697a	0.486	0.173	15.846	0.486	1.551	86	141	0.01

Table G41: Form A, Question 2 (V18.2.1) with Human Ratings “Built” Four Times in Subsample 2 and Tested on Subsample 1—Untrained

Type: Situational

Item: Adapting to Stress and Change (Accepts Feedback)

Facet: Accepting criticism



Category by Size	Mean	Correlation with Human Ratings
situation	0.5	-0.02
solution	0.49	0.086
issues	0.47	-0.064
recipient	0.47	.206**
problem	0.45	0.09
outcome	0.38	-0.025
options	0.34	0.064
time	0.31	-0.044
factors	0.3	0
feed/feedback	0.28	.306**
fix	0.22	0.058
person	0.19	-0.079
resources	0.19	0.088
course	0.18	0.12
change	0.13	0.033
questions	0.13	0.069
comments	0.12	0.107
working	0.12	-0.017
information	0.12	.133*
look	0.12	-0.107
prosecution of law	0.11	0.032
ideas	0.11	0.123
effort	0.1	0.112
opinion	0.09	0.074
details	0.07	-0.032
job	0.07	-0.094
point	0.07	0
use	0.07	0.031
complex	0.06	0.097
understanding	0.06	0.13

reporting	0.06	0.065
action	0.06	.137*
answer	0.05	0.086
advice	0.05	0.012
criticism/constructive criticism	0.05	-0.045
reasoning	0.05	0.012
academics/research	0.04	.151*
check	0.04	0.091
geometry/perspective	0.04	.151*
individual	0.04	0.071
project	0.04	.131*
criticism	0.04	0.032
goal	0.04	0.032
mind	0.04	.158*
response	0.04	-0.073
consideration	0.03	0.055
feed	0.03	0.055
process	0.03	0.01
working/work environment/communication	0.03	.210**
anatomy/heads/face/eyes	0.03	0.128
clarification	0.03	-0.014
corrections	0.03	-0.038
occupation	0.03	-0.085
occupation/supervisor	0.03	-0.014
anatomy/heads/face	0.03	0.009
family	0.03	-0.068
conversation	0.02	0.036
errors	0.02	0.036
finding	0.02	0.064
key	0.02	0.092
level	0.02	0.036
office workers/team	0.02	0.064
side	0.02	-0.02
view	0.02	-0.02
downer	0.02	0.101
peers	0.02	0.101
quality	0.02	-0.055
relationship	0.02	0.007
results	0.02	-0.024
soulution	0.02	0.007
Count	7.6	.281**
** Correlation is significant at the 0.01 level (2-tailed).		
* Correlation is significant at the 0.05 level (2-tailed).		

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.675a	0.455	0.212	0.477	0.455	1.874	70	157	0.001

Table G42: Form A, Question 2 (V18.2.1) with AFQT “Built” Four Times in Subsample 2 and Tested on Subsample 1—Untrained

Type: Situational

Item: Adapting to Stress and Change (Accepts Feedback)

Facet: Accepting criticism



Category by Size	Mean	Correlation with AFQT
situation	0.5	-0.061
solution	0.49	.221**
issues	0.47	-0.012
recipient	0.47	.240**
problem	0.45	.132*
outcome	0.38	-0.103
options	0.34	0
time	0.31	-0.002
factors	0.3	0.028
feed/feedback	0.28	0.086
fix	0.22	-.178**
person	0.19	-0.051
resources	0.19	0.104
course	0.18	0.072
change	0.13	0.06
questions	0.13	0.058
comments	0.12	-0.065
working	0.12	.155*
information	0.12	0.031
look	0.12	-0.005
prosecution of law	0.11	-0.049
ideas	0.11	0.081
effort	0.1	0.082
opinion	0.09	0.088
details	0.07	-0.006
job	0.07	-0.061
point	0.07	0.01
use	0.07	-0.071
complex	0.06	0.051
understanding	0.06	0.04

reporting	0.06	0.01
action	0.06	0.104
answer	0.05	-0.062
advice	0.05	-0.106
criticism/constructive criticism	0.05	0.006
reasoning	0.05	.169*
academics/research	0.04	0.12
check	0.04	-0.101
geometry/perspective	0.04	0.124
individual	0.04	.195**
project	0.04	.212**
criticism	0.04	0.01
goal	0.04	.136*
mind	0.04	0.121
response	0.04	0.02
consideration	0.03	0.098
feed	0.03	-.169*
process	0.03	0.026
working/work environment/communication	0.03	0.058
anatomy/heads/face/eyes	0.03	0.054
clarification	0.03	0.07
corrections	0.03	0.026
occupation	0.03	0.02
occupation/supervisor	0.03	-0.065
anatomy/heads/face	0.03	0.008
family	0.03	-0.002
conversation	0.02	.133*
errors	0.02	0.086
finding	0.02	0.007
key	0.02	-0.087
level	0.02	0.059
office workers/team	0.02	-0.022
side	0.02	0.115
view	0.02	0.052
downer	0.02	-0.04
peers	0.02	0.108
quality	0.02	-0.065
relationship	0.02	0.116
results	0.02	-.149*
soulution	0.02	-.131*
Count	7.6	.183**
** Correlation is significant at the 0.01 level (2-tailed).		
* Correlation is significant at the 0.05 level (2-tailed).		

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.647a	0.419	0.16	15.785	0.419	1.617	70	157	0.007

Table G43. Comparison of Rs of Cross Validation Study of Question 2 “Built” Four Times—Untrained (V18.2.1)

	N	Human Ratings		AFQT	
		R	# of Variables	R	# of Variables
Subsample 1 and Tested on Subsample 1	232	.724	90	.702	90
Subsample 1 and Tested on Subsample 2	231	.688	81	.669	81
Subsample 2 and Tested on Subsample 2	231	.722	87	.697	87
Subsample 2 and Tested on Subsample 1	232	.675	71	.647	71
<i>Note.</i> “Count” variable included as # of variables. Only kept categories with frequencies of 4 or more. Categories were “Built” 4 times.					

**Table G44: Form A, Question 2 (V18.2.1) with Human Ratings “Built” Four Times—
Untrained**

Type: Situational

Item: Adapting to Stress and Change (Accepts Feedback)

Facet: Accepting criticism



Category by Size	Mean	Correlation with Human Ratings
situation	0.52	0.013
recipient	0.48	.121*
issues	0.48	0.045
solution	0.46	.115*
problem	0.44	.106*
outcome	0.38	0.011
options	0.35	.103*
time	0.32	0.009
factors	0.3	0.072
feed/feedback	0.3	.190**
steps	0.22	0.066
help	0.19	0.084
person	0.18	0.039
course/course of action	0.17	.120*
resources	0.17	0.084
working	0.16	-0.016
reporting	0.15	.123**
idea	0.13	.150**
effort	0.12	0.036
people	0.12	0
change	0.11	0.071
comments	0.11	0.059
information	0.11	.161**
opinion	0.09	0.041
prosecution of law/mistakes	0.08	-0.001
details	0.07	-0.021
academics/research	0.07	.162**
understanding	0.07	0.074
action	0.06	.152**

standards	0.06	-0.021
advice	0.06	0.03
gooing	0.06	-0.08
complex	0.06	0.066
job	0.06	-0.021
response	0.06	-0.064
task	0.05	0.032
answer	0.05	0.033
individual	0.05	0.006
areas	0.05	0.062
project	0.05	0.062
physics/perspective	0.05	.213**
goal	0.05	0.075
ability	0.04	-0.001
corrections	0.04	0.05
process	0.04	0.04
reasoning	0.04	0.01
occupation/supervisor	0.04	0.021
part	0.04	.093*
complexity	0.04	-0.052
check	0.03	0.013
communication	0.03	0.089
solution/new solution	0.03	0.056
criticism	0.03	0.036
criticism/constructive criticism	0.03	-0.02
feed	0.03	0.07
anatomy/head/face/eyes	0.03	0.073
clarification	0.03	0.061
consideration	0.03	.100*
errors	0.03	0.04
course	0.03	.117*
economics/improvement	0.03	0.092
occupation	0.03	-0.033
experience	0.02	0.084
ground	0.02	-0.034
topic	0.02	-0.008
angle	0.02	0.075
notes	0.02	.102*
respect	0.02	-0.007
soultion	0.02	0.061
anatomy/head/face	0.02	-0.007
approach	0.02	.123**
behavior and behavior mechanisms/emotion	0.02	-0.007

side	0.02	-0.036
time/timeline	0.02	-0.05
anatomy/brain/brainstorm	0.02	.131**
attempt	0.02	0.024
behavior and behavior mechanisms	0.02	.100*
key	0.02	0.055
wingman	0.02	0.039
adjustments	0.02	-0.039
command	0.02	-0.006
criticism	0.02	0.043
downer	0.02	0.01
family	0.02	-0.071
level	0.02	0.043
piece	0.02	-0.039
academics	0.01	0.047
agreement	0.01	.100*
anatomy/head	0.01	0.065
behavior mechanisms/attitude	0.01	0.047
engineering design	0.01	0.012
house rooms/room	0.01	.135**
id	0.01	0.012
national service/draft	0.01	.153**
occupation/educators	0.01	-0.006
occupation/hotel personnel/guide	0.01	0.012
quality	0.01	0.012
relationship	0.01	0.065
starting	0.01	-0.023
worker/team	0.01	.153**
working/workplace	0.01	-0.023
assignment	0.01	-0.082
behavior mechanisms	0.01	-0.044
end	0.01	-0.024
finance	0.01	0.072
hand	0.01	-0.063
minor/open mind	0.01	0.072
pointers	0.01	-0.024
professional	0.01	0.072
property	0.01	-0.044
reviewd	0.01	0.014
situation/complex situation	0.01	-0.024
anatomy/heart	0.01	-0.005
aspects	0.01	.124**
business management	0.01	-0.048

economics	0.01	.124**
holdfast	0.01	0.017
light	0.01	-0.026
minor	0.01	0.017
mission	0.01	-0.048
place	0.01	-0.09
pointers/viewpoint	0.01	0.038
Count	8.62	.359**
* Correlation is significant at the 0.05 level (2-tailed).		
** Correlation is significant at the 0.01 level (2-tailed).		

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.660a	0.436	0.226	0.4849	0.436	2.075	122	328	0

Table G45: Form A, Question 2 (V18.2.1) with AFQT “Built” Four Times—Untrained

Type: Situational

Item: Adapting to Stress and Change (Accepts Feedback)

Facet: Accepting criticism



Category by Size	Mean	Correlation with AFQT
situation	0.52	-0.008
recipient	0.48	.209**
issues	0.48	0.081
solution	0.46	.231**
problem	0.44	.181**
outcome	0.38	-0.05
options	0.35	0.047
time	0.32	-0.024
factors	0.3	0.048
feed/feedback	0.3	0.067
steps	0.22	0.063
help	0.19	-0.012
person	0.18	-0.002
course/course of action	0.17	.113*
resources	0.17	0.088
working	0.16	0.07
reporting	0.15	.093*
idea	0.13	0.016
effort	0.12	0.03
people	0.12	-0.03
change	0.11	0.061
comments	0.11	0.004
information	0.11	0.013
opinion	0.09	0.076
prosecution of law/mistakes	0.08	-0.061
details	0.07	0.015
academics/research	0.07	0.056
understanding	0.07	-0.014
action	0.06	0.088
standards	0.06	0.021
advice	0.06	-.101*

goooing	0.06	-0.074
complex	0.06	0.074
job	0.06	0.032
response	0.06	0.012
task	0.05	-0.028
answer	0.05	-0.038
individual	0.05	.096*
areas	0.05	.132**
project	0.05	.112*
physics/perspective	0.05	.099*
goal	0.05	0.083
ability	0.04	0.035
corrections	0.04	0.023
process	0.04	0.083
reasoning	0.04	.125**
occupation/supervisor	0.04	0.032
part	0.04	-0.017
complexity	0.04	-0.029
check	0.03	-0.054
communication	0.03	0.058
solution/new solution	0.03	0.039
criticism	0.03	0.079
criticism/constructive criticism	0.03	0.036
feed	0.03	-0.072
anatomy/head/face/eyes	0.03	0.002
clarification	0.03	0.054
consideration	0.03	-0.001
errors	0.03	0.028
course	0.03	0.031
economics/improvement	0.03	0.053
occupation	0.03	0.025
experience	0.02	0.044
ground	0.02	0.008
topic	0.02	-0.006
angle	0.02	0.086
notes	0.02	0.025
respect	0.02	-0.019
soulution	0.02	-.108*
anatomy/head/face	0.02	0
approach	0.02	-0.039
behavior and behavior mechanisms/emotion	0.02	0.025
side	0.02	0.074
time/timeline	0.02	-0.049

anatomy/brain/brainstorm	0.02	0.028
attempt	0.02	0.058
behavior and behavior mechanisms	0.02	0.076
key	0.02	-0.047
wingman	0.02	0.035
adjustments	0.02	0.019
command	0.02	-0.049
critism	0.02	-0.077
downer	0.02	-0.082
family	0.02	-0.014
level	0.02	0.064
piece	0.02	0.023
academics	0.01	0.005
agreement	0.01	-0.024
anatomy/head	0.01	-0.051
behavior mechanisms/attitude	0.01	-0.006
engineering design	0.01	0.064
house rooms/room	0.01	0.036
id	0.01	-0.065
national service/draft	0.01	0.068
occupation/educators	0.01	.112*
occupation/hotel personnel/guide	0.01	0.034
quality	0.01	-0.035
relationship	0.01	.102*
starting	0.01	0.016
worker/team	0.01	0.025
working/workplace	0.01	-0.018
assignment	0.01	-0.074
behavior mechanisms	0.01	-0.032
end	0.01	-0.075
finance	0.01	0.033
hand	0.01	-0.074
minor/open mind	0.01	-0.014
pointers	0.01	0.039
professional	0.01	.122**
propery	0.01	-0.001
reviewd	0.01	0
situation/complex situation	0.01	-0.047
anatomy/heart	0.01	0.049
aspects	0.01	.134**
business management	0.01	-0.069
economics	0.01	0.085
holdfast	0.01	0.03

light	0.01	0.009
minor	0.01	-0.047
mission	0.01	-0.043
place	0.01	-0.029
pointers/viewpoint	0.01	-0.069
Count	8.62	.224**
** Correlation is significant at the 0.01 level (2-tailed).		
* Correlation is significant at the 0.05 level (2-tailed).		

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.629a	0.395	0.174	15.737	0.395	1.783	122	333	0

**Table G46: Form A, Question 2 (V18.2.1) with Human Ratings “Built” Seven Times—
Untrained**

Type: Situational

Item: Adapting to Stress and Change (Accepts Feedback)

Facet: Accepting criticism



Category by Size	Mean	Correlation with Human Ratings
situation	0.52	0.013
recipient	0.48	.121*
issues	0.48	0.045
solution	0.46	.115*
problem	0.44	.106*
outcome	0.38	0.011
options	0.35	.103*
time	0.32	0.009
factors	0.3	0.072
feed/feedback	0.3	.190**
steps	0.22	0.066
help	0.19	0.084
person	0.18	0.039
course/course of action	0.17	.120*
resources	0.17	0.084
working	0.16	-0.016
reporting	0.15	.132**
idea	0.13	.150**
effort	0.12	0.036
people	0.12	0
change	0.11	0.071
comments	0.11	0.059
information	0.11	.161**
look	0.11	-0.056
questions	0.1	0.088
talk	0.1	0.077
opinion	0.09	0.041
use	0.09	0.027
prosecution of law/mistakes	0.08	-0.001

details	0.07	-0.021
academics/research	0.07	.162**
understanding	0.07	0.074
action	0.06	.152**
standards	0.06	-0.021
advice	0.06	0.03
going	0.06	-0.08
complex	0.06	0.066
job	0.06	-0.021
response	0.06	-0.064
task	0.05	0.032
answer	0.05	0.033
individual	0.05	0.006
areas	0.05	0.062
project	0.05	0.062
physics/perspective	0.05	.213**
goal	0.05	0.075
ability	0.04	-0.001
corrections	0.04	0.05
process	0.04	0.04
reasoning	0.04	0.01
occupation/supervisor	0.04	0.021
part	0.04	.093*
complexity	0.04	-0.052
occupation	0.04	-0.02
check	0.03	0.013
communication	0.03	0.089
solution/new solution	0.03	0.056
criticism	0.03	0.036
criticism/constructive criticism	0.03	-0.02
feed	0.03	0.07
anatomy/head/face/eyes	0.03	0.073
clarification	0.03	0.061
view	0.03	0.073
consideration	0.03	.100*
errors	0.03	0.04
life	0.03	-.093*
course	0.03	.117*
economics/improvement	0.03	0.092
experience	0.02	0.084
ground	0.02	-0.034
topic	0.02	-0.008
angle	0.02	0.075

notes	0.02	.102*
respect	0.02	-0.007
soulution	0.02	0.061
words	0.02	0.006
anatomy/head/face	0.02	-0.007
approach	0.02	.123**
behavior and behavior mechanisms/emotion	0.02	-0.007
side	0.02	-0.036
time/timeline	0.02	-0.05
anatomy/brain/brainstorm	0.02	.131**
attempt	0.02	0.024
behavior and behavior mechanisms	0.02	.100*
data	0.02	-0.006
friends	0.02	-0.037
key	0.02	0.055
sense	0.02	0.024
wingman	0.02	0.039
adjustments	0.02	-0.039
command	0.02	-0.006
critism	0.02	0.043
downer	0.02	0.01
expectations	0.02	.108*
family	0.02	-0.071
level	0.02	0.043
piece	0.02	-0.039
academics	0.01	0.047
agreement	0.01	.100*
anatomy/head	0.01	0.065
behavior mechanisms/attitude	0.01	0.047
critisism	0.01	-0.023
deadline	0.01	0.03
decision	0.01	0.03
engineering design	0.01	0.012
house rooms/room	0.01	.135**
id	0.01	0.012
national service/draft	0.01	.153**
occupation/hotel personnel/guide	0.01	0.012
projectile	0.01	0.065
quality	0.01	0.012
relationship	0.01	0.065
reporting/better report	0.01	-0.006
sources	0.01	.100*
starting	0.01	-0.023

worker/team	0.01	.153**
working/workplace	0.01	-0.023
assignment	0.01	-0.082
behavior mechanisms	0.01	-0.044
depth	0.01	-0.024
end	0.01	-0.024
feeling	0.01	-0.044
finance	0.01	0.072
hand	0.01	-0.063
minor/open mind	0.01	0.072
offer	0.01	-0.005
par	0.01	0.033
pointers	0.01	-0.024
professional	0.01	0.072
properly	0.01	-0.044
reviewd	0.01	0.014
situation/complex situation	0.01	-0.024
anatomy/heart	0.01	-0.005
aspects	0.01	.124**
business management	0.01	-0.048
discussion	0.01	.124**
economics	0.01	.124**
geology	0.01	-0.048
holdfast	0.01	0.017
holes	0.01	0.06
home	0.01	-0.09
light	0.01	-0.026
minor	0.01	0.017
mission	0.01	-0.048
place	0.01	-0.09
pointers/viewpoint	0.01	0.038
reaction	0.01	0.017
route	0.01	-0.005
superiors	0.01	0.038
terms	0.01	-0.09
Count	9.35	.360**
* Correlation is significant at the 0.05 level (2-tailed).		
** Correlation is significant at the 0.01 level (2-tailed).		

Model Summary								

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.700a	0.49	0.235	0.4822	0.49	1.92	150	300	0

Table G47: Form A, Question 2 (V18.2.1) with AFQT “Built” Seven Times—Untrained

Type: Situational

Item: Adapting to Stress and Change (Accepts Feedback)

Facet: Accepting criticism



Category by Size	Mean	Correlation with AFQT
situation	0.52	-0.008
recipient	0.48	.209**
issues	0.48	0.081
solution	0.46	.231**
problem	0.44	.181**
outcome	0.38	-0.05
options	0.35	0.047
time	0.32	-0.024
factors	0.3	0.048
feed/feedback	0.3	0.067
steps	0.22	0.063
help	0.19	-0.012
person	0.18	-0.002
course/course of action	0.17	.113*
resources	0.17	0.088
working	0.16	0.07
reporting	0.15	.110*
idea	0.13	0.016
effort	0.12	0.03
people	0.12	-0.03
change	0.11	0.061
comments	0.11	0.004
information	0.11	0.013
look	0.11	-0.004
questions	0.1	0.057
talk	0.1	0.036
opinion	0.09	0.076
use	0.09	0.016
prosecution of law/mistakes	0.08	-0.061
details	0.07	0.015
academics/research	0.07	0.056

understanding	0.07	-0.014
action	0.06	0.088
standards	0.06	0.021
advice	0.06	-.101*
goooing	0.06	-0.074
complex	0.06	0.074
job	0.06	0.032
response	0.06	0.012
task	0.05	-0.028
answer	0.05	-0.038
individual	0.05	.096*
areas	0.05	.132**
project	0.05	.112*
physics/perspective	0.05	.099*
goal	0.05	0.083
ability	0.04	0.035
corrections	0.04	0.023
process	0.04	0.083
reasoning	0.04	.125**
occupation/supervisor	0.04	0.032
part	0.04	-0.017
complexity	0.04	-0.029
occupation	0.04	0.073
check	0.03	-0.054
communication	0.03	0.058
solution/new solution	0.03	0.039
criticism	0.03	0.079
criticism/constructive criticism	0.03	0.036
feed	0.03	-0.072
anatomy/head/face/eyes	0.03	0.002
clarification	0.03	0.054
view	0.03	0.035
consideration	0.03	-0.001
errors	0.03	0.028
life	0.03	-0.037
course	0.03	0.031
economics/improvement	0.03	0.053
experience	0.02	0.044
ground	0.02	0.008
topic	0.02	-0.006
angle	0.02	0.086
notes	0.02	0.025
respect	0.02	-0.019

soulution	0.02	-.108*
words	0.02	0.065
anatomy/head/face	0.02	0
approach	0.02	-0.039
behavior and behavior mechanisms/emotion	0.02	0.025
side	0.02	0.074
time/timeline	0.02	-0.049
anatomy/brain/brainstorm	0.02	0.028
attempt	0.02	0.058
behavior and behavior mechanisms	0.02	0.076
data	0.02	0.09
friends	0.02	0.046
key	0.02	-0.047
sense	0.02	0.064
wingman	0.02	0.035
adjustments	0.02	0.019
command	0.02	-0.049
critism	0.02	-0.077
downer	0.02	-0.082
expectations	0.02	0.065
family	0.02	-0.014
level	0.02	0.064
piece	0.02	0.023
academics	0.01	0.005
agreement	0.01	-0.024
anatomy/head	0.01	-0.051
behavior mechanisms/attitude	0.01	-0.006
critisism	0.01	0.025
deadline	0.01	0.061
decision	0.01	.150**
engineering design	0.01	0.064
house rooms/room	0.01	0.036
id	0.01	-0.065
national service/draft	0.01	0.068
occupation/hotel personnel/guide	0.01	0.034
projectile	0.01	0.053
quality	0.01	-0.035
relationship	0.01	.102*
reporting/better report	0.01	-0.053
sources	0.01	0.075
starting	0.01	0.016
worker/team	0.01	0.025
working/workplace	0.01	-0.018

assignment	0.01	-0.074
behavior mechanisms	0.01	-0.032
depth	0.01	0.02
end	0.01	-0.075
feeling	0.01	-0.056
finance	0.01	0.033
hand	0.01	-0.074
minor/open mind	0.01	-0.014
offer	0.01	0.052
par	0.01	0.042
pointers	0.01	0.039
professional	0.01	.122**
properly	0.01	-0.001
reviewd	0.01	0
situation/complex situation	0.01	-0.047
anatomy/heart	0.01	0.049
aspects	0.01	.134**
business management	0.01	-0.069
discussion	0.01	.135**
economics	0.01	0.085
geology	0.01	-0.075
holdfast	0.01	0.03
holes	0.01	0.033
home	0.01	0.004
light	0.01	0.009
minor	0.01	-0.047
mission	0.01	-0.043
place	0.01	-0.029
pointers/viewpoint	0.01	-0.069
reaction	0.01	-0.053
route	0.01	0.011
superiors	0.01	0.017
terms	0.01	.119*
Count	9.35	.247**
** Correlation is significant at the 0.01 level (2-tailed).		
* Correlation is significant at the 0.05 level (2-tailed).		

Model Summary								
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics			

					R Square Change	F Change	df1	df2	Sig. F Change
1	.681a	0.463	0.199	15.492	0.463	1.754	150	305	0

Table G48: Form A, Question 2 (V18.2.1) with Human Ratings “Built” Seven Times and with All Unused Concepts as Categories—Untrained

Type: Situational

Item: Adapting to Stress and Change (Accepts Feedback)

Facet: Accepting criticism



Category by Size	Mean	Correlation with Human Ratings
situation	0.52	0.013
report	0.51	.135**
recipient	0.48	.121*
issues	0.48	0.045
solution	0.46	.115*
work	0.44	.142**
problem	0.44	.106*
outcome	0.38	0.011
options	0.35	.103*
time	0.32	0.009
factors	0.3	0.072
feed/feedback	0.3	.190**
fix	0.24	0.014
steps	0.22	0.066
help	0.19	0.084
person	0.18	0.039
course/course of action	0.17	.120*
resources	0.17	0.084
working	0.16	-0.016
reporting	0.15	.132**
idea	0.13	.150**
effort	0.12	0.036
people	0.12	0
change	0.11	0.071
comments	0.11	0.059
information	0.11	.161**
look	0.11	-0.056
questions	0.1	0.088
talk	0.1	0.077
opinion	0.09	0.041

feel	0.09	-0.015
use	0.09	0.027
prosecution of law/mistakes	0.08	-0.001
start	0.08	-0.029
details	0.07	-0.021
academics/research	0.07	.162**
understanding	0.07	0.074
point	0.06	-0.045
action	0.06	.152**
review	0.06	.096*
standards	0.06	-0.021
advice	0.06	0.03
gooing	0.06	-0.08
complex	0.06	0.066
job	0.06	-0.021
response	0.06	-0.064
task	0.05	0.032
answer	0.05	0.033
individual	0.05	0.006
areas	0.05	0.062
project	0.05	0.062
physics/perspective	0.05	.213**
goal	0.05	0.075
reason	0.05	-0.011
ability	0.04	-0.001
mind	0.04	.195**
corrections	0.04	0.05
process	0.04	0.04
reasoning	0.04	0.01
effect	0.04	-0.01
occupation/supervisor	0.04	0.021
part	0.04	.093*
complexity	0.04	-0.052
hit	0.04	.096*
occupation	0.04	-0.02
check	0.03	0.013
communication	0.03	0.089
solution/new solution	0.03	0.056
talking	0.03	0.034
criticism	0.03	0.036
criticism/constructive criticism	0.03	-0.02
fact	0.03	0.002
feed	0.03	0.07

anatomy/head/face/eyes	0.03	0.073
clarification	0.03	0.061
explanation	0.03	0.049
view	0.03	0.073
consideration	0.03	.100*
coworker	0.03	0.052
errors	0.03	0.04
life	0.03	-.093*
paper	0.03	0.052
show	0.03	0.016
course	0.03	.117*
economics/improvement	0.03	0.092
input	0.03	0.092
peers	0.03	0.067
experience	0.02	0.084
ground	0.02	-0.034
recipient	0.02	0.084
scratch	0.02	0.071
topic	0.02	-0.008
angle	0.02	0.075
chance	0.02	0.02
conversation	0.02	.116*
notes	0.02	.102*
page	0.02	0.034
redone	0.02	0.061
requirements	0.02	0.047
respect	0.02	-0.007
soulution	0.02	0.061
words	0.02	0.006
anatomy/head/face	0.02	-0.007
approach	0.02	.123**
behavior and behavior mechanisms/emotion	0.02	-0.007
compromise	0.02	0.065
direction	0.02	.108*
finding	0.02	.094*
parties	0.02	0.051
reread	0.02	0.008
side	0.02	-0.036
suggestions	0.02	0.065
time/timeline	0.02	-0.05
anatomy/brain/brainstorm	0.02	.131**
attempt	0.02	0.024
behavior and behavior mechanisms	0.02	.100*

case	0.02	0.024
data	0.02	-0.006
finish	0.02	-0.022
flaws	0.02	0.039
friends	0.02	-0.037
key	0.02	0.055
mine	0.02	0.009
order	0.02	0.024
plan	0.02	0.055
results	0.02	.100*
reworking	0.02	0.07
sense	0.02	0.024
wingman	0.02	0.039
adjustments	0.02	-0.039
command	0.02	-0.006
conclusion	0.02	.108*
critism	0.02	0.043
downer	0.02	0.01
expectations	0.02	.108*
family	0.02	-0.071
form	0.02	.108*
know how	0.02	-0.039
level	0.02	0.043
piece	0.02	-0.039
resolution	0.02	0.059
stay	0.02	0.01
thoughts	0.02	0.01
writing	0.02	-0.055
academics	0.01	0.047
address	0.01	-0.006
agreement	0.01	.100*
anatomy/head	0.01	0.065
behavior mechanisms/attitude	0.01	0.047
contact	0.01	0.03
criticism	0.01	-0.023
deadline	0.01	0.03
decision	0.01	0.03
engineering design	0.01	0.012
gain	0.01	0.065
house rooms/room	0.01	.135**
id	0.01	0.012
national service/draft	0.01	.153**
occupation/hotel personnel/guide	0.01	0.012

projectile	0.01	0.065
quality	0.01	0.012
relationship	0.01	0.065
reporting/better report	0.01	-0.006
saw	0.01	0.012
scenario	0.01	-0.006
sources	0.01	.100*
starting	0.01	-0.023
tips	0.01	0.03
turn	0.01	-0.023
worker/team	0.01	.153**
working/workplace	0.01	-0.023
act	0.01	.130**
assignment	0.01	-0.082
behavior mechanisms	0.01	-0.044
build	0.01	0.014
depth	0.01	-0.024
end	0.01	-0.024
feeling	0.01	-0.044
finance	0.01	0.072
hand	0.01	-0.063
handle	0.01	-0.063
insight	0.01	0.014
meeting	0.01	-0.024
minor/open mind	0.01	0.072
miscommunication	0.01	.130**
offer	0.01	-0.005
okay	0.01	-0.063
par	0.01	0.033
pointers	0.01	-0.024
professional	0.01	0.072
properly	0.01	-0.044
reading	0.01	0.072
reviewd	0.01	0.014
second time	0.01	-0.005
set	0.01	-0.005
situation/complex situation	0.01	-0.024
table	0.01	.110*
trust	0.01	0.072
anatomy/heart	0.01	-0.005
argument	0.01	-0.069
aspects	0.01	.124**
at the end of the day	0.01	0.038

back up	0.01	-0.048
business management	0.01	-0.048
care	0.01	0.081
date	0.01	0.038
discussion	0.01	.124**
economics	0.01	.124**
email	0.01	-0.005
fight	0.01	-0.048
geology	0.01	-0.048
guidance	0.01	-0.005
holdfast	0.01	0.017
holes	0.01	0.06
home	0.01	-0.09
light	0.01	-0.026
minor	0.01	0.017
mission	0.01	-0.048
misunderstanding	0.01	0.06
opportunity	0.01	0.081
place	0.01	-0.09
play	0.01	-0.09
pointers/viewpoint	0.01	0.038
reaction	0.01	0.017
relook	0.01	0.038
reply	0.01	-0.005
request	0.01	-0.005
route	0.01	-0.005
spending	0.01	-0.026
superiors	0.01	0.038
terms	0.01	-0.09
track	0.01	0.081
tweak	0.01	0.017
wait	0.01	0.06
world	0.01	-0.048
Count	12.13	.424**
** Correlation is significant at the 0.01 level (2-tailed).		
* Correlation is significant at the 0.05 level (2-tailed).		

Model Summary								
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics			

					R Square Change	F Change	df1	df2	Sig. F Change
1	.798a	0.637	0.24	0.4803	0.637	1.606	235	215	0

Table G49: Form A, Question 2 (V18.2.1) with AFQT “Built” Seven Times and with All Unused Concepts as Categories —Untrained

Type: Situational

Item: Adapting to Stress and Change (Accepts Feedback)

Facet: Accepting criticism



Category by Size	Mean	Correlation with AFQT
situation	0.52	-0.008
report	0.51	0.02
recipient	0.48	.209**
issues	0.48	0.081
solution	0.46	.231**
work	0.44	.111*
problem	0.44	.181**
outcome	0.38	-0.05
options	0.35	0.047
time	0.32	-0.024
factors	0.3	0.048
feed/feedback	0.3	0.067
fix	0.24	-.131**
steps	0.22	0.063
help	0.19	-0.012
person	0.18	-0.002
course/course of action	0.17	.113*
resources	0.17	0.088
working	0.16	0.07
reporting	0.15	.110*
idea	0.13	0.016
effort	0.12	0.03
people	0.12	-0.03
change	0.11	0.061
comments	0.11	0.004
information	0.11	0.013
look	0.11	-0.004
questions	0.1	0.057
talk	0.1	0.036
opinion	0.09	0.076

feel	0.09	0.017
use	0.09	0.016
prosecution of law/mistakes	0.08	-0.061
start	0.08	.101*
details	0.07	0.015
academics/research	0.07	0.056
understanding	0.07	-0.014
point	0.06	-0.025
action	0.06	0.088
review	0.06	0.084
standards	0.06	0.021
advice	0.06	-.101*
gooing	0.06	-0.074
complex	0.06	0.074
job	0.06	0.032
response	0.06	0.012
task	0.05	-0.028
answer	0.05	-0.038
individual	0.05	.096*
areas	0.05	.132**
project	0.05	.112*
physics/perspective	0.05	.099*
goal	0.05	0.083
reason	0.05	0.088
ability	0.04	0.035
mind	0.04	.129**
corrections	0.04	0.023
process	0.04	0.083
reasoning	0.04	.125**
effect	0.04	-0.067
occupation/supervisor	0.04	0.032
part	0.04	-0.017
complexity	0.04	-0.029
hit	0.04	0.014
occupation	0.04	0.073
check	0.03	-0.054
communication	0.03	0.058
solution/new solution	0.03	0.039
talking	0.03	0.018
criticism	0.03	0.079
criticism/constructive criticism	0.03	0.036
fact	0.03	0.055
feed	0.03	-0.072

anatomy/head/face/eyes	0.03	0.002
clarification	0.03	0.054
explanation	0.03	0.069
view	0.03	0.035
consideration	0.03	-0.001
coworker	0.03	0.067
errors	0.03	0.028
life	0.03	-0.037
paper	0.03	0.034
show	0.03	-0.025
course	0.03	0.031
economics/improvement	0.03	0.053
input	0.03	.095*
peers	0.03	0.012
experience	0.02	0.044
ground	0.02	0.008
recipient	0.02	-0.032
scratch	0.02	.133**
topic	0.02	-0.006
angle	0.02	0.086
chance	0.02	0.006
conversation	0.02	.134**
notes	0.02	0.025
page	0.02	0.074
redone	0.02	0.003
requirements	0.02	-0.012
respect	0.02	-0.019
soultion	0.02	-.108*
words	0.02	0.065
anatomy/head/face	0.02	0
approach	0.02	-0.039
behavior and behavior mechanisms/emotion	0.02	0.025
compromise	0.02	.199**
direction	0.02	0.056
finding	0.02	0
parties	0.02	0.016
reread	0.02	0
side	0.02	0.074
suggestions	0.02	0.031
time/timeline	0.02	-0.049
anatomy/brain/brainstorm	0.02	0.028
attempt	0.02	0.058
behavior and behavior mechanisms	0.02	0.076

case	0.02	0.04
data	0.02	0.09
finish	0.02	0.04
flaws	0.02	0.055
friends	0.02	0.046
key	0.02	-0.047
mine	0.02	0.031
order	0.02	-0.001
plan	0.02	-0.011
results	0.02	-0.022
reworking	0.02	0.04
sense	0.02	0.064
wingman	0.02	0.035
adjustments	0.02	0.019
command	0.02	-0.049
conclusion	0.02	0.008
critism	0.02	-0.077
downer	0.02	-0.082
expectations	0.02	0.065
family	0.02	-0.014
form	0.02	.118*
know how	0.02	0.001
level	0.02	0.064
piece	0.02	0.023
resolution	0.02	-0.028
stay	0.02	-0.006
thoughts	0.02	0.079
writing	0.02	0.009
academics	0.01	0.005
address	0.01	0.025
agreement	0.01	-0.024
anatomy/head	0.01	-0.051
behavior mechanisms/attitude	0.01	-0.006
contact	0.01	0.049
criticism	0.01	0.025
deadline	0.01	0.061
decision	0.01	.150**
engineering design	0.01	0.064
gain	0.01	0.013
house rooms/room	0.01	0.036
id	0.01	-0.065
national service/draft	0.01	0.068
occupation/hotel personnel/guide	0.01	0.034

projectile	0.01	0.053
quality	0.01	-0.035
relationship	0.01	.102*
reporting/better report	0.01	-0.053
saw	0.01	-0.003
scenario	0.01	0.026
sources	0.01	0.075
starting	0.01	0.016
tips	0.01	-0.018
turn	0.01	-0.082
worker/team	0.01	0.025
working/workplace	0.01	-0.018
act	0.01	0.085
assignment	0.01	-0.074
behavior mechanisms	0.01	-0.032
build	0.01	0.016
depth	0.01	0.02
end	0.01	-0.075
feeling	0.01	-0.056
finance	0.01	0.033
hand	0.01	-0.074
handle	0.01	-0.037
insight	0.01	0.085
meeting	0.01	-0.019
minor/open mind	0.01	-0.014
miscommunication	0.01	.126**
offer	0.01	0.052
okay	0.01	0.01
par	0.01	0.042
pointers	0.01	0.039
professional	0.01	.122**
property	0.01	-0.001
reading	0.01	0.064
reviewd	0.01	0
second time	0.01	-0.042
set	0.01	0.066
situation/complex situation	0.01	-0.047
table	0.01	0.05
trust	0.01	0
anatomy/heart	0.01	0.049
argument	0.01	-0.019
aspects	0.01	.134**
at the end of the day	0.01	0.03

back up	0.01	-.125**
business management	0.01	-0.069
care	0.01	0.051
date	0.01	-0.059
discussion	0.01	.135**
economics	0.01	0.085
email	0.01	0.039
fight	0.01	0.017
geology	0.01	-0.075
guidance	0.01	0.075
holdfast	0.01	0.03
holes	0.01	0.033
home	0.01	0.004
light	0.01	0.009
minor	0.01	-0.047
mission	0.01	-0.043
misunderstanding	0.01	0.045
opportunity	0.01	0.026
place	0.01	-0.029
play	0.01	0.003
pointers/viewpoint	0.01	-0.069
reaction	0.01	-0.053
relook	0.01	-0.023
reply	0.01	0.044
request	0.01	0.058
route	0.01	0.011
spending	0.01	0.006
superiors	0.01	0.017
terms	0.01	.119*
track	0.01	0.041
tweak	0.01	0
wait	0.01	-0.002
world	0.01	-0.046
Count	12.13	.278**
** Correlation is significant at the 0.01 level (2-tailed).		
* Correlation is significant at the 0.05 level (2-tailed).		

Model Summary								

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.790a	0.624	0.223	15.262	0.624	1.555	235	220	0

Table G50. Comparison of Rs and Number of Variables Depending on Times “Built” for Question 2 (V18.2.1)

	# of Variables	Human Rating R	AFQT R
“Built” Once	44	.506	.445
“Built” Once and Trained	136	.690	.643
“Built” Twice	79	.583	.512
“Built” Three Times	105	.632	.580
“Built” Four Times	123	.660	.629
“Built” Seven Times (Max)	151	.700	.681
All Unused Concepts as Categories	236	.798	.790

N = 451.
Note. “Count” variable included as # of variables.

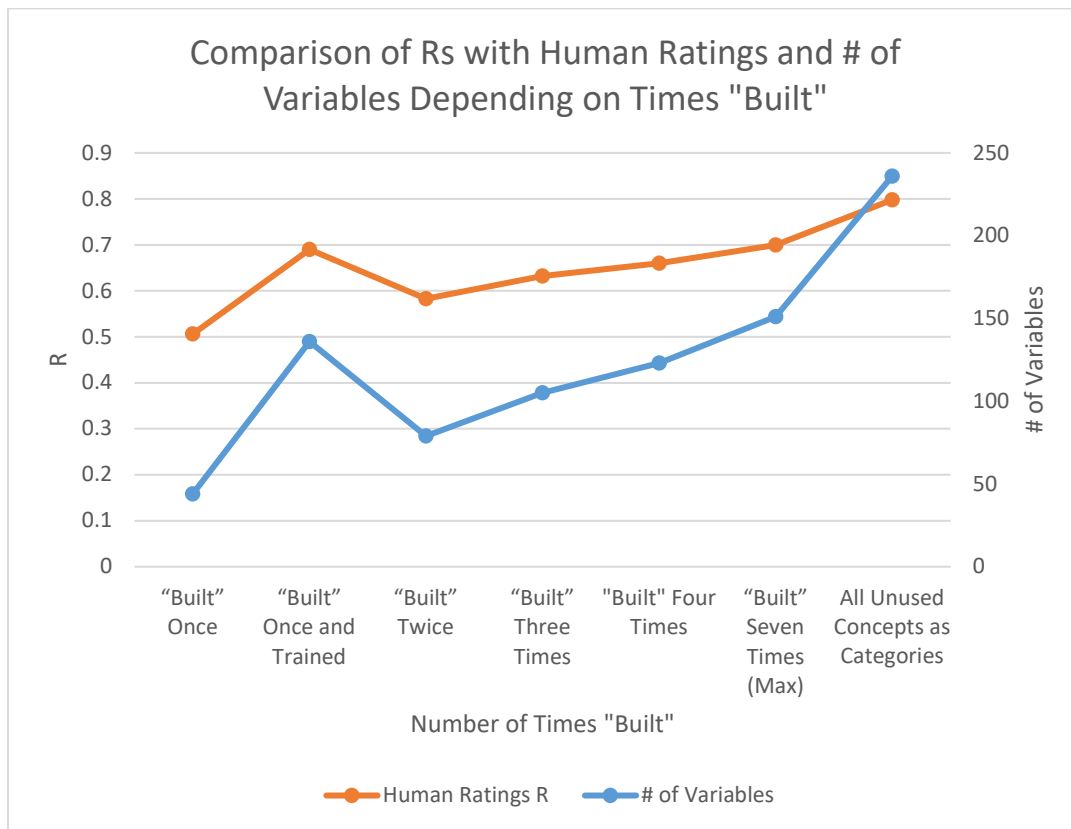


Table G51: Sample Description

Question	N
Question 1	453
Question 2	451
Question 3	455
Question 4	456
Question 5	460
Question 6	460

	N	Mean	SD	Min.	Max.	Missing
Age	454	20.54	4.052	17	40	

Gender	Frequency— Count	Frequency— Percentage
Female	222	47.9
Male	235	50.8
Declined to Respond	3	.6
Missing	3	.6
Total	463	100.0

Race	Frequency— Count	Frequency— Percentage
American Indian/Alaska Native	14	3.0
Asian	21	4.5
Black/African American	79	17.1
Native Hawaiian/Other Pacific Islander	7	1.5
White/Caucasian	342	73.9
Declined to Respond	17	3.7
Total	480	103.7
Note. Respondents were allowed to indicate more than one race, so total is more than total N, and percent is more than 100%.		

Ethnicity	Frequency— Count	Frequency— Percentage
Non-Hispanic	300	64.8
Hispanic	87	18.8
Declined to Respond	8	1.7
Missing	68	14.7
Total	463	100.0

	N	Mean	SD	Min.	Max.	Missing

Education	459	12.83	1.392	12	20	4

Education	Frequency— Count	Frequency— Percentage
12	293	63.3
13	56	12.1
14	56	12.1
15	20	4.3
16	26	5.6
17	1	.2
18	4	.9
19	2	.4
20	1	.2
Missing	4	.9
Total	463	100.0

Highest Degree Earned	Frequency— Count	Frequency— Percentage
High School	390	84.2
Associate's	28	6.0
Bachelor's	25	5.4
Masters	5	1.1
Missing	15	3.2
Total	463	100.0

	Mean	SD	Min.	Max.
AFQT	63.92	17.311	31	99

Table G52: Interrater Reliabilities

Question	% Agreement	Intra-Class Correlation (ICC2)	Krippendorff's Alpha (Ordinal Data)
Question 1	84.9%	.874	.738
Question 2	84.7%	.887	.783
Question 3	78.8%	.807	.644
Question 4	82.3%	.870	.759
Question 5	78.0%	.778	.608
Question 6	82.5%	.812	.655

Table G53: Multiple Correlations with Interview (Human) Ratings and AFQT for Versions 17.0 and 18.2.1

	N	Human Ratings				AFQT			
		V17.0	# of Variables	V18.2.1	# of Variables	V17.0	# of Variables	V18.2.1	# of Variables
Question 1	453	.807	214	.706	121	.720	214	.561	121
Question 2	451	.620	96	.506	44	.599	96	.445	44
Question 3	455	.669	112	.617	68	.547	112	.454	68
Question 4	456	.701	190	.525	103	.686	190	.501	103
Question 5	460	.749	151	.676	98	.708	151	.615	98
Question 6	460	.722	206	.601	126	.720	206	.580	126
<i>Note.</i> "Count" variable included as # of variables.									

TableG5 4: Multiple Correlations with Interview (Human) Ratings and AFQT Using Version 18.2.1 on Models Developed in Version 17.0 for Question 2

	Human Ratings		AFQT	
	R	# of Variables	R	# of Variables
Version 17.0	.620	97	.599	97
Version 18.2.1	.605	83	.548	83

Table G55: Multiple Correlations with Interview (Human) Ratings and AFQT Using Version 18.2.1 Demonstrating Influence of Training Question 2

	# of Variables	Human Rating R	AFQT R
"Built" Once	44	.506	.445
"Built" Once and Converted Unused Concepts into Categories	136	.690	.643
"Built" Twice	79	.583	.512
"Built" Three Times	105	.632	.580
"Built" Four Times	123	.660	.629
"Built" Seven Times (Max)	151	.700	.681
"Built" Seven Times (Max) and Converted Unused Concepts into Categories	236	.798	.790
N = 451.			
Note. "Count" variable included as # of variables.			

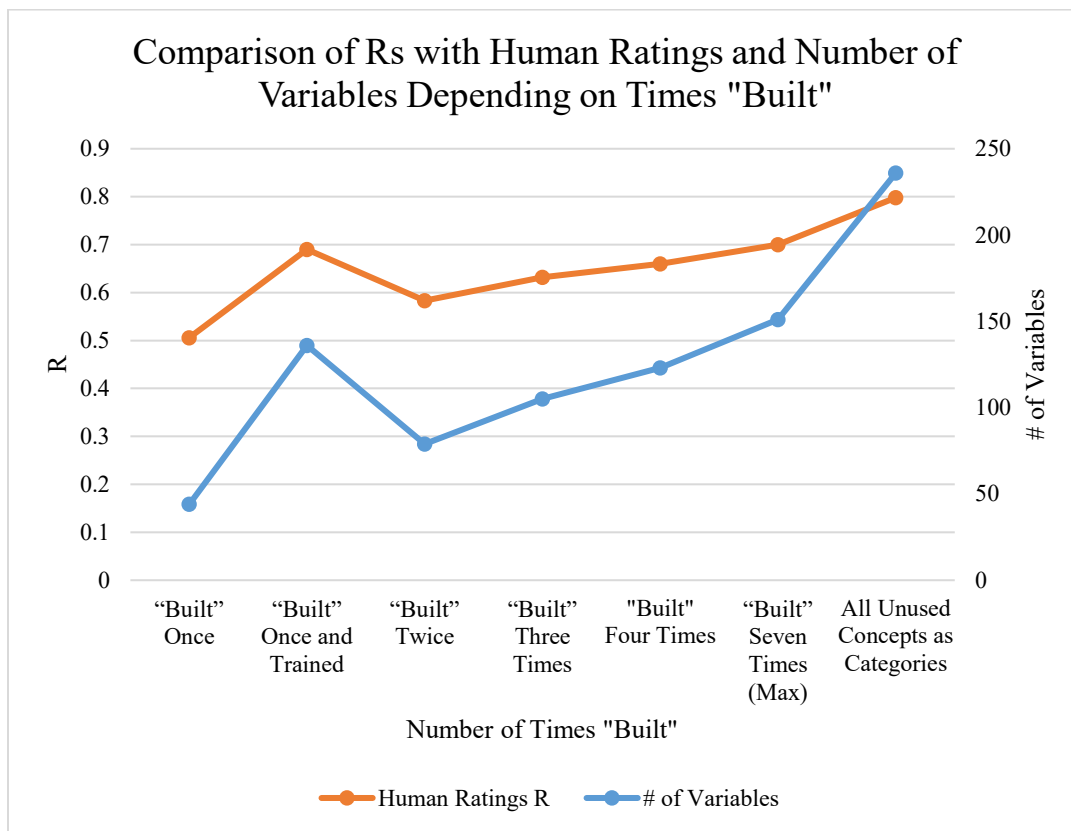


Table G56: Multiple Correlations with Interview (Human) Ratings and AFQT Using Version 18.2.1 Demonstrating Cross-Validation for Question 2

	N	Interview Ratings		AFQT	
		R	# of Variables	R	# of Variables
Subsample 1 and Tested on Subsample 1	232	.724	90	.702	90
Subsample 1 and Tested on Subsample 2	231	.688	81	.669	81
Subsample 2 and Tested on Subsample 2	231	.722	87	.697	87
Subsample 2 and Tested on Subsample 1	232	.675	71	.647	71
<i>Note.</i> “Count” variable included as # of variables. The models were built four times, but uncategorized concepts were NOT converted to categories.					

APPENDIX H: SECOND AND THIRD ANALYSES OF VALIDITY OF INTERVIEW MINING

Table H1
Means and Correlations for Question 1 Model Trained (V18.2.1) in Subsample 1 and Tested in Subsample 1

Type: Behavioral

Item: Adapting to Stress and Change (Adaptability)

Facet: Ability to adapt to new and changing tasks and situations



Categories by Size	Mean	Correlations with Human Ratings	Correlations with AFQT
life	0.43	0.105	-0.004
situation	0.35	0.051	0.013
change	0.34	0.057	0.026
time	0.34	0.053	0.035
schooling/high school	0.3	0.009	0.057
changesd/major change	0.28	0.107	-0.109
friends	0.27	-0.058	0.001
outcomes	0.27	0.01	-0.014
family	0.25	0.065	0.003
work	0.25	.250**	0.06
people	0.2	0.02	-0.069
family/family structure/parents	0.2	0.066	0.092
news	0.2	0.078	0.118
school	0.19	0.035	-0.074
job	0.19	.185**	0.042
home	0.17	.143*	0.089
year	0.17	0.036	0.094
family/family structure/parents/mom	0.14	-0.097	-0.121
help	0.14	.210**	-0.062
schooling	0.14	0.064	0.043
working	0.14	0.078	-0.049
military/air force	0.13	0.038	0.078
person	0.13	0.078	0.033
college	0.12	0.051	0.092
changesd	0.11	0.014	0.057

join	0.11	0.056	-0.08
family/family structure/parents/dad	0.1	-0.082	-0.077
moving	0.1	-0.116	0.041
family/family structure/parents/father	0.1	-0.007	0.033
finance/money	0.09	0.031	-0.059
home/house	0.09	-0.057	.133*
stay	0.09	0.066	.168*
family/family structure/parents/mother	0.09	.168*	0.11
week	0.09	0.024	0.018
approach	0.08	-0.093	0.018
talk	0.08	0.017	-0.029
living	0.08	0.01	0.03
plan	0.08	0.123	0.055
bmt	0.07	0.041	0.084
family/family structure/children/brother and sister/brother	0.07	-0.037	0.077
point	0.07	0.079	0.026
day	0.07	0.033	-0.074
military	0.07	0.093	-0.041
decision	0.06	0.128	0.023
feel	0.06	-0.077	-0.017
news/new friends	0.06	-0.118	0.062
academics/grade	0.06	0.039	0.008
control	0.06	-0.067	0.101
step	0.06	0.102	-0.108
academics/students	0.06	-0.034	0.023
anatomy/body regions/head	0.06	-0.122	0.098
city	0.06	-0.122	-0.037
part	0.06	0.097	0.058
place	0.06	-0.013	-0.048
position	0.06	-0.034	-0.009
start	0.06	0.009	0.044
state	0.06	-0.056	-0.015
academics/students/sophomore/freshman	0.05	0.023	0.068
family/family structure/child	0.05	.137*	0.03
occupation	0.05	0	-0.044
occupation/manager	0.05	0.114	-0.058
talking	0.05	0.091	0
marital status	0.05	-0.057	-0.067
mind	0.05	-0.081	-0.046
months	0.05	-0.057	0.006
one day	0.05	-0.033	0.008
relationship	0.05	0.085	0.062

support	0.05	.133*	0.05
town	0.05	0.061	-0.062
behavior mechanisms/attitude	0.04	-0.02	0.038
changesd/big change	0.04	0.054	-0.005
classes	0.04	0.054	0.003
compensation	0.04	0.079	0.11
end	0.04	0.054	0.052
kids	0.04	0.104	-0.058
know how	0.04	0.029	-0.028
night	0.04	0.029	.178**
office workers/team	0.04	0.029	-0.106
sales	0.04	0.029	-0.05
sport/sports by type	0.04	0.054	0.038
build	0.04	0.098	0.085
choice	0.04	0.046	-0.028
finance	0.04	.176**	0.047
food	0.04	0.098	-0.003
hours	0.04	0.124	-0.056
news/new school	0.04	-0.059	-0.015
problem	0.04	-0.006	0.015
schooling/change schools	0.04	-0.111	-0.091
siblings	0.04	0.124	0.1
sport	0.04	-0.032	-0.102
behavior and behavior mechanisms/emotion/love	0.03	-0.101	-0.064
boss	0.03	-0.018	-0.007
call	0.03	0.065	-0.007
fact	0.03	0.037	0.104
feeling	0.03	-0.046	0.015
goal	0.03	-0.046	-0.029
house rooms/room	0.03	0.065	0.007
idea	0.03	0.009	0.082
mental processes/learning	0.03	-0.073	-0.053
news/new people	0.03	0.065	0.015
reason	0.03	-0.129	-0.113
schooling/school year	0.03	-0.129	0.06
show	0.03	-0.101	-0.013
vehicles	0.03	.147*	-0.019
worry	0.03	0.009	0.067
age	0.03	0.057	-0.053
business	0.03	0.057	0.054
chance	0.03	-0.002	-0.008
childhood	0.03	-0.002	0.031

company	0.03	0.057	0.005
drive	0.03	.145*	0.051
economics	0.03	.204**	.156*
family/family structure/children/brother and sister	0.03	-0.032	-0.057
finish	0.03	-0.002	.137*
fun	0.03	0.057	-0.063
future	0.03	-0.032	-0.031
home/apartment	0.03	0.086	0.098
last year	0.03	-0.061	-0.072
location	0.03	0.115	-0.014
mental processes/learning/practice	0.03	0.115	0.04
mind/mindset	0.03	-0.032	-0.013
news/new place	0.03	-0.002	.140*
physics	0.03	-0.061	-0.007
questions	0.03	-0.002	0.063
rules	0.03	-0.032	-0.039
saw	0.03	0.057	0.054
schooling/switched schools	0.03	-0.032	0.046
summer	0.03	-0.032	.172**
task	0.03	0.027	0.074
today	0.03	0.057	0.033
united states/u.s.	0.03	0.115	.209**
use	0.03	0.086	0.048
academics/research	0.03	0.111	0.052
behavior and behavior mechanisms/emotion	0.03	-0.111	-0.051
care	0.03	-0.016	0.065
comfort	0.03	0.016	0.124
effort	0.03	-0.047	0.02
events	0.03	-0.047	0.068
girl	0.03	0.048	-0.056
greatness	0.03	0.048	-0.028
health facility/hospital	0.03	0.079	0.108
literature/letter	0.03	-0.016	0.07
mars rover	0.03	0.079	0.071
military/basic military training	0.03	0.016	0.033
position/positive attitude	0.03	0.016	-0.026
process	0.03	-0.016	0.07
schooling/middle school	0.03	0.016	-0.01
shift	0.03	0.111	-0.04
starting	0.03	-0.016	-0.023
2 weeks	0.02	-0.066	0.033

actions	0.02	-0.032	0.013
anatomy/body regions/extremities/arm/hand	0.02	0.003	.183**
area	0.02	-0.032	0.119
aunt	0.02	0.107	-0.007
behavior mechanisms/motivation	0.02	-0.032	-0.127
changesd/biggest change	0.02	0.003	0.021
clothes	0.02	0.003	.152*
commercial establishment/store/shop	0.02	0.038	-0.101
daily	0.02	0.072	0.059
degree	0.02	-0.032	-0.01
doubt	0.02	0.038	0.033
education	0.02	0.003	-.160*
every day	0.02	-0.032	-0.073
family/family structure/children	0.02	.142*	0.002
family/family structure/grandparents	0.02	-0.032	0.094
finding	0.02	-0.032	-0.07
food/meals	0.02	.246**	.133*
handle	0.02	0.003	0.005
human resources/career	0.02	.142*	0.021
marital status/single	0.02	.142*	-0.003
mental processes/learning/memories	0.02	-0.066	0.04
mission	0.02	0.038	0.082
occupation/white collar workers/leader	0.02	0.107	-.171**
one time	0.02	-0.032	-.164*
phone	0.02	0.107	0.019
play	0.02	0.038	0.019
program	0.02	0.107	0.002
prosecution of law	0.02	.142*	-0.055
sacrifice	0.02	0.072	-0.09
schedule	0.02	0.072	0.049
semester	0.02	0.072	.178**
set	0.02	-0.101	-0.002
solution	0.02	0.072	-0.08
sport/coach	0.02	0.038	0
teaching	0.02	0.072	0.042
this day	0.02	-0.066	0.032
time/hard time	0.02	-0.066	-0.11
training/basic training	0.02	0.107	-0.103
uncle	0.02	.142*	0.079
united states/u.s./texas	0.02	0.072	0.108
wait	0.02	-0.101	-0.063
world	0.02	.142*	0.056

academics/test	0.02	0.065	-0.011
adult	0.02	-0.013	-0.125
anatomy	0.02	0.103	0.075
baby	0.02	0.065	-0.042
behavior and behavior mechanisms/social psychology/role	0.02	-0.051	0.046
bills	0.02	0.065	-.153*
break	0.02	0.065	0.081
commercial establishment/office	0.02	-0.013	-0.022
commercial establishment/store	0.02	-0.013	0.055
compensation/income	0.02	0.026	-0.034
contact	0.02	-0.013	0.003
death	0.02	0.026	0.11
diseases	0.02	-0.013	-0.001
diseases/pain	0.02	0.026	0.063
drink	0.02	-0.013	-0.048
drink/water	0.02	0.026	0.026
fall	0.02	0.103	0.05
finance/payments	0.02	0.026	-0.003
flight	0.02	0.026	-0.04
gain	0.02	.142*	0.001
grandmother	0.02	0.026	0.053
guys	0.02	-0.051	0.001
half	0.02	0.103	-0.013
home/house/household	0.02	-0.051	-0.075
hometown	0.02	0.103	-0.007
human resources/benefits	0.02	.142*	0.009
human resources/career/skills	0.02	.142*	-0.015
individual	0.02	0.103	-0.057
information	0.02	-0.013	0.038
issues	0.02	-0.013	-0.042
lead	0.02	0.103	-0.009
life/lifestyle	0.02	0.103	0.027
life/social life	0.02	.181**	0.011
military/army	0.02	0.026	0.044
news/new enviroment	0.02	-0.013	-0.024
news/new kid	0.02	-0.051	0.036
occupation/instructor	0.02	0.103	0.024
period	0.02	-0.051	0.053
playing	0.02	-0.051	-0.05
pregnant	0.02	.181**	-0.032
respect	0.02	-0.013	0.059
responsibility	0.02	.219**	0.024

road	0.02	-0.09	0.098
routine	0.02	0.026	0.03
san antonio	0.02	0.026	0.009
servicing	0.02	0.026	0.051
side	0.02	0.103	0.011
social	0.02	0.026	-0.057
standards	0.02	.142*	-0.003
strategy	0.02	0.026	0.077
studying	0.02	0.065	0.085
stuff	0.02	-0.013	-0.022
supervisor	0.02	0.065	-0.054
switch	0.02	0.103	.139*
time/job times	0.02	0.103	-0.026
university	0.02	0.026	0.059
vehicles/truck	0.02	.219**	0.065
Count	12.94	.360**	.141*
* Correlation is significant at the 0.05 level (2-tailed).			
** Correlation is significant at the 0.01 level (2-tailed).			

Table H2: Means and Correlations for Question 1 Model Trained (V18.2.1) in Subsample 1 and Tested in Subsample 2

Type: Behavioral

Item: Adapting to Stress and Change (Adaptability)

Facet: Ability to adapt to new and changing tasks and situations



Categories by Size	Mean	Correlations with Human Ratings	Correlations with AFQT
life	0.47	-0.048	0.086
time	0.45	.269**	0.015
situation	0.44	0.073	0.048
change	0.42	0.013	0.047
changesd/major change	0.35	-0.065	-0.104
work	0.32	.362**	.172**
outcomes	0.27	-0.059	-0.069
friends	0.27	-0.069	0.041
family	0.26	-0.038	0.087
school	0.25	0.072	-0.013
job	0.19	.208**	0.042
schooling/high school	0.19	-0.024	-0.018
people	0.18	-0.001	-0.051
help	0.17	.188**	-0.002
family/family structure/parents	0.17	0.026	-0.005
home	0.17	0.036	-0.017
year	0.16	0.032	0.009
family/family structure/parents/mom	0.14	-0.05	-0.111
moving	0.13	-0.07	0.014
news	0.13	0.018	0.029
week	0.11	.205**	.176**
day	0.1	0.057	0.021
home/house	0.1	0.02	-0.071
college	0.1	0.043	0.077
start	0.1	0.094	-0.008
approach	0.1	-0.126	-0.017
control	0.09	-0.026	0.018
working	0.09	0.119	0.106
bmt	0.09	-.137*	-0.037
office workers/team	0.09	.254**	0.055

military/air force	0.08	0.078	-0.003
person	0.08	0.037	-0.027
family/family structure/parents/dad	0.08	0.007	0.069
hours	0.08	.204**	.163*
living	0.08	0.021	0.041
news/new school	0.08	-0.036	-0.023
news/new friends	0.07	-0.068	-0.063
plan	0.07	.135*	0.044
family/family structure/child	0.07	0.076	.149*
state	0.07	-.148*	0.034
stay	0.07	0.076	-0.072
academics/grade	0.06	0.044	0.124
academics/students	0.06	.137*	-0.046
months	0.06	0.029	-0.066
problem	0.06	0.106	-0.018
step	0.06	0.044	-0.008
family/family structure/parents/mother	0.06	-0.021	0.01
idea	0.06	0.027	0.013
part	0.06	0.106	0.045
place	0.06	-0.021	-0.05
academics/research	0.06	0.074	.135*
schooling	0.06	-0.008	-0.077
behavior and behavior mechanisms/emotion/love	0.05	-0.097	-0.123
classes	0.05	-0.063	0.073
decision	0.05	-0.063	-0.023
family/family structure/parents/father	0.05	-0.046	0.093
marital status	0.05	-0.029	-0.04
mental processes/learning	0.05	0.074	0.031
occupation	0.05	0.005	0.066
one day	0.05	0.005	-0.025
talk	0.05	-0.046	-0.076
talking	0.05	-0.08	-0.036
town	0.05	0.022	-0.08
changesd/big change	0.05	-0.051	0.078
finance/money	0.05	.144*	-0.006
half	0.05	0.073	.165*
kids	0.05	0.055	-0.008
military	0.05	-0.122	0.064
compensation	0.04	0.073	0.031
fact	0.04	-0.057	-0.006
human resources/career/skills	0.04	0.129	.145*
occupation/manager	0.04	.147*	-0.098
position	0.04	0.092	0.06

sales	0.04	0.036	-0.016
shift	0.04	.147*	0.005
united states/u.s./texas	0.04	-0.057	0.026
behavior and behavior mechanisms/emotion	0.04	-0.083	0.001
country	0.04	-0.064	0.054
news/new people	0.04	-0.025	.144*
process	0.04	-0.103	0.021
reason	0.04	-0.083	0.026
social	0.04	0.014	-0.008
united states/u.s.	0.04	-0.044	0.034
area	0.03	0.053	0.055
behavior and behavior mechanisms/social psychology/role	0.03	.156*	0.059
call	0.03	0.073	-0.035
drive	0.03	0.094	-.135*
feel	0.03	0.032	.149*
feeling	0.03	-0.03	-0.127
goal	0.03	.156*	0.051
handle	0.03	0.032	-0.042
human resources/career	0.03	0.094	0
mind/mindset	0.03	-0.051	0.074
occupation/white collar workers	0.03	.156*	0.083
physics	0.03	0.053	0.058
play	0.03	0.094	0.064
relationship	0.03	-0.051	-0.011
saw	0.03	-0.03	0.01
schedule	0.03	.239**	0.016
use	0.03	0.115	0.055
vehicles	0.03	0.073	-0.108
age	0.03	-0.058	0.087
anatomy/body regions/head	0.03	0.008	0.013
fall	0.03	0.096	.153*
finish	0.03	0.096	.168*
issues	0.03	.162*	0.105
know how	0.03	-0.058	-0.015
marital status/single	0.03	0.096	-0.003
mars rover	0.03	0.074	0.127
playing	0.03	.162*	0.041
point	0.03	0.03	0.079
semester	0.03	0.008	0.071
set	0.03	.140*	0.067
sport	0.03	-0.081	-.199**
staff	0.03	0.03	0.082

task	0.03	0.096	-0.021
care	0.03	0.099	-0.001
changesd/biggest change	0.03	0.004	-0.044
choice	0.03	-0.091	0.032
economics	0.03	0.123	.152*
effort	0.03	0.099	0.046
family/family structure/children/brother and sister	0.03	-0.044	-0.006
family/family structure/children/brother and sister/brother	0.03	-0.044	-0.012
food	0.03	0.099	-0.023
future	0.03	0.004	0.002
news/new place	0.03	-0.02	0.071
questions	0.03	.242**	0.024
routine	0.03	0.051	0.016
schooling/middle school	0.03	0.004	-0.022
side	0.03	0.051	-0.036
sport/sports by type	0.03	-0.115	-.171**
this day	0.03	-0.115	0.076
bills	0.02	-0.001	0.067
changesd	0.02	0.025	-0.056
city	0.02	.155*	0.027
commercial establishment/store	0.02	0.025	-0.052
contact	0.02	-0.001	-0.032
course	0.02	-0.001	0.11
daily	0.02	0.103	0.041
events	0.02	-0.001	.175**
finding	0.02	0.025	-0.009
form	0.02	0.025	0.015
girl	0.02	-0.001	-.137*
hit	0.02	0.103	0.072
hometown	0.02	0.051	0.012
night	0.02	.311**	0.06
physics/mechanics/power	0.02	.207**	-0.002
setting	0.02	0.077	-0.033
siblings	0.02	0.051	-0.047
stuff	0.02	-0.053	-.140*
summer	0.02	-0.053	-0.026
supervisor	0.02	.259**	0.037
teaching	0.02	0.103	-0.102
track	0.02	0.103	0.008
united states	0.02	0.103	0.091
world	0.02	-0.053	-0.049
behavior mechanisms/motivation	0.02	-0.036	0.046

business management	0.02	0.08	-0.025
chance	0.02	0.08	-0.015
comfort	0.02	0.051	0.006
diseases	0.02	0.051	0.004
education	0.02	-0.094	-0.015
end	0.02	-0.036	-0.078
family/family structure/children	0.02	0.022	-0.017
finance	0.02	0.051	-0.002
finance/insurance	0.02	0.051	0.002
fun	0.02	0.022	-0.025
guys	0.02	-0.094	-0.021
house rooms/room/classroom	0.02	0.109	0.072
life/lifestyle	0.02	-0.036	0.066
life/social life	0.02	.254**	0.071
look	0.02	-0.094	0.008
meeting	0.02	0.022	-0.094
military/basic military training	0.02	-0.036	-0.013
mind	0.02	-0.094	0.025
one time	0.02	-0.094	-0.115
options	0.02	0.051	0.032
rules	0.02	0.08	.144*
schooling/school year	0.02	-0.007	-0.046
spending	0.02	0.051	0.025
sport/sports by type/ball games/football	0.02	-0.007	0.02
starting	0.02	0.08	-0.015
studying	0.02	0.08	0.048
today	0.02	-0.094	0.068
training	0.02	0.109	-0.019
worry	0.02	-0.065	-0.084
Count	11.56	.335**	0.126
** Correlation is significant at the 0.01 level (2-tailed).			
* Correlation is significant at the 0.05 level (2-tailed).			

Table H3: Means and Correlations for Question 1 Model Trained (V18.2.1) in Subsample 2 and Tested in Subsample 1

Type: Behavioral

Item: Adapting to Stress and Change (Adaptability)

Facet: Ability to adapt to new and changing tasks and situations



Categories by Size	Mean	Correlations with Human Ratings	Correlations with AFQT
life	0.43	0.105	0.007
change	0.41	0.062	0.025
time	0.39	0.037	0.03
situation	0.36	0.053	0.025
schooling/high school	0.31	-0.004	0.059
change/major change	0.29	.133*	-0.091
friends	0.26	-0.029	0.02
school	0.26	0.017	-0.014
family	0.26	0.058	0.002
outcome	0.25	0.009	-0.034
work	0.22	.223**	0.019
working	0.21	.203**	0.001
people	0.2	0.02	-0.069
year	0.2	0.058	.140*
family/family structure/parents	0.19	0.048	0.088
job	0.18	.164*	0.076
home	0.16	.130*	0.052
help	0.14	.199**	-0.038
family/family structure/parents/mom	0.14	-0.097	-0.121
college	0.13	0.053	0.083
military/air force	0.13	0.038	0.078
person	0.11	0.109	0.045
moving	0.11	-0.09	0.031
family/family structure/parents/dad	0.1	-0.082	-0.077
schooling	0.1	-0.066	0.105
home/house	0.1	-0.024	.134*
month	0.1	-0.04	0.12
week	0.1	0.01	0.079
family/family structure/parents/father	0.09	-0.031	0.027
start	0.09	0.089	0.081

finances/money	0.09	0.031	-0.059
stay	0.09	0.066	.168*
approach	0.09	-0.101	0.009
day	0.09	0.114	-0.103
family/family structure/parents/mother	0.09	.168*	0.11
living	0.09	0.024	0.062
state	0.09	-0.084	-0.021
part	0.08	0.127	0.102
talk	0.08	0.017	-0.029
bmt	0.08	0.028	0.082
family/family structure/children/brother and sister/brother	0.07	-0.037	0.077
place	0.07	-0.017	-0.004
plans	0.07	.137*	0.079
point	0.07	0.079	0.026
academics	0.07	0.093	0.044
family/family structure/child	0.07	0.073	0.002
hours	0.07	0.113	0.009
military	0.07	0.113	-0.079
america/united states/u.s.	0.06	0.108	.196**
behavior and behavior mechanisms/emotions	0.06	-0.097	-0.029
behavior mechanisms/attitude	0.06	0.005	0.016
city	0.06	-0.056	-0.002
control	0.06	-0.077	0.069
decision	0.06	0.128	0.023
feel	0.06	-0.077	-0.017
friends/new friends	0.06	-0.118	0.062
kids	0.06	0.046	-0.002
learning	0.06	0.067	0.004
office workers/team	0.06	-0.036	-0.125
step	0.06	0.046	-.164*
academics/students/sophomore/freshman	0.06	0.053	0.042
food	0.06	.185**	0.028
occupation/hotel personnel/manager	0.06	0.119	-0.047
academics/students	0.05	0.046	0.048
choice	0.05	0	-0.057
compensation/pay	0.05	0.023	0.07
marital status	0.05	-0.023	-0.076
relationship	0.05	0.114	0.076
talking	0.05	0.091	0
vehicle/car	0.05	0.091	0.021
classes	0.05	0.085	0.003
jobless	0.05	0.061	-0.013

one day	0.05	-0.033	0.008
starting	0.05	-0.057	-0.001
town	0.05	0.061	-0.062
train/basic training	0.05	0.085	-0.046
company	0.04	0.128	0.054
know how	0.04	0.029	-0.028
sports	0.04	0.079	-0.035
anatomy/head	0.04	-.137*	0.115
change/big change	0.04	0.046	-0.048
future	0.04	-0.032	0.004
human resources/challenge	0.04	0.072	-0.027
night	0.04	0.02	.148*
problem	0.04	-0.006	0.015
reason	0.04	-.137*	-0.128
saw	0.04	0.02	0.051
siblings	0.04	0.124	0.1
academics/research	0.03	0.12	0.086
call	0.03	0.009	-0.013
care	0.03	0.037	0.121
fact	0.03	0.037	0.104
family/family structure/children/brother and sister/sisters	0.03	0.009	-0.028
feeling	0.03	-0.046	0.015
finish	0.03	-0.018	.166*
goal	0.03	-0.046	-0.029
home/apartment	0.03	0.065	0.107
house rooms/rooms	0.03	0.065	0.036
idea	0.03	0.009	0.082
measuring instrument	0.03	-0.046	-0.065
people/new people	0.03	0.065	0.015
process	0.03	0.009	0.003
schooling/new school	0.03	-0.046	-0.022
tasks	0.03	0.092	0.105
use	0.03	0.065	0.044
worry	0.03	0.009	0.067
age	0.03	0.057	-0.053
beverages	0.03	-0.002	0.029
chance	0.03	-0.002	-0.008
commercial establishment	0.03	-0.032	0.088
drive	0.03	.145*	0.051
effort	0.03	-0.002	0.03
event	0.03	-0.061	0.068
fun	0.03	0.057	-0.063

group	0.03	0.057	0.104
human resources/career	0.03	.204**	0.005
minor/mindset	0.03	-0.032	-0.013
opportunity	0.03	0.027	0.073
playing	0.03	0.057	-0.035
questions	0.03	-0.002	0.063
shifts	0.03	0.086	-0.026
summer	0.03	-0.032	.172**
today	0.03	0.057	0.033
world	0.03	0.086	0.057
academics/students/graduate	0.03	0.048	-0.063
area	0.03	0.016	0.103
build	0.03	0.079	0.025
commercial establishment/store	0.03	-0.016	-0.044
course	0.03	0.048	0.067
environment	0.03	0.016	0.012
experience	0.03	-0.016	-0.093
fall	0.03	0.111	0.082
girls	0.03	0.048	-0.056
handle	0.03	-0.016	0.005
location	0.03	-0.047	-0.016
marital status/single	0.03	.175**	0.009
occupation/educators	0.03	-0.079	0.044
population/households	0.03	-0.111	0.063
position	0.03	0.079	-0.031
program	0.03	.143*	0.03
side	0.03	0.048	-0.026
academics/students/sophomore	0.02	0.107	0.08
anatomy/head/face	0.02	-0.032	0.014
comfort zone	0.02	0.038	0.124
couple	0.02	0.038	-0.118
daily	0.02	0.072	0.059
degree	0.02	-0.032	-0.01
family/family structure/grandparents	0.02	-0.032	0.094
finding	0.02	-0.032	-0.07
half	0.02	0.107	0.042
hit	0.02	-0.032	0.009
issue	0.02	-0.032	-0.085
minor	0.02	-0.032	0.018
occupation	0.02	0.038	-0.129
one time	0.02	-0.032	-.164*
order	0.02	-0.032	0.012
routine	0.02	0.107	0.052

semester	0.02	0.072	.178**
service	0.02	0.038	.155*
setting	0.02	-0.032	0.117
social	0.02	0.003	-0.066
sports/coach	0.02	0.038	0
sports/sports by type	0.02	0.072	0.035
stuff	0.02	0.038	0.03
this day	0.02	-0.066	0.032
time management/schedule	0.02	0.072	0.049
week/weekend	0.02	0.072	0.004
action	0.02	-0.09	0.014
adult	0.02	-0.013	-0.125
baby	0.02	0.065	-0.042
behavior and behavior mechanisms/social psychology/role	0.02	-0.051	0.087
behavior mechanisms	0.02	-0.013	-0.129
bills	0.02	0.065	-.153*
class	0.02	-0.051	-0.096
clothes	0.02	-0.013	0.123
community	0.02	0.065	0.073
contact	0.02	-0.013	0.003
family/family structure/children/daughter	0.02	0.103	-0.05
finances	0.02	0.026	-0.042
game	0.02	-0.051	-0.114
guy	0.02	0.026	.172**
hometown	0.02	0.103	-0.007
human/human being/man	0.02	-0.051	-0.092
life/lifestyle	0.02	.181**	0.047
life/social life	0.02	.181**	0.011
obstetric medicine	0.02	.181**	-0.032
occupation/supervisor	0.02	0.065	-0.054
occupation/white collar workers	0.02	0.026	-0.104
occupation/white collar workers/employees	0.02	-0.013	-0.028
period	0.02	-0.013	0.016
physics/perspective	0.02	-0.09	0.03
prosecution of law	0.02	.142*	-0.067
shape	0.02	0.026	-0.001
sports/sports by type/running	0.02	0.026	-0.094
teaching	0.02	0.103	-0.015
Count	12.18	.338**	.153*
* Correlation is significant at the 0.05 level (2-tailed).			
** Correlation is significant at the 0.01 level (2-tailed).			

Table H4: Means and Correlations for Question 1 Model Trained (V18.2.1) in Subsample 2 and Tested in Subsample 2

Type: Behavioral

Item: Adapting to Stress and Change (Adaptability)

Facet: Ability to adapt to new and changing tasks and situations



Categories by Size	Mean	Correlations with Human Ratings	Correlations with AFQT
life	0.46	-0.041	0.056
situation	0.46	0.104	0.055
time	0.43	.242**	0.048
change	0.42	0.021	0.069
change/major change	0.36	-0.072	-0.098
family	0.27	-0.052	0.071
work	0.25	.291**	.193**
friends	0.25	-0.035	0.038
outcome	0.23	-0.059	-0.036
working	0.22	.393**	0.129
school	0.21	0.079	-0.018
schooling/high school	0.19	-0.024	-0.018
family/family structure/parents	0.17	0.026	-0.005
help	0.17	.198**	0.003
job	0.17	.167*	0.049
people	0.17	-0.015	-0.067
schooling	0.16	0.065	-0.004
home	0.16	0.032	0.012
family/family structure/parents/mom	0.14	-0.05	-0.111
year	0.13	0.041	0.014
moving	0.12	-0.057	-0.02
home/house	0.11	0	-0.098
behavior and behavior mechanisms/emotions	0.1	-0.129	-0.051
america/united states/u.s.	0.1	-0.007	0.009
approach	0.1	-0.074	0.033
person	0.1	0.081	-0.024
college	0.09	0.027	0.068
control	0.09	-0.026	0.018
bmt	0.09	-.137*	-0.037
day	0.09	0.012	-0.046

jobless	0.09	.173**	0.038
office workers/team	0.09	.254**	0.055
place	0.09	-0.029	-0.001
start	0.09	0.065	-0.032
military/air force	0.08	0.078	-0.003
schooling/new school	0.08	-0.032	-0.018
family/family structure/child	0.08	0.077	0.105
family/family structure/parents/dad	0.08	0.007	0.069
friends/new friends	0.07	-0.068	-0.063
month	0.07	0.062	-0.017
state	0.07	-0.054	0.07
week	0.07	.149*	0.088
living	0.07	0.001	0.053
family/family structure/parents/mother	0.06	-0.032	-0.019
learning	0.06	0.06	0.013
problem	0.06	0.106	-0.018
academics	0.06	0.09	0.117
idea	0.06	0.027	0.013
part	0.06	.154*	0.054
stay	0.06	0.106	-0.062
change/big change	0.06	-0.074	0.059
class	0.05	.159*	0.006
kids	0.05	0.039	-0.019
marital status	0.05	-0.029	-0.04
process	0.05	-0.029	0.04
step	0.05	0.057	-0.014
talk	0.05	-0.046	-0.076
talking	0.05	-0.08	-0.036
academics/students	0.05	0.127	-0.06
classes	0.05	-0.051	0.054
environment	0.05	-0.016	0.128
family/family structure/parents/father	0.05	-0.033	0.082
one day	0.05	0.02	-0.009
plans	0.05	0.02	-0.008
town	0.05	0.038	-0.067
country	0.04	-0.076	.154*
decision	0.04	-0.076	-0.028
feel	0.04	0.017	0.097
finances/money	0.04	.147*	-0.004
hours	0.04	0.11	0.126
minor/mindset	0.04	-0.076	0.067
occupation/hotel personnel/manager	0.04	.147*	-0.098
shifts	0.04	.147*	0.005

teaching	0.04	.147*	-0.055
vehicle/car	0.04	0.129	-0.082
area	0.04	0.053	0.034
compensation/pay	0.04	0.053	0.028
fact	0.04	-0.044	-0.033
human resources/challenge	0.04	-0.064	-0.004
people/new people	0.04	-0.025	.144*
time management/schedule	0.04	.288**	0.059
behavior and behavior mechanisms/social psychology/role	0.03	.156*	0.059
call	0.03	0.073	-0.035
family/family structure/children/brother and sister/sisters	0.03	-0.03	-0.019
goal	0.03	.156*	0.051
human resources/career	0.03	0.011	0.016
marital status/single	0.03	.156*	0.036
reason	0.03	-0.072	0.069
train/basic training	0.03	-0.092	-0.008
use	0.03	0.115	0.055
academics/research	0.03	0.008	0.124
commercial establishment/store	0.03	-0.014	-0.107
example	0.03	.184**	.155*
experience	0.03	0.008	-0.041
fall	0.03	0.096	.153*
feeling	0.03	-0.014	-0.107
handle	0.03	0.052	-0.016
human resources/career/skill	0.03	-0.014	0.098
human/human being/man	0.03	-0.014	-0.002
know how	0.03	-0.058	-0.015
life/lifestyle	0.03	-0.081	0.105
measuring instrument/watch	0.03	0.096	-0.005
occupation/educators	0.03	-0.036	0.041
occupation/supervisor	0.03	.273**	0.082
occupation/white collar workers/employees	0.03	0.096	0.038
opportunity	0.03	0.074	0.127
order	0.03	0.052	-0.043
pick	0.03	0.074	0.011
point	0.03	0.03	0.079
priority	0.03	.206**	0.095
relationship	0.03	-0.036	-0.011
saw	0.03	-0.014	-0.019
side	0.03	0.008	-0.037
starting	0.03	.162*	0.064
tasks	0.03	0.096	-0.021
age	0.03	-0.044	0.1

behavior mechanisms/attitude	0.03	-0.068	0.063
city	0.03	0.123	0.056
couple	0.03	-0.02	0.09
drive	0.03	0.004	-.186**
family/family structure/children/brother and sister/brother	0.03	-0.044	-0.012
family/family structure/grandparents	0.03	0.028	-0.042
finances	0.03	0.004	0.033
finding	0.03	0.099	0.037
finish	0.03	0.028	.188**
food	0.03	0.099	-0.023
future	0.03	0.004	0.002
issue	0.03	.170*	0.115
location	0.03	.313**	0.093
machinery/wheel	0.03	0.051	0.057
ment	0.03	0.004	-0.025
population/households	0.03	0.004	0.03
position	0.03	0.051	0.024
questions	0.03	.242**	0.024
siblings	0.03	0.028	-0.056
social	0.03	-0.02	-0.008
sports/sports by type	0.03	0.028	-0.045
stress	0.03	-0.02	-0.009
this day	0.03	-0.115	0.076
action	0.02	.155*	0.075
anatomy/head	0.02	-0.001	0.018
bills	0.02	-0.001	0.067
care	0.02	0.077	-0.029
chance	0.02	0.051	-0.037
change/drastic change	0.02	-0.105	-.157*
choice	0.02	-0.105	0.03
contact	0.02	-0.001	-0.032
course	0.02	-0.001	0.11
cover	0.02	0.077	-0.075
cultures	0.02	-0.105	0.024
daily	0.02	0.103	0.041
driving	0.02	0.025	0.061
ease	0.02	0.051	-0.106
economics/property	0.02	.233**	0.11
effort	0.02	0.129	0.044
event	0.02	-0.001	.175**
form	0.02	0.025	0.015
game	0.02	0.129	-0.038
girls	0.02	-0.001	-.137*

guy	0.02	-0.079	-0.007
half	0.02	0.129	0.096
hit	0.02	0.103	0.072
human resources/career/hiring	0.02	0.051	0.114
lessons	0.02	0.077	0.053
measuring instrument	0.02	0.077	.172**
meeting	0.02	0.077	-0.107
member	0.02	0.129	0.082
military	0.02	-0.105	0.03
neighborhood	0.02	0.077	0.046
night	0.02	.181**	0.08
options	0.02	0.051	0.027
peers	0.02	0.103	0.129
physics/mechanics/power	0.02	.207**	-0.002
physics/perspective	0.02	0.025	0.082
playing	0.02	.181**	0.055
routine	0.02	0.077	-0.035
semester	0.02	-0.001	0.113
sports	0.02	-0.105	-.175**
staff	0.02	0.077	0.086
stuff	0.02	-0.053	-.140*
time management	0.02	-0.027	-0.006
track	0.02	0.103	0.008
travel	0.02	-0.001	0.056
understanding	0.02	0.051	0.06
vehicle	0.02	.181**	-0.052
world	0.02	-0.053	-0.049
worry	0.02	-0.053	-0.068
ability	0.02	0.051	-0.071
academics/students/graduate	0.02	-0.036	-0.005
act	0.02	-0.094	0.088
america/united states	0.02	0.022	0.052
behavior mechanisms	0.02	-0.036	0.046
build	0.02	0.08	-0.071
bus	0.02	0.08	-0.073
change/huge change	0.02	0.022	-0.034
clothes	0.02	-0.094	-0.015
comfort zone	0.02	0.051	0.006
commercial establishment	0.02	0.08	0.093
company	0.02	.167*	0.118
dates	0.02	-0.036	-0.027
degree	0.02	0.022	0.114
effect	0.02	-0.036	0.075

factors	0.02	0.051	-0.019
family/family structure/children/daughter	0.02	0.022	-0.017
field	0.02	.138*	0.073
friends/girlfriend	0.02	-0.094	-0.013
fun	0.02	0.022	-0.025
funeral	0.02	-0.007	-0.002
god	0.02	-0.007	0.006
group	0.02	0.08	0.012
hand	0.02	-0.007	-0.004
hometown	0.02	0.051	0.016
house rooms/rooms	0.02	-0.007	-0.021
house rooms/rooms/classroom	0.02	0.109	0.072
human	0.02	0.109	0.104
human resources/career/skill/management	0.02	.254**	0.106
language	0.02	-0.094	0.002
life/social life	0.02	.254**	0.071
look	0.02	-0.094	0.008
meteorology and climatology	0.02	.138*	-0.052
method	0.02	0.109	0.101
mine	0.02	.138*	0.062
minor	0.02	-0.094	0.025
occupation/nurse	0.02	0.08	0
occupation/white collar workers	0.02	.312**	.146*
one time	0.02	-0.094	-0.115
opening	0.02	0.109	-0.015
personnel	0.02	0.022	0.069
physics/mechanics/surface/surface preparation	0.02	.138*	0
prosecution of law	0.02	0.022	0.008
ride	0.02	0.022	-0.1
season	0.02	-0.065	0.041
service	0.02	.167*	0.046
setting	0.02	0.08	-0.046
sleep	0.02	0.022	0.01
sports/sports by type/running	0.02	-0.094	-.180**
studing	0.02	.196**	0.098
summer	0.02	-0.036	-0.071
today	0.02	-0.094	0.068
transition	0.02	-0.094	-0.036
working/work place	0.02	0.08	0.083
Count	12.56	.437**	.161*
** Correlation is significant at the 0.01 level (2-tailed).			
* Correlation is significant at the 0.05 level (2-tailed).			

Table H5: Means and Correlations for Question 2 Model Trained (V18.2.1) in Subsample 1 and Tested in Subsample 1

Type: Situational

Item: Adapting to Stress and Change (Accepts Feedback)

Facet: Accepting criticism



Categories by Size	Mean	Correlations with Human Ratings	Correlations with AFQT
report	0.51	0.129	0.006
situation	0.49	-0.012	-0.063
recipient	0.47	.206**	.240**
solution	0.47	0.108	.218**
issues	0.46	-0.048	-0.012
problem	0.45	0.09	.132*
work	0.43	.137*	-0.009
outcome	0.37	-0.052	-0.08
options	0.34	0.064	0
time	0.32	-0.033	-0.043
factors	0.29	-0.01	0.036
feed/feedback	0.28	.306**	0.086
steps	0.23	-0.048	-0.007
fix	0.21	0.028	-.178**
person	0.19	-0.058	-0.014
resources	0.19	0.088	0.104
help	0.18	0.057	-0.051
working	0.16	-0.043	0.078
course/course of action	0.15	0.102	0.064
change	0.13	0.033	0.06
comments	0.12	0.107	-0.065
people	0.12	-0.017	-0.008
information	0.12	.133*	0.031
look	0.12	-0.107	-0.005
prosecution of law/mistakes	0.11	0.032	-0.049
questions	0.11	0.097	0.063
idea	0.1	.138*	0.072
effort	0.1	0.099	0.056
talk	0.1	0.072	0.011

start	0.09	0.059	0.091
opinion	0.09	0.074	0.088
ability	0.08	0.046	0.063
feel	0.08	0.016	-0.092
complex	0.08	0.046	0.072
criticism	0.07	-0.017	0.059
use	0.07	0.031	-0.071
job	0.06	-0.068	-0.033
review	0.06	0.08	0.02
understanding	0.06	0.13	0.04
reason	0.06	-0.055	0.067
standards	0.06	-0.02	0.042
action	0.06	.207**	.137*
detail	0.06	-0.022	-0.041
point	0.06	-0.005	-0.002
task	0.06	0.101	-0.007
areas	0.05	0.086	.151*
better solution	0.05	-0.042	0.002
going	0.05	-0.079	-0.08
project	0.05	0.104	0.124
solution/new solution	0.05	0.086	0.058
advice	0.05	0.012	-0.106
answer	0.05	0.107	-0.073
effect	0.05	-0.007	-0.062
reasoning	0.05	0.012	.165*
academics/research	0.04	.151*	0.12
complexity	0.04	-0.068	-0.004
economics	0.04	.131*	0.129
individual	0.04	0.071	.195**
check	0.04	0.095	-0.065
goal	0.04	0.032	.136*
perspective	0.04	.179**	0.11
talking	0.04	-0.01	0.034
clarification	0.03	0.032	0.108
communication	0.03	.210**	0.058
consideration	0.03	0.055	0.098
explanation	0.03	0.099	.153*
feed	0.03	0.055	-.169*
ground	0.03	-0.012	0.015
mind	0.03	.188**	.141*
occupation/white collar workers	0.03	-0.057	0.044
paper	0.03	0.032	0.091
response	0.03	-0.101	0.003

scratch	0.03	0.055	.132*
attempt	0.03	0.081	0.074
corrections	0.03	-0.038	0.026
course	0.03	0.057	0.027
eyes	0.03	0.128	0.054
fact	0.03	0.009	0.043
hit	0.03	0.081	0.023
input	0.03	.223**	.178**
occupation/supervisor	0.03	-0.014	-0.065
requirements	0.03	0.081	0.03
writing	0.03	0.009	-0.041
build	0.03	0.009	-0.007
chance	0.03	0.111	0.059
experience	0.03	0.034	0.025
family	0.03	-0.068	-0.002
friends	0.03	-0.042	0.082
part	0.03	0.034	-0.117
pointers	0.03	-0.017	0.006
process	0.03	-0.042	0.047
topic	0.03	-0.042	-0.034
anatomy/head/face	0.02	-0.02	-0.033
case	0.02	-0.02	-0.009
errors	0.02	0.036	0.086
key	0.02	0.092	-0.087
know how	0.02	-0.048	0.079
level	0.02	0.036	0.059
life	0.02	-0.048	-0.038
mental processes/learning	0.02	0.12	0.026
occupation	0.02	-0.048	0.108
offer	0.02	0.036	0.052
plan	0.02	0.036	0.011
recipient	0.02	0.12	-0.01
redone	0.02	0.092	0.044
reread	0.02	0.036	-0.01
resolution	0.02	0.092	0.03
side	0.02	-0.02	0.115
suggestions	0.02	0.064	0.052
thoughts	0.02	0.036	.167*
view	0.02	-0.02	0.052
wingman	0.02	-0.02	-0.016
compromise	0.02	0.007	.190**
contact	0.02	0.038	0.03
conversation	0.02	0.007	0.102

finding	0.02	0.038	0.007
finish	0.02	0.069	0.061
form	0.02	0.038	0.024
geology	0.02	-0.055	-0.103
home	0.02	-0.117	0.009
house rooms	0.02	0.069	-0.036
material	0.02	-0.024	0.046
minor	0.02	0.007	0.016
order	0.02	0.007	-0.036
projectile	0.02	0.069	0.094
quality	0.02	-0.055	-0.065
reaction	0.02	0.038	-0.072
second time	0.02	0.007	-0.063
sense	0.02	0.007	0.038
soulution	0.02	0.007	-.131*
turn	0.02	0.007	-0.05
words	0.02	-0.024	0.046
working/workplace	0.02	-0.024	-0.052
Count	10.87	.347**	.222**
** Correlation is significant at the 0.01 level (2-tailed).			
* Correlation is significant at the 0.05 level (2-tailed).			

Table H6: Means and Correlations for Question 2 Model Trained (V18.2.1) in Subsample 1 and Tested in Subsample 2

Type: Situational

Item: Adapting to Stress and Change (Accepts Feedback)

Facet: Accepting criticism



Categories by Size	Mean	Correlations with Human Ratings	Correlations with AFQT
report	0.56	0.119	0.04
situation	0.55	0.025	0.043
recipient	0.5	0.056	.155*
issues	0.49	.145*	.172**
work	0.48	.149*	.255**
solution	0.43	.158*	.249**
problem	0.42	0.127	.233**
outcome	0.39	0.067	-0.022
options	0.35	.138*	0.091
time	0.34	0.041	-0.029
feed/feedback	0.32	0.073	0.047
factors	0.3	.152*	0.07
fix	0.28	-0.016	-0.093
steps	0.2	.189**	0.123
course/course of action	0.19	0.125	.154*
help	0.19	0.108	0.023
idea	0.16	.193**	-0.023
resources	0.16	0.096	0.062
person	0.16	0.066	-0.035
effort	0.15	-0.029	0.005
working	0.13	0.056	0.121
people	0.12	0.043	-0.061
use	0.11	0.034	0.116
information	0.11	.201**	0
opinion	0.11	0.074	0.113
questions	0.11	0.087	0.054
change	0.1	0.13	0.081
comments	0.1	0	0.082
look	0.1	0.002	-0.025

talk	0.1	0.082	0.061
feel	0.1	-0.063	0.108
point	0.09	-0.075	-0.069
academics/research	0.08	.156*	0.002
response	0.08	-0.045	0.036
start	0.08	-0.117	0.108
advice	0.07	0.048	-0.078
review	0.07	0.114	0.129
action	0.06	0.056	0.04
individual	0.06	-0.072	0.016
part	0.06	.152*	0.055
understanding	0.06	0.04	-0.055
view	0.06	0.12	0.039
complex	0.06	0.077	0.059
prosecution of law/mistakes	0.06	-0.005	-0.08
answer	0.06	-0.037	-0.007
better solution	0.06	0.049	-0.005
job	0.06	0.032	0.086
perspective	0.06	.237**	0.088
standards	0.06	-0.003	0.01
areas	0.05	0.053	0.108
corrections	0.05	0.107	0.017
criticism	0.05	0.053	.141*
goal	0.05	0.107	0.035
mind	0.05	.196**	0.117
reason	0.05	0	0.103
detail	0.05	-0.089	-0.034
hit	0.05	0.114	-0.027
occupation/supervisor	0.05	0.04	0.107
process	0.05	0.022	0.116
project	0.05	0.022	0.1
task	0.05	-0.015	-0.055
complexity	0.04	0.007	-0.039
errors	0.04	0.045	-0.06
fact	0.04	-0.03	0.057
communication	0.03	-0.029	0.058
explanation	0.03	0.036	0.031
life	0.03	-.136*	-0.041
anatomy/brain	0.03	.157*	0.039
conversation	0.03	.180**	0.12
economics	0.03	0.042	0.022
feed	0.03	0.088	0.032
talking	0.03	0.088	0.003

check	0.03	-0.074	0.008
clarification	0.03	0.099	-0.004
effect	0.03	-0.074	-0.087
eyes	0.03	0.05	-0.004
gooing	0.03	-0.049	-0.02
input	0.03	-0.025	0.008
recipient	0.03	0.05	-0.053
soultion	0.03	0.099	-0.091
compromise	0.02	0.113	.208**
consideration	0.02	.167*	-0.121
data	0.02	-0.022	0.053
experience	0.02	.140*	0.06
key	0.02	0.059	-0.015
occupation/white collar workers	0.02	-0.022	-0.032
paper	0.02	0.086	-0.033
plan	0.02	0.113	0.029
redone	0.02	0.032	-0.037
stay	0.02	0.005	-0.03
words	0.02	-0.05	0.111
writing	0.02	-0.022	-0.009
agreement	0.02	0.01	-0.069
anatomy/head	0.02	0.04	-0.04
anatomy/head/face	0.02	0.01	0.037
behavior mechanisms/attitude	0.02	-0.08	-0.082
chance	0.02	-0.08	-0.058
commander	0.02	-0.05	-0.015
course	0.02	0.131	0.031
critism	0.02	0.04	-0.125
finish	0.02	-0.111	0.02
form	0.02	.161*	.135*
national service/draft	0.02	.191**	0.108
order	0.02	0.04	0.033
professional	0.02	0.04	0.089
quality	0.02	0.04	-0.044
reasoning	0.02	0.101	.137*
reread	0.02	-0.02	0.012
sense	0.02	0.04	0.091
side	0.02	-0.05	0.029
solution/new solution	0.02	0.04	0.02
suggestions	0.02	0.071	0.008
Count	10.81	.429**	.286**
** Correlation is significant at the 0.01 level (2-tailed).			
* Correlation is significant at the 0.05 level (2-tailed).			

Table H7: Means and Correlations for Question 2 Model Trained (V18.2.1) in Subsample 2 and Tested in Subsample 1

Type: Situational

Item: Adapting to Stress and Change (Accepts Feedback)

Facet: Accepting criticism



Categories by Size	Mean	Correlations with Human Ratings	Correlations with AFQT
report	0.5	0.12	-0.011
situation	0.5	-0.02	-0.061
solution	0.49	0.086	.221**
issues	0.47	-0.064	-0.012
recipient	0.47	.206**	.240**
work	0.46	0.116	-0.02
problem	0.45	0.09	.132*
outcome	0.38	-0.025	-0.103
options	0.34	0.064	0
time	0.31	-0.044	-0.002
factors	0.3	0	0.028
feed/feedback	0.28	.306**	0.086
steps	0.23	-0.038	0.005
fix	0.22	0.058	-.178**
person	0.19	-0.079	-0.051
resources	0.19	0.088	0.104
course	0.18	0.12	0.072
help	0.18	0.067	-0.039
change	0.13	0.033	0.06
questions	0.13	0.069	0.058
comments	0.12	0.107	-0.065
people	0.12	-0.017	0.024
working	0.12	-0.017	.155*
information	0.12	.133*	0.031
look	0.12	-0.107	-0.005
prosecution of law	0.11	0.032	-0.049
ideas	0.11	0.123	0.081
effort	0.1	0.112	0.082
talk	0.1	0.072	0.011

start	0.09	0.059	0.091
opinion	0.09	0.074	0.088
feel	0.08	0.016	-0.092
details	0.07	-0.032	-0.006
job	0.07	-0.094	-0.061
point	0.07	0	0.01
use	0.07	0.031	-0.071
complex	0.06	0.097	0.051
complexity	0.06	-0.052	-0.009
review	0.06	0.08	0.02
standards	0.06	-0.035	0.033
understanding	0.06	0.13	0.04
reporting	0.06	0.065	0.01
action	0.06	.137*	0.104
reason	0.06	-0.04	0.062
task	0.06	0.101	-0.007
answer	0.05	0.086	-0.062
areas	0.05	0.086	.151*
advice	0.05	0.012	-0.106
criticism/constructive criticism	0.05	-0.045	0.006
effect	0.05	-0.007	-0.062
reasoning	0.05	0.012	.169*
academics/research	0.04	.151*	0.12
check	0.04	0.091	-0.101
geometry/perspective	0.04	.151*	0.124
individual	0.04	0.071	.195**
project	0.04	.131*	.212**
criticism	0.04	0.032	0.01
goal	0.04	0.032	.136*
mind	0.04	.158*	0.121
part	0.04	0.053	-0.082
response	0.04	-0.073	0.02
talking	0.04	-0.01	0.034
consideration	0.03	0.055	0.098
explanation	0.03	0.099	.153*
feed	0.03	0.055	-.169*
paper	0.03	0.032	0.091
process	0.03	0.01	0.026
working/work environment/communication	0.03	.210**	0.058
anatomy/heads/face/eyes	0.03	0.128	0.054
clarification	0.03	-0.014	0.07
corrections	0.03	-0.038	0.026
hit	0.03	0.081	0.023

occupation	0.03	-0.085	0.02
occupation/supervisor	0.03	-0.014	-0.065
anatomy/heads/face	0.03	0.009	0.008
coworker	0.03	-0.017	0.006
experience	0.03	0.034	0.025
fact	0.03	0.034	0.051
family	0.03	-0.068	-0.002
input	0.03	.264**	.183**
topic	0.03	-0.042	-0.034
chance	0.02	0.12	0.024
compromise	0.02	0.036	.197**
conversation	0.02	0.036	.133*
errors	0.02	0.036	0.086
finding	0.02	0.064	0.007
form	0.02	0.12	0.019
improvement	0.02	.148*	0.049
key	0.02	0.092	-0.087
level	0.02	0.036	0.059
life	0.02	-0.048	-0.038
office workers/team	0.02	0.064	-0.022
recipient	0.02	0.12	-0.01
redone	0.02	0.092	0.044
reread	0.02	0.036	-0.01
side	0.02	-0.02	0.115
suggestions	0.02	0.064	0.052
view	0.02	-0.02	0.052
writing	0.02	-0.076	-0.038
conclusion	0.02	.194**	0.108
directions	0.02	0.069	-0.019
downer	0.02	0.101	-0.04
finish	0.02	0.069	0.061
order	0.02	0.007	-0.036
peers	0.02	0.101	0.108
quality	0.02	-0.055	-0.065
relationship	0.02	0.007	0.116
results	0.02	-0.024	-.149*
sense	0.02	0.007	0.038
soulution	0.02	0.007	-.131*
words	0.02	-0.024	0.046
Count	10.4	.342**	.192**
** Correlation is significant at the 0.01 level (2-tailed).			
* Correlation is significant at the 0.05 level (2-tailed).			

Table H8: Means and Correlations for Question 2 Model Trained (V18.2.1) in Subsample 2 and Tested in Subsample 2

Type: Situational

Item: Adapting to Stress and Change (Accepts Feedback)

Facet: Accepting criticism



Categories by Size	Mean	Correlations with Human Ratings	Correlations with AFQT
situation	0.55	0.025	0.043
report	0.54	.149*	0.042
recipient	0.5	0.03	.178**
issues	0.49	.145*	.172**
work	0.46	.140*	.227**
solution	0.45	.167*	.260**
problem	0.42	0.127	.233**
outcome	0.39	0.067	-0.022
options	0.35	.138*	0.091
time	0.33	0.054	-0.047
feed/feedback	0.32	0.073	0.047
factors	0.3	.152*	0.07
fix	0.28	-0.016	-0.093
course	0.2	.140*	.154*
steps	0.19	.209**	.130*
help	0.19	0.1	0.021
person	0.18	.137*	0.025
ideas	0.17	.181**	-0.006
reporting	0.17	0.037	0.123
working	0.17	0.016	0.088
resources	0.16	0.096	0.062
effort	0.15	-0.029	0.005
use	0.11	0.034	0.116
information	0.11	.201**	0
people	0.1	0.013	-0.056
questions	0.1	0.078	0.067
change	0.1	0.121	0.065
comments	0.1	0.016	0.081
talk	0.1	0.082	0.061

look	0.1	0.005	0
academics/research	0.09	.158*	0.008
feel	0.09	-0.048	0.118
opinion	0.09	0.007	0.064
response	0.08	-0.059	0.014
advice	0.07	0.048	-0.078
point	0.07	-0.088	-0.047
action	0.07	0.099	0.044
prosecution of law	0.07	0.052	-0.049
review	0.07	0.114	0.129
start	0.07	-0.119	0.117
understanding	0.07	0.021	-0.068
details	0.06	-0.024	-0.002
individual	0.06	-0.072	0.016
job	0.06	0.008	0.069
complex	0.06	0.011	0.043
answer	0.06	-0.037	-0.007
geometry/perspective	0.06	.237**	0.088
mind	0.06	.220**	0.082
standards	0.06	-0.003	0.01
corrections	0.05	0.107	0.017
goal	0.05	0.107	0.035
process	0.05	0.107	.147*
task	0.05	-0.035	-0.049
occupation/supervisor	0.05	0.04	0.107
project	0.05	0.022	0.1
hit	0.04	0.103	0.004
part	0.04	.162*	0.046
parties	0.04	0.065	0.01
peers	0.04	0.026	-0.023
show	0.04	0.026	-0.024
areas	0.04	0.031	0.11
fact	0.04	-0.03	0.057
page	0.04	0.01	0.073
reason	0.04	0.01	0.118
view	0.04	.133*	0.019
criticism	0.03	0.036	0.106
errors	0.03	0.036	-0.008
explanation	0.03	0.036	0.031
geometry/angle	0.03	0.036	0.054
life	0.03	-.136*	-0.041
working/work environment/communication	0.03	-0.029	0.058
anatomy/heads/face/eyes	0.03	0.019	-0.049

behavior and behavior mechanisms/emotion	0.03	-0.027	-0.012
conversation	0.03	.180**	0.12
effect	0.03	-0.004	-0.071
feed	0.03	0.088	0.032
occupation	0.03	0.042	0.065
reasoning	0.03	0.065	0.105
respect	0.03	-0.05	-0.06
starting	0.03	-0.027	0.018
talking	0.03	0.088	0.003
approach	0.03	0.124	-0.001
check	0.03	-0.074	0.008
clarification	0.03	0.099	-0.004
complexity	0.03	-0.049	-0.052
coworker	0.03	0.124	0.103
directions	0.03	.149*	0.122
finding	0.03	.149*	-0.004
input	0.03	-0.025	0.008
notes	0.03	0.074	0.007
piece	0.03	-0.049	-0.004
recipient	0.03	0.05	-0.053
results	0.03	.174**	0.029
saw	0.03	0	-0.009
soulution	0.03	0.099	-0.091
words	0.03	0.025	0.079
command	0.02	-0.077	-0.052
compromise	0.02	0.113	.208**
consideration	0.02	.167*	-0.121
data	0.02	-0.022	0.053
expectations	0.02	.167*	0.099
feelings	0.02	-0.05	-0.032
flaws	0.02	0.086	0.046
mine	0.02	0.059	0.084
occupation/guide	0.02	-0.022	0.063
paper	0.02	0.086	-0.033
redone	0.02	0.032	-0.037
reworking	0.02	0.086	0.021
stay	0.02	0.005	-0.03
topic	0.02	0.032	0.025
trust	0.02	0.086	-0.038
academics	0.02	0.131	-0.013
address	0.02	0.04	-0.027
adjustments	0.02	-0.05	-0.015
agreement	0.02	0.01	-0.069

anatomy/heads	0.02	0.04	-0.04
anatomy/heads/face	0.02	0.01	0.037
behavior mechanisms/attitude	0.02	-0.08	-0.082
brainstorm	0.02	0.131	0.037
chance	0.02	-0.08	-0.058
conclusion	0.02	0.04	-0.082
criticism/constructive criticism	0.02	0.04	0.091
date	0.02	0.04	-0.088
deadline	0.02	-0.02	0.018
discussion	0.02	.161*	.187**
draft	0.02	.191**	0.108
experience	0.02	0.071	0.06
finish	0.02	-0.111	0.02
form	0.02	.161*	.135*
geometry/holes	0.02	0.071	0.043
holdfast	0.02	0.01	0.039
improvement	0.02	0.04	-0.011
key	0.02	0.04	-0.015
order	0.02	0.04	0.033
reread	0.02	-0.02	0.012
sense	0.02	0.04	0.091
side	0.02	-0.05	0.029
suggestions	0.02	0.071	0.008
time/timeline	0.02	-0.08	0.027
tips	0.02	0.04	-0.059
writing	0.02	-0.02	0.029
Count	11.56	.456**	.305**
** Correlation is significant at the 0.01 level (2-tailed).			
* Correlation is significant at the 0.05 level (2-tailed).			

Table H9: Means and Correlations for Question 3 Model Trained (V18.2.1) in Subsample 1 and Tested in Subsample 1

Type: Situational

Item: Displaying Integrity, Ethical Behavior, and Professionalism (Integrity)

Facet: Accepts responsibility for own actions

Categories by Size	Mean	Correlations with Human Ratings	Correlations with AFQT
situation	0.66	-0.026	0.055
prosecution of law/mistake	0.51	0.093	0.091
task	0.44	.138*	0.035
people	0.44	0.039	-0.009
outcome	0.39	.171**	-0.019
problem	0.35	.201**	0.007
integrity	0.35	0.089	.146*
fix	0.34	.215**	0.076
actions	0.31	0.039	0.068
responsibility	0.31	0.037	0.127
help	0.31	.148*	0.05
behavior and behavior mechanisms/emotions/frustration	0.22	.198**	0.089
consequences	0.21	0.077	0.087
acting	0.2	.227**	-0.05
person	0.19	-0.02	-0.101
team	0.18	0.032	0.014
issue	0.16	.204**	0.061
job	0.15	0.014	-.153*
work	0.15	0.04	-0.054
guidelines	0.12	0.12	0.084
physics	0.12	0.018	0.106
time	0.12	0.003	0.046
behavior and behavior mechanisms/social psychology/role	0.12	0.103	-0.003
negatives/negative impact	0.1	.144*	-0.021
efforts	0.1	0.111	-0.082
fault	0.1	0.015	.152*
life	0.1	0.111	-0.046

norms	0.1	0.079	-0.049
working	0.1	-0.033	-.158*
impact	0.09	0.027	0.078
values/core values	0.09	0.076	.199**
act	0.09	0.107	-0.073
feel	0.09	0.023	0
step	0.09	0.071	0.019
trust	0.09	.189**	0.066
trouble	0.08	0.05	0.098
fact	0.07	-0.011	0.021
military/air force/air force core	0.07	0.007	.147*
occupation/supervisor	0.07	.153*	-0.023
blame	0.07	-0.017	0.055
mess	0.06	-0.041	-.136*
military/air force	0.06	-0.1	.133*
anatomy/head/face	0.06	0.032	0.117
respect	0.06	-0.028	0.001
solution	0.06	0.012	0.091
working/coworkers	0.06	0.052	0.103
finance	0.06	-0.034	0.04
negatives	0.06	-0.055	0.042
reason	0.06	0.09	-0.018
show	0.06	-0.013	-0.028
group	0.05	-0.041	0.042
responsibility	0.05	0.088	0.024
truth	0.05	0.045	-0.066
behavior and behavior mechanisms/social psychology/ morals	0.05	0.041	0.005
human	0.05	-0.093	-0.112
part	0.05	0.086	-0.018
responsibility	0.05	.176**	-0.02
behavior and behavior mechanisms/emotions	0.04	0.014	-0.03
course	0.04	0.107	0.029
effect	0.04	0.06	0.075
excellence	0.04	0.06	0.021
talk	0.04	0.06	-0.085
anatomy/head	0.04	0.033	0.04
attention	0.04	0.082	0.094
care	0.04	-0.042	-0.024
error	0.04	.131*	.138*
individual	0.04	.156*	0.065
learning/reinforcement/punishment	0.04	-0.042	0.124
mission	0.04	0.057	0.086

service	0.04	-0.066	0.013
words	0.04	0.033	-0.018
family	0.03	-.155*	-0.102
friends	0.03	-0.077	0.023
human resources/benefit	0.03	0.028	0.03
increase	0.03	.132*	0.043
learning	0.03	0.028	-0.085
point	0.03	0.002	-0.039
question	0.03	-0.077	-0.028
understanding	0.03	.211**	-0.004
use	0.03	0.106	0.086
working/workplace	0.03	0.002	0.074
at the end of the day	0.03	-0.005	-0.011
chance	0.03	0.022	0.046
change	0.03	0.022	0.049
day	0.03	-0.005	-0.078
honesty	0.03	-0.033	0.048
ownership	0.03	-0.005	0.027
position	0.03	0.05	0.033
result	0.03	-.145*	0.002
start	0.03	0.078	0.106
tension	0.03	0.022	0.006
ability	0.03	0.106	.135*
address	0.03	.167*	.132*
answer	0.03	0.076	0.097
consideration	0.03	-0.104	0.008
damage	0.03	-0.044	-0.072
family/family structure/parents	0.03	-0.044	-0.008
feeling	0.03	-0.014	0.012
harm	0.03	0.076	.138*
key	0.03	0.076	.130*
look	0.03	0.106	-0.01
option	0.03	-0.044	0.035
stay	0.03	0.016	0.076
stress	0.03	0.106	-0.032
team/team members	0.03	.167*	0.025
values	0.03	.167*	0.084
wingman	0.03	-0.044	0.009
area	0.02	-0.023	0.014
choice	0.02	-0.023	0.049
courage	0.02	0.108	0
decision	0.02	-0.023	0.026
finance/charge	0.02	0.075	-0.042

flight	0.02	-0.122	-0.071
human resources/career	0.02	0.009	0.021
incident	0.02	0.075	-0.054
minor	0.02	0.042	0.039
negativley	0.02	0.075	-0.081
peers	0.02	0.009	0.002
place	0.02	-0.089	0.012
project	0.02	0.108	-0.021
prosecution of law	0.02	0.075	0.044
set	0.02	-0.089	0.04
ucmj	0.02	-0.023	.218**
working/teamwork	0.02	0.075	0.011
acting/disciplinary actions	0.02	0.111	0.022
advice	0.02	-0.072	0.053
airmen	0.02	-0.035	0.026
bmt	0.02	0.038	-0.083
build	0.02	0.001	-0.045
car	0.02	-0.035	0.044
case	0.02	0.001	0.05
check	0.02	0.074	0.112
control	0.02	-0.109	-0.038
detail	0.02	0.111	0.032
factors	0.02	0.001	0.006
fall	0.02	0.111	0.096
feed	0.02	0.001	-0.015
guidlines	0.02	-0.072	-0.112
idea	0.02	-0.109	0.09
information	0.02	0.038	0.075
measuring instrument	0.02	-0.072	0.069
military	0.02	0.001	0.018
negativly	0.02	0.001	-0.03
night	0.02	0.001	-0.052
occupation/white collar workers/leader	0.02	0.001	0.02
okay	0.02	0.001	-0.005
play	0.02	0.038	0.003
potential	0.02	0.038	0.003
process	0.02	-0.109	0.044
responsability	0.02	-0.035	-0.081
resposibility	0.02	0.038	-0.015
starting	0.02	0.038	-0.034
working/work environment	0.02	0.038	0.004
Count	11.3	.447**	.214**
* Correlation is significant at the 0.05 level (2-tailed).			

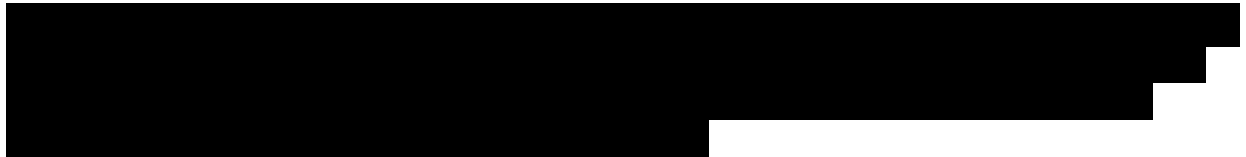
** Correlation is significant at the 0.01 level (2-tailed).

Table H10: Means and Correlations for Question 3 Model Trained (V18.2.1) in Subsample 1 and Tested in Subsample 2

Type: Situational

Item: Displaying Integrity, Ethical Behavior, and Professionalism (Integrity)

Facet: Accepts responsibility for own actions



Categories by Size	Mean	Correlations with Human Ratings	Correlations with AFQT
situation	0.67	-0.08	0.065
prosecution of law/mistake	0.54	.202**	0.07
people	0.46	0.021	-0.042
task	0.46	.266**	.142*
fix	0.39	0.115	0.101
actions	0.36	0.051	0.116
outcome	0.35	.223**	0.119
problem	0.35	0.107	0.091
responsibility	0.35	0.096	.220**
integrity	0.31	-0.011	0.062
help	0.3	.139*	0.088
consequences	0.25	.169*	0.019
behavior and behavior mechanisms/emotions/frustration	0.24	0.097	0.125
acting	0.22	.189**	0.032
team	0.2	.278**	.222**
physics	0.17	0.019	0.09
work	0.17	.153*	0.114
job	0.16	0.118	-0.037
fault	0.15	0.102	0.099
issue	0.14	0.122	.153*
person	0.14	0.002	-.161*
feel	0.14	-0.098	0.005
guidelines	0.14	.267**	.146*
norms	0.14	.400**	.146*
impact	0.1	0.092	0.11
life	0.1	0.021	-0.053
solution	0.1	0.092	0.034
step	0.1	0.078	-0.022

values/core values	0.1	-0.094	-0.005
occupation/supervisor	0.09	.149*	0.097
time	0.09	.193**	.159*
trouble	0.09	0.018	0.017
behavior and behavior mechanisms/social psychology/role	0.09	-.150*	0.006
blame	0.09	0.029	-.150*
act	0.08	.148*	-0.003
behavior and behavior mechanisms/emotions	0.08	0.057	-0.04
mess	0.08	0.007	0
part	0.08	0.07	0.013
trust	0.08	0.117	0.061
finance	0.07	.196**	0.011
efforts	0.07	.198**	0.098
military/air force	0.07	-0.05	-0.028
negatives/negative impact	0.06	-0.022	0.004
respect	0.06	0.063	0.095
decision	0.06	0.026	0.098
group	0.06	-0.097	0.053
truth	0.06	0.043	-0.072
fact	0.06	0.022	0.044
responsibility	0.06	0.077	-0.053
working/coworkers	0.06	.150*	0.038
feed	0.05	.170*	0.031
peers	0.05	-0.019	0.067
talk	0.05	-0.076	-.141*
start	0.05	0.073	-0.024
working	0.05	0.034	0.022
fall	0.04	0.092	.173**
learning	0.04	.154*	0.082
option	0.04	-0.052	-0.024
behavior and behavior mechanisms/social psychology/morals	0.04	-0.017	0.005
course	0.04	-0.038	-0.001
error	0.04	0.07	.246**
individual	0.04	-0.06	-0.03
military/air force/air force core	0.04	0.048	.150*
reason	0.04	-0.06	0.026
show	0.04	-0.017	-0.07
anatomy/head/face	0.03	0.023	-0.063
case	0.03	.160*	0.065
chance	0.03	0.091	-0.004
choice	0.03	-0.046	0.026

future	0.03	.183**	0.111
honesty	0.03	-0.023	0.073
negatives	0.03	0.045	.166*
negatively	0.03	-0.069	-0.016
stay	0.03	-0.023	-0.119
at the end of the day	0.03	-0.006	0.02
look	0.03	0.042	0.071
mission	0.03	.140*	0.065
point	0.03	-0.055	0.003
process	0.03	0.018	0.067
source of illumination	0.03	-0.055	-0.091
wingman	0.03	0.091	-0.009
ability	0.03	0.118	0.103
answer	0.03	-0.066	-0.06
area	0.03	.171**	0.063
change	0.03	.171**	0.081
effect	0.03	.171**	-0.008
excellence	0.03	-0.04	0.095
harm	0.03	0.013	0.043
human resources/benefit	0.03	-0.066	-0.056
human resources/career/skill	0.03	0.066	0.073
idea	0.03	0.066	0.011
increase	0.03	0.013	0.052
members	0.03	.224**	0.032
ownership	0.03	-0.119	0.021
position	0.03	0.013	-0.064
question	0.03	0.039	-.145*
use	0.03	-0.093	0.027
values	0.03	-0.014	0.011
advice	0.02	.151*	0.03
anatomy/head	0.02	0.065	-0.102
attention	0.02	0.093	.148*
care	0.02	0.065	-0.045
control	0.02	-0.051	0.127
courage	0.02	-0.051	0.039
friends	0.02	-0.051	-0.085
guidlines	0.02	-0.08	-0.025
human	0.02	0.065	-0.068
human resources/career	0.02	0.007	-0.078
incident	0.02	-0.022	0.018
mars rover	0.02	0.093	0.058
okay	0.02	0.007	-0.059
play	0.02	-0.108	-0.049

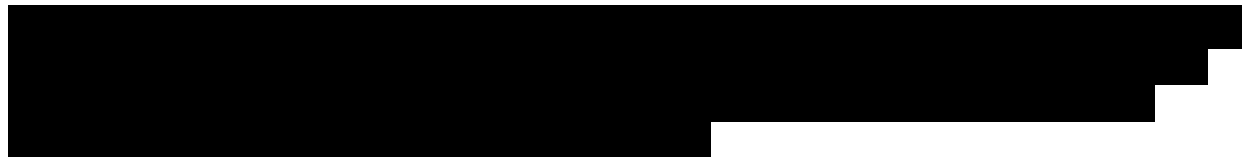
potential	0.02	0.122	0.099
reputation	0.02	-0.022	-0.014
responsibility	0.02	0.065	-0.04
responsibility	0.02	-0.022	-0.001
result	0.02	0.007	0.027
stress	0.02	0.122	0.099
task/incorrect task	0.02	.180**	0.113
understanding	0.02	0.122	0.046
words	0.02	-0.108	-0.081
address	0.02	0.096	0.052
adult	0.02	0.064	-0.029
behavior and behavior mechanisms/character	0.02	0	-0.017
bmt	0.02	-0.097	-0.063
check	0.02	0.096	-0.027
day	0.02	0	0.035
family/family structure/parents	0.02	0	0
learning/learning experience	0.02	.160*	0.098
place	0.02	-0.065	0.039
project	0.02	0	0.071
tension	0.02	0	0.087
Count	11.13	.543**	.310**
** Correlation is significant at the 0.01 level (2-tailed).			
* Correlation is significant at the 0.05 level (2-tailed).			

Table H11: Means and Correlations for Question 3 Model Trained (V18.2.1) in Subsample 2 and Tested in Subsample 1

Type: Situational

Item: Displaying Integrity, Ethical Behavior, and Professionalism (Integrity)

Facet: Accepts responsibility for own actions



Categories by Size	Mean	Correlations with Human Ratings	Correlations with AFQT
situation	0.66	-0.034	0.055
prosecution of law/mistake	0.51	0.093	0.091
actions	0.45	.232**	0.048
task	0.44	.131*	0.046
people	0.44	0.039	-0.009
outcome	0.4	.163*	-0.011
integrity	0.35	0.101	.153*
problem	0.35	.201**	0.007
fix	0.35	.199**	0.09
responsibility	0.32	0.052	.141*
help	0.31	.148*	0.05
behavior and behavior mechanisms/emotions/frustration	0.22	.198**	0.089
consequences	0.22	0.092	0.079
impact	0.2	0.12	0.069
work	0.2	0.061	-0.079
team	0.19	0.013	-0.017
person	0.17	-0.059	-0.12
issue	0.16	.204**	0.061
values/core value	0.16	0.059	.262**
job	0.14	-0.034	-.174**
occupation/guide/guidelines	0.13	0.112	0.119
time	0.13	-0.042	0.049
behavior and behavior mechanisms/social psychology/role	0.12	0.103	-0.003
working	0.11	0.026	-0.034
physics/constraints	0.11	0.007	0.093
feel	0.1	0.019	0.017
effort	0.1	0.111	-0.082

fault	0.1	0.015	.152*
life	0.1	0.111	-0.046
norms	0.1	0.079	-0.049
act	0.09	0.105	-0.077
step	0.09	0.071	0.019
trust	0.09	.189**	0.068
trouble	0.08	0.05	0.098
anatomy/head	0.08	-0.024	.136*
occupation	0.08	.154*	-0.037
fact	0.07	-0.011	0.021
blame	0.07	-0.017	0.055
mess	0.06	-0.041	-.136*
respect	0.06	-0.022	0.027
air force	0.06	-0.068	0.116
solution	0.06	0.012	0.091
group	0.06	-0.034	0.052
place	0.06	-0.055	0.066
reason	0.06	0.09	-0.018
show	0.06	-0.013	-0.028
responsibility	0.05	0.088	0.024
truth	0.05	0.045	-0.066
effect	0.05	0.041	0.119
error	0.05	0.108	.178**
excellence	0.05	0.041	0.02
individuals	0.05	0.108	0.001
mental processes/learning	0.05	0.019	-0.098
responsibility	0.05	.176**	-0.02
start	0.05	0.041	0.064
behavior and behavior mechanisms/social psychology/morals	0.04	0.06	0.043
human	0.04	-0.08	-0.115
part	0.04	0.107	0.071
point	0.04	-0.033	-0.036
talk	0.04	0.06	-0.085
use	0.04	0.06	0.051
attention	0.04	0.082	0.094
care	0.04	-0.042	-0.024
course	0.04	.131*	-0.007
family	0.04	-0.116	-0.024
mental processes/learning/reinforcement	0.04	-0.042	0.124
mission	0.04	0.057	0.086
understanding	0.04	.230**	0.001
area	0.03	-0.051	-0.022

chance	0.03	0.054	0.053
finance/accountability	0.03	0.002	-0.008
friends	0.03	-0.077	0.023
harm	0.03	0.028	.180**
increase	0.03	.132*	0.043
values	0.03	.158*	0.093
word	0.03	0.028	-0.035
working/coworkers	0.03	0.054	0.093
at the end of the day	0.03	-0.005	-0.011
change	0.03	0.022	0.049
finance	0.03	0.078	0.091
honesty	0.03	-0.033	0.048
members	0.03	.134*	.143*
ownership	0.03	-0.005	0.027
result	0.03	-.145*	0.002
ability	0.03	0.106	.135*
address	0.03	.167*	.132*
behavior and behavior mechanisms/emotions/guilt	0.03	0.076	-0.026
choice	0.03	-0.014	0.097
family/parents	0.03	-0.044	-0.008
look	0.03	0.106	-0.01
occupation/white collar workers	0.03	-0.104	-0.117
option	0.03	-0.044	0.035
peers	0.03	0.016	-0.028
position	0.03	0.046	0.004
potential	0.03	0.016	0.068
stay	0.03	0.016	0.076
stress	0.03	0.106	-0.032
wingman	0.03	-0.044	0.009
answer	0.02	0.042	0.061
courage	0.02	0.108	0
decision	0.02	-0.023	0.026
fall	0.02	.141*	0.051
feeling	0.02	-0.023	0.023
human resources/career	0.02	-0.023	0.051
idea	0.02	-0.122	0.124
incident	0.02	0.075	-0.054
advice	0.02	-0.072	0.053
behavior and behavior mechanisms	0.02	0.074	-0.032
bmt	0.02	0.038	-0.083
control	0.02	-0.109	-0.038
detail	0.02	0.111	0.032
failure	0.02	0.038	0.085

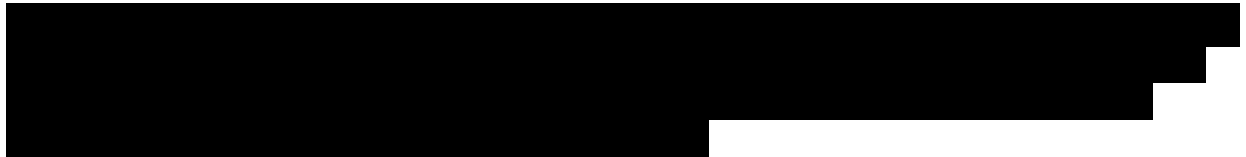
feedback	0.02	-0.035	0.055
guidlines	0.02	-0.072	-0.112
human resources/benefit	0.02	0.001	-0.001
human resources/benefit/compensation/pay	0.02	0.038	0.047
intergrity	0.02	-0.035	0.112
level	0.02	0.001	0.063
line	0.02	0.038	0.11
mind	0.02	0.111	0.063
negativly	0.02	0.001	-0.03
okay	0.02	0.001	-0.005
play	0.02	0.038	0.003
possibility	0.02	-0.035	0.09
process	0.02	-0.109	0.044
project	0.02	0.111	-0.046
resposibility	0.02	0.038	-0.015
Count	10.85	.437**	.244**
* Correlation is significant at the 0.05 level (2-tailed).			
** Correlation is significant at the 0.01 level (2-tailed).			

Table H12: Means and Correlations for Question 3 Model Trained (V18.2.1) in Subsample 2 and Tested in Subsample 2

Type: Situational

Item: Displaying Integrity, Ethical Behavior, and Professionalism (Integrity)

Facet: Accepts responsibility for own actions



Categories by Size	Mean	Correlations with Human Ratings	Correlations with AFQT
situation	0.67	-0.08	0.065
prosecution of law/mistake	0.53	.208**	0.061
actions	0.5	.165*	0.081
task	0.45	.272**	0.127
people	0.45	0.024	-0.054
fix	0.39	0.105	0.117
outcome	0.36	.209**	.134*
problem	0.35	0.107	0.091
responsibility	0.35	0.096	.220**
integrity	0.31	-0.04	0.047
help	0.29	.137*	0.086
consequences	0.26	.160*	0.029
behavior and behavior mechanisms/emotions/frustration	0.23	0.093	.140*
team	0.19	.288**	.226**
impact	0.16	0.05	0.074
job	0.16	0.118	-0.037
person	0.16	0.005	-.138*
fault	0.15	0.102	0.099
physics/constraints	0.15	0.043	0.09
work	0.15	.184**	0.113
occupation/guide/guidelines	0.14	.254**	.156*
norms	0.14	.400**	.146*
feel	0.13	-0.09	0.029
issue	0.13	0.045	0.127
values/core value	0.13	-0.048	0.094
working	0.1	0.027	0.011
occupation	0.1	.164*	0.085
trouble	0.1	0.021	0.01

life	0.09	0.032	-0.058
solution	0.09	0.105	0.017
time	0.09	.134*	0.101
behavior and behavior mechanisms/social psychology/role	0.09	-.150*	0.006
step	0.09	0.059	-0.03
act	0.08	.148*	-0.003
blame	0.08	0.026	-.165*
mess	0.07	-0.013	-0.014
part	0.07	0.084	0.008
trust	0.07	0.1	0.04
effort	0.07	.198**	0.098
failure	0.06	.166*	.161*
decision	0.06	0.026	0.098
mental processes/learning	0.06	.219**	0.124
respect	0.06	0.061	0.085
truth	0.06	0.043	-0.072
air force	0.06	-0.032	-0.008
group	0.06	-0.087	0.074
responsibility	0.06	0.077	-0.053
fact	0.05	0.018	0.069
talk	0.05	-0.076	-.141*
behavior and behavior mechanisms/emotions/guilt	0.05	-0.045	-0.013
feedback	0.05	.192**	0
peers	0.05	-0.005	0.066
behavior and behavior mechanisms/emotions	0.04	.278**	-0.115
effect	0.04	.154*	0.05
fall	0.04	0.092	.173**
option	0.04	-0.052	-0.024
working/coworkers	0.04	.175**	0.115
anatomy/head	0.04	0.048	-0.069
error	0.04	0.07	.246**
finance/accountability	0.04	.135*	.149*
increase	0.04	0.092	.168*
individuals	0.04	-0.06	-0.03
reason	0.04	-0.06	0.026
show	0.04	-0.017	-0.07
behavior and behavior mechanisms	0.03	-0.069	-0.057
behavior and behavior mechanisms/social psychology/morals	0.03	0.023	0.002
case	0.03	.160*	0.065
chance	0.03	0.091	-0.004
finance	0.03	0.068	-0.116

honesty	0.03	-0.023	0.073
route	0.03	-0.046	0.047
rules	0.03	0.068	0.016
start	0.03	0.023	0.021
stay	0.03	-0.023	-0.119
at the end of the day	0.03	-0.006	0.02
change	0.03	.140*	0.045
course	0.03	-0.08	-0.031
idea	0.03	0.067	0.042
look	0.03	0.042	0.071
mind	0.03	0.116	0.058
mission	0.03	.140*	0.065
point	0.03	-0.055	0
process	0.03	0.018	0.067
values	0.03	-0.006	0.014
ability	0.03	0.118	0.103
excellence	0.03	-0.04	0.095
hand	0.03	0.039	-0.089
harm	0.03	0.013	0.043
human resources/career	0.03	0.039	-0.099
human resources/career/skill	0.03	0.066	0.073
know how	0.03	.145*	.196**
members	0.03	.224**	0.032
moving	0.03	0.013	-0.006
ownership	0.03	-0.119	0.021
place	0.03	0.039	0.054
positives	0.03	0.013	0.048
questions	0.03	0.039	-.145*
relationship	0.03	.145*	.134*
result	0.03	.145*	0.056
task/incorrect task	0.03	.197**	0.056
wait	0.03	0.013	-0.008
wingman	0.03	0.066	0.037
advice	0.02	.151*	0.03
answer	0.02	-0.051	-0.061
area	0.02	0.122	0.044
boss	0.02	-0.022	-0.056
break	0.02	-0.051	-0.078
care	0.02	0.065	-0.045
choice	0.02	-0.108	-0.04
courage	0.02	-0.051	0.039
detail	0.02	-0.022	0.003
ease	0.02	0.065	0.106

feeling	0.02	-0.108	-0.075
friends	0.02	-0.051	-0.085
goal	0.02	0.122	0.061
guidlines	0.02	-0.08	-0.007
handle	0.02	0.093	-0.073
holding	0.02	0.093	-0.019
house rooms/room	0.02	0.007	0.049
level	0.02	0.093	0.067
occupation/white collar workers	0.02	0.036	-0.007
okay	0.02	0.007	-0.059
opportunity	0.02	0.093	0.058
physics/mechanics	0.02	0.122	0.024
play	0.02	-0.108	-0.049
position	0.02	0.036	-0.056
possibility	0.02	0.093	-0.081
potential	0.02	0.122	0.099
reputation	0.02	-0.022	-0.014
responsiblity	0.02	0.065	-0.04
resposibility	0.02	-0.022	-0.001
stress	0.02	0.122	0.099
talking	0.02	0.036	-0.005
team/teammates	0.02	0.007	0.065
understanding	0.02	0.122	0.046
use	0.02	-0.08	0.024
word	0.02	-0.108	-0.081
address	0.02	0.096	0.052
adult	0.02	0.064	-0.029
backlash	0.02	0	-0.002
behavior and behavior mechanisms/emotions/fear	0.02	0.096	0.119
bmt	0.02	-0.097	-0.063
completey	0.02	-0.097	0.025
contraints	0.02	-0.065	0.018
control	0.02	-0.032	0.093
duty	0.02	0.096	0.052
excuses	0.02	0	0.008
fair	0.02	0.064	-0.102
family/parents	0.02	0	0
human	0.02	0.096	-0.073
human resources/benefit/compensation/performance	0.02	0	0.002
incident	0.02	0	0.01
intention	0.02	-0.032	-0.002
intergrity	0.02	-0.032	-0.105
lead	0.02	-0.032	0.062

line	0.02	0.032	-.134*
man	0.02	-0.097	0.064
negativly	0.02	0	0.121
physics	0.02	-0.065	-0.054
plans	0.02	0.128	0.056
project	0.02	0	0.071
prosecution of law	0.02	-0.032	-0.034
source of illumination/light	0.02	0	-0.046
Count	11.69	.567**	.303**
** Correlation is significant at the 0.01 level (2-tailed).			
* Correlation is significant at the 0.05 level (2-tailed).			

Table H13: Means and Correlations for Question 4 Model Trained (V18.2.1) in Subsample 1 and Tested in Subsample 1

Type: Behavioral

Item: Openness (Openness to Alternative Views)

Facet: Having a willingness to overcome one's own interests for the needs of others



Categories by Size	Mean	Correlations with Human Ratings	Correlations with AFQT
ideas	0.44	.144*	-0.02
situation	0.36	0.053	-0.002
time	0.28	-0.028	-0.031
outcome	0.28	0.105	-0.105
work	0.25	0.064	-0.028
people	0.22	-0.029	-0.04
opinions	0.2	0.053	0.122
school	0.16	0.066	-0.016
school/k-12/high school	0.16	0.109	0.064
friend	0.15	0.098	0.001
working	0.15	-0.07	.143*
actions	0.14	-0.043	-0.075
life	0.14	0.038	0.109
person	0.14	0.05	-0.036
class	0.13	0.12	0.031
decision	0.13	0.084	0.005
job	0.13	-0.074	0.02
project	0.11	.311**	.133*
bmt	0.11	-0.021	0.056
group	0.11	.147*	.244**
use	0.1	-0.036	-0.051
behavior mechanisms/personality	0.09	0	-0.082
process	0.09	0.041	-0.07
compromise	0.09	.224**	.250**
day	0.09	-0.104	0.04
help	0.09	-0.019	0.005
point	0.09	0.096	0.102
side	0.09	-0.061	0.004
issue	0.08	-0.009	.225**
occupation	0.08	-0.024	.139*

problem	0.08	0.006	-0.082
end	0.07	-0.042	0.064
home	0.07	-0.103	-0.017
interest	0.07	0.035	-0.057
place	0.07	-0.026	-0.109
topic	0.07	0.02	0.086
views	0.07	0.02	.209**
plan	0.07	-0.029	0.016
academics/students	0.06	0.066	0.125
college	0.06	0.017	0.033
edge tool	0.06	0.066	0.031
family	0.06	-0.065	-0.012
coworker	0.06	-0.069	0.011
mind	0.06	0.032	0.012
talking	0.06	-0.019	0.075
task	0.06	-0.052	0.101
concerns	0.06	-0.022	-0.042
family/family structure/parents	0.06	-.144*	-0.003
military	0.06	0.031	0.018
office workers/team	0.06	-0.004	0.021
party	0.06	.187**	.133*
physics/perspective	0.06	.274**	-0.062
project/group project	0.06	.170**	0.109
start	0.06	0.065	0.059
training	0.06	-0.074	-0.011
debate	0.05	-0.025	0.032
flight	0.05	0.047	0.044
game	0.05	-0.061	-0.078
girl	0.05	-0.025	0.019
half	0.05	0.12	0.003
look	0.05	0.011	-0.04
change	0.05	-0.085	0.056
goal	0.05	0.122	0.118
home/house	0.05	-0.085	-0.006
one day	0.05	-0.047	0.099
reason	0.05	0.084	-0.023
vehicles/car	0.05	-0.066	-0.001
anatomy/body regions/heads	0.04	-0.072	0.043
argument	0.04	.145*	0.07
conversation	0.04	-0.013	-0.037
experience	0.04	-0.013	-0.085
food	0.04	0.007	-0.08
friendship	0.04	-0.052	-0.042

ground	0.04	0.007	-0.097
handle	0.04	-0.072	-0.087
one time	0.04	0.105	-0.04
option	0.04	-0.013	0.025
politics	0.04	-0.052	0.125
solution	0.04	.224**	0.05
stay	0.04	-.131*	0.046
year	0.04	0.027	0.004
choice	0.04	-0.016	0.053
class/classmates	0.04	0.108	-0.058
differences	0.04	-0.079	-0.036
example	0.04	0.025	0.07
family/family structure/parents/mom	0.04	-0.079	-0.036
feel	0.04	0.025	-0.082
finance/money	0.04	-0.099	0.037
grade	0.04	0.004	0.032
individual	0.04	0.046	0.007
input	0.04	0.087	.155*
occupation/teacher	0.04	0.025	0.053
part	0.04	0.025	0.006
question	0.04	-0.058	0.075
religion	0.04	0.004	-0.037
respect	0.04	.191**	0.014
show	0.04	-0.058	-0.083
support	0.04	0.004	.137*
talk	0.04	-0.037	-0.049
call	0.03	-.152*	0.017
customer	0.03	-.152*	0.09
family/family structure/parents/mother	0.03	-0.064	0.025
lead	0.03	-0.02	0.075
occupation/white collar workers/employees	0.03	-0.042	-0.021
prosecution of law	0.03	-0.064	-0.011
sport	0.03	-0.108	-0.072
thoughts	0.03	0.09	0.098
anatomy/body regions/extremities/arm/hand	0.03	-0.072	0.129
clothes	0.03	-0.001	-0.058
clothes/shirt	0.03	0.092	-0.062
conflict	0.03	0.045	0.122
drinks	0.03	-0.048	-0.004
engineering design/materials/housing materials	0.03	-0.025	0.009
finals	0.03	0.022	-0.034
finance	0.03	-0.072	0.082
god	0.03	-0.048	-.168*

military/air force	0.03	-0.001	0.039
page	0.03	-0.001	-.137*
partner	0.03	.209**	0.122
play	0.03	-0.048	-0.025
position	0.03	-0.072	0.066
relationship	0.03	-0.001	0.055
set	0.03	0.022	-0.014
style	0.03	0.022	0.082
switch	0.03	-0.048	0.03
vote	0.03	0.022	0.043
week	0.03	-0.095	-0.09
abortion	0.03	0.071	0.028
agreement	0.03	0.121	0.067
amount	0.03	-0.055	.146*
anatomy	0.03	-0.005	-0.053
behavior and behavior mechanisms/social psychology/roles	0.03	0.02	0
beliefs	0.03	-0.03	-0.007
business	0.03	0.02	0.006
care	0.03	-0.03	-0.067
commercial establishment/restaurant	0.03	0.02	0.118
design	0.03	0.121	.132*
disagreement	0.03	0.096	0.1
discussions	0.03	0.046	0.057
drive	0.03	-0.005	0.102
effort	0.03	0.071	0.09
fact	0.03	-.131*	0.051
fair	0.03	-0.081	-0.023
family/family structure/child	0.03	0.046	-0.013
family/family structure/children/brother and sister/sister	0.03	-0.03	-0.029
geographical location/america/united states/us states	0.03	-0.055	0.038
human resources/benefit	0.03	0.046	0.121
information	0.03	-0.005	0.097
join	0.03	0.02	-0.008
many times	0.03	0.046	0.084
meeting	0.03	0.02	0.022
music/music genres/rock	0.03	-0.081	-0.071
night	0.03	-0.03	0.102
order	0.03	-0.106	0.106
paper	0.03	0.096	0.1
reports	0.03	.147*	0.127

sense	0.03	-0.055	0.011
starting	0.03	-0.106	0.059
stuff	0.03	-0.005	-0.059
age	0.02	.156*	-0.019
answer	0.02	-0.064	0.127
approach	0.02	0.019	0.044
area	0.02	-0.119	.133*
at the end of the day	0.02	-0.009	0.094
behavior and behavior mechanisms/emotions	0.02	-0.037	-0.024
build	0.02	0.101	0.091
chance	0.02	-0.064	-0.014
check	0.02	-0.037	-0.082
commercial establishment/store/shop	0.02	-0.037	-0.108
conclusion	0.02	0.046	-0.05
consideration	0.02	0.019	-0.009
control	0.02	-0.009	0.032
economics	0.02	0.019	-0.01
family/family structure/children/brother and sister/brother	0.02	-0.119	-0.096
feelings	0.02	0.046	-0.084
front	0.02	0.046	-.141*
guy	0.02	-0.064	-0.068
house furnishings/furniture	0.02	0.046	0.005
human resources/careers/hiring	0.02	-0.064	-0.045
instance	0.02	0.019	0.04
measuring instrument/rule	0.02	-0.092	-0.071
mission	0.02	0.046	0.065
months	0.02	-0.037	0.039
moving	0.02	-0.119	0.096
occupation/white collar workers/boss	0.02	-0.009	0.009
opportunity	0.02	0.101	-0.022
pay	0.02	-0.064	-0.099
peer	0.02	-0.037	-0.057
program	0.02	0.019	-0.017
reasoning	0.02	-0.064	0.106
schedule	0.02	0.129	0.051
shifts	0.02	-0.064	-0.017
sport/sports by type/ball games/basketball	0.02	0.046	0.014
step	0.02	-0.064	0.033
student room/dorm	0.02	-0.092	.187**
town	0.02	-0.037	0.044
trust	0.02	0.019	.143*
understanding	0.02	0.101	0.023

vehicles/trucks	0.02	-0.037	-0.038
worry	0.02	-0.064	0.056
academics/research/study	0.02	-0.045	0.1
academics/test	0.02	-0.045	0.005
act	0.02	0.017	-0.04
attention	0.02	-0.106	-.151*
baby	0.02	0.047	-0.043
business management/value	0.02	.140*	0.018
characters	0.02	0.047	0.016
class/classmates/fellow classmates	0.02	0.047	0.003
clothes/shirt/flight shirt/flight t-shirt	0.02	0.109	0.013
company	0.02	-0.106	-0.054
confrontation	0.02	-0.045	0.098
cons	0.02	0.078	0.018
credits	0.02	0.017	0.032
culture	0.02	0.047	-0.024
degree	0.02	0.047	-0.028
display	0.02	0.078	0.098
economics/costs	0.02	-0.106	0.09
engineering design/building	0.02	-0.045	0.11
engineering design/materials	0.02	0.078	0.046
explanation	0.02	-0.106	0.088
family/family structure/spouse	0.02	-0.014	0.034
fight	0.02	-0.045	0.065
finish	0.02	-0.106	-0.071
friendship/girlfriend	0.02	-0.076	0.028
fun	0.02	0.017	0.074
government/laws	0.02	-0.045	-0.015
hometown	0.02	-0.045	0.096
horse	0.02	.140*	-0.019
house furnishings/furniture/beds	0.02	-0.045	0.073
house furnishings/implement	0.02	.140*	-0.019
human resources/careers/skills	0.02	.232**	.160*
human/human beings	0.02	0.017	0.029
increase	0.02	-0.076	-0.022
line	0.02	-0.076	0.078
location	0.02	-0.045	0.081
mental processes/learning/memory	0.02	-0.014	0.061
mind/mindset	0.02	-0.014	-0.011
movie	0.02	0.017	0.009
occupation/white collar workers	0.02	-0.106	0.001
okay	0.02	0.017	0.096
potential	0.02	-0.106	0.127

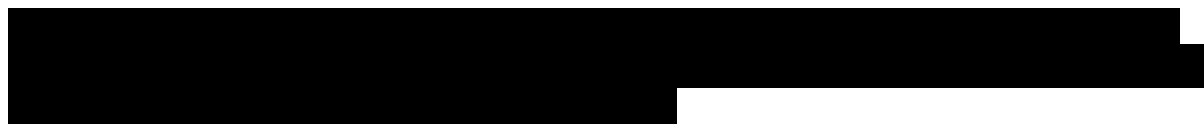
pros	0.02	0.078	0.018
raped	0.02	0.017	-0.045
ring	0.02	-0.045	-0.056
saw	0.02	-0.106	0.098
scholarship	0.02	-0.014	-0.022
setting	0.02	-0.045	0.042
setup	0.02	-0.045	-0.063
sport/sports by type	0.02	-0.014	0.032
sport/sports by type/ball games	0.02	-0.045	-0.046
standard	0.02	0.078	0.059
suggestions	0.02	.170**	-0.034
trouble	0.02	-0.045	-0.042
turn	0.02	0.017	0.036
working/extra work	0.02	-0.014	0.081
Count	11.7	0.102	.246**
* Correlation is significant at the 0.05 level (2-tailed).			
** Correlation is significant at the 0.01 level (2-tailed).			

Table H14: Means and Correlations for Question 4 Model Trained (V18.2.1) in Subsample 1 and Tested in Subsample 2

Type: Behavioral

Item: Openness (Openness to Alternative Views)

Facet: Having a willingness to overcome one's own interests for the needs of others



Categories by Size	Mean	Correlations with Human Ratings	Correlations with AFQT
ideas	0.49	.249**	-0.036
situation	0.4	0.023	0.069
time	0.29	0.027	0.073
outcome	0.27	0.07	-0.074
people	0.25	-0.066	-0.102
person	0.22	0.062	0.01
friend	0.2	-0.103	-0.044
work	0.2	0.122	0.048
opinions	0.19	.164*	.190**
school	0.18	0.064	-0.125
school/k-12/high school	0.17	0.013	-0.021
actions	0.16	-0.072	-0.041
life	0.13	0.045	-0.002
process	0.13	0.082	0.021
group	0.12	.154*	.211**
class	0.12	0.071	0.014
project	0.12	.132*	0.1
office workers/team	0.11	0.097	0.081
help	0.11	-0.028	-0.076
job	0.1	-0.055	-0.124
year	0.1	-0.029	-0.076
decision	0.1	0.049	0.105
talk	0.1	-0.03	-.150*
option	0.1	0.089	.132*
use	0.1	-0.018	0.002
point	0.09	-0.018	-0.014
physics/perspective	0.09	-0.005	0.003
working	0.09	-0.075	0.09
bmt	0.08	-0.063	-0.036
family	0.08	-0.106	-0.026

side	0.08	0.008	-0.027
views	0.08	0.096	0.03
business management/value	0.07	-0.067	-0.057
flight	0.07	-0.052	-0.062
choice	0.07	0.116	0.012
academics/students	0.06	-0.04	0.026
concerns	0.06	0.103	0.051
day	0.06	-0.04	0.065
finance/money	0.06	-.183**	0.006
plan	0.06	.134*	0.034
compromise	0.06	.204**	.179**
interest	0.06	0.106	0.002
place	0.06	0.073	0.108
problem	0.06	0.007	-0.072
end	0.06	0.126	0.122
feelings	0.06	0.007	-0.045
occupation	0.06	-0.027	0.049
topic	0.06	.194**	0.051
behavior mechanisms/personality	0.05	0.112	0.103
beliefs	0.05	0.007	0.093
college	0.05	0.007	0.098
debate	0.05	0.042	0.078
design	0.05	0.112	-0.051
discussions	0.05	-0.064	0.116
girl	0.05	-0.046	0.004
individual	0.05	0.059	0.038
occupation/teacher	0.05	0.059	0.104
project/group project	0.05	0.112	0.1
reason	0.05	0.095	0.053
solution	0.05	.165*	.188**
start	0.05	0.059	0.054
talking	0.05	-0.064	-0.038
task	0.05	0.059	0.106
week	0.05	0.059	-0.009
approach	0.05	.227**	.141*
area	0.05	0.098	.161*
argument	0.05	-0.031	0.012
conversation	0.05	-0.031	0.059
differences	0.05	.190**	.188**
feel	0.05	-0.012	-0.06
home	0.05	-0.104	-.157*
one time	0.05	0.006	-0.028
academics/research	0.04	0.121	0.029

anatomy	0.04	0.102	-0.001
change	0.04	-0.109	0.008
customer	0.04	-0.013	0.079
experience	0.04	0.044	0.031
game	0.04	0.083	0.04
issue	0.04	0.006	0.129
mind	0.04	0.064	0.04
play	0.04	0.121	-0.032
respect	0.04	0.006	-0.025
show	0.04	0.064	-0.024
anatomy/body regions/heads	0.04	0.026	-0.001
conflict	0.04	-0.096	-0.021
coworker	0.04	0.026	-0.011
disagreement	0.04	-0.015	0.006
edge tool	0.04	-0.075	-.171**
engineering design/materials	0.04	0.026	0.1
family/family structure/child	0.04	-0.015	-0.022
family/family structure/parents	0.04	-0.055	0.071
family/family structure/parents/mom	0.04	-0.116	-.185**
friendship	0.04	-0.015	-0.113
hours	0.04	0.006	0.017
military/air force	0.04	-0.096	-0.004
occupation/white collar workers	0.04	-0.035	0.101
okay	0.04	-0.075	-.135*
page	0.04	0.107	-.160*
position	0.04	0.087	0.017
sport	0.04	0.066	-0.013
stay	0.04	-0.096	-0.016
build	0.03	-0.038	-0.028
call	0.03	-0.038	0.054
conclusion	0.03	0.027	0.031
consideration	0.03	0.069	0.024
fact	0.03	-0.038	0.01
human resources/benefit	0.03	-0.102	-0.054
lead	0.03	-.145*	.179**
military	0.03	-0.102	0.016
night	0.03	-0.059	-0.069
one day	0.03	-.166*	-0.005
partner	0.03	0.048	0.042
pros	0.03	0.112	0.057
question	0.03	-0.08	-0.113
relationship	0.03	0.048	0.107
thoughts	0.03	0.069	0.002

training	0.03	-0.08	-0.071
agreement	0.03	-0.018	-0.044
at the end of the day	0.03	0.073	-0.046
class/classmates	0.03	.142*	0.042
clothes/shirt	0.03	0.051	-0.068
cons	0.03	0.073	0.064
goal	0.03	-0.064	-0.005
guy	0.03	0.005	0.02
look	0.03	0.051	-0.056
mental processes/learning	0.03	0.051	0.011
occupation/white collar workers/boss	0.03	-.132*	-0.035
occupation/white collar workers/employees	0.03	-0.041	.136*
part	0.03	0.005	0.035
prosecution of law	0.03	0.073	0.098
religion	0.03	-0.064	-0.033
set	0.03	.210**	0.06
stuff	0.03	-0.041	-.154*
understanding	0.03	0.073	0.074
vehicles/car	0.03	-0.041	0.022
anatomy/body regions/extremities/arm/hand	0.03	-0.045	-0.067
course	0.03	-0.045	0.065
family/family structure/spouse	0.03	0.029	0.002
god	0.03	-0.069	0
half	0.03	-0.094	-0.031
information	0.03	0.029	0.049
many times	0.03	-0.02	-0.022
meeting	0.03	-0.094	0.111
party	0.03	.300**	.175**
age	0.02	-0.05	0.001
amount	0.02	0.058	0.061
answer	0.02	-0.077	-0.092
attention	0.02	-0.023	-0.116
behavior and behavior mechanisms/emotions	0.02	0.031	0.06
behavior and behavior mechanisms/social psychology	0.02	0.004	0.118
clothes	0.02	-0.103	-0.011
commercial establishment/store	0.02	0.085	0.02
drinks	0.02	-0.023	-0.035
education	0.02	-0.05	-0.05
effort	0.02	0.085	0.001
engineering design/building	0.02	0.004	0.103
family/family structure/children	0.02	0.031	-0.03
finish	0.02	0.031	-0.023

food	0.02	0.031	0.118
grade	0.02	0.085	0.115
handle	0.02	0.004	0.013
home/house	0.02	-0.05	-0.068
join	0.02	-0.103	-0.095
kids	0.02	0.004	-0.078
months	0.02	-0.023	0.029
moving	0.02	-0.023	-0.047
order	0.02	-0.023	-0.009
sense	0.02	-0.023	-.157*
source of illumination/lamp	0.02	-0.103	0.043
sport/sports by type/ball games	0.02	-0.023	-0.083
step	0.02	0.058	-0.019
support	0.02	0.031	0.006
abortion	0.02	0.094	0.035
academics/research/study	0.02	0.064	-0.03
academics/test	0.02	0.004	-0.067
act	0.02	0.004	-0.011
chance	0.02	0.004	-0.117
economics/costs	0.02	.184**	0.096
electrical device	0.02	0.124	0.045
example	0.02	-0.056	0.096
family/family structure/parents/mother	0.02	0.034	0.035
human resources	0.02	0.064	0.048
input	0.02	0.094	-0.009
name	0.02	-0.116	-0.019
occupation/instructor	0.02	-0.026	0.085
politics	0.02	0.064	-0.003
schedule	0.02	-0.056	0.071
shifts	0.02	-0.116	-0.017
sport/sports by type/ball games/football	0.02	-0.056	0.068
town	0.02	0.004	-0.069
vote	0.02	0.034	0.025
Count	10.71	.209**	0.125
** Correlation is significant at the 0.01 level (2-tailed).			
* Correlation is significant at the 0.05 level (2-tailed).			

Table H15: Means and Correlations for Question 4 Model Trained (V18.2.1) in Subsample 2 and Tested in Subsample 1

Type: Behavioral

Item: Openness (Openness to Alternative Views)

Facet: Having a willingness to overcome one's own interests for the needs of others



Categories by Size	Mean	Correlations with Human Ratings	Correlations with AFQT
ideas	0.43	.158*	-0.006
situation	0.39	0.051	0
time	0.3	-0.031	-0.005
work	0.29	0.046	0.031
outcome	0.25	0.118	-0.1
people	0.25	-0.05	-0.017
opinions	0.2	0.053	0.122
friends	0.19	0.112	0.002
school	0.18	0.08	-0.034
school/high school	0.17	0.1	0.037
person	0.16	0.012	-0.03
decision	0.14	0.05	-0.025
job	0.13	-0.069	0.013
life	0.13	0.002	0.084
actions	0.13	-0.047	-0.102
class	0.13	.132*	0.031
project	0.13	.299**	.153*
group	0.11	.172**	.231**
bmt	0.11	-0.021	0.056
use	0.1	-0.036	-0.051
point	0.1	0.109	0.108
process	0.1	0.028	-0.117
day	0.09	-0.104	0.061
plan	0.09	-0.004	0.024
problem	0.09	0.024	-0.055
side	0.09	-0.061	0.018
compromise	0.08	.213**	.233**
help	0.08	-0.036	0.009
issue	0.08	-0.021	.213**
views	0.08	0.081	.233**

place	0.08	-0.009	-0.089
interests	0.07	0.035	-0.057
topic	0.07	0.02	0.086
week	0.07	-.134*	-0.059
academics/students	0.07	0.05	0.104
college	0.07	0.034	0.058
part	0.07	0.097	0.049
start	0.07	0.034	0.057
working	0.07	0.066	0.019
family	0.06	-0.065	-0.012
family/family structure/parents	0.06	-.163*	-0.043
home	0.06	-0.081	-0.017
year	0.06	0.066	-0.008
concerns	0.06	-0.036	-0.021
coworker	0.06	-0.069	-0.002
end	0.06	-0.036	0.051
military	0.06	0.015	0.024
mind	0.06	-0.002	-0.017
pick	0.06	0.049	0.02
talking	0.06	-0.019	0.075
task	0.06	-0.052	0.101
team	0.06	0.015	0.008
experience	0.06	-0.022	-0.053
half	0.06	0.1	0.008
physics/perspective	0.06	.274**	-0.062
reason	0.06	0.048	0.003
conversation	0.05	-0.007	-0.008
flight	0.05	0.047	0.044
girl	0.05	-0.025	0.019
look	0.05	0.011	-0.04
argument	0.05	0.122	0.093
debate	0.05	-0.01	0.03
food	0.05	0.028	-0.054
goal	0.05	0.122	0.118
home/house	0.05	-0.085	-0.067
one day	0.05	-0.047	0.099
options	0.05	-0.01	0.02
outdoor activities/game	0.05	-0.085	-0.096
anatomy/head	0.04	-0.072	0.043
change	0.04	-0.072	0.049
choice	0.04	-0.013	0.065
classmates	0.04	.184**	-0.063
differences	0.04	-0.092	-0.007

finances/money	0.04	-0.072	0.041
grade	0.04	0.027	0.063
occupation/manager	0.04	-0.052	0.005
one time	0.04	0.105	-0.04
solution	0.04	.224**	0.05
stay	0.04	-.131*	0.046
call	0.04	-.141*	0.057
example	0.04	0.025	0.07
feeling	0.04	-0.037	-0.06
handle	0.04	-0.079	-0.035
individuals	0.04	0.046	0.007
question	0.04	-0.058	0.075
relationship	0.04	-0.037	0.049
support	0.04	0.004	.137*
talk	0.04	-0.037	-0.049
vehicles/car	0.04	-0.037	-0.062
amount	0.03	-0.042	.190**
behavior mechanisms/personality	0.03	0.024	-.133*
clothes/shirt	0.03	0.09	-0.05
customer	0.03	-.152*	0.09
discussion	0.03	0.046	0.096
family/family structure/parents/mom	0.03	-0.064	-0.049
family/family structure/parents/mother	0.03	-0.064	0.025
god	0.03	-0.02	-.173**
ideas/great ideas	0.03	0.002	-.180**
occupation/educators/teacher	0.03	0.002	0.069
occupation/white collar workers/employees	0.03	-0.042	-0.021
occupation/white collar workers/workers	0.03	0.046	0.076
partner	0.03	.177**	0.104
party	0.03	.133*	0.11
politics	0.03	-0.02	0.104
religion	0.03	-0.02	-0.024
respect	0.03	.177**	0.004
set	0.03	0.002	-0.013
show	0.03	-0.064	-0.074
thoughts	0.03	0.09	0.098
areas	0.03	-0.072	.180**
compensation/pay	0.03	-0.048	-0.076
fact	0.03	-0.095	0.024
human resources/benefits	0.03	0.022	0.123
lead	0.03	-0.095	-0.02
military/air force	0.03	-0.001	0.039
night	0.03	-0.048	0.046

occupation/white collar workers/leaders	0.03	0.022	0.125
orders	0.03	-0.118	0.107
page	0.03	-0.001	-.137*
play	0.03	-0.048	-0.025
sense	0.03	-0.072	0.055
time management	0.03	0.069	0.049
abortion	0.03	0.071	0.028
age	0.03	0.121	-0.034
approach	0.03	0.046	0.041
chance	0.03	-0.081	0.017
company	0.03	-.131*	-0.012
disagreement	0.03	0.096	0.1
drive	0.03	-0.03	0.006
extremities/hand	0.03	-0.055	.138*
family/family structure/child	0.03	0.046	-0.013
family/family structure/children/brother and sister/sisters	0.03	-0.03	-0.029
feel	0.03	0.096	-0.091
front	0.03	0.02	-0.099
guy	0.03	-0.081	-0.068
information	0.03	-0.005	0.097
join	0.03	0.02	-0.008
many times	0.03	0.046	0.084
meeting	0.03	0.071	0.017
mental processes/learning	0.03	0.02	0.082
sports	0.03	-0.081	-0.02
stuff	0.03	-0.005	-0.059
vote	0.03	-0.005	0.036
act	0.02	0.019	-0.05
agreement	0.02	0.101	0.105
anatomy/head/face	0.02	0.101	0.059
answer	0.02	-0.064	0.127
at the end of the day	0.02	-0.009	0.094
bed	0.02	-0.064	0.098
beliefs	0.02	-0.064	-0.019
boss	0.02	-0.009	0.009
break	0.02	-0.037	-0.01
build	0.02	0.101	0.091
commercial establishment/restaurant	0.02	-0.009	0.084
conclusion	0.02	0.046	-0.05
conflict	0.02	0.046	0.061
design	0.02	0.129	.134*
engineering design	0.02	-0.009	0.103

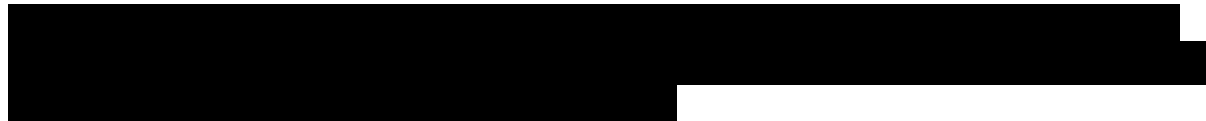
house rooms/room	0.02	0.019	0.033
occupation	0.02	-0.009	0.113
step	0.02	-0.064	0.033
student room/dorm	0.02	-0.092	.187**
train	0.02	-0.009	0.019
understanding	0.02	0.101	0.023
academics	0.02	-0.045	0.005
academics/research/study	0.02	-0.076	0.088
attention	0.02	-0.106	-.151*
business management/value	0.02	.140*	0.018
church	0.02	0.047	0.056
classes	0.02	-0.045	0.051
clothes	0.02	-0.045	-0.029
clothes/shirt/tshirt	0.02	0.078	0.011
commercial establishment/store	0.02	0.017	-0.007
commercial establishment/store/shop	0.02	-0.014	-0.085
cons	0.02	0.078	0.018
consideration	0.02	0.047	-0.024
country	0.02	-0.014	0.06
direction	0.02	.140*	0.061
drinks	0.02	-0.045	0.005
effort	0.02	0.017	0.042
family/family structure/children/brother and sister	0.02	-0.106	-0.079
fight	0.02	-0.045	0.065
finish	0.02	-0.106	-0.071
future	0.02	-0.106	-0.063
human resources/career	0.02	0.078	0.013
level	0.02	-0.045	-0.077
marital status	0.02	0.047	0.038
occupation/white collar workers/leadership	0.02	-0.045	0.057
okay	0.02	0.017	0.096
opener	0.02	0.047	0.059
players	0.02	0.047	0.085
pros	0.02	0.078	0.018
setting	0.02	-0.045	0.042
standard	0.02	0.078	0.059
town	0.02	-0.014	0.042
world	0.02	-0.045	0.055
Count	10.55	.136*	.221**
* Correlation is significant at the 0.05 level (2-tailed).			
** Correlation is significant at the 0.01 level (2-tailed).			

Table H16: Means and Correlations for Question 4 Model Trained (V18.2.1) in Subsample 2 and Tested in Subsample 2

Type: Behavioral

Item: Openness (Openness to Alternative Views)

Facet: Having a willingness to overcome one's own interests for the needs of others



Categories by Size	Mean	Correlations with Human Ratings	Correlations with AFQT
ideas	0.49	.241**	-0.023
situation	0.42	0.016	0.063
time	0.27	0.052	0.087
people	0.25	-0.065	-0.096
outcome	0.23	0.081	-0.017
friends	0.21	-0.111	-0.102
school	0.19	0.083	-.144*
opinions	0.19	.164*	.190**
school/high school	0.17	0.023	-0.021
work	0.16	0.097	0.036
person	0.16	0.055	-0.016
actions	0.16	-0.085	-0.046
behavior mechanisms/personality	0.15	0.056	0.099
project	0.13	0.116	0.1
process	0.12	0.094	0.039
life	0.12	0.083	0.019
job	0.11	-0.064	-.151*
class	0.11	0.022	0.017
group	0.11	.148*	.190**
team	0.1	0.099	0.102
decision	0.1	0.049	0.111
help	0.1	-0.017	-0.099
use	0.1	-0.018	0.002
talk	0.09	-0.005	-.146*
year	0.09	-0.032	-0.038
options	0.09	0.092	.134*
physics/perspective	0.09	-0.005	0.003
family	0.08	-0.106	-0.026
point	0.08	0.008	-0.013
side	0.08	0.023	-0.006
bmt	0.07	-0.037	-0.036

flight	0.07	-0.052	-0.032
views	0.07	0.113	0.04
occupation/white collar workers/workers	0.07	0.054	0.07
anatomy/head/face	0.06	0.007	-0.018
business management/value	0.06	-0.04	-0.026
concerns	0.06	0.103	0.051
finances/money	0.06	-.183**	0.006
players	0.06	.198**	0.07
academics/students	0.06	-0.026	0.057
biggs	0.06	-0.075	-0.033
choice	0.06	0.073	0.005
compromise	0.06	.204**	.179**
feeling	0.06	-0.009	-0.046
interests	0.06	0.106	0.002
place	0.06	0.073	0.108
problem	0.06	0.007	-0.072
family/family structure/parents	0.06	-0.095	-0.069
home	0.06	-0.129	-0.116
occupation/educators/teacher	0.06	0.041	0.108
occupation/white collar workers/leadership	0.06	-0.044	0.063
talking	0.06	-0.078	-0.045
topic	0.06	.194**	0.051
week	0.06	0.041	-0.057
beliefs	0.05	0.007	0.093
part	0.05	0.024	0.101
reason	0.05	0.095	0.053
solution	0.05	.165*	.188**
task	0.05	0.059	0.106
areas	0.05	0.098	.161*
change	0.05	-0.067	0.005
college	0.05	-0.031	0.1
conversation	0.05	-0.031	0.059
discussion	0.05	-0.104	0.086
girl	0.05	-0.104	-0.002
one time	0.05	0.006	-0.028
plan	0.05	0.043	0.025
start	0.05	0.043	0.041
academics/research	0.04	0.121	0.029
approach	0.04	.217**	0.116
customer	0.04	-0.013	0.079
debate	0.04	0.025	0.049
design	0.04	0.121	-0.022
differences	0.04	.179**	.162*

home/house	0.04	0.044	0.005
human resources/benefits	0.04	-0.09	-0.024
individuals	0.04	0.025	0.057
issue	0.04	0.006	0.129
news	0.04	0.006	0.002
outdoor activities/game	0.04	0.083	0.04
working	0.04	-0.109	0.052
build	0.04	-0.015	0
coworker	0.04	0.026	-0.011
end	0.04	0.046	.148*
experience	0.04	0.026	0.016
family/family structure/child	0.04	-0.015	-0.022
family/family structure/parents/mom	0.04	-0.116	-.185**
feel	0.04	0.026	-0.053
military/air force	0.04	-0.096	-0.004
mind	0.04	0.087	0.072
positives	0.04	-0.015	0.04
world	0.04	-0.055	-0.057
anatomy/head	0.03	0.048	0.003
argument	0.03	0.005	-0.031
aspect	0.03	.155*	0.129
call	0.03	-0.038	0.054
conflict	0.03	-.145*	0
consideration	0.03	0.069	0.024
engineering design/materials	0.03	0.027	0.106
fact	0.03	-0.038	0.01
mental processes/learning/practice	0.03	0.091	-0.026
occupation/manager	0.03	-0.016	0.068
okay	0.03	-0.08	-0.13
one day	0.03	-.166*	-0.005
page	0.03	0.069	-.152*
partner	0.03	0.027	0.008
pros	0.03	0.112	0.057
respect	0.03	0.027	-0.08
senior	0.03	-0.059	0.033
share	0.03	0.027	0.069
stay	0.03	-0.08	-0.001
thoughts	0.03	0.069	0.002
agreement	0.03	-0.018	-0.044
at the end of the day	0.03	0.073	-0.046
boss	0.03	-.132*	-0.035
classmates	0.03	.142*	0.042
conclusion	0.03	0.051	0.019

cons	0.03	0.073	0.064
day	0.03	-0.064	0.02
disagreement	0.03	-0.018	-0.059
goal	0.03	-0.064	-0.005
hours	0.03	0.051	0.052
house rooms/room	0.03	-0.041	0.004
mental processes/learning	0.03	0.028	0.001
military	0.03	-0.086	-0.021
military/battalion/officers	0.03	-0.064	-0.057
night	0.03	-0.086	-0.03
occupation/white collar workers/employees	0.03	-0.041	.136*
pick	0.03	-0.064	-.144*
play	0.03	0.073	-0.057
politics	0.03	0.096	0.087
question	0.03	-0.064	-.150*
relationship	0.03	0.028	0.096
story	0.03	0.073	-0.019
stuff	0.03	-0.041	-.154*
case	0.03	0.078	0.081
chance	0.03	0.005	-0.061
coach	0.03	0.054	-0.077
details	0.03	0.103	0.049
education	0.03	-0.069	-0.012
example	0.03	-0.094	0.09
food	0.03	0.005	0.105
god	0.03	-0.069	0
guy	0.03	-0.069	0.013
information	0.03	0.029	0.049
look	0.03	0.078	-0.056
many times	0.03	-0.02	-0.022
occupation	0.03	0.029	0.005
opener	0.03	0.054	0.062
point/view points	0.03	0.029	0.051
religion	0.03	-0.045	-0.009
service	0.03	0.054	-0.064
show	0.03	0.005	-0.015
spot	0.03	-0.02	0.067
teammate	0.03	0.054	-0.008
train	0.03	-0.02	-0.02
understanding	0.03	0.078	0.045
vehicles/car	0.03	-0.02	0.076
ability	0.02	0.085	0.025
advice	0.02	-0.05	-0.016

age	0.02	-0.05	0.001
answer	0.02	-0.077	-0.092
argument	0.02	-0.023	0.032
attention	0.02	-0.023	-0.116
behavior and behavior mechanisms/emotions/love	0.02	0.031	0.06
behavior and behavior mechanisms/social psychology/morals	0.02	0.004	0.074
break	0.02	-0.05	-0.073
church	0.02	-.130*	0.039
clothes/shirt	0.02	0.058	-0.061
clothes/shirt/tshirt/flight t shirt	0.02	0.004	-0.044
course	0.02	-0.023	0.101
designing	0.02	0.058	-0.052
effort	0.02	0.085	0.001
engineering design	0.02	0.004	0.044
extremities/hand	0.02	-0.023	-0.097
family/family structure/children/daughter	0.02	0.031	-0.03
finish	0.02	0.031	-0.023
future	0.02	0.031	-0.061
half	0.02	-0.077	-0.014
human resources/career	0.02	0.085	-0.066
item	0.02	-0.023	0.001
join	0.02	-0.103	-0.095
kids	0.02	-0.023	0.029
know how	0.02	0.085	-0.063
lead	0.02	-.130*	0.039
level	0.02	-0.023	0.06
meeting	0.02	-0.077	0.096
memory device/recording/video	0.02	0.031	-.144*
offer	0.02	0.085	0.072
orders	0.02	-0.023	-0.009
sense	0.02	-0.023	-.157*
showers	0.02	0.058	0.105
sports	0.02	-0.023	0.012
state	0.02	-0.05	0.043
step	0.02	0.058	-0.019
support	0.02	0.031	0.006
theme	0.02	0.112	-0.1
time management	0.02	-0.077	0.039
trip	0.02	0.085	0.055
word	0.02	-0.103	0.003
academics	0.02	0.004	-0.067
academics/research/study	0.02	0.064	-0.03

act	0.02	0.004	-0.011
amount	0.02	0.094	0.039
back up	0.02	0.034	0.066
background	0.02	0.004	-0.007
book	0.02	0.064	0.031
commercial establishment	0.02	-0.116	-0.009
commercial establishment/store	0.02	0.124	0.064
consumer electronics/computing device	0.02	-0.056	0.01
drinks/non-alcoholic beverages	0.02	0.004	-0.042
eating	0.02	0.064	0.028
family/family structure/parents/mother	0.02	0.034	0.035
finances	0.02	-0.026	0.029
finances/cost	0.02	.184**	0.096
food/meals	0.02	-0.086	-0.011
ideas/great ideas	0.02	0.124	-0.057
manufacturing processes/metal-work	0.02	-0.056	-0.057
movements	0.02	-0.116	-0.005
mti	0.02	-0.116	-0.059
occupation/artists/actors	0.02	-0.026	-0.054
occupation/educators/instructor	0.02	-0.026	0.085
occupation/white collar workers/leaders	0.02	-0.026	0.06
party	0.02	.304**	.164*
physics	0.02	0.004	0.129
physics/heat	0.02	0.094	0.094
prom	0.02	0.124	-0.048
result	0.02	0.064	0.064
set	0.02	.184**	0.006
shift	0.02	-0.116	-0.017
sports/sports by type/ball games/football	0.02	-0.056	0.068
sports/sports by type/bat-and-ball/baseball	0.02	0.004	-0.075
sports/sports by type/swimming	0.02	0.034	0.037
sunday	0.02	0.004	-0.025
teaching	0.02	-0.056	-0.048
walk	0.02	0.004	-0.098
wife	0.02	-0.056	-0.04
Count	11.45	.197**	0.117
** Correlation is significant at the 0.01 level (2-tailed).			
* Correlation is significant at the 0.05 level (2-tailed).			

Table H17: Means and Correlations for Question 5 Model Trained (V18.2.1) in Subsample 1 and Tested in Subsample 1

Type: Situational

Item: High Drive (High Motivation/Drive)

Facet: Setting and accomplishing challenging goals



Categories by Size	Mean	Correlations with Human Ratings	Correlations with AFQT
work	0.69	0.031	0.068
goal	0.58	0.031	-.148*
issues	0.47	-0.034	0.064
increase	0.42	0.121	0.071
time	0.39	-0.002	0.048
situation	0.38	-0.081	-0.035
productivity	0.37	.171**	.337**
factors	0.37	-0.051	0.001
outcome	0.36	0.012	-0.087
options	0.35	0.012	-0.018
10%	0.32	0.04	0.13
work/work productivity	0.24	0.056	-0.022
approach	0.24	0.031	0.009
task	0.22	.269**	.152*
job	0.21	-0.037	0.047
help	0.19	0.014	0.043
set	0.19	0.072	-0.05
working	0.19	-0.036	0.034
actions	0.17	0.042	-0.012
timee	0.17	0.025	0.102
life	0.16	-0.09	-0.062
three months	0.16	-0.004	-0.041
people	0.15	-0.061	-0.024
person	0.15	-0.061	0.037
areas	0.13	.256**	.146*
family	0.12	-0.097	0.006
plan	0.12	.142*	0.08
start	0.12	0.11	0.07
stay	0.12	-0.018	-0.06
steps	0.11	.208**	0.096

home	0.1	-0.087	-0.071
schedule	0.09	.139*	0.071
day	0.09	0.009	0.006
focus	0.09	-0.062	-0.03
productivity/increase productivity	0.09	.166*	.194**
measuring instrument	0.08	-0.036	.136*
friends	0.08	-0.094	0.02
occupation	0.07	0.037	0.017
effect	0.07	-0.058	-0.068
timee/personal time	0.07	-0.04	-0.04
amount	0.06	.138*	.151*
change	0.06	0.045	0.031
problem	0.06	-0.011	0.047
ability	0.06	-0.095	-0.05
breaks	0.06	.135*	0.072
daily	0.06	0.116	-0.089
health	0.06	0.02	0.046
health and well-being/sleep	0.06	-0.037	0.034
process	0.06	0.097	-0.001
timee/timeline	0.06	.154*	-0.02
work/increasing work	0.06	-0.037	0.037
improvement	0.06	0.034	0.036
positives	0.06	0.034	-0.035
setting	0.06	.153*	-0.012
work/workplace	0.06	0.014	0.09
effort	0.05	-0.076	-0.03
fact	0.05	-0.055	0.038
hours	0.05	0.048	0.046
success	0.05	.130*	0.068
timee/free time	0.05	-0.096	0.032
academics/research	0.05	-.129*	-0.067
compensation/pay	0.05	-0.087	-0.09
deadlines	0.05	.236**	0.041
point	0.05	-0.044	0.005
work/hard work	0.05	0.021	-0.03
check	0.04	0.104	0.065
feel	0.04	0.081	0.097
next day	0.04	0.081	-0.01
timee/time management	0.04	0.126	0.13
track	0.04	.216**	0.12
use	0.04	0.059	.188**
work/work load	0.04	0.059	0.058
body regions/head	0.04	-0.065	0.015

compensation/performance	0.04	0.077	-0.018
house rooms	0.04	0.077	0.028
pointer	0.04	.148*	0.112
work/overwork	0.04	-0.089	0.032
3 months	0.03	0.047	-0.043
distractions	0.03	0.097	0.025
dynamics/speed	0.03	-0.053	0.062
finding	0.03	0.022	-0.026
list	0.03	0.097	0.04
look	0.03	0.122	.218**
month	0.03	0.122	-0.028
opinion	0.03	-0.078	-0.06
production	0.03	-0.003	0.076
projects	0.03	0.122	0.05
quality	0.03	-0.003	0.04
question	0.03	-0.003	0.075
service	0.03	-0.028	0.019
solution	0.03	0.097	0.089
starting	0.03	0.047	-0.008
talk	0.03	0.047	-0.086
week	0.03	.147*	0.007
work/co-workers	0.03	-0.003	-0.013
aspects	0.03	0.014	0.017
eating	0.03	0.041	-0.044
energy	0.03	-0.066	0.023
food/meals/lunch	0.03	0.041	0.026
negatives	0.03	-0.013	0.082
office/office worker/team	0.03	.201**	0.079
result	0.03	0.041	-0.063
stress	0.03	-0.039	-0.001
stuff	0.03	0.067	-0.039
attempt	0.03	0.091	0.129
death	0.03	-0.11	0.011
human resources/benefit	0.03	0.091	0.001
mind	0.03	-0.024	-0.037
mind/mindset	0.03	-0.081	-0.026
progress	0.03	.148*	0.044
relax	0.03	-0.081	0.119
sacrifice	0.03	-0.024	0.09
travel	0.03	0.033	0.03
wake up	0.03	-0.11	-0.045
100%	0.02	-0.069	-0.056
address	0.02	0.12	0.082

behavior mechanisms	0.02	0.057	0.007
bmt	0.02	-0.1	-0.11
boss	0.02	0.025	0.019
control	0.02	-0.038	-0.014
excellence	0.02	-0.006	0.103
fix	0.02	-0.069	0.009
health and well-being/diet	0.02	0.057	0.077
human resources/career/promotion	0.02	-0.1	0.014
human resources/wellness	0.02	0.057	0.018
ideas	0.02	0.12	0.063
lead	0.02	0.12	0.051
military	0.02	-0.069	-.146*
mistakes	0.02	-0.006	-0.04
night	0.02	0.088	-0.042
part	0.02	0.025	-0.003
phone	0.02	0.057	0.054
place	0.02	0.025	-0.009
property/assignment	0.02	-0.038	-0.042
road	0.02	0.057	-0.099
routine	0.02	0.088	0.005
set up	0.02	-0.006	-0.035
slacking	0.02	-0.038	0.033
spending	0.02	0.057	0.054
standards	0.02	-0.006	-0.02
work/better work	0.02	0.025	0.063
work/work hours	0.02	0.12	0.122
behavior and behavior mechanisms/emotions	0.02	0.051	0.034
behavior mechanisms/attitude	0.02	-0.09	-.145*
chance	0.02	-0.055	-0.05
corners	0.02	0.051	.150*
date	0.02	0.051	0.029
downs	0.02	0.051	0.125
duties	0.02	0.051	-0.005
each day	0.02	.191**	0.096
efficiency	0.02	.156*	.153*
engineering design/material	0.02	-0.02	-0.03
environment	0.02	-0.09	-0.028
fall	0.02	-0.055	-0.067
family/family structure/parents	0.02	-0.02	-0.119
feeling	0.02	-0.09	-0.032
finances/money	0.02	0.051	-0.055
finish	0.02	-0.02	-0.05
food	0.02	0.051	0.085

future	0.02	0.051	-0.032
habit	0.02	0.016	-0.034
holding	0.02	0.121	0.116
human resources/career/skills	0.02	0.121	0.112
kids	0.02	-0.02	-0.129
know how	0.02	-0.02	-0.036
learning/reinforcements	0.02	-0.02	0.12
level	0.02	0.051	0.062
limit	0.02	0.016	.152*
loss	0.02	0.016	-0.003
methods	0.02	.226**	0.059
moving	0.02	0.086	0.024
notes	0.02	0.051	0.057
numbers	0.02	-0.09	-0.038
occupation/manager	0.02	-0.055	-0.04
occupation/white collar workers	0.02	0.121	0.098
office	0.02	0.086	.137*
pace	0.02	0.051	-0.003
path	0.02	0.051	0.024
peers	0.02	0.016	0.026
planning	0.02	0.051	0.112
play	0.02	0.086	0.034
resources	0.02	0.086	.158*
sale	0.02	0.016	-0.013
shift	0.02	-0.055	-0.102
show	0.02	-0.055	-0.122
side	0.02	-0.055	0.044
social	0.02	0.086	0.007
sports/sports by type	0.02	0.051	-0.046
studying	0.02	0.016	-0.04
techniques	0.02	0.086	.162*
timee/time frame	0.02	-0.02	-0.003
timee/waste time	0.02	.156*	0.053
values	0.02	0.016	-0.015
weekly	0.02	.156*	-0.034
Count	13.23	.308**	.241**
** Correlation is significant at the 0.01 level (2-tailed).			
* Correlation is significant at the 0.05 level (2-tailed).			

Table H18: Means and Correlations for Question 5 Model Trained (V18.2.1) in Subsample 1 and Tested in Subsample 2

Type: Situational

Item: High Drive (High Motivation/Drive)

Facet: Setting and accomplishing challenging goals



Categories by Size	Mean	Correlations with Human Ratings	Correlations with AFQT
work	0.7	0.078	0.031
goal	0.65	0.068	-0.122
issues	0.48	0.112	-0.034
situation	0.44	0.081	0.062
time	0.43	0.114	0.106
factors	0.37	.174**	0.083
outcome	0.36	.145*	-0.078
increase	0.36	.153*	.145*
productivity	0.34	.202**	.205**
options	0.34	0.129	-0.017
10%	0.29	0.115	.135*
approach	0.24	0.111	.145*
set	0.23	.130*	-0.091
help	0.22	0.074	-.201**
work/work productivity	0.22	0.084	0.124
task	0.21	0.114	0.121
start	0.2	0.111	0.031
job	0.18	-0.006	-0.047
actions	0.16	-0.014	-0.038
three months	0.15	.147*	0.12
working	0.15	0.027	-0.013
day	0.14	0.035	0.094
productivity/increase productivity	0.14	.183**	.203**
areas	0.13	.261**	.166*
people	0.12	0.015	-0.041
steps	0.12	.251**	.130*
person	0.11	-0.125	0.074
plan	0.11	0.118	-0.01
change	0.1	0.102	0.102
improvement	0.1	.160*	.181**

schedule	0.09	0.101	0.002
life	0.09	-0.005	-0.014
setting	0.09	.207**	0.02
family	0.08	-0.091	-.158*
stay	0.08	-.154*	-.135*
breaks	0.07	.132*	-0.103
body regions/head	0.07	-0.085	-0.047
ideas	0.07	.133*	0.055
daily	0.06	.168*	0.032
measuring instrument	0.06	0.03	0.088
office/office worker/team	0.06	0.082	0.058
quality	0.06	-0.022	0.095
timee	0.06	-0.005	0.069
effort	0.06	-0.062	-0.094
point	0.06	0.117	-0.035
week	0.06	-0.008	-0.081
work/increasing work	0.06	0.064	.133*
food/meals/lunch	0.06	-0.012	0.053
process	0.06	.173**	.187**
use	0.06	0.118	0.019
effect	0.05	0.023	-0.005
fact	0.05	0.061	.173**
house rooms	0.05	0.1	0.118
month	0.05	.196**	0.099
work/workplace	0.05	-0.016	0.06
academics/research	0.05	0.1	-0.066
each day	0.05	.140*	-0.035
feel	0.05	-0.04	-.138*
friends	0.05	-0.06	-0.127
mind	0.05	-0.02	-0.084
occupation	0.05	0.1	0.053
result	0.05	0.12	0.055
show	0.05	.140*	0.023
timee/time management	0.05	0.1	-0.011
3 months	0.04	-0.004	0.036
amount	0.04	0.059	0.121
downs	0.04	.185**	-0.11
finding	0.04	0.122	0.07
finish	0.04	-0.025	0.066
focus	0.04	0.122	0.068
production	0.04	0.038	0.059
progress	0.04	.185**	0.105
question	0.04	0.08	0.108

work/work load	0.04	.185**	0.044
bmt	0.04	-0.096	0.024
goal/small goals	0.04	0.124	0.074
list	0.04	0.058	0.026
look	0.04	0.058	0.063
timee/personal time	0.04	-0.008	-0.061
academics/test	0.03	0.127	0.061
behavior mechanisms	0.03	0.011	-0.015
dynamics/speed	0.03	0.034	0.047
home	0.03	-0.013	-0.002
rate	0.03	-0.082	.144*
stress	0.03	-0.082	0
talk	0.03	0.057	0.08
timee/timeline	0.03	0.127	.191**
attention	0.03	0.057	0.051
behavior mechanisms/attitude	0.03	0.057	-0.06
boss	0.03	0.082	-0.06
eating	0.03	-0.068	0.073
finances/money	0.03	0.032	0.015
hours	0.03	.156*	0.048
limit	0.03	.156*	0.036
methods	0.03	.256**	.166*
mind/mindset	0.03	-0.018	0.001
notes	0.03	0.106	-0.027
part	0.03	0.007	0.03
starting	0.03	0.007	.133*
success	0.03	-0.068	0.007
wake up	0.03	0.007	-0.034
100%	0.03	-0.051	-0.116
ability	0.03	-0.051	0.032
compensation/performance	0.03	0.056	0.127
environment	0.03	.163*	-0.011
health	0.03	-0.078	-0.075
health and well-being/sleep	0.03	-0.078	0.059
lead	0.03	-0.078	-0.069
learning/practice	0.03	0.056	.156*
peers	0.03	0.029	0.117
problem	0.03	-0.078	-0.096
routine	0.03	-0.078	-0.071
social	0.03	-0.078	-0.019
sports/sports by type/gym	0.03	-0.105	-0.019
track	0.03	0.056	-0.107
work/hard work	0.03	-0.024	-0.113

attempt	0.02	-0.003	-0.013
deadlines	0.02	.261**	0.122
fix	0.02	0.085	0.013
level	0.02	0.027	0.043
lifestyle	0.02	-0.12	0.096
moving	0.02	-0.003	0.006
resources	0.02	.232**	0.08
spending	0.02	-0.032	0.049
sports/sports by type	0.02	-0.12	0.043
standards	0.02	-0.032	-0.088
stuff	0.02	-0.061	-0.006
timee/free time	0.02	0.115	0.07
timee/time frame	0.02	0.085	0.017
timee/waste time	0.02	.144*	0.118
understanding	0.02	0.115	-0.006
work/co-workers	0.02	0.027	-0.095
behavior and behavior mechanisms/emotions	0.02	-0.009	-0.117
business	0.02	0.057	-0.044
check	0.02	.155*	0.048
distractions	0.02	-0.009	-0.058
efficiency	0.02	-0.009	0.108
energy	0.02	-0.074	-0.019
geometry	0.02	0.122	-0.08
goal/set goals	0.02	0.057	-0.077
key	0.02	.187**	-0.023
know how	0.02	-0.009	0.02
mental	0.02	-0.041	-0.009
military	0.02	-0.009	-0.09
numbers	0.02	0.089	0.05
occupation/white collar workers	0.02	0.089	0.068
opinion	0.02	-0.009	-0.042
phone	0.02	-0.107	-0.005
place	0.02	0.024	-0.021
play	0.02	-0.107	0.006
positives	0.02	0.057	0.043
sense	0.02	-0.074	0.06
set up	0.02	-0.107	-0.061
techniques	0.02	0.089	0.05
work/overwork	0.02	-0.074	-0.004
Count	12.29	.504**	.217**
** Correlation is significant at the 0.01 level (2-tailed).			
* Correlation is significant at the 0.05 level (2-tailed).			

Table 1H9: Means and Correlations for Question 5 Model Trained (V18.2.1) in Subsample 2 and Tested in Subsample 1

Type: Situational

Item: High Drive (High Motivation/Drive)

Facet: Setting and accomplishing challenging goals



Categories by Size	Mean	Correlations with Human Ratings	Correlations with AFQT
work	0.71	0.016	0.084
goal	0.56	0.036	-.136*
time	0.53	-0.018	0.087
issues	0.47	-0.034	0.064
increase	0.42	0.115	0.071
factors	0.4	-0.064	0.019
economics/productivity	0.38	.180**	.337**
outcome	0.38	0.02	-0.081
situation	0.38	-0.087	-0.046
10%	0.36	0.038	0.106
options	0.33	0.008	-0.004
work/work productivity	0.3	0.039	-0.01
approach	0.24	0.024	0.013
task	0.22	.269**	.152*
job	0.22	-0.044	0.034
set	0.21	0.019	-0.064
working	0.21	-0.015	0.024
help	0.2	0.007	0.033
actions	0.17	0.042	-0.012
life	0.17	-0.085	-0.043
three months	0.16	-0.004	-0.041
people	0.15	-0.061	-0.024
plan	0.14	0.09	0.065
start	0.14	0.073	0.034
family	0.13	-0.105	-0.024
areas	0.13	.256**	.146*
day	0.13	0.079	0.019
stay	0.12	-0.018	-0.06
step	0.11	.208**	0.096
home	0.1	-0.095	-0.058

schedule	0.1	0.115	0.056
economics/productivity/increase productivity	0.09	.170**	.213**
measuring instrument	0.09	-0.07	0.1
person	0.09	-0.023	-0.018
focus	0.09	-0.062	-0.03
break	0.08	-0.002	0.107
effect	0.08	-0.077	-0.05
friends	0.08	-0.094	0.02
hours	0.08	0.094	0.08
point	0.08	0.043	0.029
setting	0.07	0.125	-0.041
amount	0.07	0.086	0.126
change	0.07	0.068	0.021
problem	0.07	-0.022	0.036
goal/personal goal	0.06	-0.011	-0.04
health and well-being	0.06	-0.048	0.019
daily	0.06	0.116	-0.089
economics/properties/improvement	0.06	0.02	0.052
process	0.06	0.097	-0.001
ability	0.05	-0.096	-0.051
effort	0.05	-0.076	-0.03
success	0.05	.130*	0.068
use	0.05	0.027	.169*
deadline	0.05	.236**	0.041
occupation/supervisor	0.05	0.021	-0.033
track	0.05	.236**	0.12
week	0.05	0.107	0
3 months	0.04	0.104	-0.002
feel	0.04	0.081	0.097
human resources/benefit/compensation	0.04	-0.099	-0.095
month	0.04	0.081	-0.028
quality	0.04	-0.009	0.053
spending	0.04	0.104	0.107
time/time management	0.04	0.126	0.13
worker	0.04	-0.031	0.053
academics/research/study	0.04	-0.065	-0.035
distractions	0.04	0.1	0.019
finding	0.04	0.006	-0.003
human resources/benefit/compensation/performance	0.04	0.077	-0.018
question	0.04	-0.018	0.087
team	0.04	.242**	.137*
time/timeline	0.04	0.1	-0.033

work/hard work	0.04	-0.041	-0.072
work/work day	0.04	.148*	.146*
work/work load	0.04	0.077	0.09
house rooms/room	0.03	0.097	-0.003
look	0.03	0.122	.218**
mind/mindset	0.03	-0.103	0.014
person/personal life	0.03	-0.128	0.011
results	0.03	0.097	-0.074
speed	0.03	-0.053	0.062
talk	0.03	0.047	-0.086
work/overworking	0.03	-0.078	0.053
eating	0.03	0.041	-0.044
energy	0.03	-0.066	0.023
level	0.03	.174**	0.092
list	0.03	0.094	-0.011
lunch	0.03	0.041	0.026
mental	0.03	0.121	0.117
progress	0.03	.174**	0.069
routine	0.03	0.041	0.026
sports by type	0.03	-0.013	-0.016
starting	0.03	0.014	0.021
stress	0.03	-0.039	-0.001
stuff	0.03	0.067	-0.039
100%	0.03	-0.081	-0.034
attempt	0.03	0.091	0.129
behavior mechanisms/motivation	0.03	0.033	0.007
boost	0.03	0.005	.190**
head	0.03	-0.024	-0.016
ideas	0.03	.148*	0.098
minutes	0.03	0.091	-0.069
occupation	0.03	0.005	0.097
opinion	0.03	-0.11	-0.079
part	0.03	0.005	0.003
phone	0.03	0.033	0.081
prosecution of law	0.03	0.062	-0.007
time/extra time	0.03	0.005	-0.042
wake up	0.03	-0.11	-0.045
applied psychology/efficiency	0.02	.151*	.147*
balancing	0.02	0.057	0.047
bmt	0.02	-0.1	-0.11
boss	0.02	0.025	0.019
control	0.02	-0.038	-0.014
end	0.02	0.088	0.04

experience	0.02	0.025	0.117
fix	0.02	-0.069	0.009
game	0.02	0.025	-0.084
human resources/career/performance reviews	0.02	-0.1	0.014
key	0.02	0.025	0.053
limits	0.02	-0.006	.170*
mental processes/learning	0.02	0.025	.166*
metals	0.02	0.12	0.051
military	0.02	-0.069	-0.11
mind	0.02	-0.006	-0.052
moving	0.02	0.057	0.042
rate	0.02	-0.006	-0.005
sales	0.02	0.057	-0.024
slacking	0.02	-0.038	0.033
social	0.02	0.057	0.018
standards	0.02	-0.006	-0.02
trip	0.02	0.025	-0.01
academics/research	0.02	-0.09	-0.02
activity	0.02	.156*	0.063
behavior mechanisms/attitude	0.02	-0.09	-.145*
business	0.02	0.086	-0.034
business management/wealth	0.02	0.051	-0.055
commercial establishment	0.02	0.086	.137*
each day	0.02	.191**	0.096
economics	0.02	-0.055	0.12
environment	0.02	-0.09	-0.028
health and well-being/exercise	0.02	.226**	0.028
holding	0.02	0.121	0.116
howi	0.02	-0.02	-0.036
measuring instrument/measure	0.02	0.086	.209**
meeting	0.02	0.121	0.096
mental processes/learning/practice	0.02	-0.055	-0.028
methods	0.02	.226**	0.059
note	0.02	0.051	0.057
occupation/employees	0.02	0.121	0.104
path	0.02	0.051	0.024
peers	0.02	0.016	0.026
produce	0.02	0.051	0.002
product	0.02	-0.09	0.106
resources	0.02	0.016	0.112
school	0.02	-0.02	-0.069
show	0.02	-0.055	-0.122
techniques	0.02	0.086	.162*

time/time frame	0.02	-0.02	-0.003
Count	12.71	.281**	.247**
** Correlation is significant at the 0.01 level (2-tailed).			
* Correlation is significant at the 0.05 level (2-tailed).			

Table H20: Means and Correlations for Question 5 Model Trained (V18.2.1) in Subsample 2 and Tested in Subsample 2

Type: Situational

Item: High Drive (High Motivation/Drive)

Facet: Setting and accomplishing challenging goals



Categories by Size	Mean	Correlations with Human Ratings	Correlations with AFQT
work	0.7	0.099	0.043
goal	0.6	0.021	-.180**
issues	0.48	0.112	-0.034
time	0.47	0.083	0.117
situation	0.43	0.088	0.072
factors	0.39	.196**	0.119
increase	0.37	.139*	.145*
outcome	0.37	.139*	-0.067
options	0.33	0.118	-0.019
economics/productivity	0.32	.178**	.203**
work/work productivity	0.27	0.099	.164*
10%	0.25	0.104	.151*
approach	0.24	.132*	.139*
task	0.21	0.114	0.121
set	0.2	0.112	-0.081
help	0.19	0.056	-.167*
start	0.19	0.086	0.059
job	0.17	-0.008	-0.037
actions	0.16	-0.029	-0.055
economics/productivity/increase productivity	0.14	.195**	.221**
three months	0.14	.147*	0.111
day	0.13	-0.009	0.1
areas	0.12	.264**	.157*
step	0.12	.251**	.130*
working	0.12	-0.054	-0.06
goal/personal goal	0.11	.131*	0.124
economics/properties/improvement	0.11	.172**	.209**
plan	0.11	.131*	0.001
people	0.1	0.005	-0.037
person	0.1	-0.037	0.041

change	0.09	0.116	0.116
schedule	0.09	0.116	-0.031
life	0.08	-0.024	-0.04
setting	0.08	.178**	0.016
stay	0.08	-.154*	-.135*
family	0.07	-0.08	-.148*
ideas	0.07	.133*	0.055
break	0.06	.151*	-0.108
daily	0.06	.168*	0.032
feed/feedback	0.06	0.082	0.009
point	0.06	.186**	-0.003
produce	0.06	0.065	0.056
starting	0.06	0.03	.140*
process	0.06	.189**	.220**
effect	0.06	0.044	-0.001
effort	0.06	-0.049	-0.119
quality	0.06	-0.03	0.099
feel	0.05	-0.054	-.133*
lunch	0.05	0.061	0.075
results	0.05	.138*	0.078
team	0.05	0.119	0.058
week	0.05	0.023	-0.097
amount	0.05	0.12	.134*
each day	0.05	.140*	-0.035
friends	0.05	-0.06	-0.127
house rooms/room	0.05	0.1	0.084
mind	0.05	-0.02	-0.084
occupation/supervisor	0.05	0.04	0.051
priorities	0.05	0	-0.045
progress	0.05	.180**	0.078
sports by type	0.05	-0.1	-0.04
use	0.05	0.06	-0.045
3 months	0.04	-0.004	0.036
finish	0.04	-0.025	0.066
show	0.04	0.122	-0.011
time/time management	0.04	0.08	-0.022
work/work load	0.04	.185**	0.044
writing/write down	0.04	.185**	-0.11
academics/research/study	0.04	0.058	-0.077
behavior mechanisms/motivation	0.04	-0.008	-0.007
current	0.04	.212**	0.127
helpers	0.04	.168*	-0.038
look	0.04	0.058	0.063

month	0.04	0.058	0.018
person/personal life	0.04	-0.03	0.129
stress	0.04	-0.096	-0.001
success	0.04	-0.096	-0.05
time/timeline	0.04	.190**	.208**
end	0.03	0.104	0.006
finding	0.03	0.127	0.035
home	0.03	-0.013	-0.002
list	0.03	0.057	0.066
measuring instrument	0.03	-0.013	-0.048
methods	0.03	.290**	.173**
mind/mindset	0.03	-0.013	-0.023
part	0.03	0.034	0.043
question	0.03	0.057	0.066
rate	0.03	-0.059	.138*
talk	0.03	0.057	0.08
work/hard work	0.03	0.034	-0.071
attention	0.03	0.057	0.051
behavior mechanisms/attitude	0.03	0.057	-0.06
bmt	0.03	-0.068	0.035
boss	0.03	0.082	-0.06
business management/wealth	0.03	0.032	0.015
detail	0.03	.131*	-0.094
eating	0.03	-0.068	0.073
focus	0.03	0.082	0.041
goal/set goals	0.03	0.106	-0.1
head	0.03	-.142*	-0.027
mental processes/learning/practice	0.03	0.082	.153*
metals	0.03	-0.068	-0.066
note	0.03	0.106	-0.027
reason	0.03	-0.043	-0.063
speed	0.03	-0.043	0.019
wake up	0.03	0.007	-0.034
weaknesses	0.03	-0.018	0.065
work/work day	0.03	-0.018	0.109
ability	0.03	-0.051	0.032
academics	0.03	0.11	0.048
drive	0.03	0.083	-0.019
experience	0.03	.163*	-0.003
fact	0.03	-0.078	0.033
head/face	0.03	0.029	-0.041
implement	0.03	.190**	0.002
individuals	0.03	0.083	0.092

limits	0.03	.163*	0.03
measuring instrument/measure	0.03	0.029	0.109
peers	0.03	0.029	0.117
problem	0.03	-0.078	-0.096
routine	0.03	-0.078	-0.071
social	0.03	-0.078	-0.019
sports equipment	0.03	.163*	0.084
standards	0.03	-0.024	-0.091
time/time frame	0.03	0.11	0.022
track	0.03	0.056	-0.107
work/quality work	0.03	-0.024	0.076
work/work time	0.03	0.029	0.033
worker	0.03	0.056	0.032
academics/graduate	0.02	-0.12	-0.08
activity	0.02	0.027	0.044
advice	0.02	.144*	-0.023
applied psychology/efficiency	0.02	0.056	0.118
attempt	0.02	-0.003	-0.013
brainstorm	0.02	.144*	0.013
break/lunch break	0.02	-0.032	0.017
consumer electronics	0.02	-0.12	0.02
dedication	0.02	-0.003	0.043
economics	0.02	-0.032	.161*
every day	0.02	-0.003	-0.001
example	0.02	-0.032	0.106
fix	0.02	0.085	0.013
game	0.02	-0.09	-0.011
howi	0.02	0.027	-0.023
human resources/benefit/compensation/performance	0.02	0.085	0.127
life/lifestyle/healthy lifestyle	0.02	-0.061	0.015
meeting	0.02	0.027	-0.033
mental processes/learning	0.02	0.027	-0.054
military	0.02	-0.032	-.133*
minutes	0.02	0.085	0.108
prosecution of law	0.02	0.085	-0.056
resources	0.02	.232**	0.08
spending	0.02	-0.032	0.049
stuff	0.02	-0.061	-0.006
time/time limit	0.02	0.027	-0.009
understanding	0.02	0.115	-0.006
work/overworking	0.02	-0.09	0.027
work/work environment	0.02	0.056	-0.014
100%	0.02	-0.041	-0.065

ambition	0.02	-0.041	0.066
balancing	0.02	-0.009	-0.036
bed	0.02	0.024	0
behavior and behavior mechanisms/social psychology	0.02	-0.041	0.025
boost	0.02	0.057	0.101
business	0.02	0.057	-0.044
business management	0.02	0.122	0.119
business management/wealth/value	0.02	-0.107	-0.078
consideration	0.02	0.122	0.021
deadline	0.02	.187**	0.081
determination	0.02	0.089	-0.102
distractions	0.02	-0.009	-0.058
during the day	0.02	-0.009	0.068
economics/properties/waste	0.02	-0.009	.167*
energy	0.02	-0.074	-0.019
environment	0.02	.187**	0.023
health and well-being	0.02	-0.041	0.016
human resources/career	0.02	.155*	0.037
information	0.02	0.057	0.018
level	0.02	-0.009	-0.011
life/lifestyle	0.02	-0.107	0.081
material	0.02	.220**	0.069
mental	0.02	-0.074	-0.019
mood	0.02	-0.074	-0.103
moving	0.02	0.024	0.016
occupation/employees	0.02	-0.041	-0.009
opinion	0.02	-0.009	-0.042
perspective	0.02	0.122	-0.08
phone	0.02	-0.107	-0.005
product	0.02	.187**	0.006
raise	0.02	0.089	-0.011
return	0.02	-0.041	0.002
school	0.02	-0.107	-0.048
sense	0.02	-0.074	0.06
slacking	0.02	0.122	-0.052
strategies	0.02	0.122	.144*
techniques	0.02	0.057	0.045
throughout the day	0.02	-0.041	0.023
time/extra time	0.02	-0.009	0.06
Count	13.05	.517**	.218**
** Correlation is significant at the 0.01 level (2-tailed).			
* Correlation is significant at the 0.05 level (2-tailed).			

Table H21: Means and Correlations for Question 6 Model Trained (V18.2.1) in Subsample 1 and Tested in Subsample 1x

Type: Behavioral

Item: Perseverance (Perseverance)

Facet: Persisting in the face of obstacles

Categories by Size	Mean	Correlations with Human Ratings	Correlations with AFQT
work	0.4	0.09	.144*
time	0.39	.221**	.138*
school/high school	0.3	0.048	0.085
school	0.29	0.063	0.07
situation	0.23	0.073	-0.045
job	0.21	0.026	0.066
life	0.21	-0.007	0.092
help	0.2	0	0.059
obstacle	0.18	-0.017	-0.111
outcome	0.18	0.038	-.190**
office workers/team	0.16	0.124	-0.016
people	0.16	0.001	0.04
friends	0.15	-0.036	-0.1
year	0.15	-0.011	0.105
home	0.14	-0.066	0.084
working	0.14	0.063	0.01
academics/grade	0.12	0.047	0.104
day	0.12	.199**	-0.034
family	0.12	-0.097	-0.075
mental processes/learning	0.12	.141*	0.027
sports	0.12	0.057	0.002
news	0.11	0.123	-0.079
goal	0.1	0.091	-0.037
military/air force	0.1	0.002	0.043
year/senior year	0.1	0.091	.173**
week	0.1	0.028	0.033
academics/students	0.09	0.024	0.066
class	0.09	0.055	.132*
college	0.09	0.07	0.054
point	0.09	0.101	-0.066
bmt	0.09	-0.011	-0.027

person	0.09	0.004	0.034
problem	0.09	0.067	-0.009
determination	0.09	0.128	-0.042
family/family structure/parents/mom	0.08	-0.104	-0.062
night	0.08	0.06	0.115
task	0.08	.143*	0.051
classes	0.08	-0.027	0.08
bus/business management/wealth/money	0.06	.174**	-0.042
part	0.06	-0.046	0.045
season	0.06	.137*	0.092
girls	0.06	0.022	0.026
issues	0.06	-0.034	0.009
state	0.06	0.06	-0.017
studying	0.06	.193**	.143*
fact	0.06	0.056	-0.073
lead	0.06	0.056	0.085
stay	0.06	0.037	-0.089
academics/research	0.05	0.093	0.07
anatomy/body regions/head	0.05	-0.049	-0.018
area	0.05	0.053	0.004
occupation/manager	0.05	.134*	0.02
one day	0.05	-0.069	0.008
home/house	0.05	0.027	-0.026
human resources/career/skills	0.05	0.091	0.052
living	0.05	0.006	0.059
occupation/educators/teacher	0.05	0.048	-0.047
position	0.05	0.048	0.039
talk	0.05	-0.036	-0.109
academics/test	0.04	0.088	-0.062
behavior mechanisms	0.04	-0.067	-.143*
betterment	0.04	0.066	0.122
commercial establishment/store/shop	0.04	0.066	-0.038
coworker	0.04	-.156*	0.05
degree	0.04	.133*	0.095
end	0.04	.266**	.134*
family/family structure/parents	0.04	0.022	0.004
food	0.04	.133*	.151*
hard work	0.04	0.044	0.023
hours	0.04	0.111	-0.056
military	0.04	-0.089	-0.099
sales/order	0.04	0	0.068
use	0.04	0.111	0.058
weight	0.04	.177**	0.127

address	0.04	-0.054	-0.035
chance	0.04	0.063	0.115
commercial establishment/store	0.04	0.016	0.014
customers	0.04	-0.031	-0.058
diseases/pain	0.04	-0.007	0.03
feel	0.04	-0.077	-0.043
goat/kids	0.04	0.039	0.062
grit	0.04	0.016	-0.015
month	0.04	.133*	0.124
occupation/white collar workers	0.04	-0.007	-0.082
perseverance	0.04	.203**	.144*
play	0.04	-0.077	0.036
sports/sports by type/ball games/basketball	0.04	-0.077	-0.046
sports/sports by type/gym	0.04	0.109	0.005
step	0.04	-0.031	0.049
anatomy/body regions/head/face	0.03	0.108	0.004
balance	0.03	0.059	0.11
bus	0.03	-0.04	-0.042
compensation	0.03	0.108	0.071
course	0.03	0.084	.186**
decision	0.03	-0.015	-0.033
family/family structure/parents/father	0.03	-.139*	0.029
family/family structure/parents/mother	0.03	-0.064	0.071
fix	0.03	0.108	0.028
game	0.03	0.01	0.055
handle	0.03	.158*	0.001
junior	0.03	0.01	0.003
line	0.03	-0.04	-0.022
place	0.03	0.084	0.024
shift	0.03	-0.015	0.014
show	0.03	-0.064	0.062
start	0.03	0.01	0.037
summer	0.03	-0.064	0.054
train	0.03	0.01	0.085
vehicle	0.03	0.108	-0.038
academics/students/freshman	0.03	0.002	-0.003
building	0.03	0.081	0.057
change	0.03	0.002	.140*
clothes/shorts	0.03	0.081	0.035
company	0.03	.160*	0.024
country	0.03	0.055	-.147*
daily	0.03	.160*	0.067
experience	0.03	0.081	0.095

field	0.03	0.081	0.055
human resources/career	0.03	0.055	0.003
join	0.03	-0.077	0.062
lesson	0.03	.160*	0.079
plan	0.03	0.108	0.038
practicing	0.03	0.081	-0.032
runner	0.03	-0.05	-0.045
set	0.03	0.002	-0.128
sports/sports by type	0.03	0.029	0.027
sports/sports by type/ball games/football/soccer	0.03	-0.024	0.014
stress	0.03	0.002	.174**
stuff	0.03	-0.05	-0.072
time/full time	0.03	-0.05	0.063
anatomy/body regions/extremities/legs	0.03	-0.006	0.003
cold	0.03	0.022	0.011
commercial establishment/club	0.03	.136*	.145*
eating	0.03	.164*	0.074
education	0.03	0.051	0.009
every day	0.03	-0.063	0.086
example	0.03	-0.063	0.039
family/family structure/children/brother and sister/brother	0.03	-0.063	-0.109
family/family structure/parents/dad	0.03	0.108	0.044
feeling	0.03	0.022	0.057
finish	0.03	-0.006	0.003
food/meals/lunch	0.03	.164*	0.031
group	0.03	0.108	0.028
hospital	0.03	-0.034	0.081
members	0.03	0.022	0.092
minor	0.03	0.022	0.019
occupation	0.03	-0.034	0.114
occupation/supervisor	0.03	.136*	0
occupation/white collar workers/employees	0.03	-0.091	-0.048
okay	0.03	-0.063	-0.082
path	0.03	0.022	-0.061
perserverance	0.03	-0.006	0.003
playing	0.03	-0.034	-0.019
process	0.03	0.022	0.063
program	0.03	0.079	0.121
pt	0.03	-0.006	0.02
sports/sports by type/wrestling	0.03	-0.063	0.115
spot	0.03	0.051	-0.047
starting	0.03	.193**	0.033

strength	0.03	0.079	0.073
tactics	0.03	-0.063	.173**
track	0.03	0.051	0.073
training	0.03	.193**	-0.028
understanding	0.03	0.022	-0.016
vehicle/truck	0.03	0.079	-0.042
work/workplace	0.03	-0.063	0.076
writing	0.03	-0.006	-0.047
ages	0.02	-0.016	0.012
anatomy/body regions/extremities/arm/hand	0.02	-0.047	-0.118
anatomy/body regions/extremities/legs/feet	0.02	.170**	0.089
baby	0.02	0.015	-0.059
care	0.02	-0.078	-0.048
challenge	0.02	-0.016	-0.071
districts	0.02	.201**	0.023
each day	0.02	0.046	0.119
economics/graduation	0.02	-0.047	0.101
effort	0.02	.139*	0.03
emotions	0.02	0.077	0.082
family/family structure/child	0.02	0.108	0.061
future	0.02	0.015	0.007
gpa	0.02	0.015	-0.036
hometown	0.02	-0.016	0.004
idea	0.02	-0.016	.178**
information	0.02	.170**	0.091
look	0.02	0.015	0.016
material	0.02	0.015	-0.101
mentaly	0.02	-0.078	-0.021
mind	0.02	0.046	0.037
on the weekends	0.02	-0.047	-0.032
one time	0.02	-0.078	0.087
period	0.02	0.046	.140*
pounds	0.02	0.015	-0.016
project	0.02	0.077	0.091
race	0.02	0.108	-0.021
safety	0.02	0.108	0.044
sales	0.02	0.046	0.009
schedule	0.02	-0.047	-0.005
side	0.02	-0.078	0.079
struggle	0.02	-0.016	0.072
train/basic training	0.02	0.015	-0.073
trouble	0.02	0.077	0.007
ups	0.02	0.046	-0.057

ability	0.02	0.007	0.051
academics/test/pt test	0.02	0.076	0.053
activities	0.02	0.041	0.005
amount	0.02	.145*	0.009
anatomy	0.02	0.076	0.085
anatomy/body regions/extremities/arm	0.02	-0.062	-0.09
anatomy/body regions/extremities/legs/knee	0.02	0.007	0.031
anatomy/heart	0.02	-0.097	-0.125
ap	0.02	0.007	.168*
at night	0.02	-0.062	0.009
behavior mechanisms/attitude	0.02	-0.097	0.011
bills	0.02	-0.028	-0.001
body	0.02	0.041	0.001
break	0.02	-0.028	-0.089
call	0.02	-0.097	-0.036
control	0.02	0.007	0.013
difficulty	0.02	-0.097	-0.007
english	0.02	0.041	0.016
family/family member	0.02	-0.097	-0.001
family/family structure/children	0.02	0.007	0.073
finishing	0.02	.214**	0.088
form	0.02	0.041	-0.05
fun	0.02	0.007	-0.03
gain	0.02	.180**	0.057
half	0.02	-0.028	0.055
hit	0.02	0.076	-0.085
honor	0.02	-0.028	-0.052
house furnishings/furniture	0.02	0.041	0.046
in the morning	0.02	-0.097	-0.108
key	0.02	0.111	0.007
know how	0.02	0.041	-0.026
make up	0.02	-0.028	-0.1
mechanical device	0.02	.180**	-0.015
music/rock/beat	0.02	0.007	-0.069
nature	0.02	0.076	-0.028
office workers/team/teammates	0.02	.180**	0.016
opportunity	0.02	0.076	0.06
pace	0.02	.145*	-0.05
paper	0.02	-0.062	0.02
patients	0.02	-0.097	-0.09
perservered	0.02	-0.097	0.112
persevere	0.02	-0.028	0.018
plants	0.02	0.111	-0.007

questions	0.02	-0.062	0.086
reason	0.02	0.041	-0.013
relationship	0.02	-0.062	0.007
relax	0.02	-0.062	-0.061
road	0.02	0.111	0.088
rooms	0.02	0.041	.184**
signs	0.02	0.111	0.02
slack	0.02	-0.062	0.03
sleep	0.02	-0.028	-0.057
sports/sports by type/walking	0.02	-0.028	0.009
talking	0.02	-0.062	-0.052
time/time working	0.02	-0.062	0.102
town	0.02	0.111	0.092
wait	0.02	-0.028	-0.042
watch	0.02	0.007	0.075
wingman	0.02	-0.097	-0.129
winter	0.02	0.111	0.057
work environment	0.02	-0.062	0.102
workout	0.02	0.007	0.009
world	0.02	-0.028	0.065
Count	12.15	.393**	.250**
** Correlation is significant at the 0.01 level (2-tailed).			
* Correlation is significant at the 0.05 level (2-tailed).			

Table H22: Means and Correlations for Question 6 Model Trained (V18.2.1) in Subsample 1 and Tested in Subsample 2

Type: Behavioral

Item: Perseverance (Perseverance)

Facet: Persisting in the face of obstacles

Categories by Size	Mean	Correlations with Human Ratings	Correlations with AFQT
time	0.49	0.076	.159*
work	0.33	.232**	.131*
school/high school	0.32	-0.006	-0.049
situation	0.27	-0.127	-0.06
life	0.26	-0.04	0.019
job	0.24	0.096	0.039
school	0.24	0.085	-0.026
outcome	0.2	0.046	0.066
office workers/team	0.2	-0.015	-0.041
friends	0.19	-0.058	-0.125
mental processes/learning	0.17	-0.002	-0.037
help	0.17	-0.093	-0.072
working	0.16	-0.035	0.078
year	0.16	-0.035	0.008
family	0.16	0.061	0.021
people	0.16	0.007	-0.041
obstacle	0.15	-0.062	0.068
day	0.15	-0.001	0.041
week	0.15	0.012	0.014
college	0.13	0.094	.156*
military/air force	0.13	-0.033	-0.016
sports	0.13	0.018	-0.1
bmt	0.12	-0.091	-0.012
home	0.12	-0.091	-0.107
goal	0.11	0.063	.134*
hours	0.11	.195**	0.105
year/senior year	0.11	0.074	-0.059
sports/sports by type	0.1	0.126	-0.047
class	0.09	-0.004	.152*
problem	0.09	0.06	0.003
classes	0.09	.138*	0.083

month	0.08	0.085	0.129
part	0.08	0.069	0.056
determination	0.08	.134*	0.075
military	0.07	-0.045	-0.018
start	0.07	0.025	-0.071
talk	0.07	-0.098	-0.087
academics/students	0.07	-0.016	-0.029
anatomy/body regions/head	0.07	-0.034	-.177**
bus/business management/wealth/money	0.07	-0.034	0.074
experience	0.07	0.075	0.01
place	0.07	-0.016	-0.024
sales/order	0.07	-0.07	0.069
state	0.07	0.057	0.039
game	0.06	-0.06	-0.077
issues	0.06	-0.004	0.007
night	0.06	0.034	.261**
occupation/manager	0.06	0.127	0.022
person	0.06	0.052	-0.081
use	0.06	0.127	.153*
academics/grade	0.06	-0.049	0.114
end	0.06	0.009	0.1
food	0.06	0.009	0.054
half	0.06	-0.01	-0.021
human resources/career	0.06	0.048	-0.01
play	0.06	-0.01	-0.111
academics/research	0.06	0.123	0.026
finish	0.06	0.023	0.112
perseverance	0.06	-0.057	0.115
starting	0.06	-0.037	-0.079
stay	0.06	-0.017	-0.029
track	0.06	0.103	-0.073
vehicle	0.06	0.083	0.122
academics/test	0.05	0.08	0.073
goat/kids	0.05	0.101	-.144*
grit	0.05	0.08	0.109
plan	0.05	0.121	0.103
point	0.05	-0.045	0.075
season	0.05	-0.024	-.132*
shift	0.05	.142*	-0.031
step	0.05	-0.003	0.034
change	0.05	0.033	0.101
customers	0.05	0.076	-0.044
one day	0.05	.163*	-.146*

schedule	0.05	0.12	0.036
stress	0.05	.141*	.139*
task	0.05	-0.01	0.095
weight	0.05	0.055	0.076
fact	0.04	-0.109	-.144*
family/family structure/parents	0.04	0.05	-0.019
hard work	0.04	0.027	-0.039
set	0.04	.141*	0.088
studying	0.04	0.073	.138*
training	0.04	0.005	-0.03
call	0.04	.140*	-0.101
course	0.04	0.045	0.129
girls	0.04	0.045	-0.116
group	0.04	.164*	0.015
handle	0.04	-0.05	-0.053
pick	0.04	0.093	0.022
work environment	0.04	0.045	0.057
workout	0.04	0.069	0.043
amount	0.03	-0.011	.136*
area	0.03	0.065	0.032
break	0.03	-0.011	-0.024
challenge	0.03	0.09	-0.03
decision	0.03	-0.062	0.024
fall	0.03	-0.036	-0.041
feel	0.03	0.014	-0.1
future	0.03	0.039	0.113
occupation/white collar workers	0.03	-0.062	0.039
occupation/white collar workers/employees	0.03	.191**	0.028
position	0.03	0.039	0.055
process	0.03	0.014	0.028
program	0.03	0.039	0.032
summer	0.03	-0.011	0.053
time/full time	0.03	0.115	.149*
ability	0.03	0.06	0.06
address	0.03	-0.074	-.158*
anatomy/body regions/head/face	0.03	-0.02	-.139*
balance	0.03	.222**	0.065
company	0.03	0.06	-0.038
compensation	0.03	-0.02	.152*
effort	0.03	-0.047	-0.03
family/family structure/parents/mother	0.03	-0.128	0.074
gpa	0.03	-0.02	0.126
members	0.03	0.033	0.054

occupation/educators/teacher	0.03	0.006	-0.069
shape	0.03	0.033	-0.038
show	0.03	.141*	0.001
sleep	0.03	-0.047	.139*
sports/sports by type/gym	0.03	0.06	0.004
spot	0.03	0.033	-0.027
talking	0.03	0.06	-0.041
world	0.03	-0.02	0.092
academics/students/freshman	0.03	0.114	-0.022
behavior mechanisms	0.03	-0.118	0.067
coworker	0.03	0.027	-0.113
every day	0.03	0.027	.142*
family/family structure/children/brother and sister/sister	0.03	0.027	-0.075
family/family structure/parents/dad	0.03	0.056	0.089
family/family structure/parents/mom	0.03	-0.06	-0.088
flight	0.03	-0.002	-0.069
human resources/benefit	0.03	0.027	0.035
join	0.03	-0.118	-0.06
living	0.03	-0.031	0.056
news	0.03	-0.06	0.056
playing	0.03	0.027	0.043
project	0.03	0.056	0.109
sports/championship	0.03	-0.002	-0.085
time/runtime	0.03	-0.002	-0.078
train	0.03	-0.002	0.059
wait	0.03	-0.118	-0.017
body	0.02	-0.044	-0.047
building	0.02	0.082	0.08
care	0.02	0.082	0.039
degree	0.02	0.082	0.048
diseases/pain	0.02	-0.044	0.032
education	0.02	.146*	0.115
feeling	0.02	-0.013	-0.087
home/house	0.02	0.051	0.11
line	0.02	-0.076	-0.116
mind	0.02	0.051	0.063
one time	0.02	-0.013	-0.016
perserverance	0.02	0.019	0.061
persevere	0.02	0.019	0.12
pt	0.02	0.114	0.067
side	0.02	0.019	0.037
sports/sports by type/ball games/football	0.02	-0.044	-0.047

strength	0.02	0.114	.160*
time/time management	0.02	0.019	0.072
trouble	0.02	0.082	0.053
wingman	0.02	-0.013	-0.102
act	0.02	.151*	0.119
activities	0.02	0.045	0.081
anatomy/heart	0.02	-0.025	0.039
at night	0.02	-0.025	0.064
breathing	0.02	0.081	-0.125
chance	0.02	-0.025	-0.067
clothes/shorts	0.02	-0.096	0.066
commercial establishment/club	0.02	-0.025	-0.103
commercial establishment/store	0.02	-0.025	-.136*
country	0.02	0.081	0.069
daily	0.02	0.01	0.121
eating	0.02	0.116	0.116
emotions/fear	0.02	-0.025	-0.004
family/family structure/child	0.02	0.01	0.039
family/family structure/parents/father	0.02	.187**	0.096
field	0.02	0.045	-0.061
fight	0.02	0.045	0.054
fix	0.02	.151*	0.033
form	0.02	0.116	-0.046
front	0.02	-0.096	0.01
gain	0.02	-0.096	0.024
hit	0.02	0.01	-0.128
house furnishings/furniture	0.02	-0.061	0.056
information	0.02	0.045	0.037
level	0.02	-0.096	-0.032
patients	0.02	0.045	-0.048
phone	0.02	0.045	0.073
practicing	0.02	0.045	-0.069
reason	0.02	-0.025	-0.052
results	0.02	0.116	0.027
sports/sports by type/ball games/basketball	0.02	0.116	-0.021
struggle	0.02	0.01	0.1
support	0.02	0.045	-0.027
town	0.02	-0.025	0.004
united states/us states/texas	0.02	-0.025	-0.054
Count	11.48	.256**	.153*
** Correlation is significant at the 0.01 level (2-tailed).			
* Correlation is significant at the 0.05 level (2-tailed).			

Table H23: Means and Correlations for Question 6 Model Trained (V18.2.1) in Subsample 2 and Tested in Subsample 1

Type: Behavioral

Item: Perseverance (Perseverance)

Facet: Persisting in the face of obstacles

Categories by Size	Mean	Correlations with Human Ratings	Correlations with AFQT
work	0.42	0.045	.154*
time	0.38	.228**	0.121
schooling/high school	0.3	0.048	0.085
school	0.27	0.056	0.105
year	0.24	0.05	.169*
situation	0.23	0.073	-0.045
life	0.22	-0.008	0.097
job	0.22	0.043	0.084
help	0.21	0.004	0.059
military engineering/obstacle	0.19	-0.002	-0.105
outcome	0.18	0.038	-.190**
team	0.18	.133*	0.005
people	0.17	-0.001	0.043
weeks	0.16	0.102	0.064
day	0.16	.198**	0.059
working	0.16	0.084	0.021
home	0.14	-0.079	0.056
friends	0.14	-0.019	-0.06
academics/grades	0.12	0.06	0.1
family	0.12	-0.106	-0.061
academics/student	0.11	0.068	0.103
family/family structure/parents	0.11	-0.075	-0.038
game equipment/goal	0.11	0.109	-0.034
college	0.1	0.076	0.063
military/air force	0.1	0.002	0.043
class	0.1	0.028	.147*
bmt	0.09	-0.022	-0.032
point	0.09	0.101	-0.066
problem	0.09	0.055	-0.027
determination	0.09	0.128	-0.042
night	0.09	0.048	.148*

hours	0.08	.143*	0.021
task	0.08	.143*	0.051
classes	0.08	0.006	0.08
sports	0.08	-0.027	-0.004
finances	0.07	.174**	-0.049
mental processes/learning/practice	0.07	.192**	0.052
occupation	0.07	.140*	0.047
part	0.07	-0.033	0.041
mental processes/learning	0.06	0.1	0.031
season	0.06	.137*	0.074
set	0.06	-0.046	-0.101
stay	0.06	0.045	-0.078
issue	0.06	-0.034	0.009
months	0.06	.174**	.164*
academics/research	0.06	0.115	0.071
one day	0.06	-0.081	-0.026
person	0.06	-0.061	-0.034
sports/coach	0.06	.135*	0.003
studying	0.06	.135*	0.123
area	0.05	0.053	0.004
behavior mechanisms	0.05	-0.029	-0.117
end	0.05	.297**	0.086
experience	0.05	-0.049	0.029
fact	0.05	0.032	-0.094
home/house	0.05	0.012	-0.002
human resources/career/skills	0.05	0.093	0.09
members	0.05	-0.029	0.107
minutes	0.05	-0.008	0.083
state	0.05	0.053	-0.056
step	0.05	-0.049	0.11
talk	0.05	-0.049	-0.1
training	0.05	0.073	-0.016
place	0.05	0.07	0.03
play	0.05	-0.1	-0.003
sports/sports by type/running	0.05	-0.036	-0.086
start	0.05	0.091	0.059
work environment/company events/cocktail	0.05	0.112	0.126
academics/test	0.04	0.088	-0.062
address	0.04	-0.067	-0.052
anatomy/body regions/head	0.04	-0.022	0.018
bovid/kids	0.04	0.022	0.043
commercial establishment/store	0.04	0	-0.021
compensation/pay	0.04	0.022	-0.014

degrees	0.04	.133*	0.095
diseases	0.04	-0.022	0.001
occupation/educators/teacher	0.04	0.066	-0.038
plan	0.04	0.111	0.054
sales/order	0.04	0	0.068
sports/sports by type/ball games/basketball	0.04	-0.089	-0.061
use	0.04	.155*	0.006
weight	0.04	.177**	0.127
balance	0.04	0.039	0.075
customer	0.04	-0.031	-0.058
girls	0.04	0.063	0.035
grit	0.04	0.016	-0.015
junior	0.04	-0.007	0.003
living	0.04	0.016	0.045
military	0.04	-0.077	-0.008
mind	0.04	0.016	0.046
perseverance	0.04	.203**	.144*
schedule	0.04	-0.007	0.052
schooling	0.04	0.016	-0.011
shift	0.04	-0.031	-0.019
starting	0.04	.179**	0.089
track	0.04	-0.007	0.009
train	0.04	0.086	0.051
boss	0.03	0.01	-0.058
commercial establishment/club	0.03	.158*	.159*
country	0.03	0.108	-0.092
coworker	0.03	-.139*	0.072
decision	0.03	-0.015	-0.033
family/family structure/parents/father	0.03	-.139*	0.029
family/family structure/parents/mother	0.03	-0.064	0.071
feel	0.03	-0.114	-0.054
feeling	0.03	0.034	0.086
fix	0.03	0.108	0.028
handle	0.03	.158*	0.001
human resources/career	0.03	0.01	0.033
join	0.03	-0.04	0.04
line	0.03	-0.04	-0.022
metals	0.03	0.034	0.055
show	0.03	-0.064	0.062
sports/sports by type/gym	0.03	.133*	0.044
stress	0.03	-0.015	0.108
summer	0.03	-0.064	0.054
vehicle	0.03	0.108	-0.038

work/homework	0.03	0.01	0.03
academics/student/freshman	0.03	0.002	-0.003
anatomy/body regions/head/face	0.03	0.108	0.023
break	0.03	.134*	-0.047
chance	0.03	0.108	0.082
change	0.03	0.002	.140*
company	0.03	.160*	0.024
daily	0.03	.160*	0.067
eating	0.03	.134*	0.046
finish	0.03	0.029	0.008
future	0.03	-0.024	-0.031
group	0.03	.134*	0.024
outdoor activities/game	0.03	-0.077	0.035
program	0.03	0.055	.144*
semester	0.03	0.055	0.126
sports/sports by type/ball games/football/soccer	0.03	-0.024	0.014
spot	0.03	0.081	-0.053
america/north america/united states/us states	0.03	-0.034	-0.055
anatomy/body regions/extremities/arm/hand	0.03	-0.006	-0.083
call	0.03	-0.006	-0.039
care	0.03	0.022	-0.003
challenge	0.03	-0.034	-0.099
commercial establishment/store/shop	0.03	-0.034	-0.037
course	0.03	-0.034	.154*
economics	0.03	-0.006	0.059
education	0.03	0.051	0.009
effort	0.03	.164*	0.017
every day	0.03	-0.063	0.086
family/family structure/parents/dad	0.03	0.108	0.044
health and well-being	0.03	-0.006	-0.039
mental	0.03	0.051	0.062
occupation/white collar workers/employee	0.03	0.022	-0.074
papers	0.03	-0.034	-0.007
perseverance	0.03	-0.006	0.003
pounds	0.03	0.051	0.015
process	0.03	0.022	0.063
pt	0.03	-0.006	0.02
sports/sports by type/ball games/football	0.03	0.108	0.059
sports/sports by type/combat sports/wrestling	0.03	-0.063	0.115
staff	0.03	-0.063	0.036
struggle	0.03	-0.034	0.015
system	0.03	.136*	0.033
ability	0.02	-0.016	0.035

commercial establishment	0.02	0.046	0.018
department	0.02	0.077	-0.01
engineering design/material	0.02	0.046	-0.073
family/family structure/children	0.02	0.108	0.061
friendship	0.02	0.015	-0.024
gpa	0.02	0.015	-0.036
half	0.02	-0.047	0.058
information	0.02	.170**	0.091
leadership	0.02	0.015	0.105
moving	0.02	-0.016	0.014
music/music genres	0.02	-0.016	-0.094
one time	0.02	-0.078	0.087
persevere	0.02	-0.047	0.044
phone	0.02	.170**	0.014
physics	0.02	.139*	-0.038
project	0.02	0.077	0.091
race	0.02	0.108	-0.021
safety	0.02	0.108	0.044
shot	0.02	0.077	0.082
town	0.02	0.077	0.028
wingman	0.02	-0.109	-.148*
academics/test/pt test	0.02	0.076	0.053
anatomy/body regions/extremities/legs	0.02	-0.028	-0.009
anatomy/heart	0.02	-0.097	-0.125
at night	0.02	-0.062	0.009
behavior and behavior mechanisms/social psychology/role	0.02	0.041	-0.034
behavior mechanisms/attitude	0.02	-0.097	0.011
body	0.02	0.041	0.001
build	0.02	0.111	0.011
business	0.02	0.076	0.118
choice	0.02	0.007	-0.042
city	0.02	0.111	0.069
control	0.02	0.007	0.013
couple	0.02	0.041	0.036
engineering design	0.02	0.076	-0.007
form	0.02	0.041	0.007
guy	0.02	-0.028	-0.04
injury	0.02	0.007	0.022
lens/contact	0.02	0.076	0.051
measuring instrument/timepiece/watch	0.02	0.007	0.075
music	0.02	.180**	0.104
patient	0.02	-0.097	-0.09

players	0.02	0.041	0.086
reason	0.02	0.041	-0.013
relationship	0.02	-0.062	0.007
saw	0.02	0.007	-0.038
seniors	0.02	0.041	-0.001
sports/championship	0.02	-0.062	-0.061
sports/sports by type	0.02	-0.028	-0.034
success	0.02	0.007	0.013
talking	0.02	-0.062	-0.052
time/time management	0.02	0.076	.147*
wait	0.02	-0.028	-0.042
workout	0.02	0.007	0.009
Count	11.55	.383**	.239**
** Correlation is significant at the 0.01 level (2-tailed).			
* Correlation is significant at the 0.05 level (2-tailed).			

Table H24: Means and Correlations for Question 6 Model Trained (V18.2.1) in Subsample 2 and Tested in Subsample 2

Type: Behavioral

Item: Perseverance (Perseverance)

Facet: Persisting in the face of obstacles

Categories by Size	Mean	Correlations with Human Ratings	Correlations with AFQT
time	0.47	0.036	0.115
work	0.35	.225**	0.096
schooling/high school	0.29	-0.016	-0.024
life	0.28	-0.016	0.007
situation	0.26	-0.114	-0.052
job	0.24	0.104	0.008
year	0.2	0.035	0.037
outcome	0.2	0.055	0.053
team	0.19	0.005	-0.032
school	0.17	0.129	-0.117
family	0.16	0.077	0.009
help	0.16	-0.103	-0.079
people	0.16	-0.027	-0.072
military engineering/obstacle	0.14	-0.072	0.051
friends	0.13	-0.015	-0.091
military/air force	0.13	-0.033	-0.016
day	0.13	0.004	0.024
working	0.13	-0.024	0.089
college	0.12	0.07	.211**
bmt	0.12	-0.091	-0.012
home	0.11	-0.083	-.137*
game equipment/goal	0.1	0.056	0.09
class	0.1	0.001	.161*
mental processes/learning/practice	0.1	0.032	-0.042
weeks	0.1	-0.015	-0.01
finances	0.09	0.028	0.091
problem	0.09	0.06	0.003
classes	0.09	.138*	0.083
schooling	0.09	-0.092	0.126
mental processes/learning	0.08	0.03	-0.069
occupation	0.08	0.099	-0.044

sports/sports by type/running	0.08	.134*	-0.001
determination	0.07	.149*	0.106
person	0.07	-0.045	-0.113
talk	0.07	-0.098	-0.11
part	0.07	0.039	0.059
place	0.07	-0.034	-0.035
state	0.07	0.057	0.039
experience	0.06	0.052	0.03
night	0.06	0.034	.261**
sales/order	0.06	-0.079	0.084
sports	0.06	0.015	-0.035
sports/coach	0.06	0.015	-0.127
start	0.06	0.015	-0.085
use	0.06	0.127	.153*
family/family structure/parents	0.06	0.009	-0.071
friendship	0.06	-0.126	-0.07
outdoor activities/game	0.06	-0.049	-0.101
stay	0.06	-0.029	-0.036
academics/research	0.06	.143*	0.023
anatomy/body regions/head	0.06	-0.017	-.157*
hours	0.06	0.103	0.128
issue	0.06	0.023	-0.005
track	0.06	0.103	-0.073
work environment/company events/cocktail	0.06	0.003	-0.041
academics/grades	0.05	-0.024	0.098
bovid/kids	0.05	0.101	-.144*
change	0.05	0.018	0.101
grit	0.05	0.08	0.109
perseverance	0.05	-0.045	.146*
schedule	0.05	.163*	0.068
shift	0.05	0.121	-0.001
finish	0.05	0.055	0.107
half	0.05	0.033	-0.005
one day	0.05	.163*	-.146*
point	0.05	-0.032	0.039
stress	0.05	.141*	.139*
studying	0.05	0.055	.157*
academics/student	0.04	-0.063	-0.059
academics/test	0.04	0.095	0.065
customer	0.04	0.095	-0.077
decision	0.04	-0.041	0.057
end	0.04	-0.086	0.087
military	0.04	-0.063	0.115

play	0.04	0.027	-0.039
semester	0.04	.163*	.141*
step	0.04	0.027	0.051
task	0.04	0.005	0.077
vehicle	0.04	0.095	.134*
work/homework	0.04	0.118	-0.025
america/north america/united states/us states	0.04	-0.003	0.053
call	0.04	.140*	-0.101
fact	0.04	-0.098	-.149*
finals	0.04	0.045	0.053
occupation/athlete/runner	0.04	0.116	0.058
physics	0.04	0.093	-0.008
positives	0.04	-0.027	0.01
process	0.04	0.045	0.067
season	0.04	0.021	-0.117
starting	0.04	-0.027	-0.019
train	0.04	-0.027	0.031
workout	0.04	0.069	0.043
academics/student/freshman	0.03	0.065	-0.085
address	0.03	-0.087	-.149*
anatomy/body regions/head/face	0.03	-0.036	-0.123
break	0.03	-0.011	-0.024
challenge	0.03	0.09	-0.03
course	0.03	0.014	0.127
fall	0.03	-0.036	-0.041
feel	0.03	0.014	-0.098
health and well-being	0.03	-0.062	.139*
home/house	0.03	-0.011	-0.008
military/military training	0.03	-0.036	-0.09
plan	0.03	0.014	0.072
set	0.03	0.039	0.128
sports/championship	0.03	0.014	-0.096
success	0.03	-0.062	0.047
ability	0.03	0.06	0.06
area	0.03	0.033	0.063
at the same time	0.03	0.06	0.09
behavior mechanisms	0.03	-0.101	0.033
build	0.03	0.06	0.089
compensation/pay	0.03	0.033	.134*
economics	0.03	-0.128	-0.049
effort	0.03	-0.047	-0.03
future	0.03	0.06	0.095
girls	0.03	-0.02	-0.1

handle	0.03	-0.074	-0.068
house rooms/room	0.03	0.06	-0.034
human resources/career	0.03	0.087	0.071
individual	0.03	-0.101	-0.012
months	0.03	0.006	.144*
moving	0.03	0.033	-0.006
occupation/educators/teacher	0.03	0.06	-0.097
occupation/white collar workers/employee	0.03	.168*	-0.012
shape	0.03	0.033	-0.038
sports/sports by type/gym	0.03	0.06	0.004
spot	0.03	0.033	0.008
summer	0.03	-0.02	0.054
talking	0.03	0.06	-0.041
time/timefull	0.03	0.06	.143*
training	0.03	0.006	-0.013
balance	0.03	.201**	0.035
choice	0.03	-0.118	-0.036
diseases	0.03	-0.06	0.035
events	0.03	0.027	-0.028
every day	0.03	0.027	.142*
family/family structure/children/sister	0.03	0.027	-0.075
family/family structure/parents/dad	0.03	0.056	0.089
family/family structure/parents/mother	0.03	-0.118	0.095
flight	0.03	-0.002	-0.069
gpa	0.03	-0.002	0.124
group	0.03	.172**	0.071
human resources/benefit	0.03	0.027	0.035
join	0.03	-0.118	-0.06
living	0.03	-0.031	0.056
mind	0.03	0.027	0.045
pick	0.03	0.027	0.054
program	0.03	0.085	0.019
project	0.03	0.056	0.109
relationship	0.03	-0.031	-0.014
sports/sports by type	0.03	0.114	.136*
sports/sports by type/weight lifting	0.03	0.056	0.068
staff	0.03	-0.06	0.013
story	0.03	-0.118	-0.104
time/free time	0.03	0.085	0.1
time/run time	0.03	-0.002	-0.078
time/time management	0.03	0.056	0.038
today	0.03	-0.031	0.013
weight	0.03	0.056	0.056

world	0.03	-0.002	0.076
academics/test/pt test	0.02	-0.013	-0.049
anatomy/body regions/extremities/legs/foot	0.02	.146*	.135*
behavior and behavior mechanisms/emotions	0.02	0.019	-0.019
care	0.02	0.082	0.039
company	0.02	-0.013	0.008
compensation	0.02	0.019	.202**
coworker	0.02	0.051	-0.081
degrees	0.02	0.082	0.048
drive	0.02	-0.044	0.013
education	0.02	.146*	0.115
engineering design	0.02	0.082	0.08
family/family structure/parents/father	0.02	.146*	0.061
farm building/stable	0.02	-0.013	0.096
fight	0.02	0.019	0.024
guy	0.02	-0.076	-0.092
human resources/career/skills/management	0.02	.146*	.177**
leadership	0.02	-0.013	-0.061
line	0.02	-0.076	-0.116
military/battalion/officer/captain	0.02	-0.013	-.140*
minutes	0.02	-0.013	-0.019
names	0.02	-0.013	-0.068
one time	0.02	-0.013	-0.016
option	0.02	0.082	-0.006
persevere	0.02	0.019	0.12
players	0.02	-0.013	0.065
prosecution of law	0.02	-0.013	0.043
race	0.02	-0.013	-0.037
reality	0.02	-0.044	0.063
reason	0.02	-0.044	-0.05
row	0.02	-0.013	0.106
saw	0.02	-0.076	-.164*
seniors	0.02	.146*	0.005
show	0.02	0.114	-0.035
strengths	0.02	0.114	.160*
system	0.02	0.114	-0.002
time/timeline	0.02	-0.044	0.063
wait	0.02	-0.108	-0.054
wingman	0.02	-0.013	-0.102
work environment/communication	0.02	.146*	.136*
worry	0.02	-0.013	.170*
actions	0.02	.151*	0.062
at night	0.02	-0.025	0.064

bed	0.02	-0.061	0.077
behavior and behavior mechanisms/emotions/fear	0.02	-0.025	-0.004
body	0.02	-0.025	-0.059
breathing	0.02	0.081	-0.125
chance	0.02	-0.025	-0.067
clothes	0.02	-0.061	0.021
commercial establishment/club	0.02	-0.025	-0.103
commercial establishment/store	0.02	-0.025	-.136*
daily	0.02	0.01	0.121
door	0.02	0.01	0.01
drop	0.02	0.045	0.105
eating	0.02	0.116	0.116
engineering design/material	0.02	0.045	0.031
family/family structure/children	0.02	0.01	0.039
feed	0.02	.222**	0.002
feeling	0.02	0.01	-0.096
finances/security	0.02	0.045	0.043
fix	0.02	.151*	0.033
floor	0.02	.151*	0.127
form	0.02	0.116	-0.046
honors	0.02	0.116	0.06
human resources/career/school career	0.02	-0.025	-0.059
information	0.02	0.045	0.037
lens/contact	0.02	0.01	0.119
members	0.02	-0.025	0.018
mental	0.02	-0.061	-0.005
meps	0.02	0.045	.146*
music/music genres	0.02	-0.061	0.046
occupation/athlete	0.02	0.081	-0.009
occupation/nurses	0.02	0.045	0.016
patient	0.02	0.045	-0.048
perserverance	0.02	-0.025	0.037
phone	0.02	0.045	0.073
plants	0.02	-0.096	-0.009
results	0.02	0.116	0.027
sacrifice	0.02	.151*	0.127
school/community college	0.02	0.01	0.129
schooling/school year	0.02	0.045	0.006
sports/sports by type/ball games	0.02	-0.025	0.085
sports/sports by type/ball games/football	0.02	-0.096	-0.029
sports/sports by type/ball games/football/football team	0.02	0.01	-0.013
sports/sports by type/bat-and-ball/baseball	0.02	-0.061	-0.086

struggle	0.02	0.01	0.1
support	0.02	0.045	-0.027
time/timefull/full time student	0.02	0.081	0.081
town	0.02	-0.025	0.004
two hours	0.02	0.116	0.002
water	0.02	0.01	-0.109
Count	11.99	.257**	.172**
** Correlation is significant at the 0.01 level (2-tailed).			
* Correlation is significant at the 0.05 level (2-tailed).			

Table H25: Summary of Number of Variables for each Subsample per Question and Criterion

	N	# of Variables
Question 1		
Subsample 1 Model Tested on Subsample 1	232	250
Subsample 1 Model Tested on Subsample 2	231	187
Subsample 2 Model Tested on Subsample 2	231	242
Subsample 2 Model Tested on Subsample 1	232	196
Question 2		
Subsample 1 Model Tested on Subsample 1	232	134
Subsample 1 Model Tested on Subsample 2	231	113
Subsample 2 Model Tested on Subsample 2	231	142
Subsample 2 Model Tested on Subsample 1	232	112
Question 3		
Subsample 1 Model Tested on Subsample 1	232	154
Subsample 1 Model Tested on Subsample 2	231	133
Subsample 2 Model Tested on Subsample 2	231	164
Subsample 2 Model Tested on Subsample 1	232	128
Question 4		
Subsample 1 Model Tested on Subsample 1	232	256
Subsample 1 Model Tested on Subsample 2	231	192
Subsample 2 Model Tested on Subsample 2	231	238
Subsample 2 Model Tested on Subsample 1	232	197
Question 5		
Subsample 1 Model Tested on Subsample 1	232	195
Subsample 1 Model Tested on Subsample 2	231	156
Subsample 2 Model Tested on Subsample 2	231	199
Subsample 2 Model Tested on Subsample 1	232	160
Question 6		
Subsample 1 Model Tested on Subsample 1	232	266
Subsample 1 Model Tested on Subsample 2	231	199
Subsample 2 Model Tested on Subsample 2	231	252
Subsample 2 Model Tested on Subsample 1	232	215

Table H26: Rs and Alphas for Question 2 Models Trained (V18.2.1) with $r = .05$ Cutoff

	Interview Ratings			AFQT			
	N	R	# of Variables	Alpha	R	# of Variables	Alpha
Subsample 1 Model Tested on Subsample 1	232	.730	74	.571	.740	80	.506
Subsample 1 Model Tested on Subsample 2	231	.734	74	.612	.695	61	.566
Subsample 2 Model Tested on Subsample 1	231	.737	68	.540	.690	66	.502
Subsample 2 Model Tested on Subsample 2	232	.772	82	.601	.743	77	.559
<i>Note.</i> “Count” variable included as # of variables. The models were built until no new categories emerged and uncategorized concepts with frequencies of 4 or more were converted to categories.							

Alternative Forms Reliability were calculated by estimating the Unstandardized Predicted Values from each model (Interview Ratings and AFQT). For example, $R = .911$ is correlation between “Subsample 1 Model Tested on Subsample 1” and “Subsample 2 Model Tested on Subsample 1.”

	Alternative Forms Reliability	
	Interview Ratings	AFQT
Subsample 1	.911	.862
Subsample 2	.871	.901

Table H27: Rs and Alphas for Question 4 Models Trained (V18.2.1) with $r = .05$ Cutoff

	Interview Ratings			AFQT			
	N	R	# of Variables	Alpha	R	# of Variables	Alpha
Subsample 1 Model Tested on Subsample 1	232	.903	160	.517	.831	138	.505
Subsample 1 Model Tested on Subsample 2	231	.844	122	.553	.833	104	.535
Subsample 2 Model Tested on Subsample 1	231	.806	125	.534	.795	114	.501
Subsample 2 Model Tested on Subsample 2	232	.894	141	.516	.883	128	.523
<i>Note.</i> “Count” variable included as # of variables. The models were built until no new categories emerged and uncategorized concepts with frequencies of 4 or more were converted to categories.							

Alternative Forms Reliability were calculated by estimating the Unstandardized Predicted Values from each model (Interview Ratings and AFQT). For example, $R = .846$ is correlation between “Subsample 1 Model Tested on Subsample 1” and “Subsample 2 Model Tested on Subsample 1.”

	Alternative Forms Reliability	
	Interview Ratings	AFQT
Subsample 1	.846	.837
Subsample 2	.885	.855

Table H28: Rs and Alphas for Question 2 Models Trained (V18.2.1) with Same Number of Variables Within Question

Number of variables is the average number of variables determined by the .05 cutoff in Table 5. We selected the top 75 variables for all Interview Ratings tests (average of 74, 74, 68, and 82). We selected the top 71 variables for AFQT (average of 80, 61, 66, and 77).

		Interview Ratings			AFQT		
	N	R	# of Variables	Alpha	R	# of Variables	Alpha
Subsample 1 Model Tested on Subsample 1	232	.732	75	.573	.729	71	.500
Subsample 1 Model Tested on Subsample 2	231	.734	75	.614	.704	71	.608
Subsample 2 Model Tested on Subsample 1	231	.745	75	.567	.696	71	.513
Subsample 2 Model Tested on Subsample 2	232	.756	75	.600	.738	71	.545
<i>Note.</i> “Count” variable included as # of variables. The models were built until no new categories emerged and uncategorized concepts with frequencies of 4 or more were converted to categories. AFR = Alternative Forms Reliability							

Alternative Forms Reliability were calculated by estimating the Unstandardized Predicted Values from each model (Interview Ratings and AFQT). For example, R = .898 is correlation between “Subsample 1 Model Tested on Subsample 1” and “Subsample 2 Model Tested on Subsample 1.”

	Alternative Forms Reliability	
	Interview Ratings	AFQT
Subsample 1	.898	.858
Subsample 2	.854	.899

Table H29: Rs and Alphas for Question 4 Models Trained (V18.2.1) with Same Number of Variables Within Question

Number of variables is the average number of variables determined by the .05 cutoff in Table 5. We selected the top 137 variables for all Interview Ratings tests (average of 160, 122, 125, and 141). We selected the top 121 variables for AFQT (average of 138, 104, 114, and 128).

		Interview Ratings			AFQT		
	N	R	# of Variables	Alpha	R	# of Variables	Alpha
Subsample 1 Model Tested on Subsample 1	232	.873	137	.499	.807	121	.487
Subsample 1 Model Tested on Subsample 2	231	.859	137	.572	.861	121	.548
Subsample 2 Model Tested on Subsample 1	231	.824	137	.541	.807	121	.511
Subsample 2 Model Tested on Subsample 2	232	.888	137	.505	.881	121	.517
<i>Note.</i> “Count” variable included as # of variables. The models were built until no new categories emerged and uncategorized concepts with frequencies of 4 or more were converted to categories. AFR = Alternative Forms Reliability							

Alternative Forms Reliability were calculated by estimating the Unstandardized Predicted Values from each model (Interview Ratings and AFQT). For example, R = .833 is correlation between “Subsample 1 Model Tested on Subsample 1” and “Subsample 2 Model Tested on Subsample 1.”

	Alternative Forms Reliability	
	Interview Ratings	AFQT
Subsample 1	.833	.825
Subsample 2	.880	.858

Table H30: Means and Correlations of LIWC Variables for Question 1

Category	Mean	Correlations with Human Ratings	Correlations with AFQT
WC	143.8	.450**	.171**
Analytic	51.1855	.322**	.136**
Clout	31.5714	.200**	0.04
Authentic	83.6588	-.193**	0.015
Tone	48.8468	0.035	-0.062
WPS	24.0056	-0.085	-.094*
Sixltr	14.2812	.189**	.187**
Dic	90.8248	-0.075	0.004
function	57.9181	-.243**	-0.025
pronoun	17.4603	-.210**	-.118*
ppron	12.262	-.101*	-.107*
i	9.5976	-.161**	-.103*
we	1.141	.169**	0.054
you	0.2383	-.144**	-0.005
shehe	0.8049	-0.004	-0.048
they	0.4798	0.054	-0.008
ipron	5.1954	-.212**	-0.063
article	5.9519	.163**	0.055
prep	15.1081	.112*	.115*
auxverb	8.9842	-.173**	-0.089
adverb	5.244	-.295**	-0.017
conj	7.4814	-.157**	-0.037
negate	1.4848	-.179**	0.035
verb	18.0754	-.253**	-.130**
adj	5.0506	-0.06	0.088
compare	2.5671	-0.039	0.068
interrog	1.6397	-.092*	-.129**
number	1.2167	.097*	0.052
quant	2.1839	0.007	0.053
affect	3.4488	-0.053	-0.023
posemo	2.3077	-0.014	-0.054
negemo	1.038	-0.072	0.042
anx	0.2786	-0.023	-0.046
anger	0.1486	-0.023	0.055
sad	0.2773	-0.03	0.041
social	7.1202	0.071	-0.043
family	1.1768	-0.043	-0.028
friend	0.4889	-.109*	0.026

female	0.7906	0.015	-0.076
male	0.7243	-0.056	-0.002
cogproc	12.4625	-.223**	-0.053
insight	2.113	-0.059	-0.034
cause	3.3124	-.140**	-.114*
discrep	1.5994	0.068	-0.055
tentat	1.681	-.117*	0.032
certain	1.5813	-.131**	-0.075
differ	2.8547	-.179**	0.042
percept	1.0429	-0.082	-0.06
see	0.3535	-0.038	-0.021
hear	0.1774	0.003	-0.008
feel	0.4543	-0.088	-0.045
bio	1.3075	0.046	0.036
body	0.1766	-0.037	-0.007
health	0.8947	0.056	0.046
sexual	0.0229	0.071	-0.064
ingest	0.1587	.107*	0.065
drives	9.3703	.220**	0.058
affiliation	3.021	.149**	0.03
achieve	2.286	.216**	0.055
power	2.6335	.143**	0.025
reward	2.0455	-0.039	-0.065
risk	0.3557	-0.005	0.069
focuspast	9.4869	-0.014	-0.014
focuspresent	6.3913	-.183**	-.106*
focusfuture	0.9747	-.126**	-0.001
relativ	17.5254	-0.046	0.052
motion	3.6812	-.145**	-0.057
space	6.9918	.116*	0.035
time	7.183	-0.082	.094*
work	3.9703	.274**	0.091
leisure	0.8507	.101*	-0.026
home	0.763	-0.003	0.059
money	0.5497	.153**	0.007
relig	0.0674	0.005	0.026
death	0.0423	0.003	0.024
informal	0.2639	-0.064	-.121**
swear	0.0325	-0.012	-0.032
netspeak	0.0295	-0.062	-0.086
assent	0.0388	-0.046	-.094*
nonflu	0.1501	-0.019	-0.057
filler	0.0072	-0.024	0.002

AllPunc	35.2723	-0.031	-0.086
Period	32.3007	-0.032	-0.086
Comma	2.056	0.073	.183**
Colon	0.0118	0.019	-0.045
SemiC	0.036	-0.018	0.072
QMark	0.0105	-0.025	0.049
Exclam	0.0086	-0.004	-.100*
Dash	0.0872	.187**	.129**
Quote	0.062	0.008	0.034
Apostro	0.6022	-.117*	0.047
Parenth	0.0612	.104*	0.031
OtherP	0.0357	0.064	-0.031
** Correlation is significant at the 0.01 level (2-tailed).			
* Correlation is significant at the 0.05 level (2-tailed).			

Table H31: Means and Correlations of LIWC Variables for Question 2

Category	Mean	Correlations with Human Ratings	Correlations with AFQT
WC	127.1	.454**	.267**
Analytic	47.3892	.185**	.219**
Clout	34.0992	0.041	.093*
Authentic	39.2648	-0.051	0.045
Tone	44.5776	-0.077	-0.02
WPS	25.1002	-0.087	-0.069
Sixltr	16.0967	.201**	.341**
Dic	89.4939	-0.013	.142**
function	59.0159	-.178**	.092*
pronoun	16.997	-.200**	-0.072
ppron	9.7451	-.123**	-0.025
i	7.0211	-0.078	-0.081
we	0.2112	0.021	-0.039
you	1.0567	-0.067	0.013
shehe	0.2023	0.052	-0.025
they	1.2532	-0.038	.144**
ipron	7.2493	-.164**	-0.092
article	7.821	0.082	.178**
prep	12.5348	.126**	.180**
auxverb	11.5018	-0.063	-0.014
adverb	4.0388	-0.033	0.086
conj	7.6055	-0.025	0.043
negate	1.3056	-.157**	-0.051
verb	20.9634	-0.059	-0.001
adj	4.1696	0	.093*
compare	2.6433	-0.034	0.063
interrog	2.2441	.101*	0.004
number	0.7093	-0.026	-0.06
quant	2.2429	0.018	0.022
affect	5.0326	-0.034	-0.004
posemo	2.969	-0.065	-0.02
negemo	1.9971	0.023	0.009
anx	0.0841	-0.021	-0.074
anger	0.2152	-0.09	0.008
sad	0.5978	-0.007	-0.069
social	6.6108	-0.027	0.067
family	0.034	-0.072	0.007
friend	0.0468	-0.021	0.06

female	0.097	-0.027	-0.05
male	0.1348	0.084	0.041
cogproc	20.1675	0.091	.191**
insight	4.3074	.107*	.225**
cause	3.8719	0.042	.106*
discrep	6.5263	0.042	0.056
tentat	4.5841	0.032	.184**
certain	1.5307	0.031	0.029
differ	3.8838	-0.061	.112*
percept	1.9697	-0.09	0.039
see	1.0948	-0.008	0.06
hear	0.333	-.134**	-0.023
feel	0.4914	-0.049	0.002
bio	0.3475	-0.086	-0.069
body	0.1888	-0.014	-0.01
health	0.0806	-.116*	-0.047
sexual	0.0092	-0.06	0.01
ingest	0.0608	-0.033	-.097*
drives	8.7288	0.089	.122**
affiliation	0.7871	.103*	0.061
achieve	4.0758	0.073	.173**
power	2.0009	-0.011	-0.031
reward	2.1607	-0.09	-.119*
risk	1.0483	.118*	.115*
focuspast	3.517	-0.056	0.026
focuspresent	12.5688	0.021	0.041
focusfuture	1.356	-0.069	-0.045
relativ	10.0346	0.006	0.043
motion	1.6731	0.038	.098*
space	5.242	0.026	0.026
time	3.432	-0.062	-0.019
work	4.01	.181**	.123**
leisure	0.0978	-0.035	-0.033
home	0.0621	-.103*	-0.054
money	0.1456	-0.078	-0.037
relig	0.0038	-0.064	-0.014
death	0.0122	-0.031	-0.03
informal	0.2563	-.105*	0.022
swear	0.026	-.096*	0.015
netspeak	0.0195	-.104*	-.109*
assent	0.0699	-0.012	-0.037
nonflu	0.125	-0.03	.125**
filler	0.0111	-0.041	-0.071

AllPunc	33.6314	.114*	-0.085
Period	30.1076	0.019	-0.086
Comma	1.9661	0.024	.161**
Colon	0.0123	0.047	0.034
SemiC	0.054	0.057	0.05
QMark	0.1052	.114*	0.054
Exclam	0.0084	-0.066	-0.009
Dash	0.0905	0.048	0.047
Quote	0.5137	.118*	0.089
Apostro	0.6627	0.041	.097*
Parenth	0.0387	.117*	0.067
OtherP	0.0713	0.066	-0.045
** Correlation is significant at the 0.01 level (2-tailed).			
* Correlation is significant at the 0.05 level (2-tailed).			

Table H32: Means and Correlations of LIWC Variables for Question 3

Category	Mean	Correlations with Human Ratings	Correlations with AFQT
WC	129.1	.599**	.187**
Analytic	34.6755	0.081	.112*
Clout	35.0246	0.055	-0.018
Authentic	44.2004	-.131**	-0.022
Tone	19.3633	-0.006	-0.042
WPS	24.0948	0.022	-0.022
Sixltr	17.1457	.228**	.179**
Dic	89.5372	0.043	0.05
function	60.6869	-0.069	0.034
pronoun	18.0352	-.105*	-.105*
ppron	9.8359	-.160**	-.126**
i	6.6802	-.127**	-0.069
we	0.3521	-0.091	-0.054
you	1.8414	0.008	-0.001
shehe	0.0735	-0.079	-.098*
they	0.8883	0.068	-0.037
ipron	8.1933	0.022	-0.028
article	6.2323	0.055	.136**
prep	12.3419	0.039	0.083
auxverb	12.337	-0.027	0.021
adverb	4.3605	0.012	0.003
conj	8.3611	0.009	0.033
negate	2.4227	-0.05	0.028
verb	19.9068	-0.052	-0.05
adj	3.6003	-0.042	0.007
compare	2.2976	-0.04	0.07
interrog	1.8319	0.058	-.100*
number	0.8138	-0.073	-0.033
quant	1.6678	-0.065	0.008
affect	6.2197	0.022	0.02
posemo	2.3849	0.022	0.02
negemo	3.7573	-0.005	0.009
anx	0.3002	-0.014	0
anger	0.7245	0.052	0.06
sad	0.4426	-0.057	-0.036
social	7.5941	0.008	-0.072
family	0.0434	-0.087	-0.01
friend	0.0642	-.093*	-0.035

female	0.0302	-0.082	-0.082
male	0.0937	-.113*	-0.076
cogproc	21.4353	0.055	0.036
insight	3.2508	0.025	0.025
cause	3.6833	0.071	0.033
discrep	6.2093	-0.015	0.031
tentat	4.9185	-0.016	0.031
certain	1.9414	0.072	-0.042
differ	5.1576	-0.064	0.04
percept	1.2081	-.128**	-0.043
see	0.4003	-0.016	-0.013
hear	0.3027	-0.086	-0.013
feel	0.4541	-.096*	-0.068
bio	0.452	0.012	-0.025
body	0.1802	0.044	0.005
health	0.2051	-0.002	-0.084
sexual	0.0132	-0.069	.092*
ingest	0.0514	0.023	0.007
drives	9.0608	-0.027	0.081
affiliation	1.2489	0.012	0.037
achieve	2.8163	.109*	.111*
power	2.8531	-.096*	0.082
reward	2.1453	-0.053	-0.018
risk	1.8097	0.01	0.001
focuspast	3.3914	-0.07	-.106*
focuspresent	11.3998	0.03	0.03
focusfuture	1.767	.108*	0.083
relativ	10.9072	-0.061	0.052
motion	1.9874	0.016	0.017
space	5.8214	-.116*	0.051
time	3.3621	0.038	0.044
work	2.6715	.179**	0.075
leisure	0.3792	.103*	.093*
home	0.0916	-0.068	-0.021
money	0.1985	0.062	-0.009
relig	0.0809	-0.046	-0.027
death	0.0224	-0.016	-0.036
informal	0.2943	-0.016	-0.025
swear	0.0296	0.035	0.052
netspeak	0.0398	-0.034	-0.043
assent	0.1086	-0.066	-0.045
nonflu	0.0893	0.087	0.006
filler	0.0227	-0.026	0.011

AllPunc	48.7199	0.009	-0.086
Period	45.2062	-.111*	-0.087
Comma	2.3013	0.088	.151**
Colon	0.0127	0.035	0.019
SemiC	0.0452	0.032	0.043
QMark	0.0664	0.029	0.015
Exclam	0.0147	-0.035	-0.019
Dash	0.0474	0.04	0.051
Quote	0.0981	0.045	-0.058
Apostro	0.8319	-0.036	0.052
Parenth	0.039	-0.044	-0.005
OtherP	0.0567	0.058	-0.027
** Correlation is significant at the 0.01 level (2-tailed).			
* Correlation is significant at the 0.05 level (2-tailed).			

Table H33: Means and Correlations of LIWC Variables for Question 4

Category	Mean	Correlations with Human Ratings	Correlations with AFQT
WC	145.26	.118*	.100*
Analytic	53.0815	.207**	.221**
Clout	55.6323	.207**	0.092
Authentic	61.8669	-0.016	-0.014
Tone	56.5887	.210**	-0.07
WPS	23.7308	-0.042	-.101*
Sixltr	15.6981	.138**	.280**
Dic	90.5286	0.012	0.035
function	57.9143	-.120**	-0.042
pronoun	17.2455	-.191**	-.141**
ppron	11.3619	-.226**	-.133**
i	5.9283	-.246**	-.113*
we	2.5942	.198**	0.081
you	0.3616	-0.025	-.092*
shehe	1.443	-.214**	-.125**
they	1.0346	0.021	0.03
ipron	5.8753	0.026	-0.047
article	7.058	.149**	.149**
prep	14.1768	0.082	.124**
auxverb	9.071	-0.088	-0.074
adverb	4.7959	-.105*	-.116*
conj	7.5417	0.051	-0.077
negate	1.5257	-.160**	0.013
verb	17.532	-.111*	-.147**
adj	4.3553	0.037	.118*
compare	2.8795	0.014	0.082
interrog	1.8263	0.054	-.093*
number	1.1877	0.038	0.085
quant	2.7884	.250**	.203**
affect	3.883	-0.014	-0.017
posemo	2.8028	.111*	-0.071
negemo	0.9668	-.174**	0.064
anx	0.1327	-.120**	0.049
anger	0.2763	-0.042	.119*
sad	0.1087	-.164**	0.01
social	10.387	0.006	-0.026
family	0.371	-.099*	-0.045
friend	0.4684	0.022	-0.012

female	0.9555	-.130**	-0.04
male	0.8416	-.186**	-.127**
cogproc	15.2989	.152**	-0.009
insight	3.5146	.239**	-0.036
cause	2.42	0.07	-0.052
discrep	2.6361	0.054	-0.031
tentat	2.3196	0.06	0.069
certain	1.5532	-0.01	0.083
differ	4.0715	0.016	-0.008
percept	1.5743	0.056	-0.033
see	0.666	.104*	0.006
hear	0.3935	0.004	0.002
feel	0.4137	-0.018	-0.068
bio	1.0079	-0.051	-0.003
body	0.3285	-0.027	-0.027
health	0.3294	-0.023	0.013
sexual	0.0437	0.005	0.011
ingest	0.3224	-0.038	0.007
drives	10.117	.153**	.155**
affiliation	4.2582	.232**	.139**
achieve	2.254	.107*	.119*
power	2.5799	-0.039	0.084
reward	1.8465	-0.052	0.014
risk	0.3815	-.110*	-0.014
focuspast	7.6287	-.106*	-0.066
focuspresent	7.3764	-0.043	-0.058
focusfuture	0.8166	-0.059	-0.021
relativ	14.0125	-0.035	0.04
motion	2.3219	-.108*	-0.071
space	7.1882	0.056	0.054
time	4.7464	-0.089	0.027
work	3.6203	0.057	.158**
leisure	1.0348	0.011	0.021
home	0.3261	-0.082	0.054
money	0.4459	-0.08	0.017
relig	0.2132	-0.075	-0.012
death	0.0206	0.017	0.046
informal	0.3909	-0.016	-0.092
swear	0.0136	-0.031	0.009
netspeak	0.0352	-0.055	-0.042
assent	0.2006	0.02	-.097*
nonflu	0.1163	0.043	0.009
filler	0.0106	-0.087	-.094*

AllPunc	8.4984	0.049	-0.05
Period	5.235	0.003	-0.086
Comma	1.991	.099*	.197**
Colon	0.0076	-0.035	0.073
SemiC	0.0246	0.028	.097*
QMark	0.0149	-0.08	0.008
Exclam	0.0169	-0.018	-0.048
Dash	0.1356	.108*	0.006
Quote	0.172	-0.051	-0.006
Apostro	0.7447	-0.058	0.064
Parenth	0.0929	0.077	0.058
OtherP	0.0629	-0.019	0.006
** Correlation is significant at the 0.01 level (2-tailed).			
* Correlation is significant at the 0.05 level (2-tailed).			

Table H34: Means and Correlations of LIWC Variables for Question 5

Category	Mean	Correlations with Human Ratings	Correlations with AFQT
WC	131.38	.484**	.167**
Analytic	46.8512	.133**	.101*
Clout	30.1066	-0.062	-0.075
Authentic	57.7097	0.056	0.036
Tone	65.4448	-0.002	0.064
WPS	24.0798	.098*	-0.072
Sixltr	16.5121	.173**	.294**
Dic	91.3173	-0.068	0.033
function	57.6723	-.155**	-0.07
pronoun	16.7589	-.148**	-.166**
ppron	10.3948	-.166**	-.131**
i	8.1584	-0.048	-0.01
we	0.1043	-0.091	-0.034
you	1.6264	-.103*	-.122**
shehe	0.0438	-0.025	-0.085
they	0.4617	0.007	0.004
ipron	6.3589	-0.036	-.108*
article	5.0165	0.032	0.007
prep	14.3482	0.057	0.077
auxverb	12.3271	-.104*	-0.021
adverb	4.1186	-0.075	0.047
conj	7.1548	0.068	0.066
negate	1.0993	-.174**	-.137**
verb	19.2409	-.105*	-0.072
adj	5.1919	-0.053	0.032
compare	3.4235	0.002	0.054
interrog	1.7534	.133**	0.085
number	1.4067	0.083	0.03
quant	3.2398	0.027	0.062
affect	3.9798	-.142**	0.01
posemo	3.0537	-0.085	0.043
negemo	0.629	-.122**	-0.089
anx	0.1239	-.150**	-0.089
anger	0.0343	0.017	0.015
sad	0.1116	0.057	0
social	4.6614	-.121**	-.131**
family	0.1397	-.111*	-0.073
friend	0.0819	-.120*	-0.082

female	0.036	-0.056	-.109*
male	0.0447	0.044	-0.052
cogproc	17.3935	0.06	0.091
insight	1.8842	.137**	0.089
cause	3.8877	0.087	.199**
discrep	5.3427	0.073	0.074
tentat	4.0322	-0.05	0.006
certain	1.4846	-0.036	-0.085
differ	3.4368	-0.039	-0.024
percept	1.4885	0.012	-0.036
see	0.8082	.137**	0.069
hear	0.137	-0.008	-0.046
feel	0.5021	-.153**	-.133**
bio	0.7795	-.100*	0.02
body	0.2069	-0.072	0.004
health	0.4166	-0.078	0.006
sexual	0.0031	0.037	0.011
ingest	0.1639	-0.016	0.045
drives	10.9503	-0.024	-0.091
affiliation	0.8923	-0.056	-0.032
achieve	6.4234	0.035	-0.017
power	2.4417	0.024	-0.052
reward	3.7591	-.114*	-.230**
risk	0.3359	-0.005	-0.061
focuspast	1.6064	0.082	0.033
focuspresent	13.6684	-.193**	-.109*
focusfuture	1.5987	-0.012	-0.017
relativ	14.5548	.121**	0.088
motion	2.7507	-0.033	0.036
space	6.5707	0.057	-0.01
time	5.5258	.116*	.100*
work	7.0492	.098*	0.087
leisure	0.4176	-0.056	-0.001
home	0.287	-.103*	-0.046
money	0.394	-0.057	-0.015
relig	0.0612	-0.039	0.021
death	0.0234	-0.071	-0.009
informal	0.2304	0.003	-0.058
swear	0.0097	-0.031	0.027
netspeak	0.0347	-0.076	-.127**
assent	0.0302	-0.001	-0.033
nonflu	0.1551	0.051	-0.018
filler	0.001	0.013	0.076

AllPunc	8.0511	0.083	.157**
Period	4.5705	-.160**	-0.076
Comma	2.1775	.156**	.192**
Colon	0.0218	.098*	0.049
SemiC	0.0466	0.06	.100*
QMark	0.0827	0.084	0.068
Exclam	0.0048	-0.047	-0.049
Dash	0.0839	0.078	0.055
Quote	0.1162	0.055	0.036
Apostro	0.6415	-0.057	0.023
Parenth	0.0876	.154**	0.084
OtherP	0.2179	0.073	.139**
** Correlation is significant at the 0.01 level (2-tailed).			
* Correlation is significant at the 0.05 level (2-tailed).			

Table H35: Means and Correlations of LIWC Variables for Question 6

Category	Mean	Correlations with Human Ratings	Correlations with AFQT
WC	145.35	.348**	.172**
Analytic	56.872	.222**	.186**
Clout	30.2401	-0.008	-0.038
Authentic	78.7134	0.013	0.08
Tone	53.7527	0.018	-.112*
WPS	23.8334	-0.076	-0.09
Sixltr	15.2584	.154**	.135**
Dic	91.2751	-.145**	0.09
function	57.9417	-.264**	-0.079
pronoun	17.0768	-.204**	-.133**
ppron	11.9881	-.147**	-0.073
i	9.5692	-0.063	-0.027
we	1.0062	-0.004	0.007
you	0.2388	-.096*	-0.047
shehe	0.6398	-0.058	-0.083
they	0.5342	-0.037	-0.059
ipron	5.0854	-.133**	-.157**
article	6.6009	0.077	0.058
prep	15.0982	0.065	.142**
auxverb	8.8705	-.194**	-0.073
adverb	4.7606	-.157**	-0.054
conj	7.5328	-0.01	-0.02
negate	1.3808	-.141**	-0.077
verb	17.5213	-.213**	-.139**
adj	4.7213	0.063	0.084
compare	2.459	0.052	0.09
interrog	1.4016	-0.084	-.126**
number	1.5369	.104*	0.046
quant	2.2553	.119*	.150**
affect	4.3015	-0.072	-0.01
posemo	2.9206	-0.025	-0.073
negemo	1.2895	-.094*	0.088
anx	0.2591	-0.047	0.048
anger	0.1632	-0.062	-0.045
sad	0.262	-0.037	0.079
social	5.9695	-.097*	-.094*
family	0.4872	-0.06	-0.005
friend	0.2544	-0.091	-0.077

female	0.5298	-0.053	-.098*
male	0.4866	-0.049	-0.001
cogproc	11.0324	-.118*	-0.058
insight	1.9266	-0.009	-0.05
cause	2.0832	-0.048	-.124**
discrep	1.7318	-0.043	0.033
tentat	1.7406	-0.069	0.013
certain	1.6433	-0.039	0.034
differ	2.7298	-.143**	-0.015
percept	1.4152	-0.022	0.013
see	0.3165	-0.042	0.049
hear	0.2212	0.058	-0.028
feel	0.8056	-0.032	0.01
bio	1.3526	0.012	.103*
body	0.3437	-0.054	-0.037
health	0.6935	0.025	.127**
sexual	0.0125	-0.059	-0.03
ingest	0.3256	0.049	0.078
drives	10.9376	0.024	0.039
affiliation	2.5514	-0.039	-0.014
achieve	4.1244	.109*	0.067
power	3.0988	0.036	0.058
reward	2.2489	-0.009	-0.032
risk	0.6514	-0.073	0
focuspast	9.1789	-0.016	-0.024
focuspresent	5.9928	-.193**	-.120*
focusfuture	0.7666	0.004	0.031
relativ	16.405	.130**	.152**
motion	2.5207	0.032	0.009
space	7.1219	0.061	0.041
time	7.0464	.134**	.203**
work	5.9359	.145**	.152**
leisure	1.4954	0.044	-0.003
home	0.4897	-0.036	-0.001
money	0.5899	.123**	0.009
relig	0.0694	-0.034	-0.014
death	0.0275	-0.008	0.073
informal	0.2167	-0.009	0.043
swear	0.0141	0.006	0.032
netspeak	0.0239	0.029	-0.008
assent	0.0416	-0.039	-0.032
nonflu	0.1275	0.014	0.066
filler	0.0071	-0.065	-0.011

AllPunc	37.03	.100*	-0.086
Period	13.1689	0.045	-0.086
Comma	22.8239	.141**	-0.086
Colon	0.008	-0.021	0.041
SemiC	0.0327	0.067	.098*
QMark	0.0104	-0.08	-0.026
Exclam	0.0246	-0.039	-0.035
Dash	0.1189	.132**	.147**
Quote	0.0958	-0.065	-0.006
Apostro	0.5977	-0.032	0.057
Parenth	0.067	-0.049	0.076
OtherP	0.0821	0.003	0
** Correlation is significant at the 0.01 level (2-tailed).			
* Correlation is significant at the 0.05 level (2-tailed).			

**Table H36: Correlations of LIWC Variables with Interview Ratings for All Questions
(V18.2.1)**

Category	Question 1: Correlations with Interview Ratings	Question 2: Correlations with Interview Ratings	Question 3: Correlations with Interview Ratings	Question 4: Correlations with Interview Ratings	Question 5: Correlations with Interview Ratings	Question 6: Correlations with Interview Ratings
WC	.450**	.454**	.599**	.118*	.484**	.348**
Analytic	.322**	.185**	0.081	.207**	.133**	.222**
Clout	.200**	0.041	0.055	.207**	-0.062	-0.008
Authentic	-.193**	-0.051	-.131**	-0.016	0.056	0.013
Tone	0.035	-0.077	-0.006	.210**	-0.002	0.018
WPS	-0.085	-0.087	0.022	-0.042	.098*	-0.076
Sixltr	.189**	.201**	.228**	.138**	.173**	.154**
Dic	-0.075	-0.013	0.043	0.012	-0.068	-.145**
function	-.243**	-.178**	-0.069	-.120**	-.155**	-.264**
pronoun	-.210**	-.200**	-.105*	-.191**	-.148**	-.204**
ppron	-.101*	-.123**	-.160**	-.226**	-.166**	-.147**
i	-.161**	-0.078	-.127**	-.246**	-0.048	-0.063
we	.169**	0.021	-0.091	.198**	-0.091	-0.004
you	-.144**	-0.067	0.008	-0.025	-.103*	-.096*
shehe	-0.004	0.052	-0.079	-.214**	-0.025	-0.058
they	0.054	-0.038	0.068	0.021	0.007	-0.037
ipron	-.212**	-.164**	0.022	0.026	-0.036	-.133**
article	.163**	0.082	0.055	.149**	0.032	0.077
prep	.112*	.126**	0.039	0.082	0.057	0.065
auxverb	-.173**	-0.063	-0.027	-0.088	-.104*	-.194**
adverb	-.295**	-0.033	0.012	-.105*	-0.075	-.157**
conj	-.157**	-0.025	0.009	0.051	0.068	-0.01
negate	-.179**	-.157**	-0.05	-.160**	-.174**	-.141**
verb	-.253**	-0.059	-0.052	-.111*	-.105*	-.213**
adj	-0.06	0	-0.042	0.037	-0.053	0.063
compare	-0.039	-0.034	-0.04	0.014	0.002	0.052
interrog	-.092*	.101*	0.058	0.054	.133**	-0.084
number	.097*	-0.026	-0.073	0.038	0.083	.104*
quant	0.007	0.018	-0.065	.250**	0.027	.119*
affect	-0.053	-0.034	0.022	-0.014	-.142**	-0.072
posemo	-0.014	-0.065	0.022	.111*	-0.085	-0.025
negemo	-0.072	0.023	-0.005	-.174**	-.122**	-.094*
anx	-0.023	-0.021	-0.014	-.120**	-.150**	-0.047
anger	-0.023	-0.09	0.052	-0.042	0.017	-0.062
sad	-0.03	-0.007	-0.057	-.164**	0.057	-0.037
social	0.071	-0.027	0.008	0.006	-.121**	-.097*

family	-0.043	-0.072	-0.087	-.099*	-.111*	-0.06
friend	-.109*	-0.021	-.093*	0.022	-.120*	-0.091
female	0.015	-0.027	-0.082	-.130**	-0.056	-0.053
male	-0.056	0.084	-.113*	-.186**	0.044	-0.049
cogproc	-.223**	0.091	0.055	.152**	0.06	-.118*
insight	-0.059	.107*	0.025	.239**	.137**	-0.009
cause	-.140**	0.042	0.071	0.07	0.087	-0.048
discrep	0.068	0.042	-0.015	0.054	0.073	-0.043
tentat	-.117*	0.032	-0.016	0.06	-0.05	-0.069
certain	-.131**	0.031	0.072	-0.01	-0.036	-0.039
differ	-.179**	-0.061	-0.064	0.016	-0.039	-.143**
percept	-0.082	-0.09	-.128**	0.056	0.012	-0.022
see	-0.038	-0.008	-0.016	.104*	.137**	-0.042
hear	0.003	-.134**	-0.086	0.004	-0.008	0.058
feel	-0.088	-0.049	-.096*	-0.018	-.153**	-0.032
bio	0.046	-0.086	0.012	-0.051	-.100*	0.012
body	-0.037	-0.014	0.044	-0.027	-0.072	-0.054
health	0.056	-.116*	-0.002	-0.023	-0.078	0.025
sexual	0.071	-0.06	-0.069	0.005	0.037	-0.059
ingest	.107*	-0.033	0.023	-0.038	-0.016	0.049
drives	.220**	0.089	-0.027	.153**	-0.024	0.024
affiliation	.149**	.103*	0.012	.232**	-0.056	-0.039
achieve	.216**	0.073	.109*	.107*	0.035	.109*
power	.143**	-0.011	-.096*	-0.039	0.024	0.036
reward	-0.039	-0.09	-0.053	-0.052	-.114*	-0.009
risk	-0.005	.118*	0.01	-.110*	-0.005	-0.073
focuspast	-0.014	-0.056	-0.07	-.106*	0.082	-0.016
focuspresent	-.183**	0.021	0.03	-0.043	-.193**	-.193**
focusfuture	-.126**	-0.069	.108*	-0.059	-0.012	0.004
relativ	-0.046	0.006	-0.061	-0.035	.121**	.130**
motion	-.145**	0.038	0.016	-.108*	-0.033	0.032
space	.116*	0.026	-.116*	0.056	0.057	0.061
time	-0.082	-0.062	0.038	-0.089	.116*	.134**
work	.274**	.181**	.179**	0.057	.098*	.145**
leisure	.101*	-0.035	.103*	0.011	-0.056	0.044
home	-0.003	-.103*	-0.068	-0.082	-.103*	-0.036
money	.153**	-0.078	0.062	-0.08	-0.057	.123**
relig	0.005	-0.064	-0.046	-0.075	-0.039	-0.034
death	0.003	-0.031	-0.016	0.017	-0.071	-0.008
informal	-0.064	-.105*	-0.016	-0.016	0.003	-0.009
swear	-0.012	-.096*	0.035	-0.031	-0.031	0.006
netspeak	-0.062	-.104*	-0.034	-0.055	-0.076	0.029
assent	-0.046	-0.012	-0.066	0.02	-0.001	-0.039

nonflu	-0.019	-0.03	0.087	0.043	0.051	0.014
filler	-0.024	-0.041	-0.026	-0.087	0.013	-0.065
AllPunc	-0.031	.114*	0.009	0.049	0.083	.100*
Period	-0.032	0.019	-.111*	0.003	-.160**	0.045
Comma	0.073	0.024	0.088	.099*	.156**	.141**
Colon	0.019	0.047	0.035	-0.035	.098*	-0.021
SemiC	-0.018	0.057	0.032	0.028	0.06	0.067
QMark	-0.025	.114*	0.029	-0.08	0.084	-0.08
Exclam	-0.004	-0.066	-0.035	-0.018	-0.047	-0.039
Dash	.187**	0.048	0.04	.108*	0.078	.132**
Quote	0.008	.118*	0.045	-0.051	0.055	-0.065
Apostro	-.117*	0.041	-0.036	-0.058	-0.057	-0.032
Parenth	.104*	.117*	-0.044	0.077	.154**	-0.049
OtherP	0.064	0.066	0.058	-0.019	0.073	0.003
** Correlation is significant at the 0.01 level (2-tailed).						
* Correlation is significant at the 0.05 level (2-tailed).						

Table H37: Correlations of LIWC Variables with AFQT for All Questions (V18.2.1)

Category	Question 1: Correlations with AFQT	Question 2: Correlations with AFQT	Question 3: Correlations with AFQT	Question 4: Correlations with AFQT	Question 5: Correlations with AFQT	Question 6: Correlations with AFQT
WC	.171**	.267**	.187**	.100*	.167**	.172**
Analytic	.136**	.219**	.112*	.221**	.101*	.186**
Clout	0.04	.093*	-0.018	0.092	-0.075	-0.038
Authentic	0.015	0.045	-0.022	-0.014	0.036	0.08
Tone	-0.062	-0.02	-0.042	-0.07	0.064	-.112*
WPS	-.094*	-0.069	-0.022	-.101*	-0.072	-0.09
Sixltr	.187**	.341**	.179**	.280**	.294**	.135**
Dic	0.004	.142**	0.05	0.035	0.033	0.09
function	-0.025	.092*	0.034	-0.042	-0.07	-0.079
pronoun	-.118*	-0.072	-.105*	-.141**	-.166**	-.133**
ppron	-.107*	-0.025	-.126**	-.133**	-.131**	-0.073
i	-.103*	-0.081	-0.069	-.113*	-0.01	-0.027
we	0.054	-0.039	-0.054	0.081	-0.034	0.007
you	-0.005	0.013	-0.001	-.092*	-.122**	-0.047
shehe	-0.048	-0.025	-.098*	-.125**	-0.085	-0.083
they	-0.008	.144**	-0.037	0.03	0.004	-0.059
ipron	-0.063	-0.092	-0.028	-0.047	-.108*	-.157**
article	0.055	.178**	.136**	.149**	0.007	0.058
prep	.115*	.180**	0.083	.124**	0.077	.142**
auxverb	-0.089	-0.014	0.021	-0.074	-0.021	-0.073
adverb	-0.017	0.086	0.003	-.116*	0.047	-0.054
conj	-0.037	0.043	0.033	-0.077	0.066	-0.02
negate	0.035	-0.051	0.028	0.013	-.137**	-0.077
verb	-.130**	-0.001	-0.05	-.147**	-0.072	-.139**
adj	0.088	.093*	0.007	.118*	0.032	0.084
compare	0.068	0.063	0.07	0.082	0.054	0.09
interrog	-.129**	0.004	-.100*	-.093*	0.085	-.126**
number	0.052	-0.06	-0.033	0.085	0.03	0.046
quant	0.053	0.022	0.008	.203**	0.062	.150**
affect	-0.023	-0.004	0.02	-0.017	0.01	-0.01
posemo	-0.054	-0.02	0.02	-0.071	0.043	-0.073
negemo	0.042	0.009	0.009	0.064	-0.089	0.088
anx	-0.046	-0.074	0	0.049	-0.089	0.048
anger	0.055	0.008	0.06	.119*	0.015	-0.045
sad	0.041	-0.069	-0.036	0.01	0	0.079
social	-0.043	0.067	-0.072	-0.026	-.131**	-.094*
family	-0.028	0.007	-0.01	-0.045	-0.073	-0.005
friend	0.026	0.06	-0.035	-0.012	-0.082	-0.077

female	-0.076	-0.05	-0.082	-0.04	-.109*	-.098*
male	-0.002	0.041	-0.076	-.127**	-0.052	-0.001
cogproc	-0.053	.191**	0.036	-0.009	0.091	-0.058
insight	-0.034	.225**	0.025	-0.036	0.089	-0.05
cause	-.114*	.106*	0.033	-0.052	.199**	-.124**
discrep	-0.055	0.056	0.031	-0.031	0.074	0.033
tentat	0.032	.184**	0.031	0.069	0.006	0.013
certain	-0.075	0.029	-0.042	0.083	-0.085	0.034
differ	0.042	.112*	0.04	-0.008	-0.024	-0.015
percept	-0.06	0.039	-0.043	-0.033	-0.036	0.013
see	-0.021	0.06	-0.013	0.006	0.069	0.049
hear	-0.008	-0.023	-0.013	0.002	-0.046	-0.028
feel	-0.045	0.002	-0.068	-0.068	-.133**	0.01
bio	0.036	-0.069	-0.025	-0.003	0.02	.103*
body	-0.007	-0.01	0.005	-0.027	0.004	-0.037
health	0.046	-0.047	-0.084	0.013	0.006	.127**
sexual	-0.064	0.01	.092*	0.011	0.011	-0.03
ingest	0.065	-.097*	0.007	0.007	0.045	0.078
drives	0.058	.122**	0.081	.155**	-0.091	0.039
affiliation	0.03	0.061	0.037	.139**	-0.032	-0.014
achieve	0.055	.173**	.111*	.119*	-0.017	0.067
power	0.025	-0.031	0.082	0.084	-0.052	0.058
reward	-0.065	-.119*	-0.018	0.014	-.230**	-0.032
risk	0.069	.115*	0.001	-0.014	-0.061	0
focuspast	-0.014	0.026	-.106*	-0.066	0.033	-0.024
focuspresent	-.106*	0.041	0.03	-0.058	-.109*	-.120*
focusfuture	-0.001	-0.045	0.083	-0.021	-0.017	0.031
relativ	0.052	0.043	0.052	0.04	0.088	.152**
motion	-0.057	.098*	0.017	-0.071	0.036	0.009
space	0.035	0.026	0.051	0.054	-0.01	0.041
time	.094*	-0.019	0.044	0.027	.100*	.203**
work	0.091	.123**	0.075	.158**	0.087	.152**
leisure	-0.026	-0.033	.093*	0.021	-0.001	-0.003
home	0.059	-0.054	-0.021	0.054	-0.046	-0.001
money	0.007	-0.037	-0.009	0.017	-0.015	0.009
relig	0.026	-0.014	-0.027	-0.012	0.021	-0.014
death	0.024	-0.03	-0.036	0.046	-0.009	0.073
informal	-.121**	0.022	-0.025	-0.092	-0.058	0.043
swear	-0.032	0.015	0.052	0.009	0.027	0.032
netspeak	-0.086	-.109*	-0.043	-0.042	-.127**	-0.008
assent	-.094*	-0.037	-0.045	-.097*	-0.033	-0.032
nonflu	-0.057	.125**	0.006	0.009	-0.018	0.066
filler	0.002	-0.071	0.011	-.094*	0.076	-0.011

AllPunc	-0.086	-0.085	-0.086	-0.05	.157**	-0.086
Period	-0.086	-0.086	-0.087	-0.086	-0.076	-0.086
Comma	.183**	.161**	.151**	.197**	.192**	-0.086
Colon	-0.045	0.034	0.019	0.073	0.049	0.041
SemiC	0.072	0.05	0.043	.097*	.100*	.098*
QMark	0.049	0.054	0.015	0.008	0.068	-0.026
Exclam	-.100*	-0.009	-0.019	-0.048	-0.049	-0.035
Dash	.129**	0.047	0.051	0.006	0.055	.147**
Quote	0.034	0.089	-0.058	-0.006	0.036	-0.006
Apostro	0.047	.097*	0.052	0.064	0.023	0.057
Parenth	0.031	0.067	-0.005	0.058	0.084	0.076
OtherP	-0.031	-0.045	-0.027	0.006	.139**	0
** Correlation is significant at the 0.01 level (2-tailed).						
* Correlation is significant at the 0.05 level (2-tailed).						

Table H38: Rs of LIWC Variables for All Questions (V18.2.1)

	N	Interview Ratings R	AFQT R
Question 1	453	.700	.538
Question 2	451	.664	.637
Question 3	455	.756	.513
Question 4	456	.624	.555
Question 5	460	.718	.595
Question 6	460	.609	.570
<i>Note.</i> Number of LIWC variables = 93.			

Table H39: Correlations of Subsample 1 Modeler Variables (V18.2.1) with All TAPAS Facets for Question 2 in Subsample 1

The SPSS Model used for this analysis used the $r = .05$ cutoff for variable selection.

Categories by Size	Achievement	Adjustment	Cooperation	Dominance	Even Tempered	Attention Seeking	Selflessness	Intellectual Efficiency	Non-Delinquency	Order	Physical Condition	Self-Control	Sociability	Tolerance	Optimism
Count	-0.043	-.208**	0.057	-0.011	-0.088	-0.057	0.021	.150*	0.03	0.044	-0.035	0.074	-0.087	0.051	0.024
feed/feedback	0.018	-0.04	0.028	0.022	-0.003	-0.134	0.133	0.042	-0.056	0.037	0.02	-0.086	-0.014	-0.037	-0.059
input	0.055	0.045	0.077	0.097	0.116	0.079	0.106	0.104	.158*	-0.055	0.039	0.117	0.098	0.133	.162*
communication	-0.122	-0.095	0.118	0.037	0.047	0.107	-0.052	0.137	-0.014	.163*	-0.029	0.038	-0.003	0.03	0.065
action	-0.046	0.018	-0.054	-0.028	0.017	0.067	-0.056	0.081	-0.065	-.220**	0.077	-0.114	0.045	-0.105	-0.041
recipient	-0.093	-.191**	-0.021	-0.061	-0.041	-0.116	-0.064	-0.001	0.026	0.076	-0.085	0.063	-0.048	0.052	0.02
mind	0.025	0.005	0.035	-0.103	-0.014	0.006	0.012	0.035	-0.12	0.008	-0.029	-0.043	-0.117	-0.003	-0.011
perspective	0.047	0.011	0.08	0.003	.148*	0.113	-0.023	0.038	-0.086	-0.111	0.001	0.1	0.091	0.072	0.019
academics/research	-0.035	-0.121	0.008	-0.039	0.008	-0.051	0	0.077	0.138	0.016	-0.032	0.048	-0.079	-0.025	-0.007
idea	-0.055	0.026	-0.024	-0.023	-0.046	-0.072	-0.012	0.117	0.022	-0.04	-0.031	-0.068	-0.116	-.190**	-0.072
work	0.036	-0.068	0.041	0.043	0.059	-0.005	0.044	0.053	0.098	-0.1	-0.023	.188*	-0.014	-0.021	0.049
information	0.003	0.03	-0.065	0.073	0.029	0.041	-0.121	0.069	-0.105	-0.027	-0.056	-0.027	0.084	0.042	0.035
economics	-0.013	-0.022	-0.076	-0.08	-0.087	-0.051	0.06	0.024	-0.038	0.11	0.093	-0.107	-0.064	0.049	0.005
understanding	-0.069	0.023	-0.077	-.164*	-0.043	-0.003	-0.052	0.038	-0.06	0.004	-0.117	-0.068	0.026	0.096	0.021
report	-0.037	-0.079	-0.009	0.054	0.053	-0.016	-0.12	-0.002	-0.015	0.003	-0.025	-0.006	-0.026	-0.034	0.057
eyes	0.095	.192**	0.035	0.124	0.07	0.003	0.104	0.102	0.107	0.036	0.092	-0.13	0.053	0.088	0.103
mental processes/learning	0.128	-0.134	0.009	0.017	-.163*	-0.053	.161*	0.063	0.037	0.064	0.121	-0.006	-0.017	-0.038	-0.058
recipient	0.037	-0.027	0.112	-0.086	0.058	0.075	.169*	0.002	0.108	0.14	-0.005	-0.033	-0.051	0.089	0.115
home	-0.017	0.002	-0.032	0.036	-0.004	-0.054	-0.091	0.034	-0.028	-0.051	0.027	-0.033	-0.021	0.043	-0.002

chance	-0.098	0.01	0.043	-0.03	0.028	0.064	-0.138	-0.016	-0.021	0.088	-0.007	-0.057	-0.019	-0.004	-0.002
solution	-0.02	0.013	-0.053	-0.087	0.006	0.046	0.052	0.129	0.136	0.026	-0.125	-0.071	-0.124	-0.052	0.031
comments	.153*	0.134	0.059	0.011	0.009	0.093	0.066	-0.024	0.07	0.051	0.074	0.099	0.067	-0.019	-0.031
look	-0.035	-0.044	-0.136	-0.034	-.165*	-0.04	-0.065	0.015	0.056	-0.053	-0.057	0.04	-0.036	0.031	0.088
answer	-0.031	0.011	0.143	0.04	0.059	0.013	-0.11	0.036	-0.039	-0.031	-0.028	0.049	0.016	-0.055	-0.045
project	-0.037	.284**	-0.078	0.027	0.022	0.033	0.013	0.073	-.173*	0	0.02	-0.075	-0.002	-0.013	-0.026
course/course of action	-0.081	-.179*	0.138	-0.044	0.019	0.064	0.042	0.031	0.116	.190**	-0.007	.192**	-0.088	0.06	0.046
task	-0.04	0.093	-0.01	-0.042	0.03	0.039	-0.008	-0.11	-0.071	0.072	0.092	0.108	-0.032	0.139	0.021
response	0.07	0.021	0.003	0.027	-0.144	-0.046	0.093	0.054	0.079	0.036	-0.044	0.047	.154*	0.088	0.034
effort	-0.035	0.002	0.125	-0.009	0.098	0.124	-0.016	0.082	0.068	0.107	-0.049	.207**	0.009	-0.021	-0.113
explanation	-0.028	-0.046	-0.095	-0.024	0.106	-0.118	-0.002	0.034	-.154*	0.059	0.009	-0.015	-0.079	-0.019	-0.094
questions	-0.025	0.006	-0.105	0.001	-.197**	-0.04	-0.139	0.047	-0.017	0.052	-0.086	-0.037	0.046	-0.083	-0.038
check	-0.079	0.025	0.066	-0.066	0.019	0.009	-0.046	0.016	0.038	-0.062	-0.114	-0.074	-0.002	-0.093	-0.017
key	-0.004	-0.109	.158*	-0.028	0.046	0.087	0.041	0.045	-0.017	0.099	-0.025	0.071	0.044	0.017	0.003
redone	-.145*	0.036	-0.038	-0.075	0.102	0.035	-0.008	0.069	-0.084	-0.016	0.043	-0.008	-0.021	-0.066	0.017
resolution	0.08	-0.092	0.131	-0.022	0.04	0.025	.232**	0.014	0.103	0.093	-0.049	0.138	0.063	-0.015	.153*
problem	0.067	0.048	-0.144	-0.049	0.037	-0.032	0.125	0.06	-0.085	0.102	-0.037	-0.117	-0.049	-0.052	-0.056
resources	0.049	0.029	0.124	0.021	0.035	-0.089	.182*	0.052	-0.044	0.087	0.053	.182*	-0.038	0.083	-0.033
areas	0.041	0.012	-0.119	0.043	-0.02	-0.006	0.008	0.13	0.097	0.025	0.044	-0.03	-0.043	0.059	0.05
solution/new solution	-0.062	0.012	-0.054	-0.08	0.048	-0.006	-0.021	0.046	-0.012	0.037	0.023	-.161*	-0.142	0.1	-0.073
attempt	-0.111	-0.03	-0.039	0.01	-0.122	-0.035	-0.02	.149*	-0.031	-0.059	-0.035	0.102	0.014	-0.041	-0.001
hit	0.01	-0.071	0.08	0.017	-0.076	-0.107	-0.017	-0.057	-0.124	-0.019	0.035	-0.015	-0.061	0.055	-0.12
requirements	-0.024	-0.077	-0.074	-0.082	-0.051	-0.116	-0.113	-0.002	-0.072	0.066	0.014	-0.098	-0.106	-0.099	0.004
review	0.011	0.015	-0.041	0.011	0.113	-0.05	0.013	0.044	-0.006	0.034	-0.042	-0.072	-0.057	-0.099	0.086
going	0.103	0.054	0.004	0.011	-0.129	0.018	0.08	-0.034	-0.06	-0.024	0.064	-0.015	0.037	0.021	.149*
opinion	0.008	0.025	0.053	0.05	-0.007	-0.032	-0.02	0.073	0.1	-.172*	-0.039	0.055	0.072	-0.049	0.045

talk	0.124	0.062	-0.04	0.112	0.03	-0.036	0.045	0.075	0.061	0.036	0.029	0.012	-0.024	0.001	0.046
individual	-0.073	-0.091	0.007	-0.088	0.089	-0.044	0.117	0.09	.185*	0.094	0.017	0.024	-0.083	0.065	0.124
finish	-0.075	-0.007	0.072	-0.134	0.003	-0.055	0.059	-0.066	0.043	0.048	0.008	0.067	0.124	0.094	0.012
house rooms	-0.05	-0.07	-0.065	-0.104	-.158*	-0.08	0.014	-0.136	-0.001	-0.05	-0.031	-0.058	0.056	0.114	0.001
projectile	-0.049	-0.041	-0.013	-0.014	-0.066	0.103	-0.038	0.08	0.051	-0.068	0	0.058	0.088	0.018	0.124
job	-0.055	-0.03	-0.031	-0.047	0.014	0.095	0.123	-0.016	-0.055	-0.103	0.023	0.014	0.074	0.139	-0.022
complexity	-0.015	-0.088	0.01	-0.054	-0.091	-0.082	0.135	0.076	0.036	0.068	-0.021	0.025	-0.035	0.059	-0.1
family	-0.048	-0.021	0.058	-0.082	0.021	0.033	-0.026	0.029	0.015	0.044	-0.04	0.046	0.052	-0.012	-0.029
options	-0.064	-0.124	0.081	-0.039	0.009	-0.066	0.018	0.063	0.022	.165*	-0.043	0.108	-0.111	0.14	0.045
suggestions	0.111	.153*	0.057	-0.007	0.121	0.075	0.025	.241**	0.058	0.05	-0.13	0.085	0.096	-0.058	0.054
start	-0.028	-0.025	-0.051	-0.033	0.031	-0.072	-0.092	0.065	0.068	0.005	-0.05	-0.091	-0.023	-0.144	0.043
person	-0.131	-0.02	-0.029	-0.061	-0.074	0.099	0.134	0.013	-0.083	-0.086	0.094	-.224**	0.014	-0.014	0.064
help	-0.008	0.119	0.059	0.076	0.128	0.005	0.086	-0.103	0.072	-0.009	-0.031	-0.062	-0.111	-0.051	0.008
occupation/ white collar workers	0.099	0.055	-0.116	0.022	-0.144	-0.027	-0.104	0.122	-.153*	0.014	0.028	-0.122	-0.087	0.003	-0.044
course	0.088	-.155*	0.026	0.076	-.166*	-0.056	0.026	-0.055	-0.056	-0.056	-0.014	-0.046	-0.052	0.045	-.172*
reason	0.046	-0.033	-0.078	-0.085	-0.034	0.046	0.034	-0.019	-.161*	0.01	-0.012	-0.024	-0.031	0.07	-0.026
consideration	-0.01	0.014	-0.032	0.128	0.137	-0.015	-0.051	0.083	-0.043	0.034	0.083	-0.044	0.01	-0.01	.166*
feed	-0.099	0.115	0.109	-0.035	0.071	0.051	0.031	0.023	0.01	-0.084	.149*	0.113	0.051	0.031	0.119
scratch	0.048	0.026	-.169*	0.06	0.057	-0.094	0.082	0.049	0.105	-0.054	0.003	-0.14	-0.079	-0.08	-0.075
geology	-0.081	-0.082	-0.057	-0.075	0.008	-0.044	-0.041	-0.038	0.056	0.072	-0.054	-0.07	-0.107	0.015	-0.066
quality	-0.037	-0.117	-0.089	0.082	-0.075	0.057	-0.051	0.136	-0.057	-0.062	0.023	-0.062	-0.022	0.045	0.009
outcome	-0.001	-.152*	0.05	-0.032	-.161*	0.005	-0.031	-0.033	0.067	-0.025	0.047	0.099	0.028	0.036	0.14
issues	-0.02	-.254**	-0.041	-0.088	-0.035	-0.109	-0.008	0.006	-0.005	0.106	-0.145	0.125	-0.024	.169*	-0.045
steps	0.05	-.233**	0.048	0	-.177*	0.014	0.028	0.024	-0.041	0.015	0.073	0.032	-0.009	0.023	0.025
know how	0.019	-0.022	0.008	-0.005	-0.08	0.111	-0.033	0.042	-0.017	-0.109	0.123	-0.138	0.018	-0.077	-0.064

life	-0.065	-0.022	0.054	0.003	0.016	-0.071	0.019	0.004	0.026	0.045	-0.033	0.111	0.046	-0.027	-0.033
occupation	-0.035	0.046	-0.024	0.047	-0.067	-0.075	0.028	0.033	-0.089	0.077	-0.027	-0.01	-.146*	-0.021	-0.024
ability	.158*	0.07	0.136	0.016	0.094	0.088	0.045	-0.05	0.049	- 0.069	0.015	.235**	-0.014	0.117	0.033
complex	0.106	-0.074	.161*	0.079	-0.072	-0.039	0.025	0.111	-0.064	- .164*	0.025	0.088	0.087	0.137	0.027
<i>N</i> = 184															
** Correlation is significant at the 0.01 level (2-tailed).															
* Correlation is significant at the 0.05 level (2-tailed).															

Table H40: Correlations of Subsample 1 Modeler Variables (V18.2.1) with All TAPAS Facets for Question 4 in Subsample 1

The SPSS Model used for this analysis used the $r = .05$ cutoff for variable selection.

Categories by Size	Achieve-ment	Adjust-ment	Coopera-tion	Domi-nance	Even Temp-ered	Attenti-on Seeking	Selfless-ness	Intellec-tual Efficien-cy	Non-Delinquen-cy	Order	Physical Condi-tion	Self-Control	Sociabili-ty	Tolerance	Opti-mism
project	-0.087	0.013	0.079	-0.085	0.066	0.044	0.021	-0.07	0.072	0.027	-0.064	0.057	-0.037	-0.005	0.144
physics/perspective	-0.038	-0.099	0.02	-0.066	0.091	-0.099	0.027	-0.021	0.059	-0.022	0.022	0.123	-0.012	0.034	-0.069
human resources/careers/skills	0.051	0.081	-0.023	-0.002	-0.015	-0.122	-0.021	0.096	-0.098	-0.012	-0.124	-0.021	0.009	0.074	-0.001
compromise	0.009	-0.036	.228**	-0.057	0.111	0.027	0.085	.178*	0.079	0.004	-0.002	0.014	-0.037	0.084	0.106
solution	0.053	0.141	0.016	-0.102	0.054	-0.025	0.035	0.062	-0.009	-0.041	0.008	-0.029	0.03	-0.011	0.097
partner	-0.074	-0.04	0.021	-0.058	0.046	0.026	-0.019	0.018	0.085	0.046	-0.029	-0.047	-0.054	-0.022	-0.011
respect	-0.002	0.053	0.015	-0.021	0.051	0.103	-0.05	-0.022	-0.042	0.044	0.071	0.13	0.056	0.03	-0.006
party	-0.037	-0.076	0.007	0.068	-0.045	0.138	0.079	0.048	-0.006	-0.096	-.176*	-0.037	0.003	-0.024	0.015
project/group project	-0.097	0.054	0.004	-0.061	0.111	0.056	-0.003	-0.047	-0.03	0.017	0.044	0.064	0.05	0.081	0.139
suggestions	0.024	-0.048	-0.092	0.014	-0.085	0.062	-0.033	0.127	-0.016	0.023	-0.092	0.015	0.027	-0.043	0.004
age	-0.055	0.083	0.11	-0.001	0.007	-0.042	0.021	-0.037	0.007	-0.085	0.041	0.006	-0.024	-0.016	0.004
call	0.092	-0.031	.163*	0.077	0.063	-0.063	0.001	-.163*	-0.035	0.123	0.009	.174*	-0.073	0.045	0.011
customer	0.02	-0.036	0.002	0.108	-0.031	-.162*	0.048	-0.082	-0.024	0.04	0.059	0.02	-0.055	0.1	-0.041
group	0.078	0.033	0.026	0.011	0.027	0.022	0.086	0.068	-0.107	-0.039	-0.005	-0.038	-0.036	-0.001	.151*
reports	0.086	0.046	0.026	0.048	-0.021	0.039	0.086	-0.025	-0.096	0.062	-0.046	0.042	0.012	0.074	0.102
argument	-0.102	-0.048	0.144	-0.037	0.017	-0.003	-0.108	-0.026	-0.048	0.016	0.109	-0.008	-0.14	0.041	0.059
ideas	-0.022	-0.109	-0.107	-.167*	0.039	-0.069	0.035	0.02	0.038	0.027	-0.065	0.007	-0.027	-0.058	-0.062
family/family structure/parents	0.055	0.054	0.028	0.052	-0.028	0.057	-0.116	0.058	-0.023	-0.075	-0.019	-0.014	0.095	0.038	0.119
business management/value	-0.012	0.002	0.068	-0.038	0.1	0.081	-0.087	0.068	0.036	0.072	0.053	-0.001	-0.029	0.078	0.061
horse	0.023	-0.025	0.117	-0.022	0.015	0.111	-0.065	0.007	0.02	-0.021	0.039	-0.067	-0.018	0.032	0.031
house furnishings/implement	-0.031	0.001	0.019	-0.045	0.121	-0.027	0.13	-0.029	-0.02	0.068	.154*	0.022	0.025	0.099	-0.045
stay	0.059	-0.08	0.033	-0.054	-0.086	-0.008	-0.046	-0.012	-0.057	-0.058	-0.136	0.046	0.015	.216**	-0.014
fact	0.053	-0.104	0.055	0.059	0.015	-0.048	0.049	0.062	0.098	0.02	0.117	-0.133	0.042	0.071	0.025

schedule	-0.057	-0.007	0	0.039	0.103	0.068	-0.052	0.033	-0.017	-0.032	0.04	0.006	0.126	0.107	0.076
goal	0.071	0.128	0.079	.176*	-0.017	0.061	0.086	.173*	0.011	-0.06	0.059	0.006	-0.042	-0.09	0.028
agreement	-0.019	-0.13	0	0.055	0.026	0.024	-0.013	-0.118	-0.04	-0.074	-0.123	0.014	-0.054	0	-0.095
design	-0.061	0.099	-0.065	-0.068	0.068	-0.029	0.098	.149*	0.044	0.067	0.01	-0.076	0.024	-0.049	-0.068
class	0.045	-0.084	0.081	-0.011	0.017	-0.072	0.027	-0.031	0.084	0.064	-0.027	0.121	0.028	-0.08	.160*
half	0.062	-0.041	-0.018	-0.093	-0.027	-0.128	0.03	0.051	0.081	0	-0.025	-0.024	0.092	-0.112	-0.14
area	0.108	0.068	-0.024	.159*	0.103	0.034	-0.04	-0.092	0.014	-0.048	-0.044	0.129	0.018	0.079	0.004
family/family structure/children/bro ther and sister/brother	-0.048	.161*	0.016	0.069	0.094	0.062	-0.018	0.045	0.113	-0.026	-0.002	0.091	0.007	0.033	0.141
moving	0.048	-0.076	-0.037	-0.094	-0.081	0.009	.149*	0.101	0.016	0.088	-0.01	-0.015	-0.06	-0.058	-0.059
school/k-12/high school	-.162*	-0.069	-0.114	-0.049	-0.011	0.017	-0.132	-0.13	-0.086	-0.109	0.012	-0.126	-0.043	-0.074	0.009
clothes/shirt/flight shirt/flight t-shirt	0.048	-0.001	.168*	-0.025	0.139	0.016	0.109	0.081	.190**	0.047	-0.049	0.055	.158*	0.09	0.012
class/classmates	-0.059	-0.047	0.11	-0.041	0.027	-0.003	-0.031	-0.127	-0.081	-0.047	-0.016	0.04	-0.094	-0.028	0.017
sport	-0.001	0.033	0.016	0.129	0.024	0.051	-0.006	-0.021	0.059	-0.051	0.018	0.094	-0.085	-0.1	-0.01
order	0.066	-0.09	-0.011	-0.027	0.025	0.069	-0.02	0.04	0.061	0.034	-0.019	-0.003	-0.049	.215**	-0.054
starting	0.059	0.109	-0.002	-0.057	-0.034	0.037	-0.003	-0.011	-0.099	-0.078	0.006	-0.042	0.089	0.078	0.021
attention	0.142	-0.01	0.022	0.087	-0.03	0.008	0.016	-0.005	0.009	0.064	-0.07	0.093	0.02	-0.036	-0.123
company	-0.079	0.066	-0.06	-0.06	-0.001	0.027	0.068	0.003	0.006	0.069	-0.044	-0.018	0.032	-0.072	0.007
economics/costs	-0.012	-0.084	-0.068	-0.094	-0.017	-0.117	-0.081	-0.071	-0.09	-0.027	-0.051	-0.117	-0.099	-.180*	-0.049
explanation	-0.021	-0.039	-0.062	0.037	-0.028	0.022	-0.104	-0.041	-0.086	0.043	-0.077	-0.049	0.049	0.053	-0.022
finish	-0.048	.165*	-0.024	0.047	-0.021	0.021	-0.067	-0.045	0.003	-0.012	0.07	-0.011	-0.007	-0.077	0.003
occupation/white collar workers	0.002	0.026	-0.005	0.06	0.038	0.09	-0.014	0.07	0.033	0.01	-0.02	0.006	0.021	0.096	-0.087
potential	0.008	-0.021	-0.082	-0.02	-0.027	-0.056	-0.057	0.017	-.174*	-0.11	-0.042	-0.107	-0.086	-0.098	-0.095
saw	0.081	0.142	0.037	0.086	-0.031	0.012	0.089	-0.04	0.121	0.008	0.121	0.055	0.068	-0.014	0.03
outcome	0.057	-0.016	-0.008	0.008	-.187*	0.01	-0.02	0.052	-0.004	0.062	0.004	0.039	-0.017	0.041	0.067
one time	-0.046	0.059	0.121	0.012	0.02	-0.011	-0.059	-0.06	.157*	-0.013	0.123	-0.003	0.03	-.164*	0.05
day	0.055	0.124	0.057	0	0.063	0.061	0.036	0.011	-0.023	0.02	0	-0.074	0.002	-0.025	0.039
home	-0.037	-0.055	.198**	.179*	-0.053	0.135	-0.087	-0.079	-0.019	-0.046	-0.026	0.015	0.143	0.107	0.095
Count	.193**	0.042	0.105	0.097	0.097	-0.003	0.067	0.103	0.041	0.003	-0.063	0.062	0.059	.153*	.145*

build	0.044	0.123	0.041	-0.019	-0.017	0.094	-0.021	-0.099	-0.047	0	.171*	0.041	0.032	0.058	-0.027
oppurtunity	0.014	-0.08	0.059	-0.011	-0.024	-0.044	0.014	-0.06	.155*	-0.099	-0.048	0.01	.166*	0.086	-0.091
understanding	-0.066	-0.027	0.003	-0.04	-0.017	0.002	.146*	-0.069	-0.002	0.131	-0.088	0.026	-0.02	.190**	-0.041
finance/money	0.121	-0.035	0.011	0.029	-0.027	0.043	-0.009	-0.093	-0.071	-0.066	0.014	-0.049	0.008	-0.053	-0.03
friend	-0.092	0.051	-0.087	-.153*	-0.022	-0.031	-0.039	-0.043	0.008	-0.047	0.02	-0.082	-0.059	-0.067	0.122
point	0.023	0.015	0.063	0.116	0.046	-0.026	-0.059	0.12	-0.056	-0.018	0.046	-0.034	-0.027	0.02	0.068
disagreement	-0.103	-0.119	-0.038	-0.052	0.03	-0.033	-.156*	0.138	-0.035	-0.045	0.072	-0.021	-0.058	-0.051	0.054
paper	0.096	0.061	-0.058	-0.114	0.063	-0.028	0.01	-0.061	-0.134	-0.039	-0.077	0.02	-0.034	0.105	0.022
week	0.001	0.057	0.048	-0.094	0.012	-0.04	-0.016	-0.045	0.059	-0.074	0.107	0.008	-0.06	-0.09	-0.064
clothes/shirt	0.012	-0.047	0.045	-0.053	0.063	-0.056	0.132	0.064	0.073	0.121	0.015	0.03	0.135	0.109	-0.004
measuring instrument/rule	-0.034	0.012	-0.083	0.039	-0.016	0.131	-0.08	-0.059	-0.031	0.037	-0.092	-0.012	0.105	0.118	-0.058
student room/dorm	0.111	0.108	-0.003	0.078	0.059	0.083	-0.03	0.083	-0.07	0.031	-0.035	0.041	-0.084	0.118	-0.095
thoughts	-0.008	-0.02	0.144	-.168*	0.049	0.004	0.004	-0.069	0.026	-0.034	0.016	.152*	-0.089	0.055	-0.136
input	0	-0.015	-0.045	0.062	0	0.108	0.064	0.105	0.051	0.139	-0.007	0.039	0.045	0.05	0.06
change	-0.049	0.011	-0.098	-0.039	0.142	0.007	-0.074	0.133	-0.118	-0.035	-0.037	-0.115	-0.07	-0.039	0
home/house	-0.062	-0.04	-0.049	-0.005	-0.108	0.015	-0.076	0.023	-0.025	-0.056	0.047	-0.135	0.023	-0.062	-0.07
decision	-0.07	-0.006	0.097	0.032	0.103	0.07	0.145	0.015	-0.02	0.075	-0.128	0.112	.150*	-0.01	0.06
reason	0.028	-0.006	0.05	-0.069	-0.06	-0.053	0.069	-0.094	0.057	-0.01	0.058	0.057	0.014	0.024	0.055
fair	0.05	0.033	0.114	0.141	0.126	0.032	0.067	0.067	0.104	0.03	-0.016	0.053	-0.003	0.121	0.019
music/music genres/rock	-0.054	-0.045	-0.072	0.051	-.168*	0.037	-0.128	-0.074	-0.13	-0.123	-0.006	-0.091	0.109	-0.008	0.015
differences	0.003	0.008	0.004	-0.021	0.039	0.122	-0.057	0.084	-0.109	-0.088	0.002	-0.108	-0.009	0.061	-0.009
family/family structure/parents/mo m	0.041	-0.127	0.127	0.087	0.032	0.1	0.02	0.049	0.065	0.028	-0.087	0.062	0.123	.237**	0.101
cons	0.016	0.001	-0.048	-0.126	0.019	0.004	-0.02	0.096	0.081	-0.046	-0.056	0.035	0.049	0.076	0.018
display	-0.007	-0.089	-0.029	-0.116	-0.017	-0.107	-0.099	-0.05	-0.028	0.075	0.01	0.034	-0.046	0.069	0.03
engineering design/materials	0.008	0.014	0.043	-0.016	0.05	-0.017	-0.123	0.028	0.037	0.021	-.149*	0.105	-0.022	0.003	-0.112
pros	0.016	0.001	-0.048	-0.126	0.019	0.004	-0.02	0.096	0.081	-0.046	-0.056	0.035	0.049	0.076	0.018
standard	0.038	-0.064	-0.091	0.14	-0.094	-0.028	-0.042	0.068	0.018	-0.1	-.151*	-0.1	-0.005	-.157*	-0.09
friendship/girlfriend	0.081	0.082	0.035	-0.014	0.042	-0.009	0.027	0.006	0.048	0.075	0.018	-0.008	0.061	0.004	-0.129

increase	-0.046	-0.044	-0.062	-0.003	-0.047	-0.063	0.064	-0.026	-0.013	-0.124	0.068	0.041	0.111	0.042	0.03
line	-0.133	0.059	-0.141	0.03	0.027	-0.08	-0.051	.158*	0.027	0	0.019	-0.046	-0.056	0.056	0.115
job	0.059	-0.078	-0.093	0.018	-0.145	0.001	-0.065	-0.144	-0.071	-0.035	0.037	-0.053	0.083	-0.054	-0.073
training	0.098	0.019	-0.029	-0.099	0.065	-0.085	0.017	-0.023	0.007	0.055	-0.043	0.061	0.019	0.044	-0.102
anatomy/body regions/heads	-0.081	0.09	0.105	0.103	.185*	0.031	-0.075	-0.01	0.012	-0.1	-0.057	0.094	0.025	0.03	.147*
handle	0.014	-0.009	0.041	0.032	-0.064	0.026	0.05	-0.043	-0.048	0.04	0.058	-0.025	-0.045	-0.012	-.163*
anatomy/body regions/extremities/ar m/hand	0.02	.188*	0.009	0.096	.147*	.151*	-0.054	0.101	-0.066	-.152*	-0.032	-0.07	0.052	-0.039	0.013
finance	0.037	-0.053	-0.055	-0.021	0.043	0.102	0.111	-0.047	-0.06	0.045	-0.033	0.05	0.039	0.07	-0.038
position	0.086	0.115	0.033	0.078	-0.069	0.061	0.098	-0.029	0.024	-0.105	0.013	0.063	.159*	0	0
abortion	-0.009	-0.085	0.066	0.081	0.028	0.003	-0.064	0.069	0.041	0.103	0.043	0.139	-0.042	0.047	0.07
effort	-0.035	-0.035	0.134	-0.045	0.12	-0.001	-0.043	0.106	0.017	0.015	-0.022	0.019	0.068	0.057	-0.01
working	-0.065	-0.053	0.013	-0.02	0.128	-0.034	-0.089	-0.052	0.113	0.014	0.007	0.008	0.027	-0.049	0
coworker	0.033	-0.13	-0.058	0.088	0.008	-0.035	-0.033	-.176*	0.083	0.072	-0.029	0.094	0.05	-0.011	-0.037
school	0.064	-0.016	0.068	-0.037	-0.098	-0.072	.160*	0.034	0.069	0.009	-0.111	-0.022	0.071	-0.002	0.126
academics/students	.242**	0.089	0.066	0.034	0.026	-0.074	.156*	0.119	0.095	0.051	0.022	0.03	0.016	0.034	0.066
edge tool	-0.062	-0.006	0.034	-0.08	0.042	-0.004	-0.014	0.097	0.079	0.047	0.015	-0.048	-0.012	-0.045	0.092
vehicles/car	-0.06	0.033	0.007	-0.049	0.045	-0.076	-0.125	-0.136	-0.003	0.031	-0.056	-0.004	-0.042	-0.002	0.023
family	0.086	0.106	0.072	0.139	.178*	0.017	0.044	0.096	.159*	0.073	-0.024	0.117	0.012	-0.01	0.116
start	0.087	.149*	-0.06	.149*	0.027	-0.118	-0.104	.151*	-.152*	-0.056	0.035	-0.089	0.001	0.034	0.02
work	0.039	0.052	0.072	-0.069	0.088	-0.048	0.005	0.006	0.081	-0.068	-0.136	0.084	0.005	-0.03	0.022
family/family structure/parents/mot her	-0.009	-0.038	0.088	0.032	0.056	0.054	0.039	0.019	0.049	-0.002	-0.064	0.108	-0.015	0.102	.152*
prosecution of law	-0.008	0.013	-0.074	-0.011	-0.068	0.1	0.084	0.009	0.078	0.003	-0.074	-0.141	-0.049	-0.059	-0.087
answer	-0.027	0.035	-0.014	0.065	0.066	0.01	0.068	0.128	0.06	-0.054	0.063	0.017	0.049	0.006	0.133
chance	0.078	0.044	0.014	0.114	0.045	0.069	0.068	0.073	0.073	0.104	-0.006	0.078	-0.014	-0.055	0.041
guy	0.035	0.045	0.108	-0.022	0.018	-0.022	-0.011	-0.016	-0.049	-0.027	-0.023	0.109	-0.046	0.014	-0.016
human resources/careers/hiri ng	0.089	-0.02	0.119	-0.004	-0.016	-0.112	-0.023	-.159*	0.099	-0.052	0.037	0.026	-0.026	-0.03	-0.064
pay	-0.027	0.019	0.016	0.102	0.049	0.028	0.006	0.039	0.056	.160*	-0.118	0.081	0.023	0.038	-0.108

reasoning	-0.04	-0.012	-0.096	-0.122	-0.018	-0.132	-0.043	0.023	-0.046	0.057	-0.05	-0.047	-.151*	0.079	-0.064
shifts	-0.03	-0.026	.236**	-0.056	.173*	0.024	0.07	-0.04	0.133	0.058	-0.022	0.133	-0.04	0.107	0.026
step	0.034	-0.052	-0.126	0.106	0.058	0.021	0.033	0.014	-0.004	-0.051	-0.092	-0.124	0.01	-0.108	-0.014
worry	0.028	0.016	.161*	-0.054	0.127	-0.001	0.054	0.015	0.141	0.035	0.032	0.011	0.045	0.049	.154*
side	0.107	.236**	-0.106	0.096	0.036	-0.067	0.007	0.126	0.04	0.02	0.051	0.006	0.007	-0.001	-0.053
game	0.011	0.088	0.048	0.095	0.023	0.064	-0.095	-0.053	-0.036	-0.045	-0.083	0.05	.222**	0.047	-0.021
question	0.025	0.039	-0.024	0.104	0.016	0.06	0.053	0.019	0.003	-0.035	-0.037	-0.04	0.068	0.001	0.135
show	-0.089	0.07	-0.05	0.11	0.071	0.018	0.126	-0.006	0.027	-0.055	-0.02	0.01	-0.036	-0.007	0.05
amount	0.023	0.092	-0.068	0.087	0.03	0.083	-0.044	-.177*	-0.056	-0.023	0.032	-0.019	0.123	0.144	-0.081
geographical location/america/unit ed states/us states	0.014	0.08	-0.092	-0.064	-0.063	-0.11	0.055	-.155*	-0.001	0.008	-0.077	0.032	-0.082	-0.003	0.083
sense	0.031	0.005	0.027	0.053	-0.03	0.003	0.025	0.047	-0.046	0.086	0.063	-0.021	-0.004	0.048	0.059
situation	0.064	-0.064	0.074	-0.03	-0.066	-0.074	0.115	0.034	-0.074	0.039	-0.018	0.074	-0.06	-0.026	0.074
opinions	0.091	-0.029	-0.057	0.019	-0.041	0.043	0.046	0.092	0.045	0.116	0.035	-0.046	0.067	0.079	0.026
task	0.054	.166*	-0.085	-0.011	0.049	0.005	0.098	0.045	-0.102	.166*	0.042	-0.027	0.006	0.043	0.078
friendship	0.015	-0.031	-0.085	0.004	-0.016	0.013	-0.044	0.034	-0.037	0.108	-0.01	0.031	0.098	0.112	-0.034
politics	0.133	0.039	0.088	0.056	-0.075	0.024	0.099	0.095	0.028	0.01	.175*	-0.114	-0.029	-0.025	0.086
person	-0.04	-0.139	0.005	-0.025	-.175*	-0.093	-0.042	-0.012	-0.116	-0.045	0.003	-0.065	-0.051	-0.032	-0.099
drinks	0.009	0.001	-0.03	-0.091	-0.026	-.163*	0.007	-0.011	-0.052	0.097	-0.035	-0.058	-0.118	-0.022	0.09
god	0.125	-0.035	-0.048	0.024	0.046	0.006	0.118	-0.009	0.095	0.052	-0.118	.164*	0.012	.152*	0.085
play	.152*	0.085	0.085	0.048	0.085	0.078	0.077	-0.025	0.075	-0.055	-0.098	0.125	0.062	0.041	0.063
switch	-0.071	-0.033	0.039	0.027	-0.002	-0.026	0.008	0.047	0.03	-0.078	-0.05	0.022	-0.03	0.018	0.077
flight	0.097	0.017	0.031	0.097	0.019	0.091	.149*	0.073	-0.021	0.126	0.047	-0.049	0.03	0.039	-0.009
one day	-0.044	-0.093	0.118	-0.075	0.116	0.004	-0.055	0.029	0.115	-0.073	0.018	-0.085	0.025	0.066	0.062
baby	-0.011	-0.063	0.028	0.087	0.037	0.033	-0.003	-0.004	0.025	0.096	-0.036	.164*	-0.03	0.016	0.035
characters	0.087	0.071	0.096	0.043	-0.03	0.047	-0.031	0.027	0.083	-0.054	0.044	.218**	-0.007	0.036	-0.002
class/classmates/fello w classmates	-0.113	0.02	-0.005	-0.079	0.059	-0.085	-0.059	0.071	-0.093	0.045	-0.013	-0.085	-0.025	-0.058	0.082
culture	0.006	0.062	-0.085	-0.019	0.029	0.08	0.092	0.129	-0.043	0.107	0.095	-0.023	-0.076	0.107	-0.022
degree	-0.017	0.012	0.002	-0.115	0.055	-0.144	-0.01	0.079	0.006	0.09	-.159*	-0.005	0.008	-0.006	-0.1
individual	0.065	0.104	-0.004	0.141	0.129	0.06	0.138	0.134	0.119	0.006	0.128	-0.014	0.001	0.018	0.101

discussions	-0.098	-0.058	-0.07	0.072	-0.111	0.045	-0.064	-0.047	-0.015	-0.09	0.027	-0.061	0.09	-0.047	0.023
family/family structure/child	0.09	-0.01	0.091	0.127	-0.091	-0.016	-0.015	0.037	-0.001	-0.006	0.048	0.064	0.047	-0.032	0.078
human resources/benefit many times	0.09	-0.119	0.04	-0.123	-0.095	-0.122	0.023	0.138	-0.086	-0.04	0.004	-0.003	-.178*	0.018	-0.089
conclusion	-0.025	-.167*	0.111	-0.037	-0.018	-.147*	-0.097	-0.07	-0.072	-0.094	0.088	0.087	-0.11	0.04	-0.032
feelings	-0.023	0.055	0.006	0.023	-0.005	0.05	-0.004	-0.123	-0.001	-0.01	-0.019	0.003	0.119	0.062	-0.022
front	-0.018	-0.041	0.102	0.049	.148*	0.032	-0.126	0.056	-0.092	-0.044	-0.078	0.029	0	-0.023	-0.038
house furnishings/furniture	0.041	0.07	-0.014	0.037	0.038	0.059	-0.056	0.05	0.002	0.132	0.09	0.09	0.102	-0.053	-0.057
mission	-0.029	-0.063	0.074	-0.048	-0.01	-0.126	-0.063	-0.099	-0.05	-0.041	0.051	0.053	-0.129	-0.045	-0.048
sport/sports by type/ball games/basketball	0.094	0.121	0.068	0.031	0.092	0.008	0.049	-0.05	0.046	0.032	-0.036	.164*	0.008	-0.023	-0.026
conflict	-0.098	0.075	0.048	0.034	-0.018	0.013	-0.082	-.179*	0.069	-0.035	0.012	0.066	-0.062	-0.038	0.049
academics/research/study	-0.041	-0.044	0.013	-0.069	0.077	-0.042	0.004	0.059	-0.01	-0.049	-0.023	0.012	0.012	-0.114	-0.002
academics/test	0.011	-0.04	-0.008	-0.008	0.002	0.018	-0.141	-0.095	-0.078	-0.049	0.072	0.026	-0.015	0.02	-0.102
confrontation	0.08	0.046	0.004	0.021	-0.056	0.093	-0.065	-0.018	-0.113	-0.037	-0.033	-0.085	0.089	0.131	0.113
engineering design/building	0.033	0.031	-0.046	0.091	0.096	0.039	0.082	0.059	0.069	-0.018	-0.029	-.160*	0.017	-0.128	0.02
fight	0.019	0.134	-0.018	0.013	0.041	0.088	-0.005	-0.084	-0.017	-0.14	0.054	-0.011	0.056	-0.094	0.007
government/laws	0.033	0.018	0.061	0.01	.210**	0.004	-0.063	0.019	-0.06	0.05	-0.057	0.035	0.066	-0.085	-0.02
hometown	0.072	0.072	0.038	0.021	0.1	0.028	0.122	-0.003	0.005	-0.078	-0.122	0.106	0.008	0.112	0.05
house furnishings/furniture/beds	-0.143	-0.075	.156*	0.019	0.113	-0.002	-0.002	0.085	0.116	0.01	-0.07	-0.026	0.103	0.105	.153*
location	0.075	0.067	0.092	0.013	.157*	0.032	-0.09	.169*	-0.134	-0.037	-0.001	-0.006	0.065	0.037	-0.029
ring	0.085	0.076	0.039	0.121	0.042	0.113	0.042	0.005	-0.02	0.055	-0.051	0.113	0.031	0.023	0.097
setting	0	-0.025	-0.02	0.099	-.147*	-0.048	0.027	-0.072	-0.062	0.023	-0.027	0.014	0.044	0.105	-0.08
setup	-0.022	0.038	0.072	-0.097	0.051	-.148*	0.013	-0.053	0.046	-0.006	0.09	-0.017	0.101	-0.067	.157*
sport/sports by type/ball games	0.135	-0.089	.181*	0.092	0.014	-.167*	0.097	-0.017	0.07	0.1	0.055	0.141	-0.077	0.015	0.008
trouble	-0.08	-0.03	-0.084	-0.094	-0.047	-0.059	-.178*	-0.031	-0.033	-0.083	-0.113	-0.061	0.01	-0.053	-0.027
	0.051	0.002	0.099	-0.016	-0.069	0.109	-0.044	-0.047	-0.018	-0.116	0.057	-0.102	0.099	0.005	0.042
N = 184.															

* Correlation is significant at the 0.05 level (2-tailed).
** Correlation is significant at the 0.01 level (2-tailed).

Table H41: Rs of SPSS Model (V18.2.1) Developed in Subsample 1 for All TAPAS for Question 2 and 4 Using the $r = .05$ Cutoff for SPSS Modeler Variable Selection

	Subsample 1		Cross-Validation (Subsample 2)	
	Rs for Question 2	Rs for Question 4	Rs for Question 2	Rs for Question 4
Achievement	.641	.930	.640	.810
Adjustment	.737	.948	.581	.827
Cooperation	.622	.954	.557	.802
Dominance	.573	.953	.545	.744
Even Tempered	.672	.938	.589	.800
Attention Seeking	.626	.940	.628	.823
Selflessness	.697	.931	.616	.815
Intellectual Efficiency	.643	.980	.577	.781
Non-Delinquency	.641	.929	.662	.791
Order	.688	.927	.632	.821
Physical Condition	.566	.909	.536	.804
Self-Control	.712	.946	.625	.754
Sociability	.539	.926	.670	.747
Tolerance	.589	.946	.585	.738
Optimism	.671	.961	.606	.770
Number of Modeler Variables	71	160	74	122
<i>N</i> (Subsample 1) = 184				
<i>N</i> (Subsample 2) = 192				

Table H42: Correlations of Subsample 1 Modeler Variables (V18.2.1) with All MAGE Facets for Question 2 in Subsample 1

The SPSS Model used for this analysis used the $r = .05$ cutoff for variable selection.

Categories by Size	Mechanical	Administrative	General	Electronic
Count	0.111	.230**	.192**	0.121
feed/feedback	0.031	0.089	0.079	0.011
input	.228**	.186**	.154*	.189**
communication	0.077	0.028	0.083	0.062
action	.156*	.143*	0.116	.171**
recipient	.180**	.210**	.246**	.147*
mind	.140*	.138*	.131*	0.102
perspective	0.04	0.104	0.098	0.057
academics/research	.161*	0.11	0.12	0.081
idea	0.057	0.078	0.064	0.071
work	-0.026	-0.04	0.022	-.155*
information	0.1	-0.008	0.056	0.054
economics	0.053	.139*	0.113	0.063
understanding	0.024	0.06	0.02	-0.023
report	-0.008	0.004	0.005	-0.03
eyes	0.017	0.02	0.075	0.024
mental processes/learning	-0.026	0.079	-0.023	0.026
recipient	0.021	-0.015	-0.008	-0.008
home	0.032	0.008	0.012	-0.008
chance	-0.016	0.081	0.042	0.048
solution	.156*	.209**	.206**	.200**
comments	-0.108	-0.052	-0.071	-0.035
look	-0.053	-0.007	-0.007	-0.044
answer	-0.108	-0.069	-0.071	-0.06
project	.181**	0.087	.145*	0.107
course/course of action	0.002	0.082	0.043	0.045
task	-0.02	-0.004	-0.004	-0.065

response	0.012	-0.028	0.023	0.035
effort	0.015	0.095	0.025	0.016
explanation	0.119	.138*	.156*	0.056
questions	0.008	0.085	0.032	0.041
check	-0.055	-0.06	-0.066	-0.095
key	-0.061	-0.069	-0.099	-0.079
redone	0.039	0.027	0.054	0.044
resolution	0.049	0.068	-0.006	0.037
problem	0.104	0.12	0.124	0.1
resources	0.024	0.113	0.088	0.053
areas	.152*	.164*	0.123	0.102
solution/new solution	0.03	0.073	0.035	-0.011
attempt	0.129	0.117	0.025	0.102
hit	0.052	0.026	0.02	0.044
requirements	0.035	0.05	0.01	0.058
review	0.043	0.04	-0.002	-0.008
going	-0.129	-0.083	-0.068	-0.084
opinion	0.107	0.052	0.113	0.065
talk	-0.012	0.025	-0.006	0.064
individual	.136*	.199**	.174**	.132*
finish	0.027	0.055	0.064	0.085
house rooms	-0.092	-0.031	-0.033	-.144*
projectile	0.042	0.099	0.081	0.043
job	0.018	-0.045	-0.026	0.005
complexity	-0.031	-0.01	0.002	0.018
family	0	-0.007	0	-0.015
options	-0.077	0.021	-0.021	-0.048
suggestions	-0.053	0.046	0.054	0.048
start	0.08	0.09	0.081	0.107
person	-0.042	0.012	-0.035	-0.013
help	-0.014	-0.069	-0.034	0.009

occupation/white collar workers	0.046	0.047	0.042	0.049
course	0.038	-0.009	0.054	0.057
reason	0.055	0.05	0.075	0.043
consideration	0.048	0.089	0.1	0.041
feed	-0.124	-.131*	-.192**	-0.124
scratch	.165*	0.108	.138*	0.116
geology	-0.035	-0.099	-0.096	-0.049
quality	-0.02	-0.046	-0.071	-0.055
outcome	-0.122	-0.067	-0.094	-0.096
issues	-0.047	-0.037	0.008	-0.029
steps	-0.002	0.004	-0.017	-0.025
know how	0.102	0.076	0.079	0.083
life	-0.017	-0.033	-0.04	0.02
occupation	0.103	0.106	0.109	0.114
ability	0.046	0.062	0.058	0.011
complex	0.011	0.063	0.073	0.046
<i>N</i> = 232				
** Correlation is significant at the 0.01 level (2-tailed).				
* Correlation is significant at the 0.05 level (2-tailed).				

Table H43: Correlations of Subsample 1 Modeler Variables (V18.2.1) with All MAGE Facets for Question 4 in Subsample 1

The SPSS Model used for this analysis used the $r = .05$ cutoff for variable selection.

Categories by Size	Mechanical	Administrative	General	Electronic
project	0.102	0.094	.157*	0.062
physics/perspective	-0.103	-0.050	-0.064	-0.104
human resources/careers/skills	.197**	.160*	.151*	.171**
compromise	.186**	.258**	.228**	.181**
solution	0.031	0.073	0.030	0.011
partner	0.101	0.082	.148*	0.090
respect	-0.022	0.035	-0.004	0.007
party	0.120	0.112	.140*	.139*
project/group project	0.072	0.118	0.092	0.049
suggestions	-0.049	-0.021	-0.043	0.043
age	0.017	-0.035	-0.006	0.025
call	-0.019	0.020	0.012	0.016
customer	0.097	0.080	0.090	0.068
group	.169*	.241**	.226**	.150*
reports	.131*	0.121	0.116	.147*
argument	0.091	0.036	0.092	0.054
ideas	-0.062	-0.018	-0.018	-0.008
family/family structure/parents	-0.085	0.022	-0.026	-0.017
business management/value	0.038	0.000	0.035	0.023
horse	0.010	-0.044	0.000	-0.021
house furnishings/implement	-0.022	-0.012	-0.024	-0.033
stay	-0.015	0.069	0.020	0.010
fact	0.016	0.076	0.027	0.039
schedule	0.017	0.051	0.047	0.021
goal	.138*	0.082	.145*	0.083
agreement	0.041	0.073	0.057	0.088
design	0.088	0.123	.132*	0.080

class	0.001	0.019	0.036	0.027
half	0.009	-0.015	0.022	0.061
area	.133*	.132*	0.121	0.111
family/family structure/children/brother and sister/brother	-0.047	-0.050	-.137*	-0.065
moving	0.082	0.102	0.078	0.111
school/k-12/high school	0.008	0.048	0.073	0.035
clothes/shirt/flight shirt/flight t-shirt	-0.031	0.026	0.000	0.000
class/classmates	-0.094	-0.081	-0.034	-.141*
sport	-0.029	-0.092	-0.052	-0.071
order	0.084	0.129	0.075	0.109
starting	0.028	0.019	0.085	0.023
attention	-.138*	-.144*	-.142*	-.155*
company	0.035	-0.079	-0.026	0.001
economics/costs	0.105	0.082	0.088	0.116
explanation	.169*	0.059	0.113	0.109
finish	-0.016	-0.048	-0.097	-0.034
occupation/white collar workers	-0.028	0.026	-0.016	0.017
potential	.130*	0.105	.133*	0.120
saw	0.072	0.109	0.078	0.114
outcome	-.164*	-0.110	-0.100	-.134*
one time	-0.028	-0.026	-0.046	-0.048
day	-0.006	0.048	0.032	0.010
home	-0.006	-0.009	-0.024	0.010
Count	0.097	.238**	.234**	.133*
build	0.061	0.104	0.076	0.055
oppurtunity	-0.037	-0.041	-0.002	-0.047
understanding	-0.033	0.061	-0.006	0.064
finance/money	0.059	0.012	0.057	0.066
friend	0.003	0.025	-0.019	0.002

point	0.102	0.095	0.101	0.127
disagreement	0.045	0.107	0.088	0.113
paper	0.090	0.080	0.108	0.003
week	-0.059	-0.097	-0.074	-0.041
clothes/shirt	-0.070	-0.033	-0.077	-0.063
measuring instrument/rule	-0.040	-0.056	-0.082	-0.018
student room/dorm	.153*	.173**	.183**	0.125
thoughts	0.077	0.108	0.083	0.097
input	0.115	.198**	0.107	.137*
change	0.118	0.041	0.064	0.113
home/house	0.076	0.013	-0.022	0.026
decision	-0.093	0.016	-0.006	-0.027
reason	-0.040	-0.024	-0.018	-0.039
fair	-0.002	-0.005	-0.038	-0.054
music/music genres/rock	0.021	-0.077	-0.062	-0.011
differences	-0.062	-0.025	-0.043	-0.016
family/family structure/parents/mom	-0.102	0.012	-0.071	-0.058
cons	0.030	0.040	-0.004	0.029
display	0.092	0.118	0.076	0.095
engineering design/materials	0.008	0.065	0.029	0.040
pros	0.030	0.040	-0.004	0.029
standard	.130*	0.049	0.059	0.109
friendship/girlfriend	0.037	0.011	0.045	0.071
increase	0.040	-0.062	0.014	-0.024
line	0.056	0.107	0.056	0.067
job	0.009	0.054	-0.008	0.076
training	-0.127	0.000	-0.028	-0.084
anatomy/body regions/heads	0.032	0.026	0.051	0.035
handle	-0.070	-0.115	-0.055	-0.082
anatomy/body regions/extremities/arm/hand	0.066	0.128	0.120	0.076

finance	0.054	0.047	0.103	0.058
position	0.094	0.007	0.109	0.049
abortion	-0.020	0.034	0.025	-0.006
effort	0.033	0.086	0.085	0.028
working	0.107	.166*	0.117	0.113
coworker	0.038	0.004	0.016	0.000
school	-0.049	-0.048	0.014	0.009
academics/students	0.065	0.118	0.121	0.038
edge tool	0.060	0.029	0.033	0.051
vehicles/car	-0.054	0.039	-0.036	0.033
family	-0.079	-0.005	-0.011	-0.026
start	-0.012	0.064	0.043	0.026
work	0.000	-0.041	-0.009	-0.048
family/family structure/parents/mother	-0.045	0.020	0.033	-0.026
prosecution of law	0.003	-0.032	0.001	0.049
answer	.177**	.130*	0.107	.157*
chance	-0.010	-0.046	0.015	-0.024
guy	0.010	-0.062	-0.065	-0.011
human resources/careers/hiring	-0.053	-0.050	-0.036	-0.096
pay	-.145*	-0.103	-0.086	-0.054
reasoning	0.125	0.096	0.106	0.090
shifts	-0.039	-0.013	-0.019	-0.082
step	0.032	0.023	0.042	0.018
worry	0.007	0.076	0.039	0.004
side	0.063	-0.011	0.010	0.050
game	-0.015	-0.106	-0.052	-0.032
question	0.094	0.044	0.092	0.067
show	-0.103	-0.086	-0.073	-0.087
amount	.140*	.142*	.134*	0.100
geographical location/america/united states/us states	0.003	0.045	0.020	0.005

sense	-0.019	-0.006	0.018	-0.037
situation	-0.017	0.023	-0.024	-0.028
opinions	0.053	.140*	0.101	0.103
task	0.064	0.115	0.077	0.085
friendship	-0.076	-0.049	-0.030	-0.098
politics	0.084	0.108	0.129	0.076
person	-0.069	-0.001	-0.062	-0.052
drinks	-0.077	-0.011	0.000	-0.081
god	-.166*	-0.127	-.190**	-.175**
play	-0.004	-0.028	-0.024	-0.014
switch	-0.042	0.053	0.012	-0.022
flight	0.048	0.035	0.048	0.021
one day	0.062	0.129	0.068	0.085
baby	-0.063	-0.021	-0.054	-0.081
characters	-0.047	-0.002	0.028	-0.005
class/classmates/fellow classmates	0.005	-0.010	0.017	0.012
culture	-0.023	-0.031	-0.021	0.018
degree	-0.004	-0.006	-0.045	0.029
individual	0.021	-0.021	0.026	-0.012
discussions	0.049	0.044	0.057	0.095
family/family structure/child	-0.037	-0.013	-0.010	-0.051
human resources/benefit	0.056	0.117	0.115	0.097
many times	0.044	0.087	0.078	0.025
conclusion	-0.043	-0.069	-0.030	-0.011
feelings	-0.093	-0.110	-0.054	-0.101
front	-0.107	-.189**	-0.084	-.153*
house furnishings/furniture	-0.084	0.038	-0.023	-0.060
mission	0.010	0.046	0.071	-0.042
sport/sports by type/ball games/basketball	-0.015	0.025	-0.002	0.019
conflict	0.076	0.128	0.108	0.050

academics/research/study	0.086	0.099	0.099	0.040
academics/test	0.004	-0.008	0.012	0.046
confrontation	0.042	0.088	0.099	0.099
engineering design/building	0.094	0.105	0.099	0.099
fight	0.046	0.057	0.068	0.078
government/laws	-0.036	-0.012	-0.016	0.010
hometown	0.054	0.087	0.100	0.053
house furnishings/furniture/beds	0.000	0.088	0.050	0.026
location	0.056	0.080	0.078	0.109
ring	-0.015	-0.043	-0.060	-0.012
setting	0.084	0.040	0.040	0.055
setup	-0.038	-0.037	-0.082	-0.072
sport/sports by type/ball games	-0.043	-0.039	-0.049	-0.041
trouble	-0.014	-0.044	-0.040	-0.027
<i>N</i> = 232				
**. Correlation is significant at the 0.01 level (2-tailed).				
*. Correlation is significant at the 0.05 level (2-tailed).				

Table H44: Rs of SPSS Model (V18.2.1) Developed in Subsample 1 for All MAGE for Question 2 and 4 Using the $r = .05$ Cutoff for SPSS Modeler Variable Selection

	Subsample 1		Cross-Validation (Subsample 2)	
	Rs for Question 2	Rs for Question 4	Rs for Question 2	Rs for Question 4
Mechanical	.674	.876	.665	.838
Administrative	.668	.872	.696	.815
General	.664	.864	.672	.831
Electronic	.650	.837	.646	.793
Number of Modeler Variables	71	160	74	122
<i>N</i> (Subsample 1) = 228				
<i>N</i> (Subsample 2) = 228				

Table H45: Correlations of Subsample 1 Modeler Variables (V18.2.1) with All ASVAB Facets for Question 2 in Subsample 1

The SPSS Model used for this analysis used the $r = .05$ cutoff for variable selection.

Categories by Size	General Sciences	Electronics Information	Mechanical Comprehension	Auto & Shop Information	Assembling Objects	Word Knowledge	Paragraph Comprehension	Mathematics Knowledge	Arithmetic Reasoning
Count	0.125	-0.016	0.091	-0.105	0.063	.138*	.199**	.177**	.131*
feed/feedback	0.017	-0.048	0.009	-0.073	-0.015	0.047	0.092	0.07	0.05
input	.217**	.167*	.181**	.201**	0.093	.159*	.148*	0.105	0.084
communication	0.042	0.052	0.037	0.051	-0.076	0.066	-0.022	0.01	0.097
action	.157*	.174**	0.114	0.105	0.082	0.075	.179**	0.096	0.059
recipient	0.123	0.087	0.101	0.008	.188**	.200**	.229**	0.075	.161*
mind	0.085	0.115	0.07	0.08	0.054	0.104	.154*	0.107	0.078
perspective	0.06	-0.059	-0.004	-0.027	-0.059	0.031	0.11	0.129	0.087
academics/research	.172**	0.022	0.114	0.097	-0.017	.179**	0.085	0.021	0.039
idea	0.074	0.038	0.065	-0.014	0.07	0.063	-0.018	0.099	0.079
work	-0.106	-.159*	-0.003	-0.129	0.099	0.08	0.043	-.135*	-0.031
information	0.056	.158*	0.056	0.111	0.006	0.084	0.112	-0.129	-0.007
economics	0.049	0.002	-0.047	-0.029	-0.01	0.128	0.029	0.1	0.082
understanding	-0.021	-0.044	-0.038	0.043	-0.05	0.023	0.056	0.043	-0.015
report	0.017	-0.045	-0.022	-0.012	0.052	0.035	-0.005	-0.022	-0.011
eyes	0.018	0.011	-0.041	0	0.05	0.002	0.1	-0.057	0.049
mental processes/learning	0.017	0.009	-0.064	-0.013	-0.055	-0.013	0.044	.134*	-0.043
recipient	-0.007	0.057	0.043	0.037	.160*	-0.013	0.085	-0.009	-0.038
home	-0.014	-0.026	0.063	0.03	0.044	0.02	-0.013	-0.006	0.008
chance	0.075	-0.038	-0.01	-.138*	0.041	0.006	0.013	0.107	0.046
solution	.179**	0.112	0.072	0.045	0.027	.146*	.147*	.167*	.171**
comments	-0.068	-0.037	-0.082	-0.066	0.06	-0.1	-0.091	0.041	-0.018
look	-0.007	-0.068	-0.058	-0.085	0.066	-0.015	0.028	-0.006	-0.011
answer	-.155*	-0.084	-0.111	-0.045	-0.003	-.137*	-.135*	0.045	0.02

project	0.094	.154*	0.106	0.128	0.01	.177**	0.109	-0.05	0.062
course/course of action	0.029	-0.01	0.034	-0.059	0.038	0.018	0.051	0.105	0.036
task	-0.077	-0.033	-0.013	-0.019	0.07	0.003	0.026	-0.015	-0.006
response	-0.011	0.037	0.08	0.003	0.062	-0.07	0.015	0.002	0.075
effort	-0.009	-0.01	0.046	-0.062	0.063	0.034	-0.012	.131*	0.044
explanation	0.036	0.024	0.031	0.009	0.001	0.127	.195**	0.04	0.093
questions	-0.001	0.013	-0.009	-0.057	-0.11	0.042	0.003	0.105	0.031
check	-0.033	-0.035	-0.041	-0.068	-0.094	0.031	-0.011	-0.098	-0.119
key	-0.038	-0.026	-0.047	-0.027	-0.069	-0.013	-0.044	-0.078	-0.126
redone	0.056	0.047	0.023	-0.067	0.072	0.025	0.106	-0.025	0.018
resolution	0.064	0	0.092	0.069	0.015	-0.046	0.059	0.107	-0.005
problem	.133*	0.058	0.058	0.039	0.044	0.066	.154*	0.064	0.081
resources	-0.031	0.033	-0.031	-0.05	0.055	0.082	0.05	0.097	0.059
areas	0.074	0.12	0.104	0.09	0.08	.188**	0.119	0.056	0.04
solution/new solution	0.069	-0.029	-0.009	-0.022	0.054	0.105	0.12	0.005	-0.051
attempt	.187**	0.103	.136*	.155*	0.048	.147*	0.065	0.064	-0.078
hit	0.088	0.033	0.049	0.064	0.084	0.062	-0.027	-0.007	-0.01
requirements	0.045	0.022	0.018	0.067	0.02	0.014	-0.027	0.078	0.013
review	0.007	-0.012	0.093	0.011	0.027	0.067	-0.011	0.021	-0.04
gooing	-0.126	-.131*	-0.128	-0.074	-0.078	-.134*	-0.08	0.002	0.007
opinion	0.079	0.01	0.097	0.015	0.006	.137*	-0.013	-0.006	0.093
talk	0.035	-0.004	0.042	-0.019	0.053	-0.061	-0.085	0.108	0.051
individual	0.099	0.051	0.018	0.048	0.115	0.099	.245**	.157*	0.115
finish	-0.025	0.083	0.074	-0.022	0.098	-0.02	-0.041	0.107	.130*
house rooms	-.138*	-.148*	-0.127	-0.118	-0.131	-0.004	-0.03	-0.028	-0.031
projectile	0.071	0.012	-0.049	0.022	-0.052	0.107	.143*	0.013	-0.005
job	0.09	0.01	0.04	0.04	-0.005	0.035	-0.023	-0.085	-0.063
complexity	0.019	0.056	-0.029	-0.049	-0.005	-0.008	-0.007	-0.013	0.022
family	-0.1	0.012	0.031	-0.009	0.009	-0.06	0.044	0.012	0.018

options	-0.072	-0.111	-0.083	-0.106	-0.059	-0.046	0.004	0.057	-0.016
suggestions	-0.085	0.047	-0.129	-0.113	-0.032	0.021	-0.008	0.065	0.078
start	0.049	0.078	0.072	0.057	0.115	0.006	0.049	0.097	0.092
person	-0.045	-0.028	-0.05	-0.031	-0.103	-0.04	-0.064	0.066	0.002
help	0.047	-0.02	0.085	-0.016	-0.111	-0.089	-0.052	-0.018	0.029
occupation/white collar workers	0.03	0.027	0.057	0.037	-0.067	0.006	-0.059	0.086	0.075
course	.141*	0.084	-0.035	0.003	-.148*	0.099	0.039	-0.088	-0.002
reason	0.043	0.02	0.01	0.029	0	0.003	0.122	0.015	0.065
consideration	0.048	0.009	0.031	-0.046	0.058	0.119	0.064	-0.011	0.019
feed	-0.079	-0.074	-0.057	-0.034	-0.11	-0.1	-0.125	-0.074	-.177**
scratch	.135*	0.12	.142*	0.068	0.128	.153*	0.113	0.002	0.097
geology	0.011	-0.022	0.078	-0.002	-0.04	-0.066	-0.072	-0.074	-0.082
quality	0.014	-0.056	0.056	0.006	0.046	-0.025	0.005	-0.04	-0.088
outcome	-0.096	-0.104	-0.119	-0.088	-0.046	-0.064	-0.066	-0.032	-0.078
issues	-0.037	-0.081	-0.033	-0.101	0.091	-0.039	-0.007	-0.02	0.034
steps	-0.027	-0.018	0.071	-0.019	0.046	-0.006	0.058	-0.005	-0.051
know how	0.068	0.111	0.064	0.08	0.02	0.068	0.095	0.007	0.018
life	-0.047	0.065	0.019	0.014	0.124	-0.094	0.016	0.013	-0.005
occupation	0.095	0.07	0.01	0.102	0.077	0.04	0.09	0.112	0.125
ability	-0.035	-0.005	0.025	-0.016	0.038	0.049	0.083	0.031	0.034
complex	0.013	-0.032	-0.03	-0.028	0.077	0.061	-0.049	0.064	0.091
N = 232									
** Correlation is significant at the 0.01 level (2-tailed).									
* Correlation is significant at the 0.05 level (2-tailed).									

Table H46: Correlations of Subsample 1 Modeler Variables (V18.2.1) with All ASVAB Facets for Question 4 in Subsample 1

The SPSS Model used for this analysis used the $r = .05$ cutoff for variable selection.

Categories by Size	General Sciences	Electronics Information	Mechanical Comprehension	Auto & Shop Information	Assembling Objects	Word Knowledge	Paragraph Comprehension	Mathematics Knowledge	Arithmetic Reasoning
project	0.050	-0.007	0.030	0.026	-0.065	0.116	0.031	0.037	.148*
physics/perspective	-0.075	-0.102	-0.101	-0.114	-0.017	-0.063	0.025	-0.036	-0.057
human resources/careers/skills	.188* *	.210**	.152*	.158*	0.025	.182**	0.114	0.066	0.073
compromise	0.128	0.082	0.034	0.088	0.008	.227**	.136*	.186**	.165*
solution	-0.001	0.036	0.062	-0.021	0.118	0.108	-0.004	0.040	-0.021
partner	0.091	0.043	0.049	-0.021	-0.059	.147*	0.048	-0.012	0.120
respect	-0.010	-0.038	-0.016	-0.049	-0.007	0.013	-0.022	0.057	0.007
party	.151*	0.092	0.074	0.053	0.052	0.106	0.080	0.071	0.122
project/group project	-0.057	0.009	0.000	0.105	0.032	0.054	0.010	.136*	0.097
suggestions	0.019	0.015	-0.036	-0.022	0.080	-0.089	-0.059	0.060	0.016
age	0.087	0.044	0.051	0.030	0.004	0.006	-0.003	-0.052	-0.010
call	0.008	-0.005	-0.010	-0.063	-0.091	0.002	-0.001	0.024	0.017
customer	0.110	0.077	0.106	0.063	-0.110	0.104	0.101	-0.045	-0.007
group	0.036	0.091	0.049	0.080	0.074	.192**	0.071	.187**	.192**
reports	0.130	.219**	0.025	.151*	-0.097	.141*	0.090	0.035	0.045
argument	0.086	0.022	0.088	0.020	-0.014	0.094	0.022	-0.032	0.075
ideas	-0.007	-0.020	-0.051	-0.095	0.063	-0.032	-0.019	0.015	0.009
family/family structure/parents	-0.005	-0.063	-.151*	-0.083	-0.020	-0.051	0.003	0.082	-0.006
business management/value	0.062	0.019	0.005	0.030	-0.032	0.076	-0.001	-0.052	0.011
horse	0.084	-0.020	-0.045	0.030	-0.052	0.044	0.016	-0.111	-0.036
house furnishings/implement	-0.034	-0.020	-0.031	0.006	0.082	0.033	-0.053	-0.022	-0.041
stay	0.021	0.011	-0.044	-0.059	-0.072	0.074	0.070	0.043	-0.034

fact	0.026	0.007	-0.008	0.037	-0.001	0.002	0.020	0.069	0.011
schedule	0.017	0.000	-0.072	-0.017	-0.115	0.073	0.044	0.012	0.009
goal	0.122	0.040	0.121	0.026	0.051	.204**	0.020	-0.009	0.110
agreement	0.084	0.062	0.029	-0.002	-0.044	0.045	-0.009	0.074	0.062
design	0.030	0.100	0.033	-0.038	0.076	0.097	.194**	0.045	0.101
class	0.020	0.015	0.003	-0.040	-0.080	0.052	-0.033	0.006	0.035
half	0.028	0.087	-0.041	0.039	-.149*	-0.069	0.065	-0.005	0.043
area	0.126	0.092	0.113	0.044	0.062	0.125	0.126	0.054	0.060
family/family structure/children/brother and sister/brother	-0.014	0.003	0.010	0.026	-0.058	-0.008	-0.065	-0.041	-.173**
moving	0.091	0.111	0.068	0.030	-0.022	0.063	0.111	0.091	0.036
school/k-12/high school	0.058	-0.023	-0.058	-0.032	0.010	0.036	-0.005	0.045	0.092
clothes/shirt/flight shirt/flight t-shirt	-0.042	0.015	-0.040	-0.094	0.062	0.007	0.074	0.007	-0.015
class/classmates	-.154*	-.157*	-0.093	-0.105	-0.007	-0.026	-0.061	-0.074	-0.014
sport	0.020	-0.059	0.008	-0.020	0.017	-0.028	0.019	-0.125	-0.074
order	0.094	0.129	0.018	0.066	0.020	.141*	0.086	0.098	0.007
starting	0.030	-0.057	0.007	-0.045	0.080	-0.046	0.114	0.001	0.126
attention	-.147*	-.169*	-0.081	-0.042	0.009	-.163*	-.151*	-0.028	-0.052
company	-0.012	0.076	0.042	0.114	0.025	-0.020	-0.018	-0.105	-0.031
economics/costs	0.110	0.054	0.092	0.090	0.082	0.054	0.010	0.107	0.094
explanation	0.088	.164*	.184**	.150*	0.030	0.097	0.079	-0.011	0.094
finish	-0.034	0.008	0.024	0.066	0.004	-0.036	-0.070	-0.017	-0.098
occupation/white collar workers	0.014	-0.006	0.028	-0.094	-0.076	-0.004	0.028	0.042	-0.031
potential	0.127	0.065	.147*	0.010	0.108	0.102	0.033	0.102	0.120
saw	0.101	0.061	0.047	0.034	0.030	0.044	0.033	0.113	0.068
outcome	-0.126	-0.119	-.231**	-0.105	-.204**	-0.106	-0.051	-0.074	-0.065
one time	-0.037	-0.014	-0.050	0.025	-0.101	0.013	-0.044	-0.028	-0.061
day	-0.040	0.019	0.021	-0.077	-0.121	-0.009	0.056	0.019	0.003

home	-0.002	-0.014	0.025	0.021	-0.025	-0.038	-0.038	0.030	0.019
Count	0.103	0.027	-0.033	-0.093	-0.026	.193**	.211**	.134*	.156*
build	0.005	0.016	-0.010	0.062	.196**	0.049	0.033	0.112	0.106
oppurtunity	-0.061	-0.029	-0.059	-0.063	-0.094	-0.003	0.044	-0.068	-0.005
understanding	0.044	0.082	-0.010	-0.092	0.004	0.040	-0.023	0.054	-0.038
finance/money	0.084	0.022	0.061	0.040	0.054	0.020	0.020	-0.006	0.056
friend	0.050	-0.042	0.036	-0.005	0.031	-0.019	0.021	0.036	-0.030
point	0.073	.133*	0.034	0.094	0.036	0.080	0.008	0.088	0.097
disagreement	0.084	0.054	-0.005	0.007	0.006	0.050	0.001	0.123	0.096
paper	-0.006	-0.034	0.007	0.043	0.052	0.119	0.081	-0.013	0.049
week	0.008	-0.021	0.007	-0.045	-0.005	-0.026	-0.079	-0.097	-0.074
clothes/shirt	-0.065	-0.005	-0.059	-0.069	0.041	0.006	-0.005	-0.057	-0.109
measuring instrument/rule	0.032	0.025	-0.014	0.023	-0.032	-0.032	0.003	-0.046	-0.085
student room/dorm	0.103	0.035	0.088	0.051	0.001	0.116	.204**	0.118	.158*
thoughts	0.033	0.072	0.063	0.023	0.135	0.070	0.015	0.099	0.067
input	0.113	0.108	0.060	0.071	0.056	.134*	0.105	.153*	0.034
change	.135*	.133*	0.099	0.094	0.055	0.110	0.059	-0.034	0.001
home/house	0.072	0.061	0.100	0.112	0.011	0.108	-0.044	-0.025	-0.084
decision	-0.089	-0.073	-.161*	-.131*	-0.104	-0.029	-0.088	0.078	0.048
reason	0.018	-0.038	-0.027	-0.079	0.018	0.003	0.009	-0.049	-0.043
fair	0.034	-0.066	-0.016	0.037	-0.045	0.037	0.048	-0.052	-0.095
music/music genres/rock	0.044	0.019	0.051	.137*	-0.097	0.002	-0.065	-0.089	-0.075
differences	0.016	-0.088	-0.001	-0.068	-0.120	-0.080	-0.053	0.042	-0.004
family/family structure/parents/mom	-0.051	-0.114	-0.109	-0.086	0.006	-0.066	-0.042	0.089	-0.042
cons	0.075	0.037	0.069	-0.002	-0.082	0.039	0.056	0.007	-0.057
display	0.088	0.076	0.069	0.098	0.046	0.081	0.016	0.107	0.052
engineering design/materials	0.019	0.054	-0.031	-0.010	-0.022	-0.009	0.125	0.066	0.016
pros	0.075	0.037	0.069	-0.002	-0.082	0.039	0.056	0.007	-0.057
standard	.149*	.189**	0.079	.154*	0.004	.145*	0.056	-0.058	-0.015

friendship/girlfriend	0.066	0.068	0.033	0.014	0.082	0.033	-0.007	-0.017	0.037
increase	-0.025	-0.017	0.051	0.078	.217**	-0.036	0.028	-0.076	0.026
line	0.101	0.003	0.026	0.030	0.092	0.075	-0.019	0.110	0.050
job	0.036	0.082	0.023	0.056	-0.009	-0.008	-0.047	0.117	0.021
training	-0.099	-.137*	-.132*	-.130*	-.222**	-0.111	0.065	0.026	-0.018
anatomy/body regions/heads	0.007	0.047	0.044	-0.006	0.017	-0.004	0.129	0.013	0.049
handle	-0.026	-0.071	-0.059	-0.039	0.039	-0.083	0.029	-0.127	-0.044
anatomy/body regions/extremities/arm/hand	0.045	0.011	0.018	-0.039	0.082	0.062	0.122	0.096	0.096
finance	0.108	0.019	0.011	-0.045	0.030	0.046	.170*	-0.034	0.049
position	0.028	0.011	0.070	0.046	0.037	-0.010	.131*	-0.039	.132*
abortion	-0.046	-0.026	0.002	-0.106	-0.053	0.030	-0.008	0.033	0.032
effort	-0.016	-0.019	-0.005	-0.087	0.046	0.097	0.010	0.064	0.075
working	0.092	0.009	0.062	0.048	0.044	0.090	0.070	.182**	0.108
coworker	0.007	0.010	-0.012	0.090	-0.071	0.029	0.072	-0.056	-0.040
school	-0.034	-0.084	0.011	-0.072	0.084	-0.125	-0.101	0.065	.132*
academics/students	0.000	0.012	-0.055	0.014	-0.024	0.113	0.122	0.038	0.059
edge tool	-0.044	0.090	0.042	0.076	-0.056	0.031	-0.005	0.021	0.029
vehicles/car	0.061	0.005	-0.019	-0.089	-0.056	0.003	-0.026	0.063	-0.037
family	0.000	-0.058	-0.100	-0.128	-0.029	0.026	-0.045	-0.014	-0.026
start	0.042	-0.063	0.000	-0.085	0.078	0.021	-0.055	0.072	0.053
work	-0.115	0.009	-0.043	0.057	0.039	-0.003	0.009	-0.059	-0.014
family/family structure/parents/mother	-0.070	-0.057	-0.054	-.134*	0.036	0.013	-0.022	0.023	0.049
prosecution of law	0.030	0.085	0.021	-0.017	0.017	-0.032	-0.030	-0.024	0.041
answer	.204* *	0.124	.182**	.141*	0.118	0.116	0.059	0.075	0.069
chance	-0.018	-0.013	0.035	-0.067	0.050	-0.022	0.075	-0.083	0.004
guy	-0.003	0.057	0.059	0.062	-0.013	-0.022	0.003	-0.073	-0.085

human resources/careers/hiring	-0.100	-0.102	0.014	-0.074	-.185**	-0.051	-0.003	-0.041	-0.024
pay	-0.073	-0.093	-0.121	-0.117	-0.068	- .174**	-0.075	0.001	0.004
reasoning	0.060	0.085	0.092	0.073	.197**	0.078	0.080	0.097	0.092
shifts	-0.088	-0.061	-0.039	-0.070	0.076	0.011	0.033	-0.009	-0.052
step	0.036	0.051	0.018	-0.034	-0.105	0.049	0.008	-0.009	0.050
worry	-0.018	-0.042	-0.039	-0.027	0.025	0.035	0.090	0.060	0.013
side	0.104	0.068	0.089	0.081	0.035	0.065	-0.005	-0.063	-0.028
game	-0.001	-0.015	0.082	0.015	-0.054	-0.063	-0.077	-0.081	-0.002
question	0.060	0.058	0.042	0.064	0.064	0.045	0.098	-0.014	0.094
show	-0.063	-0.105	-0.078	-0.068	0.049	-0.101	-0.045	-0.026	0.000
amount	0.112	0.057	0.082	0.070	-0.040	.145*	.133*	0.035	0.062
geographical location/america/united states/us states	0.001	-0.007	0.010	-0.048	-0.045	0.028	0.072	0.011	-0.019
sense	-0.009	-0.036	-0.027	-0.016	-0.010	-0.016	0.053	-0.076	-0.023
situation	-0.039	-0.064	-0.009	-0.008	-0.004	-0.016	-0.044	0.056	-0.026
opinions	0.046	0.034	0.069	-0.059	0.015	0.044	0.097	.146*	0.091
task	0.059	0.111	0.028	0.053	-0.070	0.064	0.112	0.044	0.002
friendship	-0.118	-.132*	-0.038	-0.128	0.049	-0.079	-0.055	0.009	0.026
politics	0.066	-0.007	0.018	-0.001	0.018	0.067	0.059	0.089	.132*
person	-0.113	-0.006	-0.047	-0.063	-0.050	-0.022	-0.069	0.041	-0.060
drinks	-0.045	-0.129	-.132*	-0.060	-0.006	-0.034	0.048	-0.057	-0.030
god	-.141*	-0.094	-.139*	-0.072	-0.069	-0.115	-0.031	-0.088	-.192**
play	0.025	-0.021	0.094	-0.030	0.071	0.006	-0.014	-0.030	-0.034
switch	-0.042	-0.067	-0.021	-0.100	0.020	-0.026	0.048	0.073	0.013
flight	0.007	0.054	0.018	0.008	0.070	0.015	.197**	-0.040	0.004
one day	-0.009	0.125	-0.033	0.053	0.008	0.116	0.059	0.118	0.011
baby	-0.114	-0.046	-0.027	-0.066	-0.052	0.020	-0.099	-0.013	-0.058
characters	-0.042	-0.059	-0.095	-0.078	0.035	-0.046	0.005	0.025	0.068

class/classmates/fellow classmates	-0.064	0.029	-0.017	0.018	0.067	0.028	-0.070	-0.005	0.032
culture	0.014	-0.020	0.001	-0.002	-0.032	-0.004	-.139*	0.013	0.021
degree	0.001	0.054	0.047	0.018	0.020	-0.057	-0.041	0.054	-0.020
individual	0.063	-0.054	-0.016	0.010	0.013	0.049	0.024	-0.082	0.007
discussions	0.084	0.080	0.048	0.001	-0.014	0.032	0.048	0.021	0.041
family/family structure/child	-0.066	-0.048	-0.053	-0.055	-0.045	0.032	-0.093	-0.003	0.003
human resources/benefit	0.076	0.030	-0.035	0.011	0.015	0.084	0.029	.132*	0.109
many times	-0.003	-0.048	0.031	-0.038	0.015	0.082	-0.013	0.075	0.069
conclusion	0.083	-0.045	-0.010	-0.049	-0.126	-0.051	0.018	-0.078	-0.029
feelings	-0.088	-0.045	-.137*	-0.059	-0.040	-0.036	-0.039	-0.120	-0.047
front	-.147*	-0.096	-0.080	-0.059	-0.046	-0.122	-0.049	-.168*	-0.033
house furnishings/furniture	-0.077	-0.064	-0.059	-0.127	-0.013	-0.013	-0.054	0.033	-0.052
mission	-0.061	-0.083	-0.023	-0.067	-0.011	0.002	.162*	0.012	0.050
sport/sports by type/ball games/basketball	0.060	0.000	0.010	-0.059	-0.017	0.006	0.018	0.028	-0.015
conflict	-0.018	0.070	-0.035	0.034	0.066	0.119	.183**	0.037	0.021
academics/research/study	-0.021	-0.002	0.033	0.042	0.124	0.076	0.085	0.072	0.094
academics/test	0.014	0.005	-0.027	0.042	0.098	-0.041	-0.053	0.037	0.068
confrontation	0.071	0.097	-0.017	-0.042	-0.052	0.070	0.085	0.048	0.089
engineering design/building	0.119	0.083	0.024	0.018	0.021	0.107	0.120	0.019	0.026
fight	0.005	0.086	0.028	-0.006	0.043	0.017	0.062	0.048	0.068
government/laws	-0.038	0.001	0.010	-0.038	-0.010	-0.062	-0.030	0.037	0.021
hometown	-0.024	0.064	-0.064	0.008	-0.016	0.093	.140*	0.035	0.068
house furnishings/furniture/beds	-0.034	-0.041	-0.077	-0.006	-0.022	0.023	0.051	0.113	0.047
location	0.119	0.072	0.042	-0.030	0.056	0.076	0.016	0.054	0.063
ring	0.036	0.015	0.015	0.026	-0.088	0.020	-0.099	-0.047	-0.076
setting	0.079	0.086	0.097	0.094	0.092	0.076	0.010	0.007	0.011
setup	-0.090	-0.013	-0.004	0.014	-0.111	-0.057	0.033	-0.034	-0.098

sport/sports by type/ball games	-0.016	-0.059	-0.036	0.002	-0.074	-0.014	-0.070	-0.017	-0.041
trouble	0.079	-0.020	-0.008	-0.014	-0.100	0.033	-0.001	-0.093	-0.088
<i>N</i> = 232									
**. Correlation is significant at the 0.01 level (2-tailed).									
*. Correlation is significant at the 0.05 level (2-tailed).									

Table H47: Rs of SPSS Model (V18.2.1) Developed in Subsample 1 for All ASVAB for Question 2 and 4 Using the $r = .05$ Cutoff for SPSS Modeler Variable Selection

	Subsample 1		Cross-Validation (Subsample 2)	
	Rs for Question 2	Rs for Question 4	Rs for Question 2	Rs for Question 4
General Sciences	.653	.866	.602	.760
Electronics Information	.617	.840	.645	.792
Mechanical Comprehension	.600	.838	.620	.799
Auto & Shop Information	.626	.829	.609	.769
Assembling Objects	.617	.882	.671	.824
Word Knowledge	.636	.863	.710	.813
Paragraph Comprehension	.683	.854	.619	.801
Mathematics Knowledge	.647	.818	.652	.753
Arithmetic Reasoning	.601	.840	.607	.782
Number of Modeler Variables	71	160	74	122
<i>N</i> (Subsample 1) = <i>N</i> (Subsample 2) = 228				

Table H48: Differences in Unstandardized Predicted Value by Race and Gender for Subsample 1 Model (V18.2.1) for Questions 2 and 4 in Subsample 1

Question 2				
Gender	N	Mean	SD	d-score
Women	110	1.484	.390	.093
Men	118	1.447	.410	
Racioethnicity	N	Mean	SD	d-score
Whites	158	1.468	.395	.008
Blacks	38	1.471	.417	
Whites	140	1.483	.410	.183
Hispanics	42	1.410	.357	
<i>Note.</i> Pooled SD for Women vs. Men was .400. Pooled SD for Whites vs. Blacks was .398. Pooled SD for Whites vs. Hispanics was .399. Calculator used to estimate d-score: https://www.socscistatistics.com/effectsize/default3.aspx				

Question 4				
Gender	N	Mean	SD	d-score
Women	110	1.498	.508	.278
Men	120	1.363	.459	
Racioethnicity	N	Mean	SD	d-score
Whites	158	1.452	.486	.264
Blacks	38	1.324	.474	
Whites	140	1.478	.488	.378
Hispanics	42	1.295	.447	
<i>Note.</i> Pooled SD for Women vs. Men was .486. Pooled SD for Whites vs. Blacks was .485 Pooled SD for Whites vs. Hispanics was .484. Calculator used to estimate d-score: https://www.socscistatistics.com/effectsize/default3.aspx				

Table H49: Differences in Average Human Rating by Race and Gender for Subsample 1 Model (V18.2.1) for Questions 2 and 4 in Subsample 1

Question 2				
Gender	N	Mean	SD	d-score
Women	108	1.528	.546	.180
Men	116	1.431	.531	
Racioethnicity	N	Mean	SD	d-score
Whites	156	1.462	.528	.200
Blacks	36	1.569	.563	
Whites	138	1.478	.540	.090
Hispanics	42	1.429	.569	
<i>Note.</i> Pooled SD for Women vs. Men was .539. Pooled SD for Whites vs. Blacks was .535. Pooled SD for Whites vs. Hispanics was .546. Calculator used to estimate d-score: https://www.socscistatistics.com/effectsize/default3.aspx				

Question 4				
Gender	N	Mean	SD	d-score
Women	109	1.532	.579	.364
Men	119	1.336	.483	
Racioethnicity	N	Mean	SD	d-score
Whites	157	1.455	.547	.115
Blacks	37	1.392	.567	
Whites	139	1.486	.558	.454
Hispanics	42	1.238	.459	
<i>Note.</i> Pooled SD for Women vs. Men was .539. Pooled SD for Whites vs. Blacks was .550. Pooled SD for Whites vs. Hispanics was .546. Calculator used to estimate d-score: https://www.socscistatistics.com/effectsize/default3.aspx				

Table H50: Correlations of ESL, Education, Unstandardized Predicted Scores (Subsample 1 Model Developed with Human Ratings), and Human Ratings for Question 2 in Subsample 1

	Mean	SD	Education	EFL	Unstandardized Predicted Value
Education	12.86	1.444			
English as First Language (EFL)	0.04	0.204	.197**		
Unstandardized Predicted Value	1.460	0.399	.198**	0.004	
Average Ratings from Human Raters	1.471	0.537	.162*	-0.049	.730**
<i>N</i> = 232 <i>Note.</i> Education ranges from 12 to 20. For EFL, (1 = “Yes” or Did not respond, 0 = “No” ** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).					

Table H51: Correlations of ESL, Education, Unstandardized Predicted Scores (Subsample 1 Model Developed with Human Ratings), and Human Ratings for Question 4 in Subsample 1

	Mean	SD	Education	EFL	Unstandardized Predicted Value
Education	12.86	1.444			
English as First Language (EFL)	0.04	0.204	.197**		
Unstandardized Predicted Value	1.430	0.488	-0.057	-0.044	
Average Ratings from Human Raters	1.433	0.542	-0.036	-0.072	.903**
<i>N</i> = 232 <i>Note.</i> Education ranges from 12 to 20. For EFL, (1 = “Yes” or Did not respond, 0 = “No” ** Correlation is significant at the 0.01 level (2-tailed).					

Table H52: Summary of Number of Categories for each Subsample per Question

	N	# of Categories
Question 1		
Subsample 1	232	250
Subsample 2	231	242
Question 2		
Subsample 1	232	134
Subsample 2	231	142
Question 3		
Subsample 1	232	154
Subsample 2	231	164
Question 4		
Subsample 1	232	256
Subsample 2	231	238
Question 5		
Subsample 1	232	195
Subsample 2	231	199
Question 6		
Subsample 1	232	266
Subsample 2	231	252

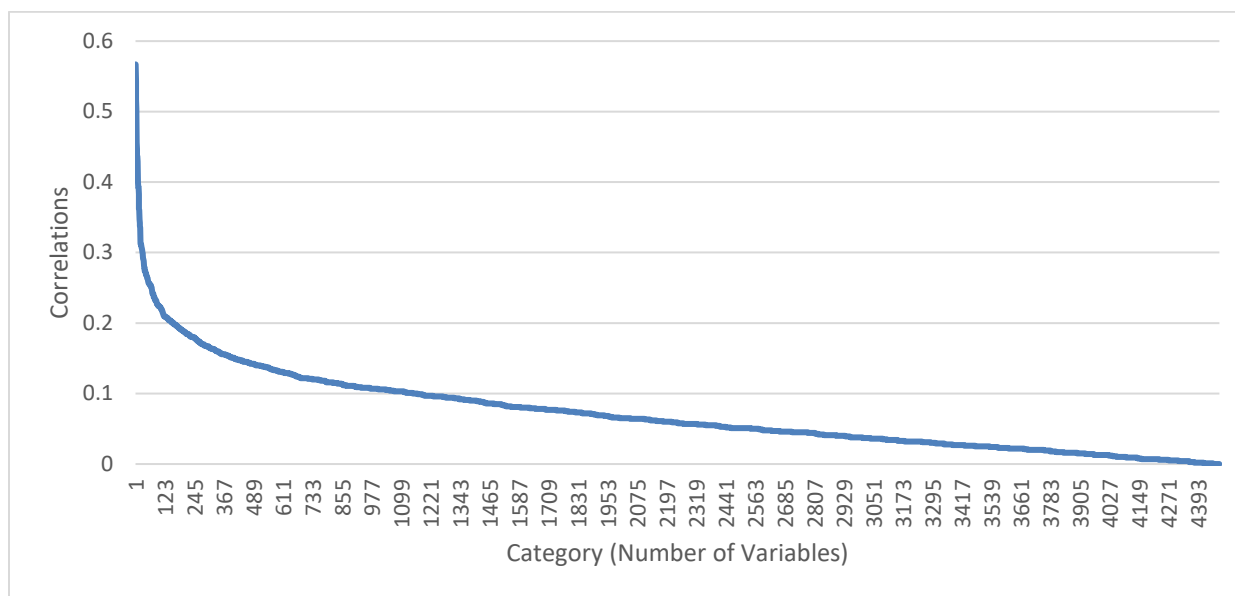


Figure H1. Plot of Correlations across All Questions and Subsamples

Table H53: Cross-Validations of the Categories Extracted

Question 2		Interview Ratings			AFQT		
	N	R	# of Categories	Alpha	R	# of Categories	Alpha
Model Developed in Sample 1 and Validated in Sample 1	232	.730	74	.571	.740	80	.506
Model Developed in Sample 1 and Cross-Validated in Sample 2	231	.734	74	.612	.695	61	.566
Model Developed in Sample 2 and Validated in Sample 2	232	.772	82	.540	.743	77	.502
Model Developed in Sample 2 and Cross-Validated in Sample 1	231	.737	68	.601	.690	66	.559
<i>Note.</i> “Count” variable included as # of variables. The models were built until no new categories emerged and uncategorized concepts with frequencies of 4 or more were converted to categories.							

Question 4		Interview Ratings			AFQT		
	N	R	# of Categories	Alpha	R	# of Categories	Alpha

Model Developed in Sample 1 and Validated in Sample 1	232	.903	160	.517	.831	138	.505
Model Developed in Sample 1 and Cross-Validated in Sample 2	231	.844	122	.553	.833	104	.535
Model Developed in Sample 2 and Validated in Sample 2	232	.894	141	.534	.883	128	.501
Model Developed in Sample 2 and Cross-Validated in Sample 1	231	.806	125	.516	.795	114	.523
<i>Note.</i> “Count” variable included as # of variables. The models were built until no new categories emerged and uncategorized concepts with frequencies of 4 or more were converted to categories.							

Table H54: Cross-Validations of Regression Equations

Question 2	# of Categories	r
Model Developed in Sample 1 and Validated in Sample 1	73	.729
Model Developed in Sample 1 and Cross-Validated in Sample 2	73	.337
Model Developed in Sample 2 and Validated in Sample 2	81	.771
Model Developed in Sample 2 and Cross-Validated in Sample 1	81	.252

Question 4	# of Categories	r
Model Developed in Sample 1 and Validated in Sample 1	159	.903
Model Developed in Sample 1 and Cross-Validated in Sample 2	159	.114
Model Developed in Sample 2 and Validated in Sample 2	140	.893
Model Developed in Sample 2 and Cross-Validated in Sample 1	140	.166

NOTES: Categories only retained that had a minimum of 4 responses and minimum of .05 correlation.

Table H55: Cross-Validations of Unit-Weighted Composites

Question 2	# of Categories	r
Model Developed in Sample 1 and Validated in Sample 1	67	.582
Model Developed in Sample 1 and Cross-Validated in Sample 2	56	.380
Model Developed in Sample 2 and Validated in Sample 2	81	.604
Model Developed in Sample 2 and Cross-Validated in Sample 1	61	.274

Question 4	# of Categories	r
Model Developed in Sample 1 and Validated in Sample 1	159	.635
Model Developed in Sample 1 and Cross-Validated in Sample 2	110	.240
Model Developed in Sample 2 and Validated in Sample 2	129	.656
Model Developed in Sample 2 and Cross-Validated in Sample 1	93	.260

NOTES: Categories only retained that had a minimum of 4 responses and minimum of .05 correlation.

Table H56: Cross-Validations of Unit-Weighted Composites Based on Number of Categories Retained

Categories retained if $r = .10$:

Question 2	# of Categories	r
Model Developed in Sample 1 and Validated in Sample 1	31	.595
Model Developed in Sample 1 and Cross-Validated in Sample 2	29	.357
Model Developed in Sample 2 and Validated in Sample 2	45	.574
Model Developed in Sample 2 and Cross-Validated in Sample 1	39	.242

Question 4	# of Categories	r
Model Developed in Sample 1 and Validated in Sample 1	59	.622
Model Developed in Sample 1 and Cross-Validated in Sample 2	45	.235
Model Developed in Sample 2 and Validated in Sample 2	52	.632
Model Developed in Sample 2 and Cross-Validated in Sample 1	41	.273

Categories retained if $r = .05$:

Question 2	# of Categories	r
Model Developed in Sample 1 and Validated in Sample 1	67	.582
Model Developed in Sample 1 and Cross-Validated in Sample 2	56	.380
Model Developed in Sample 2 and Validated in Sample 2	81	.604
Model Developed in Sample 2 and Cross-Validated in Sample 1	61	.274

Question 4	# of Categories	r
Model Developed in Sample 1 and Validated in Sample 1	159	.635
Model Developed in Sample 1 and Cross-Validated in Sample 2	110	.240
Model Developed in Sample 2 and Validated in Sample 2	129	.656
Model Developed in Sample 2 and Cross-Validated in Sample 1	93	.260

All categories retained:

Question 2	# of Categories	r
Model Developed in Sample 1 and Validated in Sample 1	133	.560
Model Developed in Sample 1 and Cross-Validated in Sample 2	102	.317
Model Developed in Sample 2 and Validated in Sample 2	141	.590
Model Developed in Sample 2 and Cross-Validated in Sample 1	105	.252

Question 4	# of Categories	r
Model Developed in Sample 1 and Validated in Sample 1	255	.595
Model Developed in Sample 1 and Cross-Validated in Sample 2	176	.239
Model Developed in Sample 2 and Validated in Sample 2	237	.634
Model Developed in Sample 2 and Cross-Validated in Sample 1	171	.254

Table H57: Cross-Validations of Category Count and Word Count

	N	# of Categories	Validity of Category Count	Validity of Word Count
Question 1				
Subsample 1 Model Tested on Subsample 1	232	250	.360	.450
Subsample 1 Model Tested on Subsample 2	231	187	.335	
Subsample 2 Model Tested on Subsample 2	231	242	.338	
Subsample 2 Model Tested on Subsample 1	232	196	.437	
Question 2				
Subsample 1 Model Tested on Subsample 1	232	134	.347	.454
Subsample 1 Model Tested on Subsample 2	231	113	.429	
Subsample 2 Model Tested on Subsample 2	231	142	.342	
Subsample 2 Model Tested on Subsample 1	232	112	.456	
Question 3				
Subsample 1 Model Tested on Subsample 1	232	154	.447	.599
Subsample 1 Model Tested on Subsample 2	231	133	.543	
Subsample 2 Model Tested on Subsample 2	231	164	.434	
Subsample 2 Model Tested on Subsample 1	232	128	.567	
Question 4				
Subsample 1 Model Tested on Subsample 1	232	256	.102	.118
Subsample 1 Model Tested on Subsample 2	231	192	.209	
Subsample 2 Model Tested on Subsample 2	231	238	.136	
Subsample 2 Model Tested on Subsample 1	232	197	.197	
Question 5				
Subsample 1 Model Tested on Subsample 1	232	195	.308	.484
Subsample 1 Model Tested on Subsample 2	231	156	.504	
Subsample 2 Model Tested on Subsample 2	231	199	.281	
Subsample 2 Model Tested on Subsample 1	232	160	.517	
Question 6				
Subsample 1 Model Tested on Subsample 1	232	266	.393	.348
Subsample 1 Model Tested on Subsample 2	231	199	.256	
Subsample 2 Model Tested on Subsample 2	231	252	.383	
Subsample 2 Model Tested on Subsample 1	232	215	.257	

NOTE: Categories for each sample and model are only retained if they have at least 4 responses.

Table H58: Cross-Validations of Category Count if Only the Categories Occurring in Both Subsamples Are Retained

	N	# of Categories	Validity of Category Count
Question 2			
Subsample 1 Model Tested on Subsample 1	232	102	.335
Subsample 1 Model Tested on Subsample 2	231	102	.426
Subsample 2 Model Tested on Subsample 2	231	105	.442
Subsample 2 Model Tested on Subsample 1	232	105	.340

Table H59: Cross-Validations of a Composite of Category Count and Word Count

Question 2	N	# of Categories	Validity of Category Count	Validity of Word Count	r between Category Count and Word Count	Validity of Category and Word Count Composite	Validity of LIWC Composite	Validity of Category Count, LIWC Composite, and Errors Composite
Subsample 1 Model Tested on Subsample 1	232	134	.347	.396	.592	.426	.450	.455
Subsample 1 Model Tested on Subsample 2	231	113	.429	.493	.767	.500	.505	.517
Subsample 2 Model Tested on Subsample 2	231	142	.342	.493	.778	.513	.505	.519
Subsample 2 Model Tested on Subsample 1	232	112	.456	.396	.573	.425	.449	.455

Table H60: Analysis of Whether Item Analysis to Improve Reliability Might Improve Cross-Validities

VALIDITY APPROACH FIRST

Step 1: Select categories with .05 correlation or greater (absolute value) with human rating

Question 2	# of Categories	r	Alpha
Subsample 1 Model Tested on Subsample 1	67	.582	.404
Subsample 1 Model Tested on Subsample 2	67	.384	.411
Subsample 2 Model Tested on Subsample 2	81	.604	.591
Subsample 2 Model Tested on Subsample 1	81	.273	.467

Step 2: Conduct item analysis on the categories from Step 1 and select the variables with a .05 corrected item-total correlation or greater (absolute value)

Question 2	# of Categories	r	Alpha
Subsample 1 Model Tested on Subsample 1	51	.514	.468
Subsample 1 Model Tested on Subsample 2	51	.349	.368
Subsample 2 Model Tested on Subsample 2	59	.527	.631
Subsample 2 Model Tested on Subsample 1	59	.293	.497

ITEM ANALYSIS APPROACH FIRST

Step 1: Select the categories with a .05 corrected item-total correlation or greater (absolute value)

Question 2	# of Categories	r	Alpha
Subsample 1 Model Tested on Subsample 1	83	.528	.561
Subsample 1 Model Tested on Subsample 2	82	.251	.565
Subsample 2 Model Tested on Subsample 2	85	.487	.660
Subsample 2 Model Tested on Subsample 1	85	.285	.583

Step 2: With categories from Step 1, select variables with .05 correlation or greater (absolute value) with human rating

Question 2	# of Categories	r	Alpha
Subsample 1 Model Tested on Subsample 1	52	.543	.527
Subsample 1 Model Tested on Subsample 2	52	.276	.474
Subsample 2 Model Tested on Subsample 2	56	.509	.634
Subsample 2 Model Tested on Subsample 1	56	.281	.506

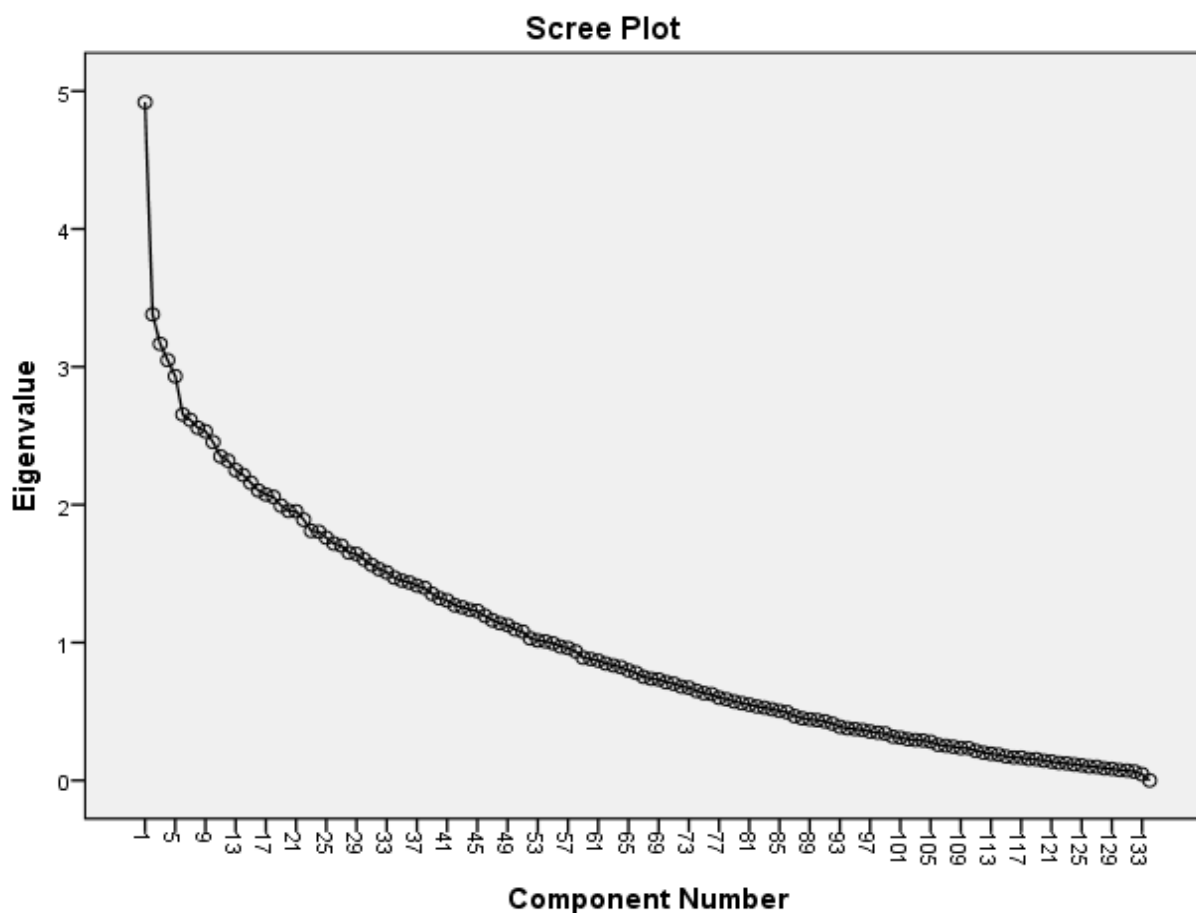


Figure H2. Plot of Eigenvalues (Question 2)

Table H61: Correlations of LIWC Variables with Interview Ratings for All Questions

Category	Question 1: Correlations with Interview Ratings	Question 2: Correlations with Interview Ratings	Question 3: Correlations with Interview Ratings	Question 4: Correlations with Interview Ratings	Question 5: Correlations with Interview Ratings	Question 6: Correlations with Interview Ratings
WC	.450**	.454**	.599**	.118*	.484**	.348**
Analytic	.322**	.185**	0.081	.207**	.133**	.222**
Clout	.200**	0.041	0.055	.207**	-0.062	-0.008
Authentic	-.193**	-0.051	-.131**	-0.016	0.056	0.013
Tone	0.035	-0.077	-0.006	.210**	-0.002	0.018
WPS	-0.085	-0.087	0.022	-0.042	.098*	-0.076
Sixltr	.189**	.201**	.228**	.138**	.173**	.154**
Dic	-0.075	-0.013	0.043	0.012	-0.068	-.145**
function	-.243**	-.178**	-0.069	-.120**	-.155**	-.264**
pronoun	-.210**	-.200**	-.105*	-.191**	-.148**	-.204**

ppron	-.101*	-.123**	-.160**	-.226**	-.166**	-.147**
i	-.161**	-0.078	-.127**	-.246**	-0.048	-0.063
we	.169**	0.021	-0.091	.198**	-0.091	-0.004
you	-.144**	-0.067	0.008	-0.025	-.103*	-.096*
shehe	-0.004	0.052	-0.079	-.214**	-0.025	-0.058
they	0.054	-0.038	0.068	0.021	0.007	-0.037
ipron	-.212**	-.164**	0.022	0.026	-0.036	-.133**
article	.163**	0.082	0.055	.149**	0.032	0.077
prep	.112*	.126**	0.039	0.082	0.057	0.065
auxverb	-.173**	-0.063	-0.027	-0.088	-.104*	-.194**
adverb	-.295**	-0.033	0.012	-.105*	-0.075	-.157**
conj	-.157**	-0.025	0.009	0.051	0.068	-0.01
negate	-.179**	-.157**	-0.05	-.160**	-.174**	-.141**
verb	-.253**	-0.059	-0.052	-.111*	-.105*	-.213**
adj	-0.06	0	-0.042	0.037	-0.053	0.063
compare	-0.039	-0.034	-0.04	0.014	0.002	0.052
interrog	-.092*	.101*	0.058	0.054	.133**	-0.084
number	.097*	-0.026	-0.073	0.038	0.083	.104*
quant	0.007	0.018	-0.065	.250**	0.027	.119*
affect	-0.053	-0.034	0.022	-0.014	-.142**	-0.072
posemo	-0.014	-0.065	0.022	.111*	-0.085	-0.025
negemo	-0.072	0.023	-0.005	-.174**	-.122**	-.094*
anx	-0.023	-0.021	-0.014	-.120**	-.150**	-0.047
anger	-0.023	-0.09	0.052	-0.042	0.017	-0.062
sad	-0.03	-0.007	-0.057	-.164**	0.057	-0.037
social	0.071	-0.027	0.008	0.006	-.121**	-.097*
family	-0.043	-0.072	-0.087	-.099*	-.111*	-0.06
friend	-.109*	-0.021	-.093*	0.022	-.120*	-0.091
female	0.015	-0.027	-0.082	-.130**	-0.056	-0.053
male	-0.056	0.084	-.113*	-.186**	0.044	-0.049
cogproc	-.223**	0.091	0.055	.152**	0.06	-.118*
insight	-0.059	.107*	0.025	.239**	.137**	-0.009
cause	-.140**	0.042	0.071	0.07	0.087	-0.048
discrep	0.068	0.042	-0.015	0.054	0.073	-0.043
tentat	-.117*	0.032	-0.016	0.06	-0.05	-0.069
certain	-.131**	0.031	0.072	-0.01	-0.036	-0.039
differ	-.179**	-0.061	-0.064	0.016	-0.039	-.143**
percept	-0.082	-0.09	-.128**	0.056	0.012	-0.022
see	-0.038	-0.008	-0.016	.104*	.137**	-0.042
hear	0.003	-.134**	-0.086	0.004	-0.008	0.058
feel	-0.088	-0.049	-.096*	-0.018	-.153**	-0.032
bio	0.046	-0.086	0.012	-0.051	-.100*	0.012
body	-0.037	-0.014	0.044	-0.027	-0.072	-0.054

health	0.056	-.116*	-0.002	-0.023	-0.078	0.025
sexual	0.071	-0.06	-0.069	0.005	0.037	-0.059
ingest	.107*	-0.033	0.023	-0.038	-0.016	0.049
drives	.220**	0.089	-0.027	.153**	-0.024	0.024
affiliation	.149**	.103*	0.012	.232**	-0.056	-0.039
achieve	.216**	0.073	.109*	.107*	0.035	.109*
power	.143**	-0.011	-.096*	-0.039	0.024	0.036
reward	-0.039	-0.09	-0.053	-0.052	-.114*	-0.009
risk	-0.005	.118*	0.01	-.110*	-0.005	-0.073
focuspast	-0.014	-0.056	-0.07	-.106*	0.082	-0.016
focuspresent	-.183**	0.021	0.03	-0.043	-.193**	-.193**
focusfuture	-.126**	-0.069	.108*	-0.059	-0.012	0.004
relativ	-0.046	0.006	-0.061	-0.035	.121**	.130**
motion	-.145**	0.038	0.016	-.108*	-0.033	0.032
space	.116*	0.026	-.116*	0.056	0.057	0.061
time	-0.082	-0.062	0.038	-0.089	.116*	.134**
work	.274**	.181**	.179**	0.057	.098*	.145**
leisure	.101*	-0.035	.103*	0.011	-0.056	0.044
home	-0.003	-.103*	-0.068	-0.082	-.103*	-0.036
money	.153**	-0.078	0.062	-0.08	-0.057	.123**
relig	0.005	-0.064	-0.046	-0.075	-0.039	-0.034
death	0.003	-0.031	-0.016	0.017	-0.071	-0.008
informal	-0.064	-.105*	-0.016	-0.016	0.003	-0.009
swear	-0.012	-.096*	0.035	-0.031	-0.031	0.006
netspeak	-0.062	-.104*	-0.034	-0.055	-0.076	0.029
assent	-0.046	-0.012	-0.066	0.02	-0.001	-0.039
nonflu	-0.019	-0.03	0.087	0.043	0.051	0.014
filler	-0.024	-0.041	-0.026	-0.087	0.013	-0.065
AllPunc	-0.031	.114*	0.009	0.049	0.083	.100*
Period	-0.032	0.019	-.111*	0.003	-.160**	0.045
Comma	0.073	0.024	0.088	.099*	.156**	.141**
Colon	0.019	0.047	0.035	-0.035	.098*	-0.021
SemiC	-0.018	0.057	0.032	0.028	0.06	0.067
QMark	-0.025	.114*	0.029	-0.08	0.084	-0.08
Exclam	-0.004	-0.066	-0.035	-0.018	-0.047	-0.039
Dash	.187**	0.048	0.04	.108*	0.078	.132**
Quote	0.008	.118*	0.045	-0.051	0.055	-0.065
Apostro	-.117*	0.041	-0.036	-0.058	-0.057	-0.032
Parenth	.104*	.117*	-0.044	0.077	.154**	-0.049
OtherP	0.064	0.066	0.058	-0.019	0.073	0.003

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Table H62: Correlations of LIWC Variables with AFQT for All Questions

Category	Question 1: Correlations with AFQT	Question 2: Correlations with AFQT	Question 3: Correlations with AFQT	Question 4: Correlations with AFQT	Question 5: Correlations with AFQT	Question 6: Correlations with AFQT
WC	.171**	.267**	.187**	.100*	.167**	.172**
Analytic	.136**	.219**	.112*	.221**	.101*	.186**
Clout	0.04	.093*	-0.018	0.092	-0.075	-0.038
Authentic	0.015	0.045	-0.022	-0.014	0.036	0.08
Tone	-0.062	-0.02	-0.042	-0.07	0.064	-.112*
WPS	-.094*	-0.069	-0.022	-.101*	-0.072	-0.09
Sixltr	.187**	.341**	.179**	.280**	.294**	.135**
Dic	0.004	.142**	0.05	0.035	0.033	0.09
function	-0.025	.092*	0.034	-0.042	-0.07	-0.079
pronoun	-.118*	-0.072	-.105*	-.141**	-.166**	-.133**
ppron	-.107*	-0.025	-.126**	-.133**	-.131**	-0.073
i	-.103*	-0.081	-0.069	-.113*	-0.01	-0.027
we	0.054	-0.039	-0.054	0.081	-0.034	0.007
you	-0.005	0.013	-0.001	-.092*	-.122**	-0.047
shehe	-0.048	-0.025	-.098*	-.125**	-0.085	-0.083
they	-0.008	.144**	-0.037	0.03	0.004	-0.059
ipron	-0.063	-0.092	-0.028	-0.047	-.108*	-.157**
article	0.055	.178**	.136**	.149**	0.007	0.058
prep	.115*	.180**	0.083	.124**	0.077	.142**
auxverb	-0.089	-0.014	0.021	-0.074	-0.021	-0.073
adverb	-0.017	0.086	0.003	-.116*	0.047	-0.054
conj	-0.037	0.043	0.033	-0.077	0.066	-0.02
negate	0.035	-0.051	0.028	0.013	-.137**	-0.077
verb	-.130**	-0.001	-0.05	-.147**	-0.072	-.139**
adj	0.088	.093*	0.007	.118*	0.032	0.084
compare	0.068	0.063	0.07	0.082	0.054	0.09
interrog	-.129**	0.004	-.100*	-.093*	0.085	-.126**
number	0.052	-0.06	-0.033	0.085	0.03	0.046
quant	0.053	0.022	0.008	.203**	0.062	.150**
affect	-0.023	-0.004	0.02	-0.017	0.01	-0.01
posemo	-0.054	-0.02	0.02	-0.071	0.043	-0.073
negemo	0.042	0.009	0.009	0.064	-0.089	0.088
anx	-0.046	-0.074	0	0.049	-0.089	0.048
anger	0.055	0.008	0.06	.119*	0.015	-0.045
sad	0.041	-0.069	-0.036	0.01	0	0.079
social	-0.043	0.067	-0.072	-0.026	-.131**	-.094*
family	-0.028	0.007	-0.01	-0.045	-0.073	-0.005
friend	0.026	0.06	-0.035	-0.012	-0.082	-0.077

female	-0.076	-0.05	-0.082	-0.04	-.109*	-.098*
male	-0.002	0.041	-0.076	-.127**	-0.052	-0.001
cogproc	-0.053	.191**	0.036	-0.009	0.091	-0.058
insight	-0.034	.225**	0.025	-0.036	0.089	-0.05
cause	-.114*	.106*	0.033	-0.052	.199**	-.124**
discrep	-0.055	0.056	0.031	-0.031	0.074	0.033
tentat	0.032	.184**	0.031	0.069	0.006	0.013
certain	-0.075	0.029	-0.042	0.083	-0.085	0.034
differ	0.042	.112*	0.04	-0.008	-0.024	-0.015
percept	-0.06	0.039	-0.043	-0.033	-0.036	0.013
see	-0.021	0.06	-0.013	0.006	0.069	0.049
hear	-0.008	-0.023	-0.013	0.002	-0.046	-0.028
feel	-0.045	0.002	-0.068	-0.068	-.133**	0.01
bio	0.036	-0.069	-0.025	-0.003	0.02	.103*
body	-0.007	-0.01	0.005	-0.027	0.004	-0.037
health	0.046	-0.047	-0.084	0.013	0.006	.127**
sexual	-0.064	0.01	.092*	0.011	0.011	-0.03
ingest	0.065	-.097*	0.007	0.007	0.045	0.078
drives	0.058	.122**	0.081	.155**	-0.091	0.039
affiliation	0.03	0.061	0.037	.139**	-0.032	-0.014
achieve	0.055	.173**	.111*	.119*	-0.017	0.067
power	0.025	-0.031	0.082	0.084	-0.052	0.058
reward	-0.065	-.119*	-0.018	0.014	-.230**	-0.032
risk	0.069	.115*	0.001	-0.014	-0.061	0
focuspast	-0.014	0.026	-.106*	-0.066	0.033	-0.024
focuspresent	-.106*	0.041	0.03	-0.058	-.109*	-.120*
focusfuture	-0.001	-0.045	0.083	-0.021	-0.017	0.031
relativ	0.052	0.043	0.052	0.04	0.088	.152**
motion	-0.057	.098*	0.017	-0.071	0.036	0.009
space	0.035	0.026	0.051	0.054	-0.01	0.041
time	.094*	-0.019	0.044	0.027	.100*	.203**
work	0.091	.123**	0.075	.158**	0.087	.152**
leisure	-0.026	-0.033	.093*	0.021	-0.001	-0.003
home	0.059	-0.054	-0.021	0.054	-0.046	-0.001
money	0.007	-0.037	-0.009	0.017	-0.015	0.009
relig	0.026	-0.014	-0.027	-0.012	0.021	-0.014
death	0.024	-0.03	-0.036	0.046	-0.009	0.073
informal	-.121**	0.022	-0.025	-0.092	-0.058	0.043
swear	-0.032	0.015	0.052	0.009	0.027	0.032
netspeak	-0.086	-.109*	-0.043	-0.042	-.127**	-0.008
assent	-.094*	-0.037	-0.045	-.097*	-0.033	-0.032
nonflu	-0.057	.125**	0.006	0.009	-0.018	0.066
filler	0.002	-0.071	0.011	-.094*	0.076	-0.011

AllPunc	-0.086	-0.085	-0.086	-0.05	.157**	-0.086
Period	-0.086	-0.086	-0.087	-0.086	-0.076	-0.086
Comma	.183**	.161**	.151**	.197**	.192**	-0.086
Colon	-0.045	0.034	0.019	0.073	0.049	0.041
SemiC	0.072	0.05	0.043	.097*	.100*	.098*
QMark	0.049	0.054	0.015	0.008	0.068	-0.026
Exclam	-.100*	-0.009	-0.019	-0.048	-0.049	-0.035
Dash	.129**	0.047	0.051	0.006	0.055	.147**
Quote	0.034	0.089	-0.058	-0.006	0.036	-0.006
Apostro	0.047	.097*	0.052	0.064	0.023	0.057
Parenth	0.031	0.067	-0.005	0.058	0.084	0.076
OtherP	-0.031	-0.045	-0.027	0.006	.139**	0
** Correlation is significant at the 0.01 level (2-tailed).						
* Correlation is significant at the 0.05 level (2-tailed).						

Table H63: Differences in Unstandardized Predicted Value by Gender and Race Using the Subsample 1 Regression Model Applied to Subsample 1 for Questions 2 and 4

Question 2				
Gender	N	Mean	SD	d-score
Women	110	1.484	.390	.093
Men	118	1.447	.410	
Racioethnicity	N	Mean	SD	d-score
Whites	158	1.468	.395	.008
Blacks	38	1.471	.417	
Whites	140	1.483	.410	.183
Hispanics	42	1.410	.357	
<i>Note.</i> Pooled SD for Women vs. Men was .400. Pooled SD for Whites vs. Blacks was .398. Pooled SD for Whites vs. Hispanics was .399. Calculator used to estimate d-score: https://www.socscistatistics.com/effectsize/default3.aspx				

Question 4				
Gender	N	Mean	SD	d-score
Women	110	1.498	.508	.278
Men	120	1.363	.459	
Racioethnicity	N	Mean	SD	d-score
Whites	158	1.452	.486	.264
Blacks	38	1.324	.474	
Whites	140	1.478	.488	.378
Hispanics	42	1.295	.447	
<i>Note.</i> Pooled SD for Women vs. Men was .486. Pooled SD for Whites vs. Blacks was .485 Pooled SD for Whites vs. Hispanics was .484. Calculator used to estimate d-score: https://www.socscistatistics.com/effectsize/default3.aspx				

Table H64: Differences in Average Human Rating by Gender and Race Using the Subsample 1 Regression Model Applied to Subsample 1 for Questions 2 and 4

Question 2				
Gender	N	Mean	SD	d-score
Women	108	1.528	.546	.180
Men	116	1.431	.531	
Racioethnicity	N	Mean	SD	d-score
Whites	156	1.462	.528	.200
Blacks	36	1.569	.563	
Whites	138	1.478	.540	.090
Hispanics	42	1.429	.569	
<i>Note.</i> Pooled SD for Women vs. Men was .539. Pooled SD for Whites vs. Blacks was .535. Pooled SD for Whites vs. Hispanics was .546. Calculator used to estimate d-score: https://www.socscistatistics.com/effectsize/default3.aspx				

Question 4				
Gender	N	Mean	SD	d-score
Women	109	1.532	.579	.364
Men	119	1.336	.483	
Racioethnicity	N	Mean	SD	d-score
Whites	157	1.455	.547	.115
Blacks	37	1.392	.567	
Whites	139	1.486	.558	.454
Hispanics	42	1.238	.459	
<i>Note.</i> Pooled SD for Women vs. Men was .539. Pooled SD for Whites vs. Blacks was .550. Pooled SD for Whites vs. Hispanics was .546. Calculator used to estimate d-score: https://www.socscistatistics.com/effectsize/default3.aspx				

Table 65: Correlations of English as First Language, Education, Unstandardized Predicted Scores (Subsample 1 Regression Model Applied to Subsample 1) and Human Ratings for Questions 2 and 4

	Mean	SD	Education	EFL	Unstandardized Predicted Value
Education	12.86	1.444			
English as First Language (EFL)	0.04	0.204	.197**		
Unstandardized Predicted Value	1.460	0.399	.198**	0.004	
Average Ratings from Human Raters	1.471	0.537	.162*	-0.049	.730**
<i>N</i> = 232 <i>Note.</i> Education ranges from 12 to 20. For EFL, (1 = “Yes” or Did not respond, 0 = “No” ** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).					

	Mean	SD	Education	EFL	Unstandardized Predicted Value
Education	12.86	1.444			
English as First Language (EFL)	0.04	0.204	.197**		
Unstandardized Predicted Value	1.430	0.488	-0.057	-0.044	
Average Ratings from Human Raters	1.433	0.542	-0.036	-0.072	.903**
<i>N</i> = 232 <i>Note.</i> Education ranges from 12 to 20. For EFL, (1 = “Yes” or Did not respond, 0 = “No” ** Correlation is significant at the 0.01 level (2-tailed).					

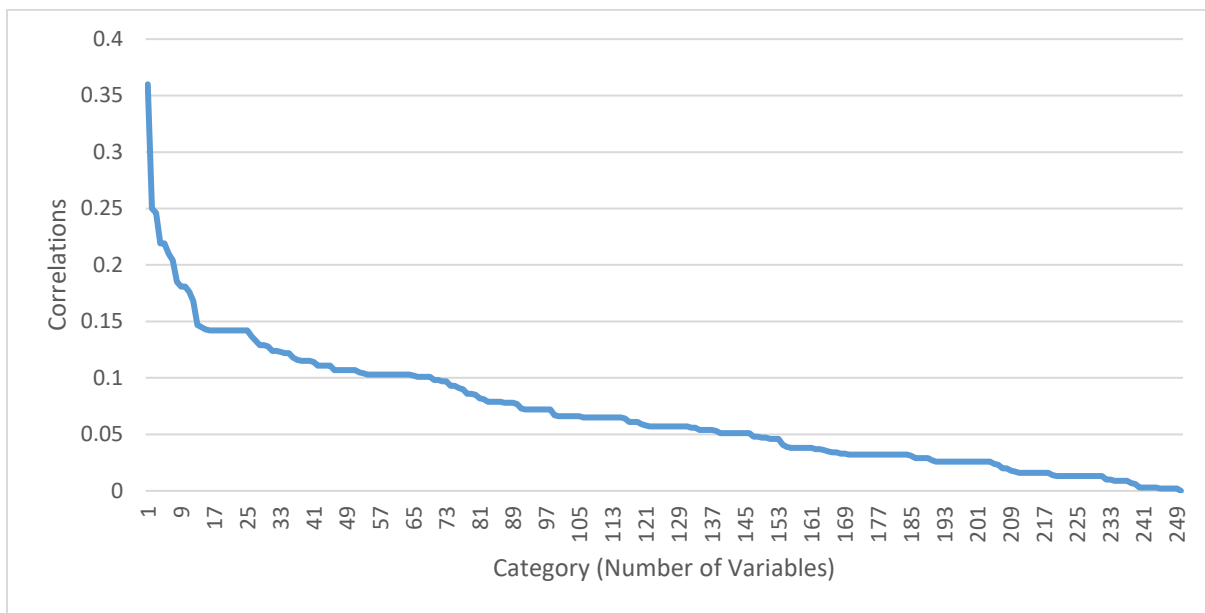


Figure H3: Plots of Correlations for Question 1 Model Trained (V18.2.1) in Subsample 1 and Tested in Subsample 1

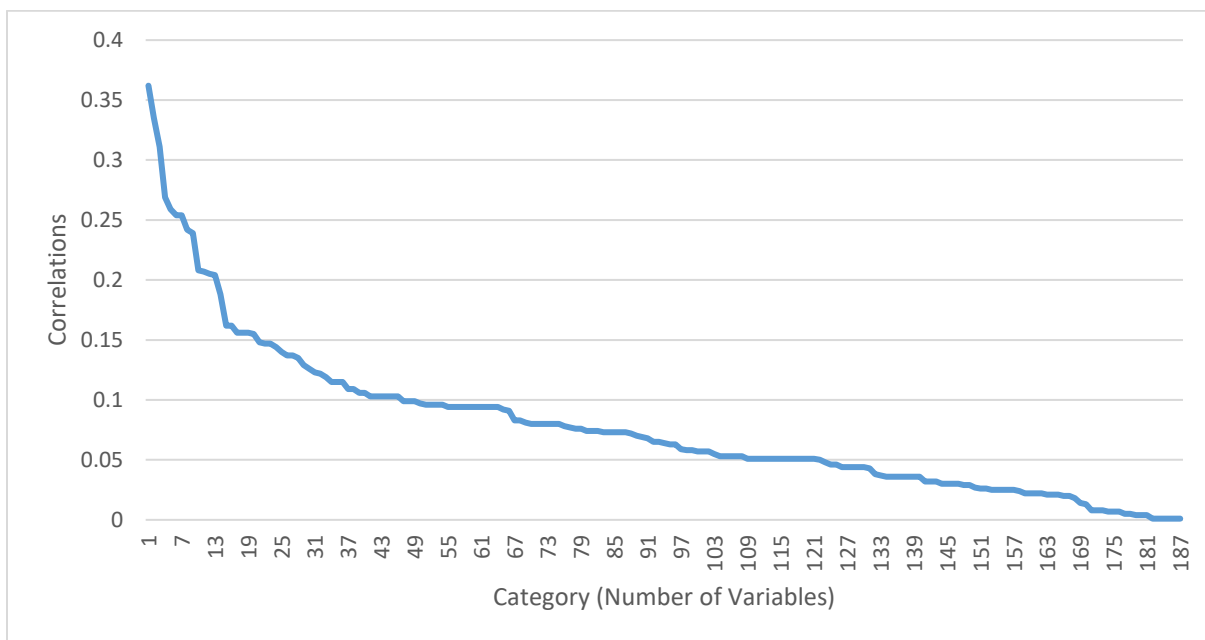


Figure H4. Plots of Correlations for Question 1 Model Trained (V18.2.1) in Subsample 1 and Tested in Subsample 2

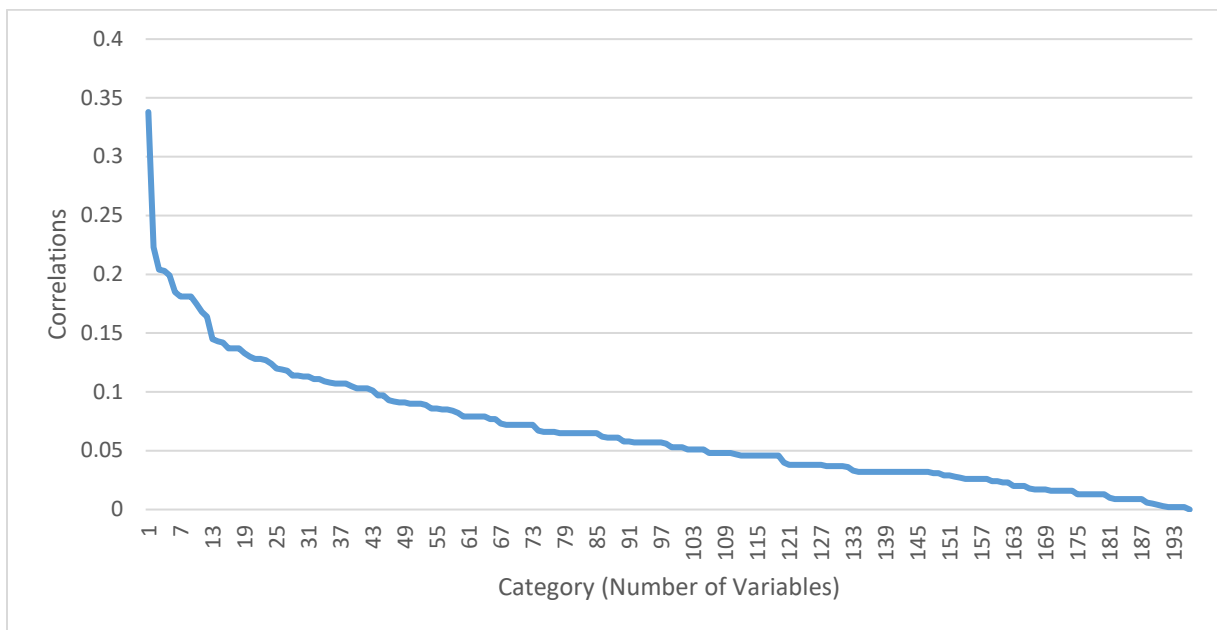


Figure H5. Plots of Correlations for Question 1 Model Trained (V18.2.1) in Subsample 2 and Tested in Subsample 1

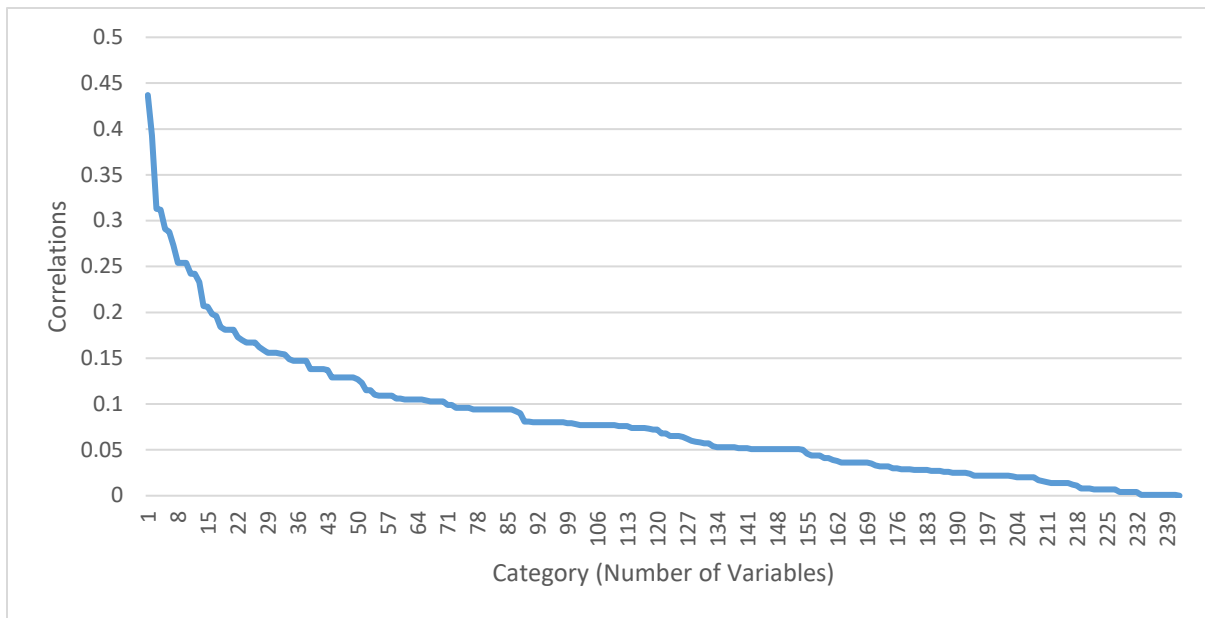


Figure H6/ Plots of Correlations for Question 1 Model Trained (V18.2.1) in Subsample 2 and Tested in Subsample

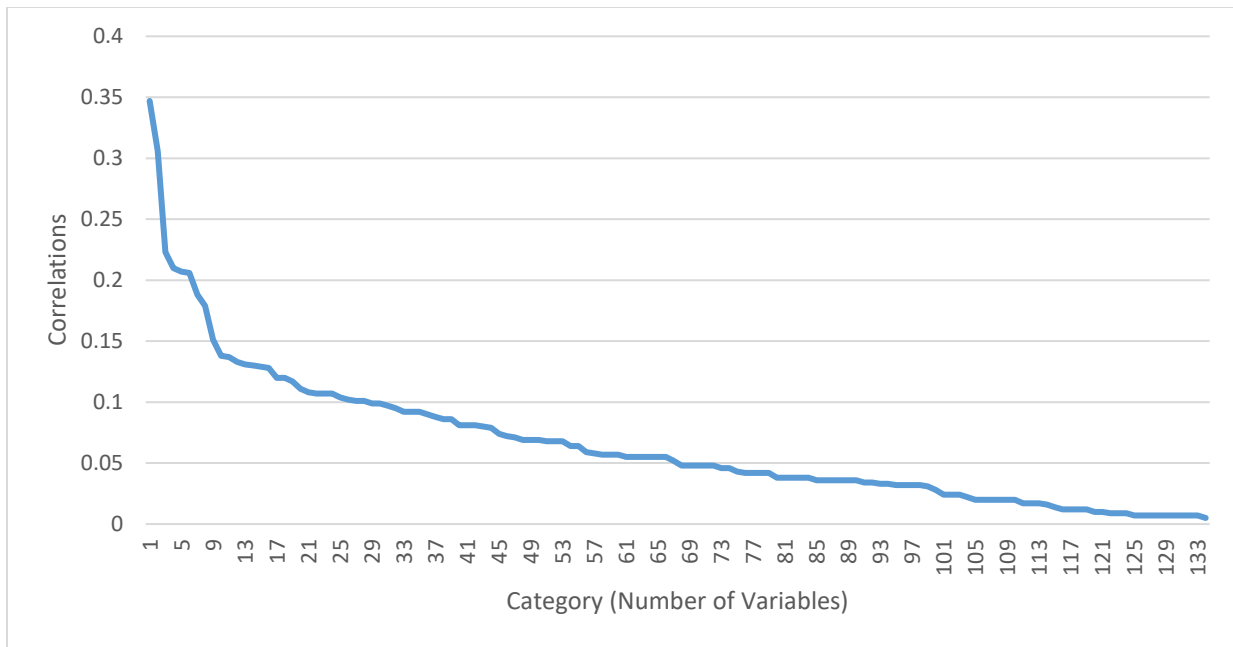


Figure H7. Plots of Correlations for Question 2 Model Trained (V18.2.1) in Subsample 1 and Tested in Subsample 1

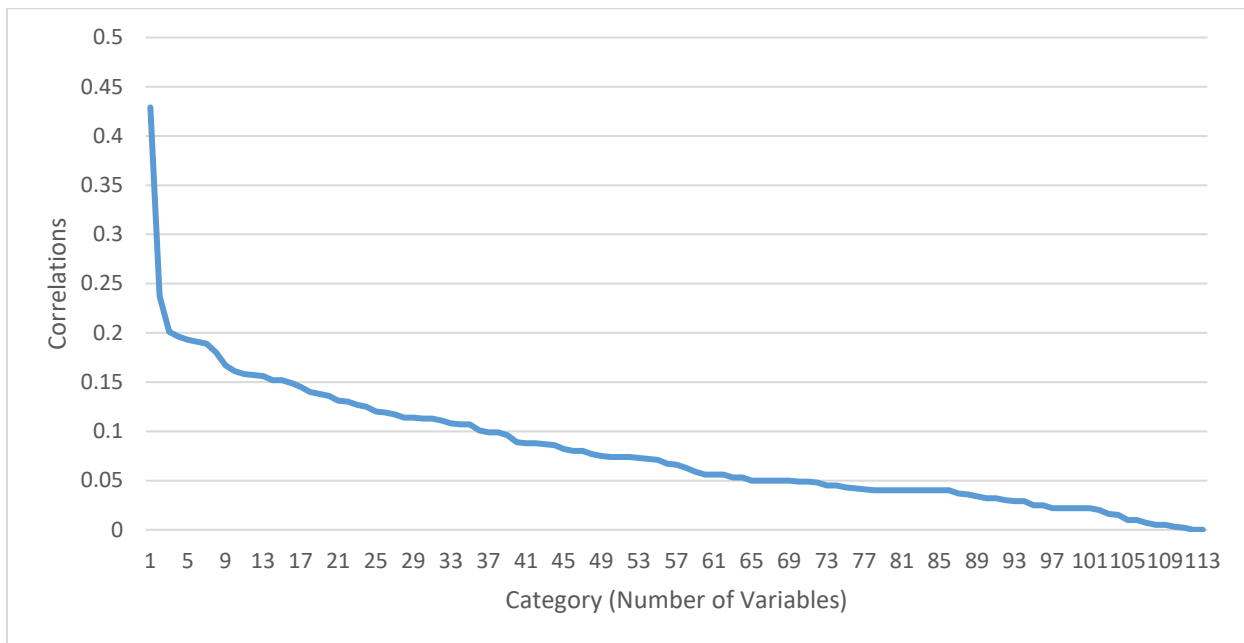


Figure H8. Plots of Correlations for Question 2 Model Trained (V18.2.1) in Subsample 1 and Tested in Subsample 2

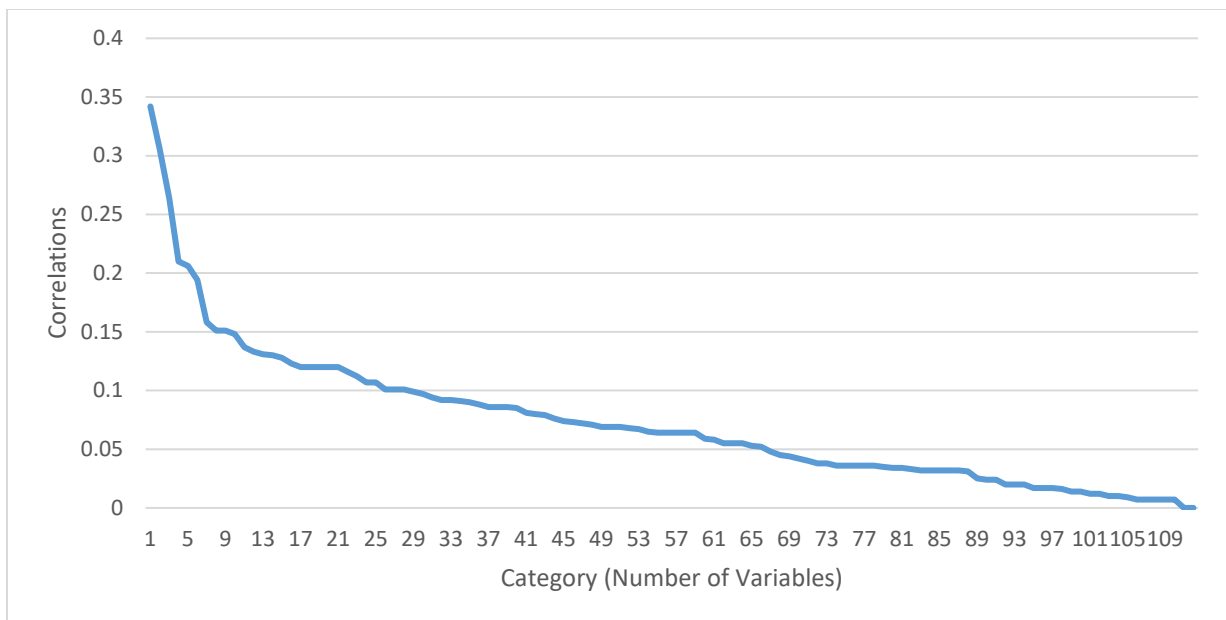


Figure H9. Plots of Correlations for Question 2 Model Trained (V18.2.1) in Subsample 2 and Tested in Subsample 1

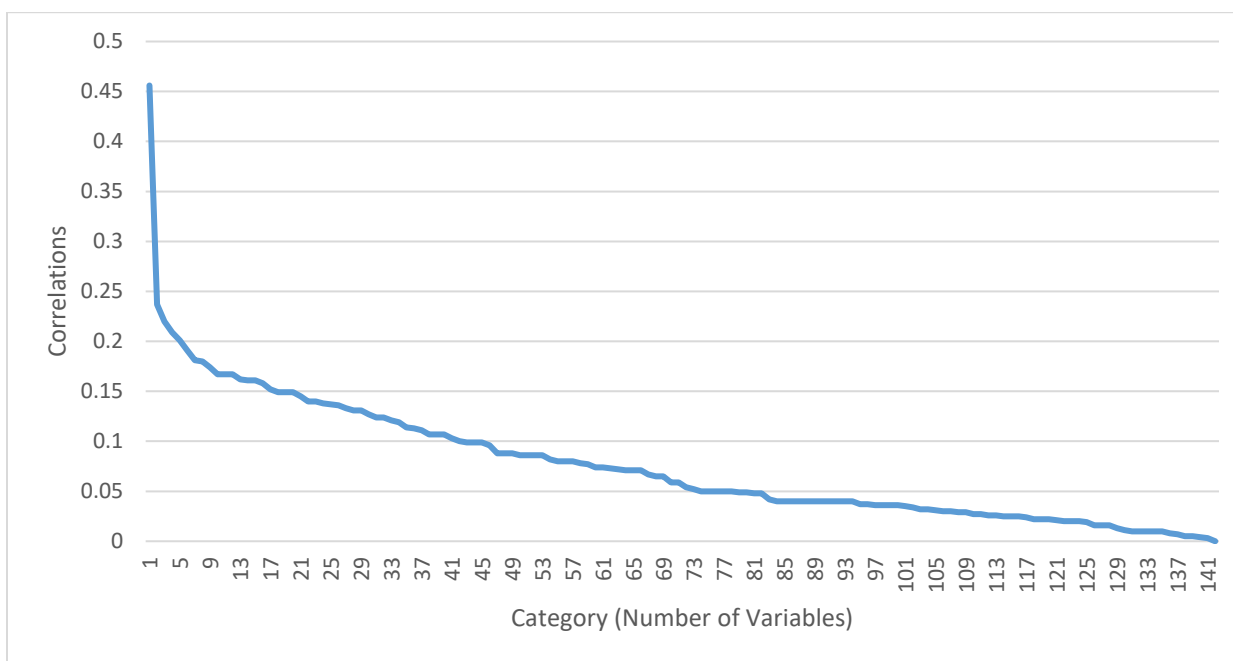


Figure H10. Plots of Correlations for Question 2 Model Trained (V18.2.1) in Subsample 2 and Tested in Subsample 2

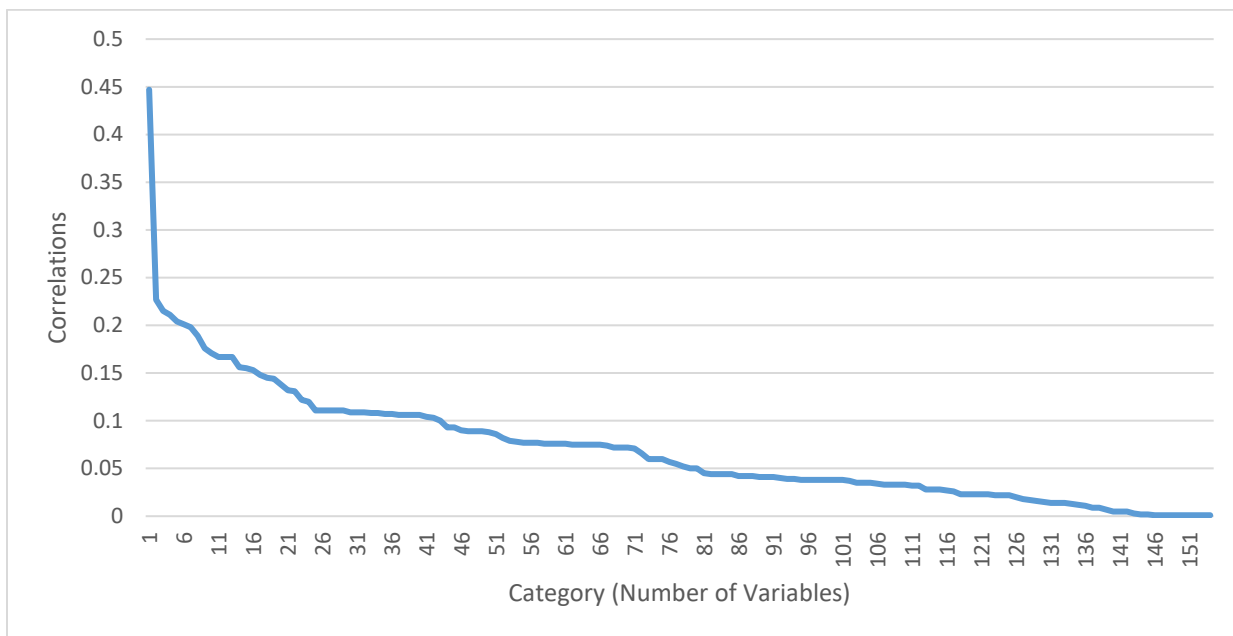


Figure H1. Plots of Correlations for Question 3 Model Trained (V18.2.1) in Subsample 1 and Tested in Subsample 2

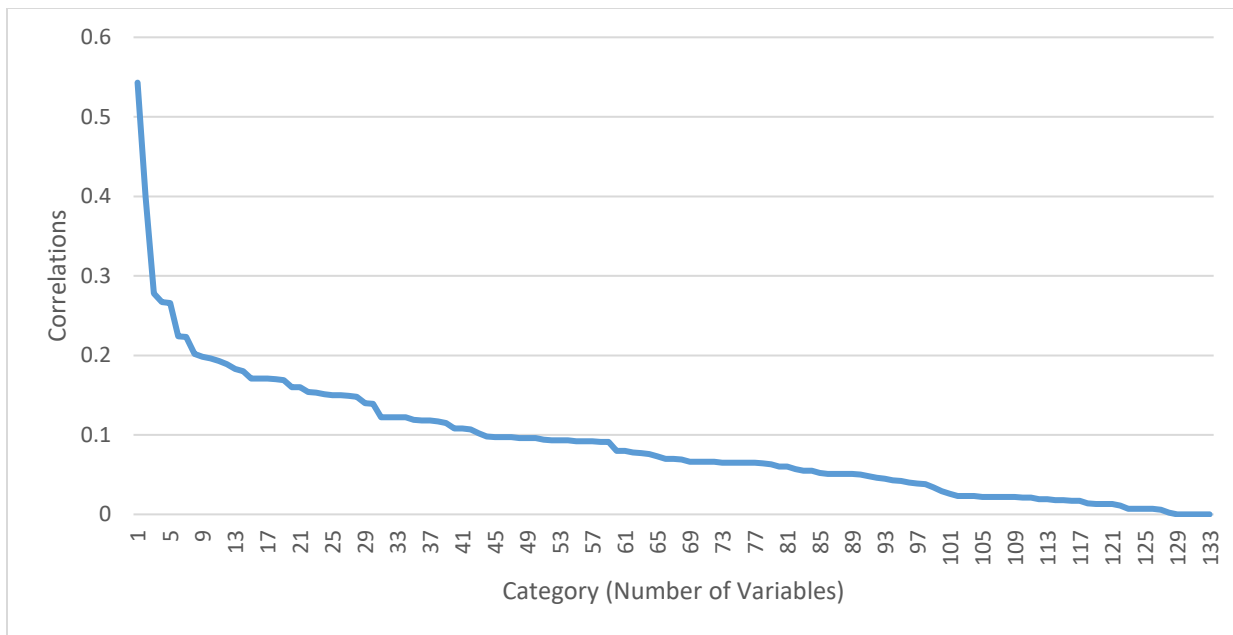


Figure H12: Plots of Correlations for Question 3 Model Trained (V18.2.1) in Subsample 1 and Tested in Subsample 1

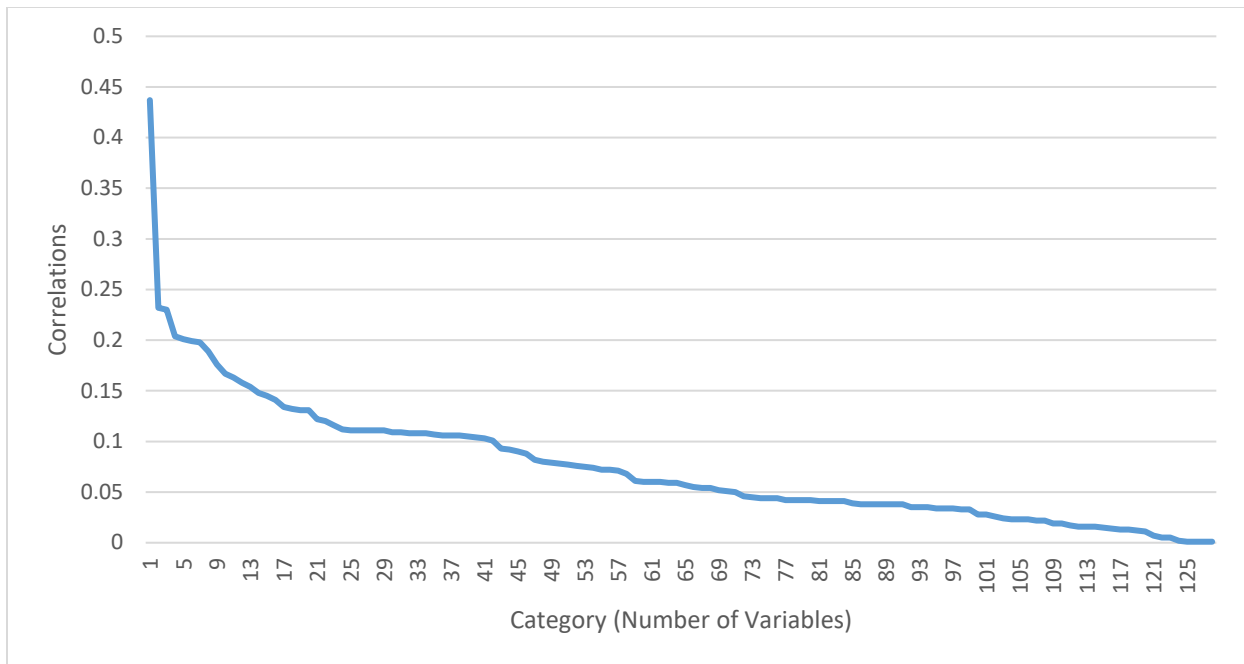


Figure H13. Plots of Correlations for Question 3 Model Trained (V18.2.1) in Subsample 2 and Tested in Subsample 1

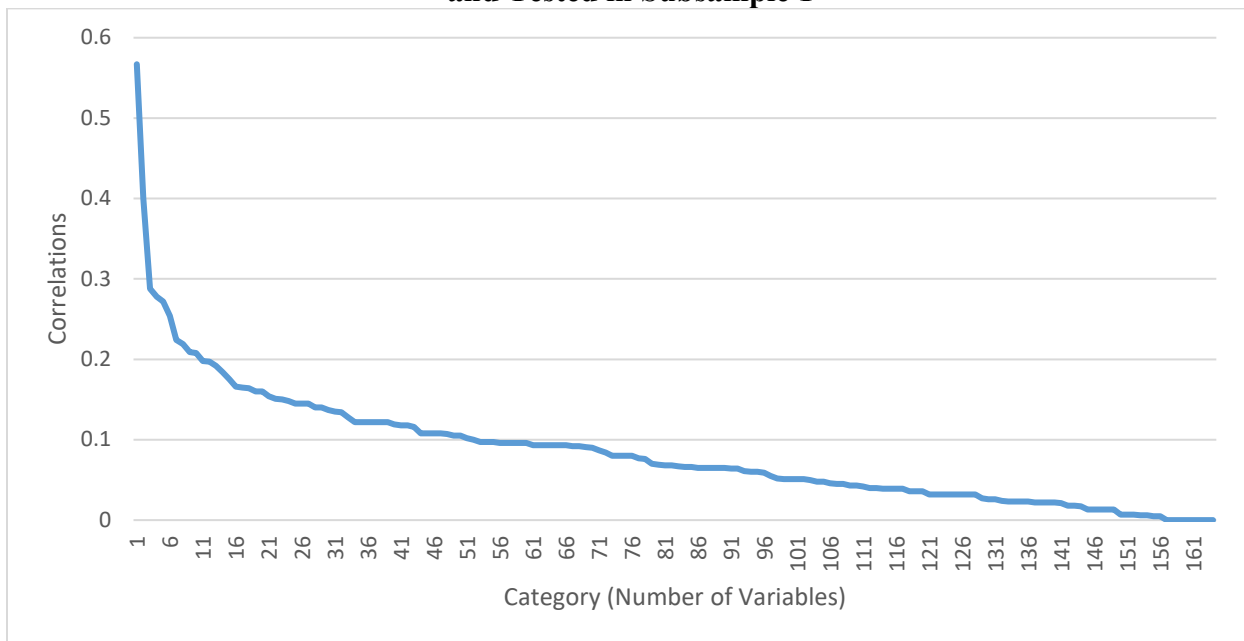


Figure H14: Plots of Correlations for Question 3 Model Trained (V18.2.1) in Subsample 2 and Tested in Subsample 2

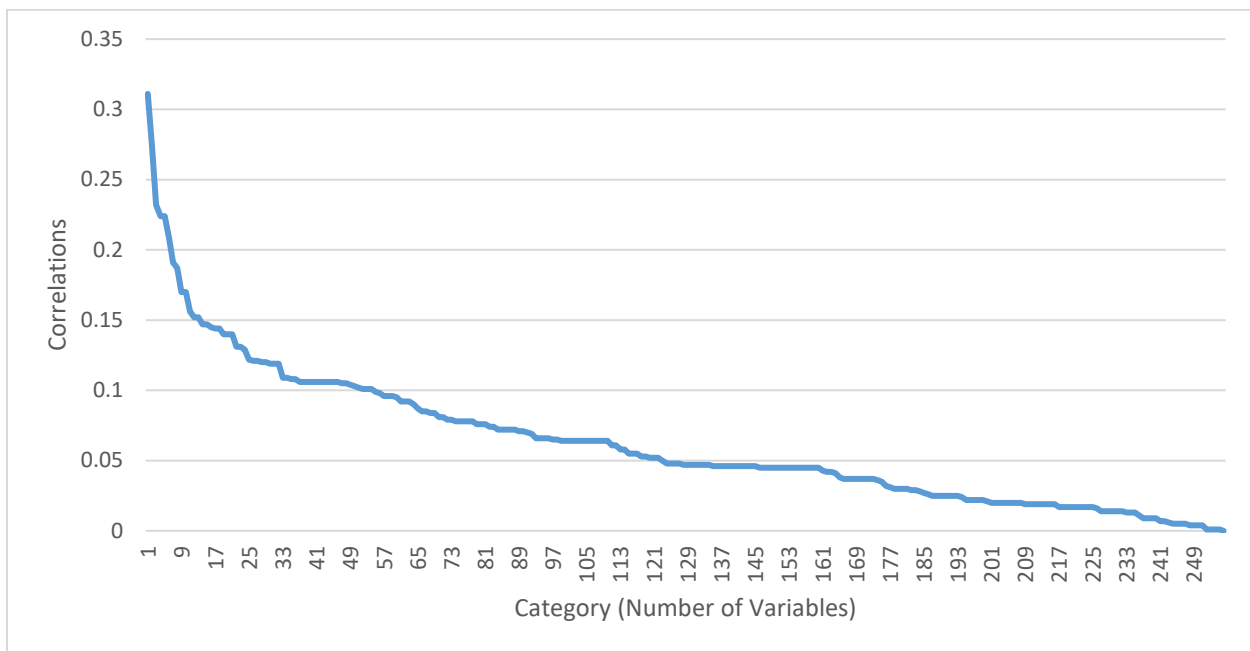


Figure H15/ Plots of Correlations for Question 4 Model Trained (V18.2.1) in Subsample 1 and Tested in Subsample 1

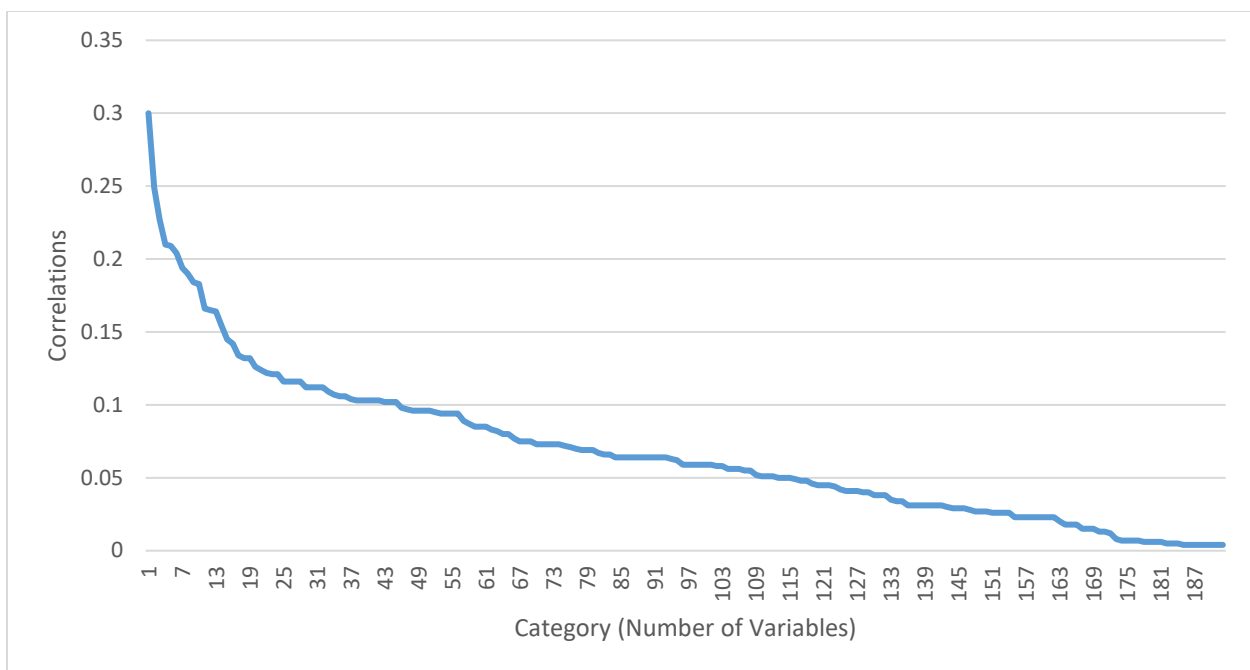


Figure H16. Plots of Correlations for Question 4 Model Trained (V18.2.1) in Subsample 1 and Tested in Subsample 2

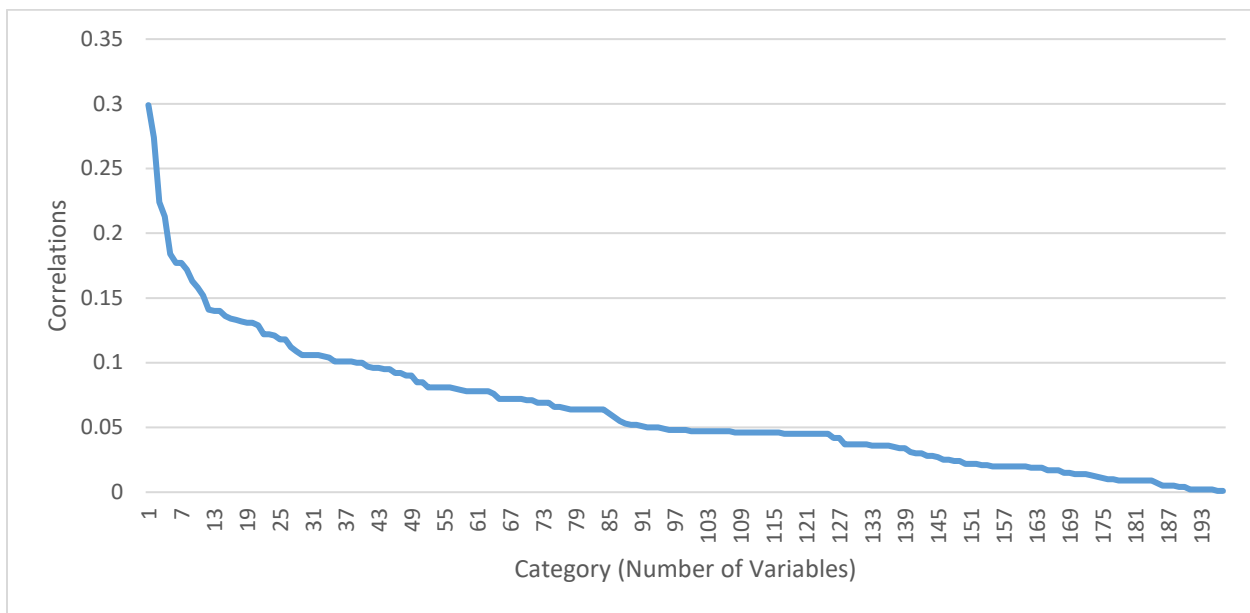


Figure H17. Plots of Correlations for Question 4 Model Trained (V18.2.1) in Subsample 2 and Tested in Subsample 1

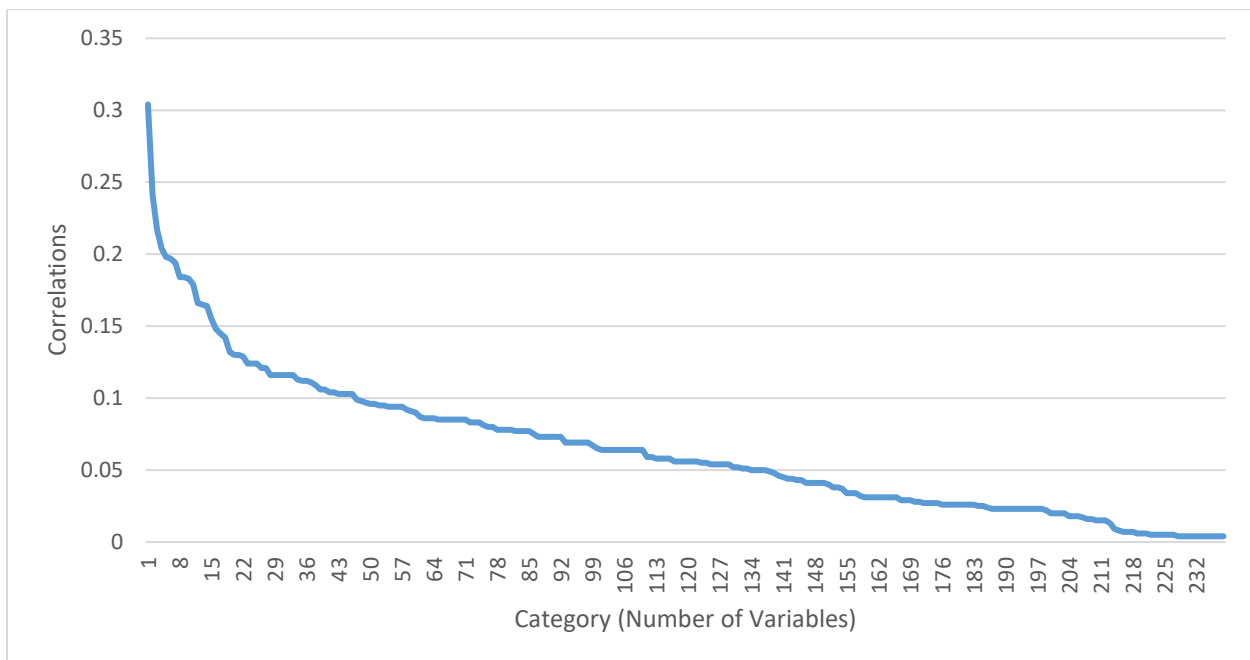


Figure H18. Plots of Correlations for Question 4 Model Trained (V18.2.1) in Subsample 2 and Tested in Subsample 2

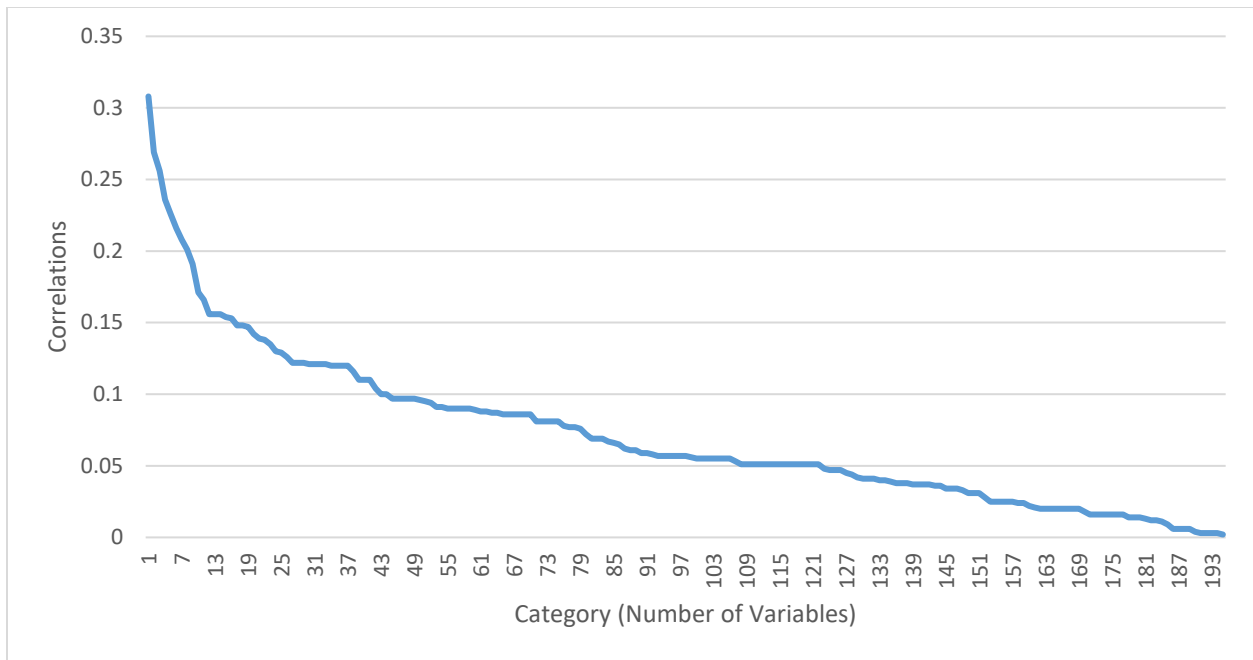


Figure H19. Plots of Correlations for Question 5 Model Trained (V18.2.1) in Subsample 1 and Tested in Subsample 1

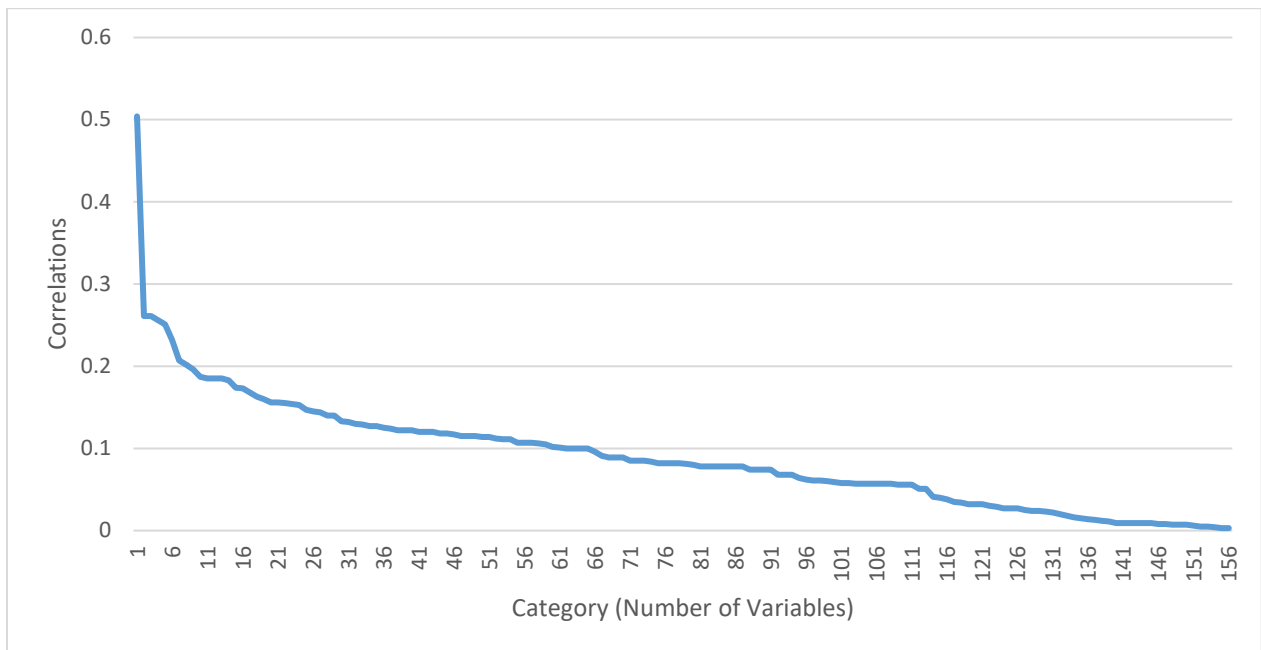


Figure H20:..Plots of Correlations for Question 5 Model Trained (V18.2.1) in Subsample 1 and Tested in Subsample 2

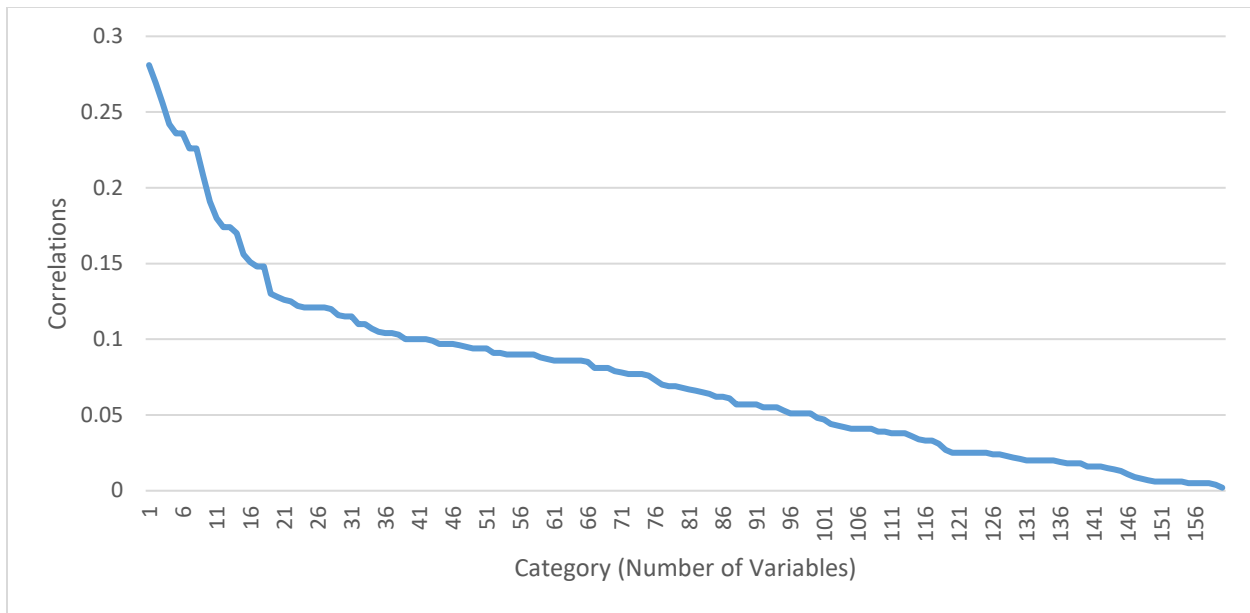


Figure H21. Plots of Correlations for Question 5 Model Trained (V18.2.1) in Subsample 2 and Tested in Subsample 1

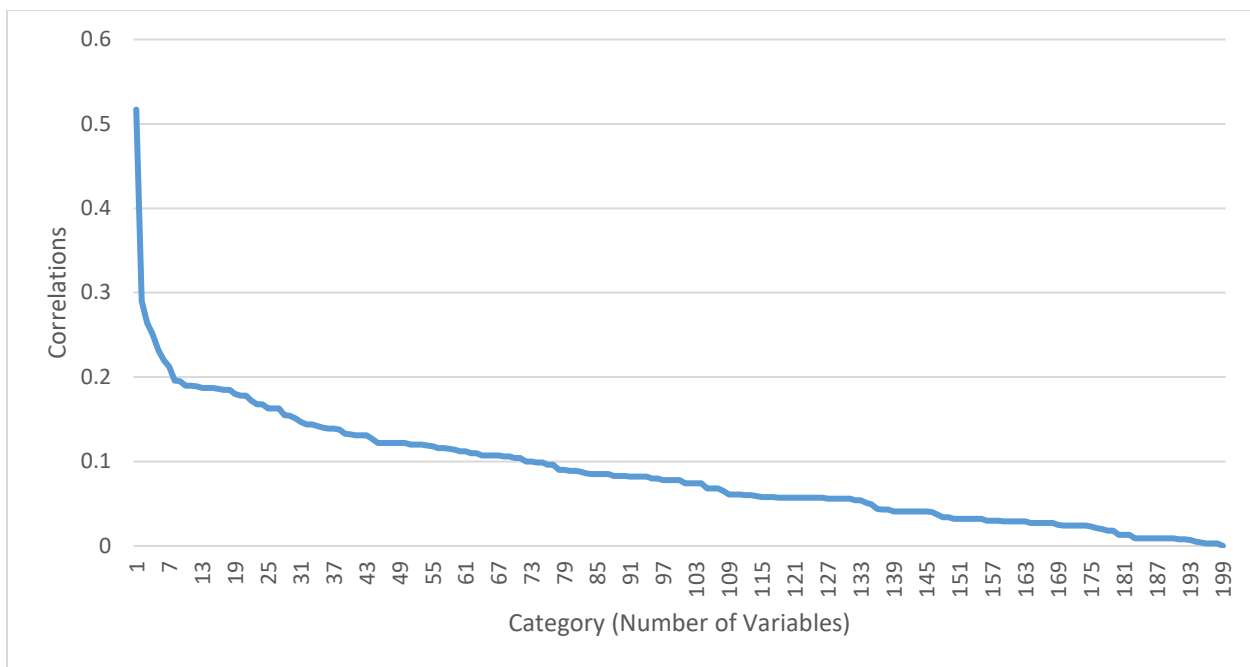


Figure H22. Plots of Correlations for Question 5 Model Trained (V18.2.1) in Subsample 2 and Tested in Subsample 2

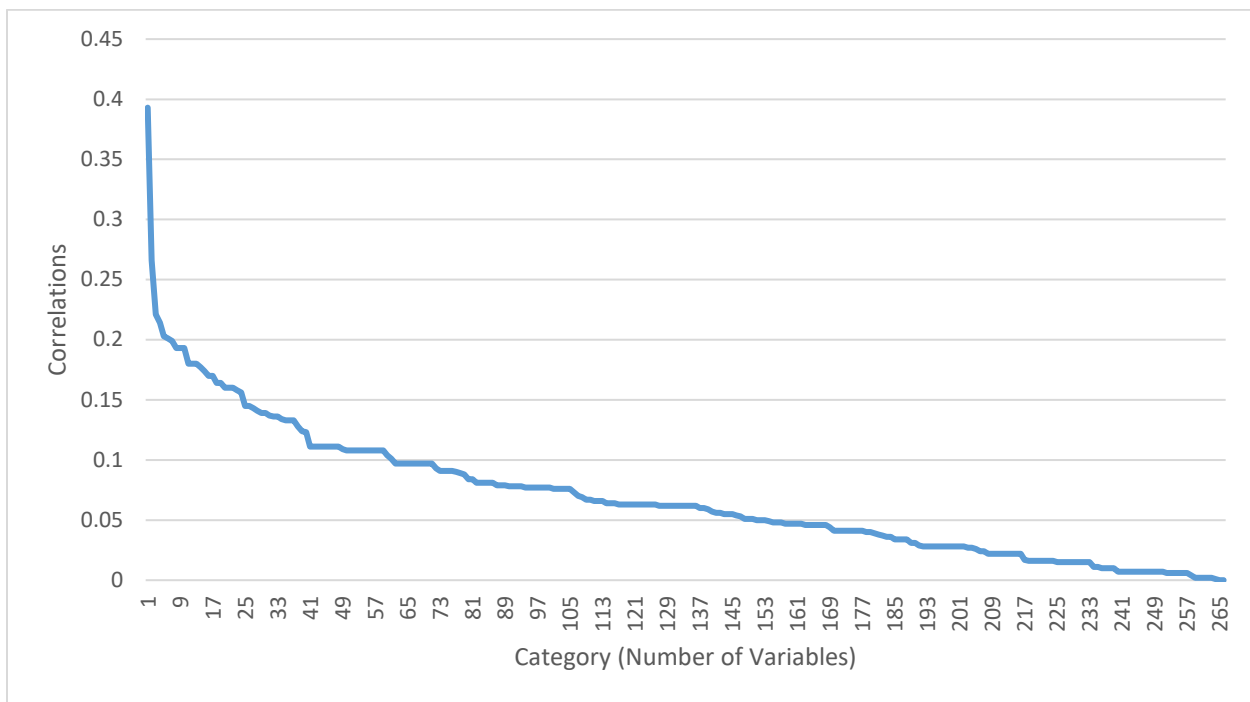


Figure H23. Plots of Correlations for Question 6 Model Trained (V18.2.1) in Subsample 1 and Tested in Subsample 1

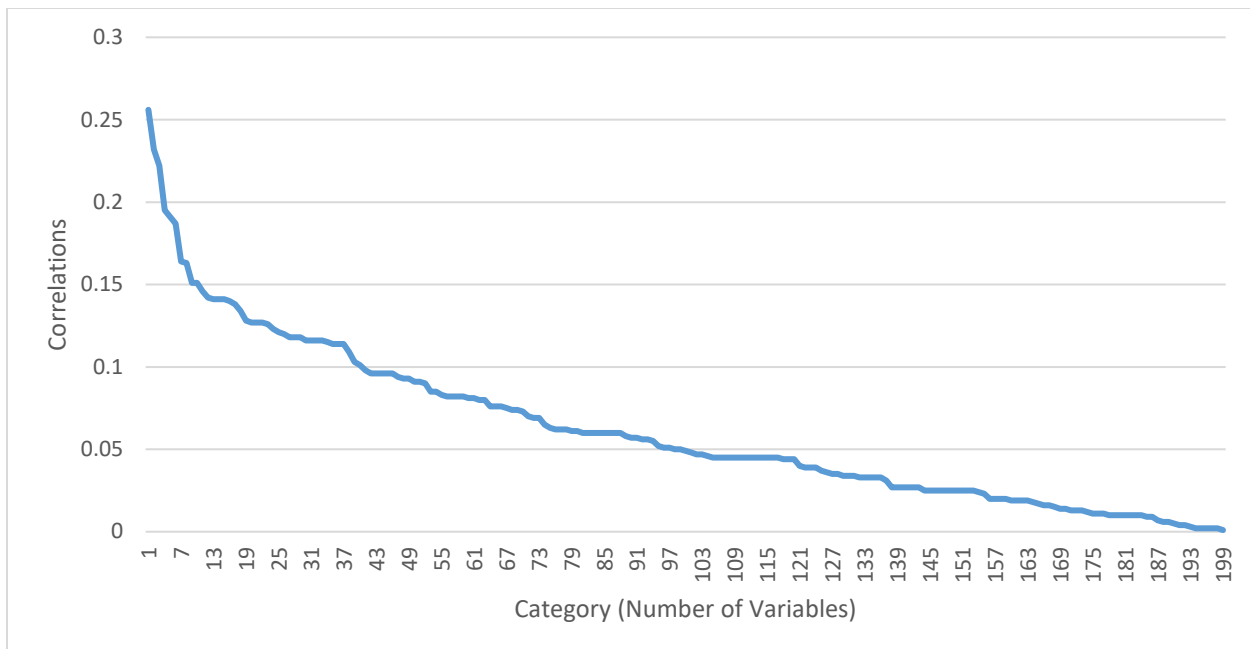


Figure H24. Plots of Correlations for Question 6 Model Trained (V18.2.1) in Subsample 1 and Tested in Subsample 2

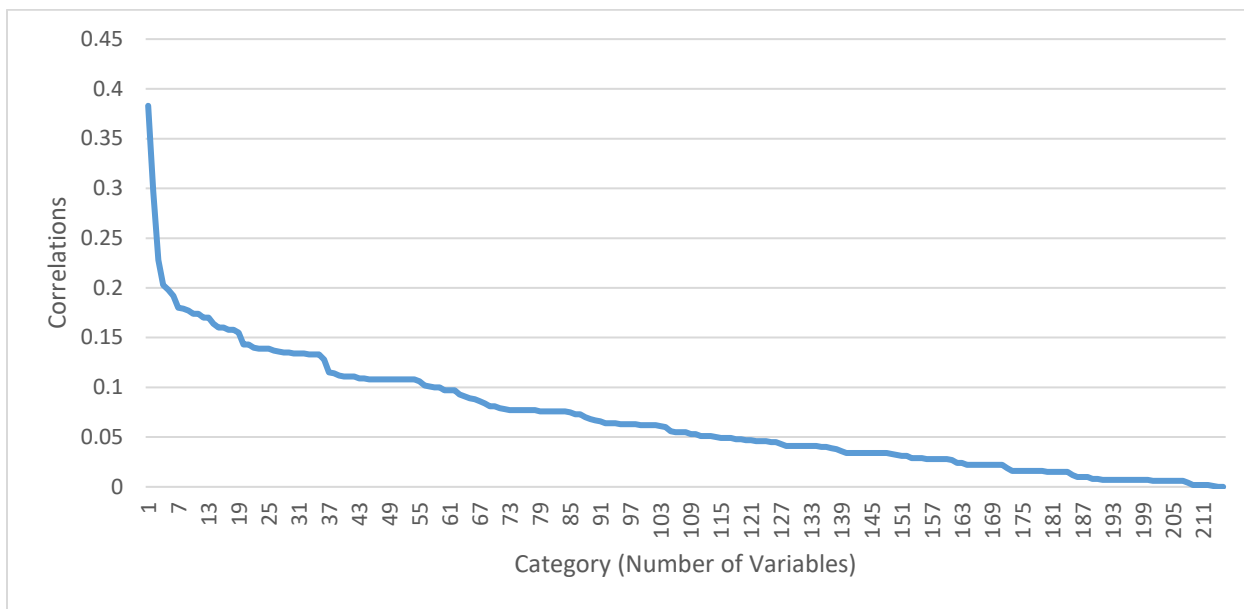


Figure H25. Plots of Correlations for Question 6 Model Trained (V18.2.1) in Subsample 2 and Tested in Subsample 1

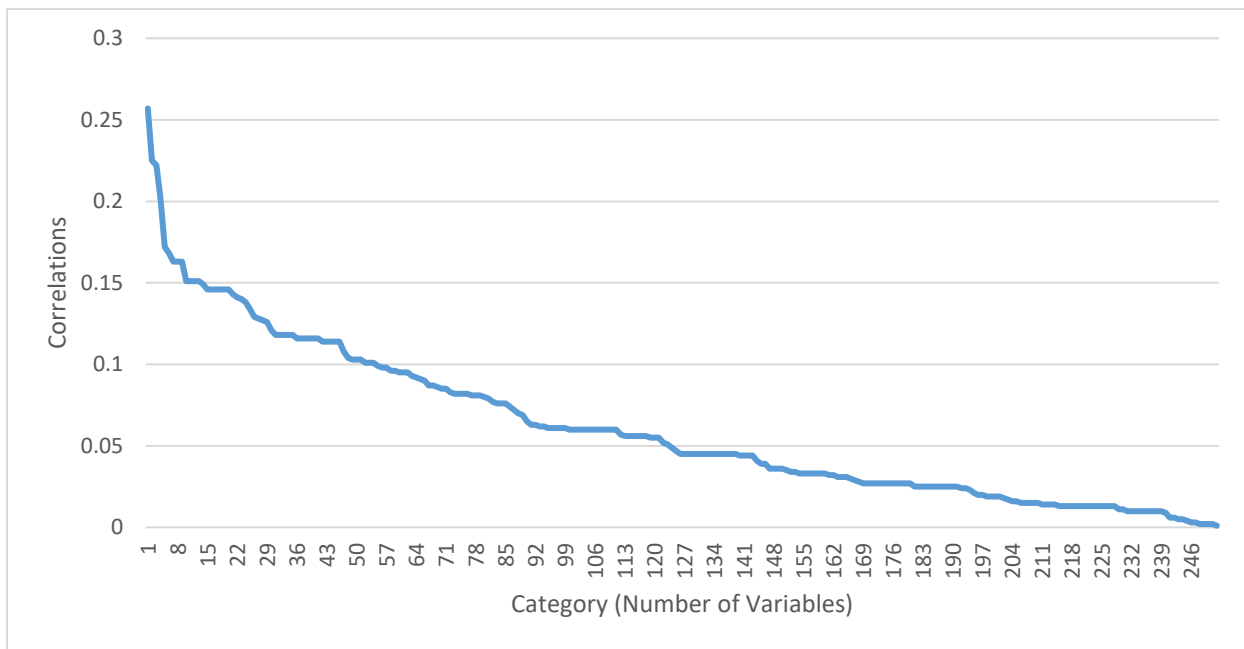


Figure H26. Plots of Correlations for Question 6 Model Trained (V18.2.1) in Subsample 2 and Tested in Subsample 2

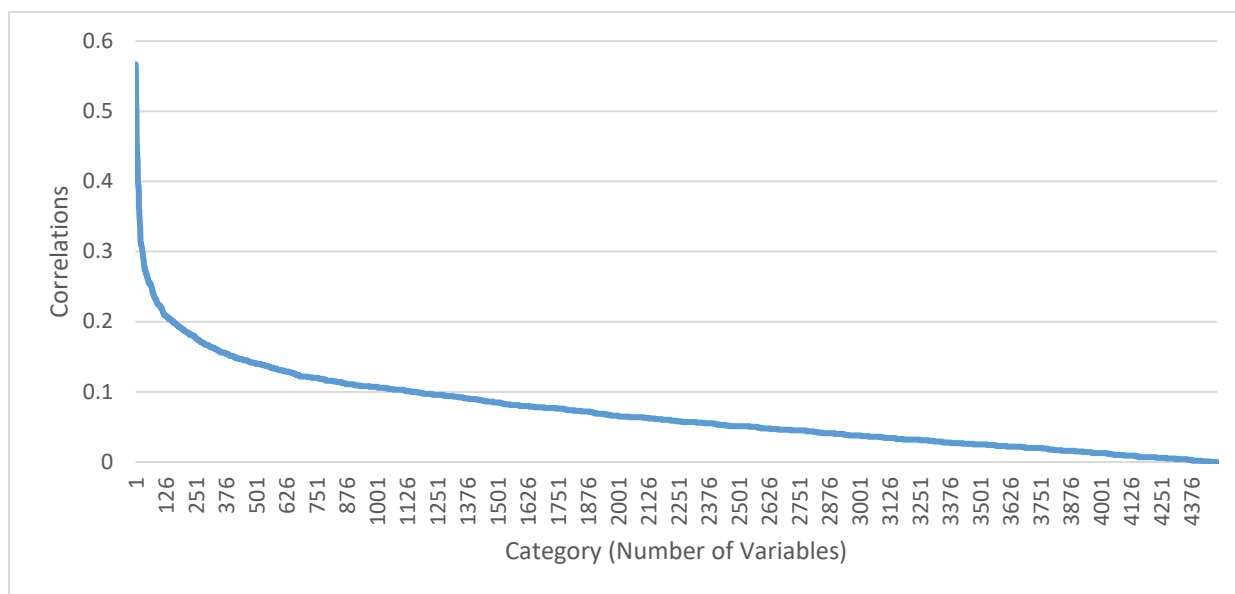


Figure H27. Plot of Correlations Across All Questions and Subsamples (V18.2.1)

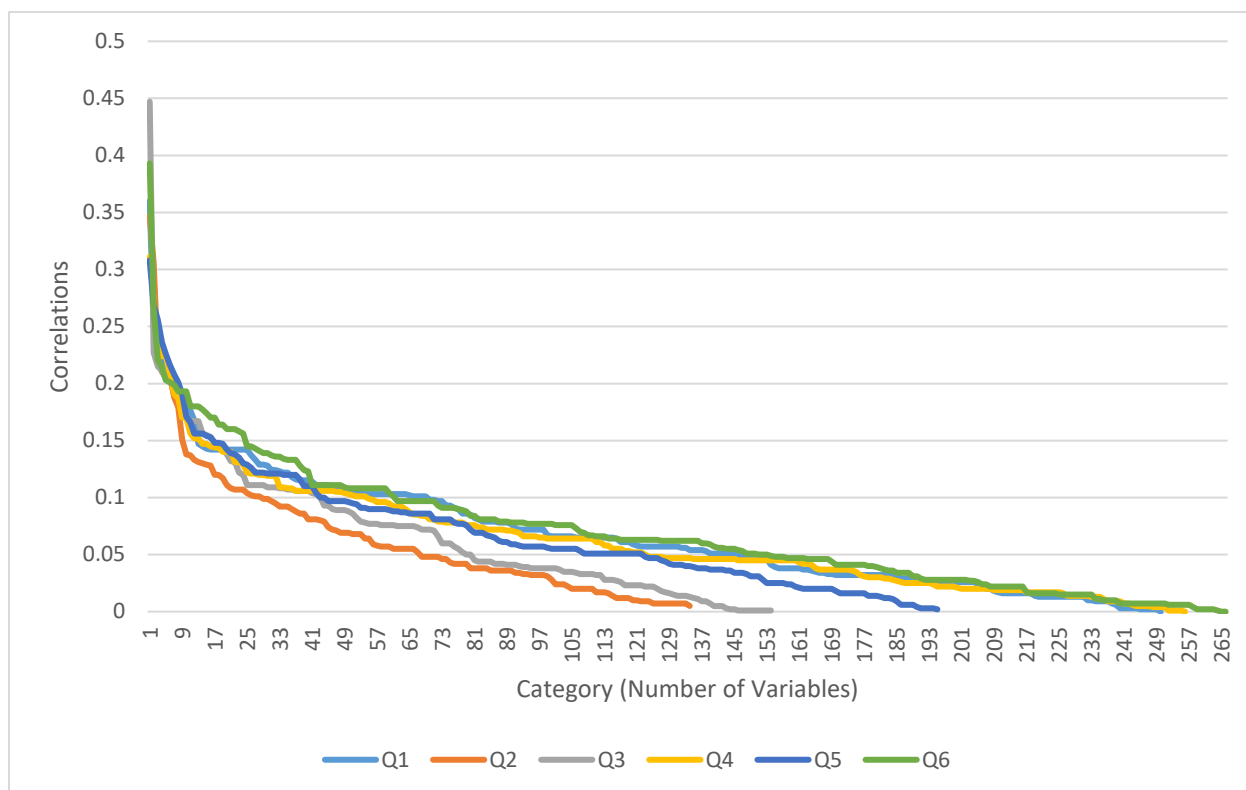


Figure H28. Plot of Correlations of Subsample 1 Across Questions (V18.2.1) Stacked

Table H66. Correlations of Final Text-Mining Model Variables with Interview Ratings by Question

Question 1	Mean	SD	Correlation with Human Rating
Word Count	146.97	47.03	.45**
Category Count	7.49	3.51	.57**
Composite	0.00	.90	.57**
<i>N</i> = 453 Note. Composite generated from z-scored Word Count and Category Count Variables. ** Correlation is significant at the 0.01 level (2-tailed).			

Question 2	Mean	SD	Correlation with Human Rating
Word Count	130.47	35.94	.45**
Category Count	5.59	2.72	.45**
Composite	0.00	.87	.52**
<i>N</i> = 451 Note. Composite generated from z-scored Word Count and Category Count Variables. ** Correlation is significant at the 0.01 level (2-tailed).			

Question 3	Mean	SD	Correlation with Human Rating
Word Count	131.37	34.15	.60**
Category Count	8.60	3.39	.58**
Composite	0.00	.89	.67**
<i>N</i> = 455 Note. Composite generated from z-scored Word Count and Category Count Variables. ** Correlation is significant at the 0.01 level (2-tailed).			

Question 4	Mean	SD	Correlation with Human Rating
Word Count	147.11	47.49	.12*
Category Count	6.56	3.13	.25**
Composite	0.00	.86	.21**
<i>N</i> = 457 Note. Composite generated from z-scored Word Count and Category Count Variables. * Correlation is significant at the 0.05 level (2-tailed). ** Correlation is significant at the 0.01 level (2-tailed).			

Question 5	Mean	SD	Correlation with Human Rating
Word Count	132.03	35.71	.48**
Category Count	6.66	3.18	.48**
Composite	0.00	.88	.54**
<i>N</i> = 460 Note. Composite generated from z-scored Word Count and Category Count Variables. ** Correlation is significant at the 0.01 level (2-tailed).			

Question 6	Mean	SD	Correlation with Human Rating
Word Count	146.62	44.75	.35**
Category Count	6.32	3.22	.47**
Composite	0.00	.89	.46**
<i>N</i> = 459 Note. Composite generated from z-scored Word Count and Category Count Variables. ** Correlation is significant at the 0.01 level (2-tailed).			

Across All Questions	Mean	SD	Correlation with Human Rating
Word Count	138.48	32.31	.63**
Category Count	6.83	2.12	.73**
Composite	-0.01	0.67	.73**
<i>N</i> = 463 Note. Composite generated from z-scored Word Count and Category Count Variables. ** Correlation is significant at the 0.01 level (2-tailed).			

Table H67. Correlations between Interview Ratings and LIWC Variables by Subsample per Question

Interview Questions for Reference:

1. Behavioral (Adaptability):

2. Situational (Accepts Feedback):

3. Situational (Integrity):

4. Behavioral (Openness to Alternative Views):

5. Situational (High Motivation/Drive):

6. Behavioral (Perseverance):

LIWC	Question 1		Question 2		Question 3		Question 4		Question 5		Question 6	
Variables	SS1	SS2	SS1	SS2	SS1	SS2	SS1	SS2	SS1	SS2	SS1	SS2
WC	.366**	.529**	.396**	.493**	.550**	.640**	0.062	.174**	.432**	.529**	.373**	.322**
Analytic	.259**	.375**	.207**	.172*	0.071	0.088	.243**	.171**	0.1	.176**	.288**	.155*
Clout	.151*	.249**	0.067	0.03	0.025	0.08	.296**	0.115	-0.092	-0.037	-0.07	0.055
Authentic	-.200**	-.204**	-0.06	-0.058	-0.095	-.161*	-0.121	0.087	.147*	-0.029	0.084	-0.064
Tone	0.056	0.037	-0.078	-0.078	-0.027	0.012	.237**	.179**	0.012	-0.018	0.044	-0.009

WPS	-0.1	-0.077	-0.081	-0.087	0.034	0.011	-0.061	-0.015	0.049	.162*	-0.052	-0.096
Sixltr	.170**	.212**	.177**	.248**	.204**	.252**	0.123	.154*	0.076	.267**	0.084	.220**
Dic	-0.066	-0.127	-0.009	-0.006	0.033	0.054	0.028	-0.021	0.019	-.152*	-.149*	-.141*
function	-.183**	-.325**	-.177**	-.189**	-0.042	-0.096	-0.11	-.137*	-0.108	-.209**	-.264**	-.267**
pronoun	-.137*	-.271**	-.202**	-.210**	-0.084	-0.124	-.169*	-.213**	-0.071	-.223**	-.195**	-.215**
ppron	-0.012	-.166*	-0.124	-0.131	-.130*	-.190**	-.256**	-.192**	-0.066	-.255**	-.131*	-.166*
i	-0.068	-.239**	-0.094	-0.072	-0.072	-.180**	-.297**	-.185**	0.025	-0.114	-0.016	-0.117
we	0.1	.225**	-0.056	0.093	-0.079	-0.103	.244**	.151*	-0.1	-0.086	-0.037	0.028
you	-.147*	-.143*	0.031	-.171*	-0.008	0.023	-0.081	0.031	-0.08	-0.128	-0.042	-.134*
shehe	0.054	-0.035	0.09	0.016	-0.105	-0.052	-.190**	-.239**	-0.076	0.097	-0.109	0.002
they	0.049	0.049	-.134*	0.079	0.033	0.095	-0.007	0.054	-0.022	0.02	-0.077	0
ipron	-.217**	-.221**	-.184**	-.157*	0.025	0.019	.144*	-0.091	-0.034	-0.047	-.133*	-.131*
article	0.029	.264**	0.055	0.119	0.038	0.07	.195**	0.105	-0.027	0.083	0.114	0.039
prep	.133*	0.099	.179**	0.085	0.049	0.029	0.081	0.081	0.099	0.037	0.121	0.009
auxverb	-0.123	-.220**	-0.102	-0.026	-0.01	-0.044	-0.109	-0.07	-0.118	-0.107	-.263**	-0.12
adverb	-.268**	-.331**	-0.043	-0.012	0.024	0.002	-.186**	-0.019	-0.061	-0.089	-.220**	-0.097
conj	-.136*	-.184**	-0.034	-0.013	-0.062	0.07	0.047	0.05	0.029	0.101	-0.07	0.052
negate	-.178**	-.182**	-.151*	-.178**	-0.034	-0.066	-.161*	-.172**	-.159*	-.192**	-.153*	-0.128
verb	-.249**	-.269**	-0.083	-0.026	-0.042	-0.064	-0.073	-.151*	-0.052	-.166*	-.261**	-.168*
adj	-0.022	-0.102	0.096	-0.089	-0.086	-0.002	-0.025	0.103	-0.024	-0.073	0.079	0.048
compare	-0.016	-0.065	0.048	-0.116	-0.063	-0.019	-0.036	0.058	0.026	-0.016	0.09	0.01
interrog	-0.066	-0.119	0.052	.167*	0.056	0.061	0.009	0.095	.154*	0.102	-0.086	-0.082
number	.132*	0.07	0.071	-0.114	0.008	-.147*	0.125	-0.039	0.079	0.095	0.088	0.123
quant	0.097	-0.062	-0.013	0.052	-0.042	-0.085	.242**	.259**	-0.034	0.094	0.124	0.117
affect	-0.043	-0.07	-0.005	-0.051	0.018	0.025	-0.027	0.001	-0.108	-.177**	-0.075	-0.069
posemo	0.004	-0.021	-0.047	-0.077	0.021	0.022	0.121	0.097	-0.047	-0.124	-0.019	-0.03
negemo	-0.078	-0.091	0.036	0.026	-0.002	-0.006	-.183**	-.162*	-0.073	-.171**	-0.12	-0.063
anx	-0.046	-0.028	0.019	-0.069	0.067	-0.08	-.181**	-0.046	-0.095	-.204**	-0.093	0.003
anger	-0.003	-0.049	-0.078	-0.105	0.018	0.08	-0.068	-0.02	-0.048	0.075	-0.057	-0.068
sad	-0.051	-0.018	0.007	-0.009	-0.062	-0.053	-.157*	-.172**	0.113	0.002	-0.059	-0.015
social	0.083	0.071	-0.038	-0.008	-0.042	0.053	0.073	-0.058	-.162*	-0.087	-.144*	-0.049

family	0.024	-0.099	-0.074	-0.07	-0.124	-0.045	-0.108	-0.086	-.145*	-0.056	-0.095	-0.024
friend	-0.099	-0.122	-0.032	0.013	-0.103	-0.092	0.119	-0.056	-0.129	-0.104	-0.059	-0.127
female	0.09	-0.042	-0.025	-0.017	-0.109	-0.069	-.136*	-.0123	-0.084	0.037	-0.104	0.011
male	-0.056	-0.037	.131*	0.045	-0.124	-0.104	-.157*	-.216**	-0.025	.145*	-0.043	-0.061
cogproc	-.261**	-.215**	0.089	0.097	0.112	0.004	0.119	.192**	0.038	0.076	-0.128	-0.107
insight	-.183**	0.022	0.101	0.121	0.092	-0.039	.223**	.251**	0.048	.213**	-0.022	0.004
cause	-.148*	-.141*	-0.016	0.112	.137*	0.012	0.098	0.044	.133*	0.046	-0.075	-0.022
discrep	0.047	0.081	0.021	0.062	0.006	-0.031	0.031	0.077	0.053	0.088	-0.048	-0.037
tentat	-0.118	-0.116	0.067	-0.011	0.002	-0.031	0.065	0.055	-0.105	-0.003	-0.053	-0.085
certain	-0.09	-.169*	0.079	-0.007	0.03	0.112	-0.026	0.027	0.001	-0.079	-0.063	-0.017
differ	-.223**	-.162*	-0.073	-0.071	-0.043	-0.079	-0.017	0.042	-0.049	-0.042	-0.121	-.167*
percept	-.207**	0.031	-.181**	-0.019	-0.127	-0.129	0.029	0.081	0.063	-0.038	-0.04	-0.004
see	-.130*	0.044	-0.117	0.094	-0.039	0.002	0.059	.156*	.131*	0.129	-0.092	0.007
hear	-0.061	0.094	-.145*	-0.131	-0.107	-0.067	0.026	-0.02	0.065	-0.069	0.127	-0.003
feel	-.157*	-0.035	-0.039	-0.07	-0.043	-.145*	-0.037	-0.008	-0.112	-.183**	-0.06	0
bio	.154*	-0.03	-0.089	-0.084	0.015	0.009	-0.038	-0.065	-0.068	-0.125	0.028	-0.004
body	-0.074	0.017	-0.007	-0.022	0.06	0.03	-0.012	-0.043	-0.104	-0.038	-0.032	-0.078
health	.170**	-0.031	-0.121	-0.112	-0.002	-0.003	-0.016	-0.026	-0.019	-0.125	0.024	0.026
sexual	.135*	0.017	-0.07	.c	-0.116	0.016	0.019	-0.019	0.066	.c	-0.077	-0.048
ingest	0.121	0.127	-0.042	-0.026	0.042	-0.003	-0.034	-0.044	0.005	-0.035	0.061	0.041
drives	.209**	.239**	0.101	0.082	-0.076	0.017	.197**	0.111	-0.059	-0.003	0.035	0.016
affiliation	0.116	.177**	0.028	.156*	-0.029	0.051	.304**	.164*	-0.096	-0.014	-0.053	-0.025
achieve	.224**	.218**	0.086	0.065	0.023	.176**	0.076	.132*	0.009	0.053	0.112	0.106
power	.133*	.160*	0.041	-0.055	-0.126	-0.072	-0.004	-0.073	0.022	0.005	0.058	0.015
reward	-0.018	-0.053	-0.066	-0.117	-0.092	-0.018	-0.071	-0.016	-0.124	-0.112	0.093	-0.112
risk	0.053	-0.057	0.108	.137*	0.059	-0.032	-0.099	-0.121	-0.004	-0.003	-0.104	-0.04
focuspast	-0.056	0.016	-0.06	-0.05	-0.045	-0.089	-0.079	-.133*	.161*	0.011	-0.08	0.043
focuspresent	-.192**	-.174**	-0.025	0.06	0.033	0.027	-0.026	-0.058	-.179**	-.217**	-.208**	-.180**
focusfuture	-0.102	-.155*	-0.055	-0.093	0.036	.172**	-.144*	0.02	-0.023	0.005	-0.061	0.066
relativ	-0.043	-0.062	-0.005	0.012	-0.088	-0.038	-0.057	-0.013	.211**	0.038	.179**	0.082
motion	-.157*	-.155*	0.021	0.054	-0.021	0.047	-0.125	-0.098	0.025	-0.087	0.054	0.012

space	.198**	0.056	0.012	0.038	-0.113	-0.12	0.063	0.054	0.117	0.001	0.102	0.016
time	-.140*	-0.048	-0.063	-0.065	-0.013	0.081	-.139*	-0.036	.180**	0.061	.153*	0.112
work	.230**	.317**	.222**	.137*	0.045	.290**	0.068	0.046	0.105	0.099	0.119	.174**
leisure	0.032	.164*	-0.104	0.042	-0.001	.204**	-0.072	0.078	-0.02	-0.085	0.018	0.071
home	0.001	-0.005	-0.123	-0.069	-0.068	-0.072	-.135*	-0.02	-.130*	-0.055	-0.098	0.028
money	.177**	.150*	-0.041	-0.109	0.016	0.096	-0.083	-0.078	-0.078	-0.03	0.12	0.126
relig	-0.016	0.007	-0.083	.c	-0.021	-0.068	-0.08	-0.074	-0.038	-0.02	-0.052	-0.02
death	0.035	-0.02	0.011	-0.06	-0.036	0.016	-0.005	0.111	-0.126	-0.013	0.009	-0.031
informal	-0.027	-0.099	-0.076	-0.129	-0.089	0.07	-0.063	0.022	0.016	-0.016	-0.098	0.085
swear	0.063	-0.097	-0.068	-0.124	-0.06	.165*	-0.105	0.037	-0.033	-0.032	-0.039	0.037
netspeak	0.009	-0.111	-0.109	-0.102	-0.062	0.019	-0.072	-0.05	-0.071	-0.089	-0.057	.186**
assent	-0.053	-0.053	0.026	-0.049	-0.076	-0.057	0.029	0.009	-0.053	0.053	-0.109	0.025
nonflu	-0.004	-0.031	-0.022	-0.022	0.031	.144*	-0.019	0.09	0.095	0.019	-0.02	0.048
filler	-0.051	0.007	0.065	-0.089	0.009	-0.055	-0.104	-0.076	0.025	.c	-0.068	-0.062
AllPunc	-0.045	0.076	0.071	.153*	0.054	-0.032	0.052	0.046	0.128	0.038	0.103	0.097
Period	-0.045	0.013	-0.045	0.071	-.167*	-0.064	0.026	-0.024	-.152*	-.170**	0.018	0.071
Comma	0.051	0.093	-0.001	0.059	.132*	0.047	0.115	0.085	.211**	0.105	.182**	0.101
Colon	0.109	0.003	-0.081	0.106	-0.036	0.08	0.031	-0.079	0.04	.132*	-0.042	0.002
SemiC	-0.009	-0.024	-0.009	0.111	0.008	0.06	-0.034	0.069	0.127	0.014	0.064	0.07
QMark	-0.035	0.011	.172**	0.056	0.055	-0.006	-0.124	-0.003	0.034	0.106	-0.068	-0.091
Exclam	-0.063	0.006	-0.075	-0.07	-0.053	.c	-0.028	0.002	-0.045	-0.053	0.092	-0.083
Dash	.230**	.169*	0.086	0.013	0.089	-0.026	0.096	0.13	0.087	0.096	0.039	.228**
Quote	0.016	0.013	.194**	0.042	0.079	0.016	-0.068	-0.031	0.034	0.072	-0.078	-0.051
Apostro	-.138*	-0.103	-0.019	0.097	0.024	-0.088	-0.1	-0.023	-0.061	-0.056	-0.028	-0.036
Parenth	-0.018	.210**	0.01	.179**	0.017	-0.108	0.121	0.039	.207**	0.104	-0.049	-0.048
OtherP	0.046	0.08	0.103	0.03	0.066	0.052	0.018	-0.053	0.089	0.058	-0.002	0.008
** Correlation is significant at the 0.01 level (2-tailed).												
* Correlation is significant at the 0.05 level (2-tailed).												

LIWC Variables:

Category	Abbrev	Examples
Word count	WC	-
Summary Language Variables		
Analytical thinking	Analytic	-
Clout	Clout	-
Authentic	Authentic	-
Emotional tone	Tone	-
Words/sentence	WPS	-
Words > 6 letters	Sixltr	-
Dictionary words	Dic	-
Linguistic Dimensions		
Total function words	funct	it, to, no, very
Total pronouns	pronoun	I, them, itself
Personal pronouns	ppron	I, them, her
1st pers singular	i	I, me, mine
1st pers plural	we	we, us, our
2nd person	you	you, your, thou
3rd pers singular	shehe	she, her, him
3rd pers plural	they	they, their, they'd
Impersonal pronouns	ipron	it, it's, those
Articles	article	a, an, the
Prepositions	prep	to, with, above
Auxiliary verbs	auxverb	am, will, have
Common Adverbs	adverb	very, really
Conjunctions	conj	and, but, whereas
Negations	negate	no, not, never
Other Grammar		
Common verbs	verb	eat, come, carry
Common adjectives	adj	free, happy, long
Comparisons	compare	greater, best, after
Interrogatives	interrog	how, when, what
Numbers	number	second, thousand
Quantifiers	quant	few, many, much
Psychological Processes		
Affective processes	affect	happy, cried
Positive emotion	posemo	love, nice, sweet
Negative emotion	negemo	hurt, ugly, nasty
Anxiety	anx	worried, fearful
Anger	anger	hate, kill, annoyed
Sadness	sad	crying, grief, sad
Social processes	social	mate, talk, they
Family	family	daughter, dad, aunt

Category	Abbrev	Examples
Friends	friend	buddy, neighbor
Female references	female	girl, her, mom
Male references	male	boy, his, dad
Cognitive processes	cogproc	cause, know, ought
Insight	insight	think, know
Causation	cause	because, effect
Discrepancy	discrep	should, would
Tentative	tentat	maybe, perhaps
Certainty	certain	always, never
Differentiation	differ	hasn't, but, else
Perceptual processes	percept	look, heard, feeling
See	see	view, saw, seen
Hear	hear	listen, hearing
Feel	feel	feels, touch
Biological processes	bio	eat, blood, pain
Body	body	cheek, hands, spit
Health	health	clinic, flu, pill
Sexual	sexual	horny, love, incest
Ingestion	ingest	dish, eat, pizza
Drives	drives	
Affiliation	affiliation	ally, friend, social
Achievement	achieve	win, success, better
Power	power	superior, bully
Reward	reward	take, prize, benefit
Risk	risk	danger, doubt
Time orientations	TimeOrient	
Past focus	focuspast	ago, did, talked
Present focus	focuspresent	today, is, now
Future focus	focusfuture	may, will, soon
Relativity	relativ	area, bend, exit
Motion	motion	arrive, car, go
Space	space	down, in, thin
Time	time	end, until, season
Personal concerns		
Work	work	job, majors, xerox
Leisure	leisure	cook, chat, movie
Home	home	kitchen, landlord
Money	money	audit, cash, owe
Religion	relig	altar, church
Death	death	bury, coffin, kill
Informal language	informal	
Swear words	swear	fuck, damn, shit
Netspeak	netspeak	btw, lol, thx
Assent	assent	agree, OK, yes
Nonfluencies	nonflu	er, hm, umm
Fillers	filler	I mean, you know

Table H68. Correlations of Final Text-Mining Model Variables with AFQT Scales by Question

Question 1	Mean	SD	Word Count	Category Count	Composite
AFQT	63.92	17.31	.194**	.205**	.223**
Mechanical	55.76	21.27	.135**	.171**	.171**
Administrative	66.28	15.90	.209**	.201**	.229**
General	61.73	19.48	.160**	.193**	.197**
Electronic	63.48	20.93	0.087	.118*	.115*
General Sciences	53.41	7.69	0.029	0.062	0.051
Electronics Information	50.98	9.10	0.059	.123**	.102*
Mechanical Comprehension	52.78	7.38	0.064	.101*	0.092
Auto & Shop Information	46.97	8.09	0.019	0.052	0.04
Assembling Objects	57.38	7.16	0.029	0.065	0.053
Word Knowledge	51.99	6.38	.172**	.211**	.214**
Paragraph Comprehension	54.30	5.74	.180**	.189**	.206**
Mathematics Knowledge	56.18	5.46	.135**	.094*	.128**
Arithmetic Reasoning	53.65	6.60	0.085	.112*	.110*
N = 453 Note. Composite generated from z-scored Word Count and Category Count Variables. ** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).					

Question 2	Mean	SD	Word Count	Category Count	Composite
AFQT	63.92	17.31	.216**	.245**	.264**
Mechanical	55.76	21.27	.172**	.192**	.208**
Administrative	66.28	15.90	.240**	.257**	.284**
General	61.73	19.48	.177**	.214**	.224**
Electronic	63.48	20.93	.163**	.212**	.214**
General Sciences	53.41	7.69	.145**	.203**	.198**
Electronics Information	50.98	9.10	.116*	.145**	.149**
Mechanical Comprehension	52.78	7.38	.138**	.125**	.150**
Auto & Shop Information	46.97	8.09	0.049	0.065	0.065
Assembling Objects	57.38	7.16	.101*	0.058	0.091
Word Knowledge	51.99	6.38	.212**	.207**	.240**
Paragraph Comprehension	54.30	5.74	.171**	.224**	.226**
Mathematics Knowledge	56.18	5.46	.173**	.171**	.197**
Arithmetic Reasoning	53.65	6.60	.106*	.131**	.135**
N = 451 Note. Composite generated from z-scored Word Count and Category Count Variables. ** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).					

Question 3	Mean	SD	Word Count	Category Count	Composite
AFQT	63.92	17.31	.179**	.262**	.250**
Mechanical	55.76	21.27	.118*	.156**	.155**
Administrative	66.28	15.90	.192**	.287**	.271**
General	61.73	19.48	.154**	.221**	.212**
Electronic	63.48	20.93	.095*	.163**	.146**
General Sciences	53.41	7.69	0.033	.118*	0.085
Electronics Information	50.98	9.10	0.035	0.069	0.059
Mechanical Comprehension	52.78	7.38	0.08	0.07	0.085
Auto & Shop Information	46.97	8.09	-0.021	-0.026	-0.026
Assembling Objects	57.38	7.16	0.034	0.084	0.067
Word Knowledge	51.99	6.38	.132**	.205**	.190**
Paragraph Comprehension	54.30	5.74	.126**	.241**	.208**
Mathematics Knowledge	56.18	5.46	.163**	.219**	.216**
Arithmetic Reasoning	53.65	6.60	.128**	.150**	.157**
N = 455 Note. Composite generated from z-scored Word Count and Category Count Variables. ** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).					

Question 4	Mean	SD	Word Count	Category Count	Composite
AFQT	63.92	17.311	0.089	.145**	.137**
Mechanical	55.76	21.268	0.026	0.062	0.052
Administrative	66.28	15.898	.105*	.155**	.152**
General	61.73	19.481	0.068	.131**	.116*
Electronic	63.48	20.934	0.007	0.078	0.05
General Sciences	53.41	7.687	-0.021	0.015	-0.003
Electronics Information	50.98	9.097	0	0.015	0.009
Mechanical Comprehension	52.78	7.379	-0.028	-0.012	-0.023
Auto & Shop Information	46.97	8.092	-0.056	-0.035	-0.053
Assembling Objects	57.38	7.159	-0.037	-0.016	-0.031
Word Knowledge	51.99	6.377	.103*	.103*	.121*
Paragraph Comprehension	54.3	5.737	.103*	.099*	.118*
Mathematics Knowledge	56.18	5.46	0.058	.136**	.114*
Arithmetic Reasoning	53.65	6.597	0.02	.115*	0.079
N = 456 Note. Composite generated from z-scored Word Count and Category Count Variables. ** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).					

Question 5	Mean	SD	Word Count	Category Count	Composite
AFQT	63.92	17.31	.165**	.284**	.254**
Mechanical	55.76	21.27	.121*	.251**	.211**
Administrative	66.28	15.90	.165**	.288**	.256**
General	61.73	19.48	.152**	.256**	.231**
Electronic	63.48	20.93	.112*	.219**	.188**
General Sciences	53.41	7.69	.096*	.194**	.164**
Electronics Information	50.98	9.10	.097*	.182**	.158**
Mechanical Comprehension	52.78	7.38	0.06	.118*	.100*
Auto & Shop Information	46.97	8.09	-0.017	.121**	0.059
Assembling Objects	57.38	7.16	0.044	0.07	0.064
Word Knowledge	51.99	6.38	.175**	.273**	.253**
Paragraph Comprehension	54.30	5.74	.155**	.280**	.246**
Mathematics Knowledge	56.18	5.46	0.075	.168**	.138**
Arithmetic Reasoning	53.65	6.60	0.082	.152**	.132**
N = 456 Note. Composite generated from z-scored Word Count and Category Count Variables. ** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).					

Question 6	Mean	SD	Word Count	Category Count	Composite
AFQT	63.92	17.31	.153**	.229**	.215**
Mechanical	55.76	21.27	0.07	.139**	.117*
Administrative	66.28	15.90	.154**	.238**	.220**
General	61.73	19.48	.141**	.204**	.194**
Electronic	63.48	20.93	0.074	.148**	.124**
General Sciences	53.41	7.69	0.019	.098*	0.066
Electronics Information	50.98	9.10	0.025	0.068	0.052
Mechanical Comprehension	52.78	7.38	0.013	0.064	0.043
Auto & Shop Information	46.97	8.09	-0.081	-0.027	-0.061
Assembling Objects	57.38	7.16	0.076	.108*	.103*
Word Knowledge	51.99	6.38	.129**	.188**	.178**
Paragraph Comprehension	54.30	5.74	.111*	.192**	.170**
Mathematics Knowledge	56.18	5.46	.108*	.174**	.158**
Arithmetic Reasoning	53.65	6.60	.112*	.152**	.148**
N = 456 Note. Composite generated from z-scored Word Count and Category Count Variables. ** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).					

Across All Questions	Mean	SD	Word Count	Category Count	Composite
AFQT	63.92	17.31	.225**	.358**	.312**
Mechanical	55.76	21.27	.131**	.242**	.201**
Administrative	66.28	15.90	.244**	.375**	.331**
General	61.73	19.48	.189**	.315**	.270**
Electronic	63.48	20.93	.110*	.232**	.186**
General Sciences	53.41	7.69	0.054	.165**	.120*
Electronics Information	50.98	9.107	0.057	.144**	.109*
Mechanical Comprehension	52.78	7.38	0.063	.110*	.097*
Auto & Shop Information	46.97	8.09	-0.049	0.015	-0.018
Assembling Objects	50.20	20.14	0.031	0.044	0.038
Word Knowledge	51.99	6.38	.205**	.312**	.276**
Paragraph Comprehension	54.30	5.74	.186**	.319**	.268**
Mathematics Knowledge	56.18	5.46	.171**	.254**	.229**
Arithmetic Reasoning	53.65	6.60	.116*	.202**	.172**
N = 456 Note. Composite generated from z-scored Word Count and Category Count Variables. ** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).					

Summary across Questions on the Composite:

Across All Questions	Q1	Q2	Q3	Q4	Q5	Q6	Q1-6
AFQT	.223**	.264**	.250**	.137**	.254**	.215**	.312**
Mechanical	.171**	.208**	.155**	0.052	.211**	.117*	.201**
Administrative	.229**	.284**	.271**	.152**	.256**	.220**	.331**
General	.197**	.224**	.212**	.116*	.231**	.194**	.270**
Electronic	.115*	.214**	.146**	0.05	.188**	.124**	.186**
General Sciences	0.051	.198**	0.085	-0.003	.164**	0.066	.120*
Electronics Information	.102*	.149**	0.059	0.009	.158**	0.052	.109*
Mechanical Comprehension	0.092	.150**	0.085	-0.023	.100*	0.043	.097*
Auto & Shop Information	0.04	0.065	-0.026	-0.053	0.059	-0.061	-0.018
Assembling Objects	0.053	0.091	0.067	-0.031	0.064	.103*	0.038
Word Knowledge	.214**	.240**	.190**	.121*	.253**	.178**	.276**
Paragraph Comprehension	.206**	.226**	.208**	.118*	.246**	.170**	.268**
Mathematics Knowledge	.128**	.197**	.216**	.114*	.138**	.158**	.229**
Arithmetic Reasoning	.110*	.135**	.157**	0.079	.132**	.148**	.172**
N = 451-456 Note. Composite generated from z-scored Word Count and Category Count Variables. ** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).							

Table H69. Correlations of Final Text-Mining Model Variables with TAPAS Scales by Question

Question 1	Mean	SD	N	Word Count	Category Count	Composite
Achievement	49.48	9.71	377	0.034	0.01	0.024
Adjustment	49.32	10.62	377	-0.061	-0.049	-0.06
Cooperation	52.16	9.37	377	0.093	.135**	.126*
Dominance	48.25	9.32	377	0.022	0.06	0.045
Even Tempered	50.38	9.23	377	0.045	0.016	0.034
Attention Seeking	46.45	9.28	377	0.01	-0.006	0.002
Selflessness	50.79	8.79	377	0.019	.132*	0.083
Intellectual Efficiency	48.87	9.38	377	0.091	0.08	0.095
Non-Delinquency	51.40	10.31	377	-0.009	0.02	0.006
Order	51.53	9.85	377	-0.02	0.076	0.031
Physical Condition	49.55	10.20	377	-0.034	-0.021	-0.031
Self-Control	50.39	10.25	377	0.096	.129*	.124*
Sociability	48.38	9.35	377	0.066	0.053	0.066
Tolerance	51.25	10.12	377	0.036	0.087	0.068
Optimism	49.71	9.37	377	0.027	0.008	0.02
Note. Composite generated from z-scored Word Count and Category Count Variables.						
* Correlation is significant at the 0.05 level (2-tailed).						
** Correlation is significant at the 0.01 level (2-tailed).						

Question 2	Mean	SD	N	Word Count	Category Count	Composite
Achievement	49.48	9.71	377	-0.035	-0.08	-0.066
Adjustment	49.32	10.62	377	-0.093	-.117*	-.120*
Cooperation	52.16	9.37	377	.119*	0.011	0.074
Dominance	48.25	9.32	377	0.069	0.025	0.053
Even Tempered	50.38	9.23	377	0.01	-0.032	-0.013
Attention Seeking	46.45	9.28	377	-0.017	-0.012	-0.017
Selflessness	50.79	8.79	377	0	0.018	0.01
Intellectual Efficiency	48.87	9.38	377	0.075	.150**	.129*
Non-Delinquency	51.40	10.31	377	-0.003	-0.048	-0.03
Order	51.53	9.85	377	0.027	.122*	0.085
Physical Condition	49.55	10.20	377	-0.064	-0.031	-0.054
Self-Control	50.39	10.25	377	0.043	0.008	0.029
Sociability	48.38	9.35	377	0.011	-0.059	-0.028
Tolerance	51.25	10.12	377	0.078	.110*	.108*
Optimism	49.71	9.37	377	-0.003	0.032	0.017
Note. Composite generated from z-scored Word Count and Category Count Variables.						
* Correlation is significant at the 0.05 level (2-tailed).						
** Correlation is significant at the 0.01 level (2-tailed).						

Question 3	Mean	SD	N	Word Count	Category Count	Composite
Achievement	49.48	9.71	377	0.015	-0.021	-0.003
Adjustment	49.32	10.62	377	-0.006	-0.082	-0.05
Cooperation	52.16	9.37	377	.131*	0.056	.105*
Dominance	48.25	9.32	377	0.015	0.054	0.039
Even Tempered	50.38	9.23	377	0.068	0	0.038
Attention Seeking	46.45	9.28	377	-0.034	-0.035	-0.039
Selflessness	50.79	8.79	377	0.079	0.095	0.098
Intellectual Efficiency	48.87	9.38	377	0.086	.137**	.126*
Non-Delinquency	51.40	10.31	377	0.027	-0.023	0.002
Order	51.53	9.85	377	0.026	.155**	.103*
Physical Condition	49.55	10.20	377	-0.013	-0.065	-0.044
Self-Control	50.39	10.25	377	.109*	.116*	.127*
Sociability	48.38	9.35	377	-0.019	-0.041	-0.034
Tolerance	51.25	10.12	377	0.056	0.095	0.085
Optimism	49.71	9.37	377	-0.015	0.006	-0.005
Note. Composite generated from z-scored Word Count and Category Count Variables.						
* Correlation is significant at the 0.05 level (2-tailed).						
** Correlation is significant at the 0.01 level (2-tailed).						

Question 4	Mean	SD	N	Word Count	Category Count	Composite
Achievement	49.48	9.71	377	0.096	-0.021	0.044
Adjustment	49.32	10.62	377	-0.056	-0.027	-0.049
Cooperation	52.16	9.37	377	.109*	0.052	0.094
Dominance	48.25	9.32	377	.107*	0.012	0.07
Even Tempered	50.38	9.23	377	0.093	0.076	0.099
Attention Seeking	46.45	9.28	377	-0.012	0.028	0.009
Selflessness	50.79	8.79	377	-0.006	-0.011	-0.01
Intellectual Efficiency	48.87	9.38	377	0.03	0.065	0.056
Non-Delinquency	51.40	10.31	377	0.031	0.044	0.044
Order	51.53	9.85	377	-0.053	0.038	-0.008
Physical Condition	49.55	10.20	377	-0.01	-0.083	-0.055
Self-Control	50.39	10.25	377	.136**	0.028	0.096
Sociability	48.38	9.35	377	0.085	0.015	0.058
Tolerance	51.25	10.12	377	.140**	.139**	.164**
Optimism	49.71	9.37	377	0.01	-0.004	0.003
Note. Composite generated from z-scored Word Count and Category Count Variables.						
* Correlation is significant at the 0.05 level (2-tailed).						
** Correlation is significant at the 0.01 level (2-tailed).						

Question 5	Mean	SD	N	Word Count	Category Count	Composite
Achievement	49.48	9.71	377	-0.005	-0.036	-0.023
Adjustment	49.32	10.62	377	-0.021	-0.04	-0.034
Cooperation	52.16	9.37	377	-0.031	-0.029	-0.034
Dominance	48.25	9.32	377	0.042	0.073	0.065
Even Tempered	50.38	9.23	377	0.029	0.013	0.024
Attention Seeking	46.45	9.28	377	-0.022	-0.006	-0.016
Selflessness	50.79	8.79	377	0.035	0.084	0.067
Intellectual Efficiency	48.87	9.38	377	0.033	.138**	0.096
Non-Delinquency	51.40	10.31	377	-0.044	-0.066	-0.062
Order	51.53	9.85	377	-0.059	-0.025	-0.048
Physical Condition	49.55	10.20	377	0.009	-0.025	-0.009
Self-Control	50.39	10.25	377	0.009	-0.028	-0.011
Sociability	48.38	9.35	377	-0.035	-0.049	-0.048
Tolerance	51.25	10.12	377	-0.026	-0.011	-0.021
Optimism	49.71	9.37	377	0.022	0.051	0.041
Note. Composite generated from z-scored Word Count and Category Count Variables.						
* Correlation is significant at the 0.05 level (2-tailed).						
** Correlation is significant at the 0.01 level (2-tailed).						

Question 6	Mean	SD	N	Word Count	Category Count	Composite
Achievement	49.48	9.71	377	-0.005	-0.036	-0.023
Adjustment	49.32	10.62	377	-0.021	-0.04	-0.034
Cooperation	52.16	9.37	377	-0.031	-0.029	-0.034
Dominance	48.25	9.32	377	0.042	0.073	0.065
Even Tempered	50.38	9.23	377	0.029	0.013	0.024
Attention Seeking	46.45	9.28	377	-0.022	-0.006	-0.016
Selflessness	50.79	8.79	377	0.035	0.084	0.067
Intellectual Efficiency	48.87	9.38	377	0.033	.138**	0.096
Non-Delinquency	51.40	10.31	377	-0.044	-0.066	-0.062
Order	51.53	9.85	377	-0.059	-0.025	-0.048
Physical Condition	49.55	10.20	377	0.009	-0.025	-0.009
Self-Control	50.39	10.25	377	0.009	-0.028	-0.011
Sociability	48.38	9.35	377	-0.035	-0.049	-0.048
Tolerance	51.25	10.12	377	-0.026	-0.011	-0.021
Optimism	49.71	9.37	377	0.022	0.051	0.041
Note. Composite generated from z-scored Word Count and Category Count Variables.						
* Correlation is significant at the 0.05 level (2-tailed).						
** Correlation is significant at the 0.01 level (2-tailed).						

Across All Questions	Mean	SD	N	Word Count	Category Count	Composite
Achievement	49.48	9.71	377	0.047	-0.015	0.015
Adjustment	49.32	10.62	377	-0.053	-0.069	-0.065
Cooperation	52.16	9.37	377	0.083	0.059	0.075
Dominance	48.25	9.32	377	0.075	0.081	0.081
Even Tempered	50.38	9.23	377	0.058	0.037	0.05
Attention Seeking	46.45	9.28	377	-0.006	-0.002	-0.006
Selflessness	50.79	8.79	377	0.036	0.094	0.066
Intellectual Efficiency	48.87	9.38	377	0.074	.161**	.124*
Non-Delinquency	51.40	10.31	377	0.002	-0.019	-0.01
Order	51.53	9.85	377	-0.022	.102*	0.039
Physical Condition	49.55	10.20	377	-0.03	-0.045	-0.039
Self-Control	50.39	10.25	377	0.094	0.082	0.091
Sociability	48.38	9.35	377	0.027	-0.021	0
Tolerance	51.25	10.12	377	0.074	.122*	.101*
Optimism	49.71	9.37	377	0.043	0.056	0.051
Note. Composite generated from z-scored Word Count and Category Count Variables.						
* Correlation is significant at the 0.05 level (2-tailed).						
** Correlation is significant at the 0.01 level (2-tailed).						

Summary across Questions on the Composite:

	Q1	Q2	Q3	Q4	Q5	Q6	Average
Achievement	0.024	-0.066	-0.003	0.044	-0.023	-0.023	0.015
Adjustment	-0.06	-.120*	-0.05	-0.049	-0.034	-0.034	-0.065
Cooperation	.126*	0.074	.105*	0.094	-0.034	-0.034	0.075
Dominance	0.045	0.053	0.039	0.07	0.065	0.065	0.081 ^a
Even Tempered	0.034	-0.013	0.038	0.099	0.024	0.024	0.05
Attention Seeking	0.002	-0.017	-0.039	0.009	-0.016	-0.016	-0.006
Selflessness	0.083	0.01	0.098	-0.01	0.067	0.067	0.066
Intellectual Efficiency	0.095	.129*	.126*	0.056	0.096	0.096	.124*
Non-Delinquency	0.006	-0.03	0.002	0.044	-0.062	-0.062	-0.01
Order	0.031	0.085	.103*	-0.008	-0.048	-0.048	0.039
Physical Condition	-0.031	-0.054	-0.044	-0.055	-0.009	-0.009	-0.039
Self-Control	.124*	0.029	.127*	0.096	-0.011	-0.011	0.091 ^a
Sociability	0.066	-0.028	-0.034	0.058	-0.048	-0.048	0
Tolerance	0.068	.108*	0.085	.164**	-0.021	-0.021	.101*
Optimism	0.02	0.017	-0.005	0.003	0.041	0.041	0.051
Note. Composite generated from z-scored Word Count and Category Count Variables.							
* Correlation is significant at the 0.05 level (2-tailed).							
** Correlation is significant at the 0.01 level (2-tailed).							
^a Correlation is significant at the 0.10 level (2-tailed).							

Table H70: Impact of Selecting Out Bottom Third of Candidates on Computer Scores

Interview Rating Percentile (Potential Passing Scores)	Candidates Screened Out by Being in Bottom Third of Computer Scores that Would Have Passed the Interview (of N = 139)	
	Count	Percentage
10	1	1%
20	5	4%
30	2	1%
40	8	6%
50	10	7%
60	15	11%
70	17	12%
80	15	11%
90	34	24%

N = 460.

Table H71. Correlation between Rater Scores across Questions

Across All Questions	Mean	SD	AM Average
AD Average	1.38	0.31	.830**
N = 463 Note. AM Average Mean = 1.42; SD = .32 ** Correlation is significant at the 0.01 level (2-tailed).			

APPENDIX I: SECOND ANALYSIS OF THE OTS - RATED

Click the paper clip in the panel on the left to open the Appendix I spreadsheet in Excel.

APPENDIX J: SECOND ANALYSIS OF THE OTS – NON-RATED

Click the paper clip in the panel on the left to open the Appendix J spreadsheet in Excel.

APPENDIX K: SECOND ANALYSIS OF THE OTS – FREQUENCIES FOR SEVERAL VARIABLES

Click the paper clip in the panel on the left to open the Appendix K spreadsheet in Excel.

APPENDIX L: SECOND ANALYSIS OF THE OTS – LETTERS OF RECOMMENDATIONS

Click the paper clip in the panel on the left to open the Appendix L spreadsheet in Excel.

APPENDIX M: SECOND ANALYSIS OF THE OTS – NUMBER OF JOBS CURVILINEAR TEST

Click the paper clip in the panel on the left to open the Appendix M spreadsheet in Excel.

APPENDIX N: SECOND ANALYSIS OF THE OTST - INTERCORRELATIONS

Click the paper clip in the panel on the left to open the Appendix N spreadsheet in Excel.