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ABILITY, INTEREST, AND OCCUPATIONAL OUTCOMES

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Abstract

Abilities, interests, and socioeconomic status are all important factors in determining the occupation a student is likely to pursue. In this paper, we intend to study which factor—ability or interest—is a greater determinant of occupational choice and whether either affects future wages or job satisfaction. Using the Project TALENT dataset, a longitudinal study consisting of approximately 400,000 high school students initially tested in 1960, we find that interest plays a greater role than ability in predicting a student's occupation. However, we did not find significant effects of ability or interest affecting individuals' wages or job satisfaction levels.

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1. Introduction

Determining the predictors of occupational attainment and career success has been a topic of interest to psychologists, sociologists, and economists for decades. There seems to be consensus on the fact that both ability and interest are good predictors of the career path a student is likely to pursue. However, it is unclear how much they contribute to career success and job satisfaction. Researchers in many fields have used varying datasets and study designs in order to better understand which factor, ability or interest is are more likely to affect an individual's occupational outcomes. When generalizing, the definition of occupational outcomes is also unclear as several indicators, such as choice of college major and job, probability of employment, wages, and levels of job satisfaction are all relevant in outlining one's level of success. It is extremely difficult to separate a student's ability from their interests, as the two are often intertwined, but doing so could have significant economic implications.

Knowing what factors play a role in molding one's career path could affect primary and secondary school structure, guidance counseling, allocation of resources, and parental pressures. If students who choose their careers based on passion earn higher wages or experience greater levels of job satisfaction than those choosing careers based on ability (or vice versa), then high schools should offer guidance counseling services accordingly. This could potentially lead to a happier, more productive workforce. Additionally, it may also be true that students who pursue a career based on their ability measures adjust more easily to the job, and as a result not only earn higher wages, but also feel greater satisfaction and less frustration. Knowing the extent to which ability and interests do play a role on wages and job satisfaction could therefore change the way

students decide on a career. This also relates to the issue of when to specialize—early or late, as in the United States.

However, much of the existing work on the issue has failed to integrate the ability and interest variables, focusing on one or the other. Additionally, many studies that look at both variables have completely neglected the concept of job satisfaction, while other studies only look at job satisfaction. Part of the reason for such a disconnect is the fact that the topic is relevant in almost every field of social science, but there has been limited interaction. It is a topic that has been studied for decades, and cultural ideas of "career success" have changed throughout the years, so older studies may be using different indicators of success than what we are used to today. In order to address the lack of consistency, we intend to use the Project TALENT dataset to better understand the importance of ability and interests in determining a student's future prospects of employment, wages, and job satisfaction.

We have decided to study three variables, choice of career, wages, and job satisfaction, not only because they are readily available in the data, but also because we believe that when integrated, they present a more complete picture of the interrelations between choice, performance, and satisfaction. Studying the job or field that a student pursues based on individual characteristics gives us insight into how people make decisions and derive utility. Through the Project TALENT database, we can learn a lot about students' choices of occupation and what variables impact those choices. Wages can give us an idea about the productivity levels of a worker, especially when we compare them to other workers. Moreover, to interpret the effect of attributes on wages in a job, we need to control for selection. Since occupational choice and performance are likely to be positively correlated, we would have selection bias as we only see the agent's wage in the occupation the agent has chosen. Finally, job satisfaction is relevant from a societal perspective and can be an important factor when considering

structural changes or policies in education and career counseling.

2. Background

Austin and Hanisch (1990) used the Project TALENT dataset to conclude that abilities, interests, gender, and socioeconomic status are all related to the occupation that a student is likely to pursue. This paper is intended to complement their findings.

Austin and Hanisch used discriminant function analysis and twelve categories of occupations in order to predict the career path of students based on ability, interests, socioeconomic status, and gender. They determined that ability is the best predictor of occupational attainment, followed by interest. However, their measurement of occupational attainment is arguably antiquated. Austin and Hanisch ordered the twelve different occupation categories based on "prestige," which they determined was a result of the years of education required to obtain a job in each category. They then used the ranking of the occupational category to assess a person's level of occupational attainment. In their analysis, different variables were used to predict the occupational category, and thus the level of success, of each student.

There are several reasons why this measure of "success" may not be as relevant today. Since 1960, there have been evolutionary changes in education that may have affected the number of years required to obtain certain degrees, certifications, and jobs. For example, prior to 1940, medical residency positions were generally reserved for students interested in clinical research. In the mid-1900s, there was a vast boom in residency positions for clinical training, so students that still wanted a career in research became required to obtain doctorate degrees. Likewise, in the 1900s business administration and management positions only required high school or bachelor's degrees, but now are almost exclusively reserved for MBAs. Today, while some occupa-

tions are still seen are more prestigious than others, there is also a greater emphasis on job satisfaction and overall happiness. Most career guidance counseling services tend to focus more on helping individuals choose a career based on interest over intelligence or ability because happiness in one's career is often valued more than money. Additionally, a student's choice of career may be dependent on ability, interest, or both, but it is not necessary that low-ability people will choose to pursue low-education or low-income jobs, especially given the fact that access to a college education has become more accessible. Thus, it is more informative to compare students within fields and see how students choosing careers based on ability fare against those choosing careers based on interest.

Lipsett and Wilson (1954), contrary to Austin and Hanisch, focused on the effects of "suitable" interests and ability on job satisfaction. They utilized the *Kuder Preference Record* and considered a person's interests to be "suitable" for a job if one of their two highest percentile scores corresponded with the *Kuder* classification for that particular job. Additionally, the *Minnesota Occupational Rating Scales* was used to organize different occupations into levels of mental ability required and determine whether or not a person's mental ability was considered to be "suitable" for a job. They surveyed 378 individuals who had completed counseling programs at the R.I.T. Counseling Center to gauge their levels of job satisfaction.

Lipsett and Wilson found there to be only a slight positive relationship between the suitability of mental ability and job satisfaction. However, for those who were considered to have suitable mental ability, the proportion of individuals that reported high job satisfaction was greater than the proportion that did not. Additionally, those that reported low levels of job satisfaction were more likely to have interests or ability levels that were considered unsuitable for their job. Those with suitable ability and interests likely adjusted to the job more easily, and thus, were more satisfied overall.

While Austin and Hanisch reported that ability was a greater predictor of occupational attainment, Lipsett and Wilson found there to be a stronger relationship between suitable interests and job satisfaction. This indicates a need to reconcile the different approaches into a single method that will incorporate ability, interest, socioeconomic status, occupation, wages, job satisfaction, and potentially other indicators of attainment. It is evident that while ability may help an individual adjust better to a position, that may not necessarily be indicative of happiness.

Another study looked at the extent to which personality measures, interests, and ability predict job performance and satisfaction of managers. Gellatly et al. (1990) surveyed a total of 79 managers in a large food-service organization. They collected information on their job performance through performance appraisal instruments. Additionally, they used the *Personality Research Form-E* to measure self-reported personality, *Career Directions Inventory* to gauge vocational interests, *Personnel Assessment* to measure quantitative aptitude, and the *Index of Organizational Reactions* to to determine job satisfaction.

Gellatly et al. found that cognitive ability predictors were highly correlated with a manager's communication and job performance, along with their levels of promotability, while vocational interests were related to components of the job that were not predicted by ability. Additionally, personality was associated with job satisfaction, which itself was related to non-cognitive—rather than cognitive—predictors.

Countless other studies have noted correlations between abilities, interests, and occupational attainment. *The Study of Mathematically Precocious Youth* (Stanley, 1971) has often been cited to indicate a link between adolescent mathematical ability and future occupational outcomes. *SMPY* is the longest-running study of gifted youth in the United States, having completed 35-year follow-up surveys to date. Twelve and thirteen year-old students were given the SAT and those that scored exceptionally well

on the exam (top 1%, top 0.5%, and top 0.01%) were studied for longitudinal patterns. According to the 20-year follow-up data, by age 33, 25% of the top 1%-scoring cohort had obtained doctorate degrees, while the rates were 30% for the 0.5% cohort (Benbow et al., 2000). The rate was an astonishing 50% for the top 0.01% cohort (Lubinski et al., 2006). These studies also revealed that of the precocious youth, both males and females reported very high levels of career satisfaction in the follow-up surveys, indicating a high correlation between ability and job satisfaction. However, despite having similar levels of ability, there were significant gender differences in degrees pursued between males and female. While males were more likely to pursue hard sciences—like mathematics, computer science, physics, and engineering—females were more inclined to pursue humanities, life sciences, and social sciences. (Benbow et al., 2000; Lubinski et al., 2006). These gender differences highlight that educational choices could potentially be more closely linked to students' interests and a potential gender bias (resulting in females pursuing more traditional roles), rather than their ability levels.

SMPY data also indicates that the difference between an SAT score of 500 and an SAT score of 700 at age twelve translates into a divergence in income, number of tenure-track positions at universities, and number of patents earned by the time the students in the different cohorts reach their thirties and are well into their careers (Lubinski et al., 2006; Wai, Lubinski, and Benbow, 2005).

While all of these conclusions are derived from a variety of datasets and cite different levels of correlations, there is one common theme: a student's ability and interests both matter. They are prominent factors in shaping one's career and determining differences in income and job satisfaction. In this paper, we intend to determine which factor has a greater effect on occupational outcomes and whether the correlation coefficients vary with subject, gender, and socioeconomic status.

3. Project TALENT

3.1 Description

Project TALENT, developed by the American Institutes for Research, aimed to provide researchers with a more comprehensive overview of education trends and youth development within the United States. It was a national longitudinal survey that was, at the time, the largest study of high school students ever conducted in the United States.

In 1960, approximately 375,000 students (about 5% of all American high school students) from 987 different high schools were chosen as a representative sample of the country's high school population to take part in a two-day study. Once the schools were selected, every student in those schools—from grades nine to twelve—took a series of tests to determine their levels of aptitude in general information, mathematics, complex intellect, language, and clerical tasks. The students were also surveyed of their family background, personal and educational experiences, career aspirations, personality traits, and interests in different occupations and activities.

Regardless of what grade the students were in during the initial 1960 testing, they were all contacted one, five, and eleven years after high school graduation to participate in follow-up surveys. While response rates continued to drop with each follow-up, certain measures were taken to ensure that the data remained representative of the sample. The surveys asked respondents about their educational attainment, occupational attainment, family and marital status. They also asked respondents to self-report their wages and level of job satisfaction.

We decided to use the Project TALENT data base because of its reliable quality, vast size, and longitudinal study design. Because there are approximately 375,000 observations constructing a representative sample of all American high schoolers, we expect to obtain sound results. This type of a longitudinal dataset is extremely useful in studying students' career progress from high school to adulthood. Because we have data on student demographics, socioeconomic status, test scores, interest measures, occupations, wages, and levels of job satisfaction, we can see how the different variables relate to and affect one another and patterns that may develop. Additionally, Project TALENT assessed all students on different dimensions of ability using the same test, so there are standardized ability measures aside from performance measures like GPA, which may vary from school to school. Having such measures available in large data sets is unusual.

Still, the Project TALENT data base is not without flaws or limitations. Cultural norms have changed drastically since 1960, and if such a study was conducted today, we would see those changes being reflected in the data. In 1960, gender and race may have been huge factors in determining the career path a student would pursue. Most women did not attend college and instead worked as housewives. Those that did enter the workforce were likely to take up more "feminine" roles, such as teaching or nursing. Similarly, minorities also rarely attended college. It is important to take these limitations of the data into account when making generalizations regarding today's population.

3.2 Data Limitations

While Project TALENT aimed to comprise a representative sample of the United States high school population, there are some unique characteristics that should be noted prior to analysis. Although the data is mostly evenly split between males and

females, there are some racial discrepancies. Approximately 39 percent of the sample identified as Caucasian. However, for about 59 percent of the sample, race is unreported. As a result, there may be a potential response bias, since we cannot accurately determine the racial composition of the sample. We cannot conclusively make generalizations about student behavior with regards to race. In the United States, race has always been heavily linked to income level, with blacks and Hispanics often dominating the lowest income groups (US Census, 2014). Additionally, Project TALENT only surveyed students in high school, not accounting for low-achieving students from disadvantaged backgrounds that may have dropped out prior to testing (Reardon, 2011). Thus, the data on race and income may create bias.

Another flaw of the Project TALENT data is the loss of information through the follow-up waves. Students that were in twelfth grade during the time of the initial testing were more responsive during the follow-up exams, likely due to the fact that for them the first follow-up was only a year after initial testing, while it was four years later for ninth graders. Additionally, response for all cohorts continued to decrease with each wave, and although Project TALENT undertook measures—such as targeting representative samples through phone calls or in person visits—to account for the nonresponse, biases may still impact our results.

One interesting aspect of Project TALENT is the question of who is actually responding to the follow-up surveys. For the eleven-year follow-up data, the response rates is lower for those with the lowest initial family income and those with the highest initial family income; the response rate is highest for students in the middle ranges. Studies indicate that socioeconomic status and family background is a strong predictor of future occupational attainment and the decision to attend college (Cameron and Heckman, 2001; Coleman et al., 1966). As a result, follow-up survey responses probably oversample around the median, and we may not have enough information about the

extreme tails of the sample.

We must take these weaknesses of the data into consideration when conducting the analysis and reporting any results. Due to the problems with the racial data, we have eliminated the variable of race from our analyses; however, we acknowledge that this may skew our results, resulting in generalizations that may not be valid for all racial types.

4. Analysis

4.1 Data Organization

There are two distinct types of variables that are used for the analysis: variables measured during the initial 1960 testing and variables measured in the eleven-year follow-up survey. Demographic variables, interest, and ability are all determined during the initial testing, while data on wages and job satisfaction are extracted from the eleven-year follow-up surveys.

The two demographic variables that are incorporated into our analysis are gender and a measure of socioeconomic status, known as the socioeconomic index. The socioeconomic index was created by Project Talent researchers to objectively identify students' backgrounds. It was calculated using the following items: the value of the family home, annual family income, number of books in the home, appliances, TV and radio access, whether the student has their own room, the father's occupation, the father's education level, and the mother's education level. These responses were standardized with a mean of 0 and a standard deviation of 1 and denoted as z_i, where $i = 1, 2, ...n$ indicates the item.

Socioeconomic index is calculated as follows:

$$P = 10(\frac{\sum_{i=1}^{n} z_i}{k_n} + 10) \text{ where } k_n = \sqrt{n + n(n-1)\bar{r}}.$$

Here, $\bar{r}$ is the mean of the 36 intercorrelations among the nine items, and k_n is an approximation of the standard deviation of the sum of the n items.

In 1960, students were originally screened with information and aptitude tests in a variety of different subjects. The aptitude tests focused on mathematics ability,

language ability, complex intellectual aptitude, visualization, and clerical aptitude. The information tests were more specific, focusing on subjects like physics, arts, music, and technical fields. In order to assess students' interests, researchers asked them how much they would enjoy different activities or jobs if money were not an issue. Students reported their interests on a level from one (lowest) to five (highest).

For the choice model (Section 4.2), we utilized the five aptitude measures, and we separated the different information questions into distinct fields: science; social science; music and arts; outdoor recreation and farming; social service; business; mechanical-technical; and miscellaneous. We then calculated students' scores in each of these fields and converted them into percentiles. Therefore, for each ability category, the independent variable is the percentile of the students' score. This simplifies our analysis because students can be compared to one another more easily, and we can interpret the coefficients as the level of change in the independent variable resulting from a percentile increase in student score. We also categorized the many different occupations and interests listed into fifteen distinct categories of occupation: physical science; biological science; social science and linguistics; social service; music and arts; outdoor recreation and farming; business management; sales; computation; office work; technical jobs; mechanical-technical trades; construction trades; general labor; and protection and military. We then organized the different occupations reported in the follow-up surveys into these categories (for example, if a student reports their occupation as "mechanical engineer," it would fall into the physical science category). We also separated the different activities and jobs from the interest questionnaire and calculated students' average interest levels transformed into percentiles for each of the fifteen categories.

For the wage regression (Section 4.3) and the job satisfaction model (Section 4.4), we reduced the number of ability measures and occupation categories in order to simplify the interactions of variables. We separated the ability measures into five

categories: science; social science, arts, and business; language; math, complex intellectual aptitude, visual, and clerical; and miscellaneous. We reduced the occupation categories to four: science; social science and arts; business; and miscellaneous. For both, we took averages and converted the numbers into percentiles.

For all three sections, we also converted students' socioeconomic index and high school grades into percentiles.

4.2 Choice Model for Occupation

We have $i = 1, 2, ..., I$ different individuals and $j = 1, 2, ..., J$ potential occupations, or alternatives, that they can choose. An individual i will only select occupation j if that particular occupation is better than all other alternatives. Thus, the follow-up data indicates the occupation that is revealed preferred for each individual. The occupation that an individual selects is the one that will give them the highest utility.

Let Y_i denote choice of occupation for individual i and U_{ij} denote the utility level given to individual i from occupation j. $Y_i = j$ if and only if $U_{ij} > U_{ik}$ for all $k \neq j$. U_{ij} can be separated between the observable and unobservable utilities such that $U_{ij} = V_{ij} + \epsilon_{ij}$. Here, the observable utility V_{ij} can also be separated between variables that vary across individuals, alternatives, or both such that

$$V_{ij} = \mathbf{x}_{ij}\beta + \mathbf{z}_i\gamma_j. \text{ Thus, } U_{ij} = \mathbf{x}_{ij}\beta + \mathbf{z}_i\gamma_j + \epsilon_{ij}.$$

The probability that individual i chooses occupation j is:

$$P(Y_i = j) = P(U_{ij} > U_{ik}) = P(\epsilon_{ik} - \epsilon_{ij} < V_{ij} - V_{ik}) \text{ for all } k \neq j.$$

We assume that ϵ_{ij} and ϵ_{ik} are extreme values and that their difference follows a logistic distribution. Thus, in order to calculate $P(Y_i = j)$, we can use the McFadden's Choice Model. This probability is calculated as:

$$P_{ij} = \frac{e^{\mathbf{X}_{ij}\beta + \mathbf{Z}_i\gamma_j}}{\sum_j e^{\mathbf{X}_{ij}\beta + \mathbf{Z}_i\gamma_j}}.$$

Here, $\mathbf{x}_{ij}$ refers to the alternative-specific variables for individual i and occupation j. We will be using interest levels of each individual in all fifteen occupation categories. $\mathbf{z}_i$ is the vector of individual-specific variables for individual i. We will be using the ability scores, gender, race, socioeconomic index, and high school grades as the individual-specific independent variables. This vector is interacted with γ_j because the effect of individual-specific variables differ by alternative. For example, a student's score in science will have a different impact on them pursuing engineering than it will on them pursuing music.

In order to determine the effects of interest, ability, gender, socioeconomic index, and high school grades on choice of occupation, we applied the McFadden's Choice Model on all students that reported their occupation—eliminating "housewife"—in the eleven-year follow-up survey. We found that a one percentile increase in a student's interest in a particular occupation category increases their probability of getting a job in that category. This is intuitive because students are more likely to pursue jobs in which they have interest. Additionally, we found that for every single occupation category, the marginal effects, dp/dx (at the means), of interest were higher than the marginal effects of all ability scores (see Appendix B). These results were significant at the $p \approx 0.000$ level for all occupations. Thus for most occupations, holding all other variables constant, a percentile increase from the mean interest level in an occupation category leads to a greater probability of a student pursuing that particular field than a percentile increase in ability in either that field or any other field. These results show us that interest in a given field matters to students, especially when they make a career choice. Students do not necessarily choose their occupations simply based on their strengths, but also on job characteristics that they feel they will enjoy. As a result, they find that pursuing a career in which they have interest gives them greater

utility than other careers do.

The fact that ability may not play as large of a role in determining one's career can also be highlighted in the fact that for the Project TALENT sample, women chose to pursue more traditional roles. In physical science fields, gender had fairly large negative marginal effects, despite the fact that women's scores in math were not significantly lower than men's. For example, in physical sciences, engineering, and math, women had a marginal effect of -0.023577, significant at the $p \approx 0.000$ level, but in social service women had a marginal effect of $+0.050920$, significant at the $p \approx 0.000$ level (see Appendix B). These results highlight that interest in a given field, potentially shaped by societal norms, can outweigh ability factors when it comes to students choosing their career paths.

Additionally, socioeconomic index and high school grades had positive marginal effects for most high-skilled occupations and negative marginal effects (at the means) for most low-skilled occupations. These results were also significant at the $p = 0.05$ level (see Appendix B) for most occupations. This is fairly intuitive since high-skilled jobs most likely require a college education, which might be unaffordable to students of low-income families and unattainable to low-achieving high school students. Holding all other variables constant, increasing one's percentile level of socioeconomic index or high school grades will increase their probability of choosing high-skilled work.

4.3 Wages

To examine the role of different factors on eleven-year follow-up wages, we used the variables of ability, interest, gender, socioeconomic index, and high school grades.

Wages can be represented through a multivariate regression where W_{ij} represents the predicted annual earnings for individual i in occupation j eleven years after high school graduation. Thus,

$$W_{ij} =$$

$$\alpha(\boldsymbol{x}_1)+\beta(\boldsymbol{x}_{2i})+\gamma(\boldsymbol{x}_{3i})+\delta(\boldsymbol{x}_{1i}\boldsymbol{x}_{2i})+\delta(\boldsymbol{x}_{1i}\boldsymbol{x}_{3i})+\zeta(\boldsymbol{x}_{1i}\boldsymbol{x}_{2i}\boldsymbol{x}_{3i})+\eta(x_{4i})+\theta(x_{5i})+\iota(x_{6i})+\epsilon$$

Here, $\boldsymbol{x}_1$ is the vector of occupation fixed effects, $\boldsymbol{x}_{2i}$ is the vector of student i's interests in the set of different occupations, and $\boldsymbol{x}_{3i}$ is the vector of student i's abilities. Additionally, x_{4i}, x_{5i}, and x_{6i} represent student i's gender, socioeconomic index, and high school grades, and ϵ is the error term, which we assume to be normally distributed. We used a logarithm-wage variable for W_{ij} in order to reduce the range and variance within our dependent variable.

After running this regression, we find that both interest and ability are individually significantly related with higher wages in the science field. However, there is no significant effect of the interaction of the two variables. That is, having both high interest and high ability in science does not significantly impact wages for those in the science occupations. Additionally, having a high ability in social science, arts, and business is significantly related to higher wages in business occupations. Regardless of these results, we find no significant effects for all other occupations. This may be due to the fact that the ability, interest, and occupation categories are extremely broad, and we may have a loss of information. More research is likely needed in the area.

We find strong negative effects of being female on wages, meaning that either women are paid less on the job or are occupying low-paying jobs overall. Additionally, we find positive effects of socioeconomic index and high school grades on wages. This is intuitive because students from high-income backgrounds are more likely to pursue high-income jobs, and low-achieving students are less likely to attend college and pursue high-income jobs.

While we intended to measure the effects of ability and interest on wages, we found there to be no significant relationship for most occupations. It does not seem that having strong ability in a field or having a high level of interest in a field is directly

correlated to higher earnings.

4.4 Job Satisfaction

When reporting their levels of satisfaction eleven years after high school graduation, the Project TALENT students were required to rate their level of satisfaction on a scale from one to five, one being very unsatisfied and five being very satisfied. These are discrete values, so we used an ordered probit regression to determine the probability of selecting a particular level based on individual characteristics.

Let $Y_i^* = \mathbf{x}_i\beta + u_i$ represent the choice or rating of individual i.

$$Y_i = j \text{ if } a_{j-1} < Y_i^* \leq a_j \text{ for } j = 1, 2, 3, 4, 5.$$

We are trying to determine the probability, P_{ij}, that individual i will select rating j. We can represent this as:

$$P_{ij} = P(Y_i = j) = P(a_{j-1} < Y_i^* \leq a_j) = F(a_j - \mathbf{x}_i\beta) - F(a_{j-1} - \mathbf{x}_i\beta) = \frac{e^{a_j - \mathbf{X}_i\beta}}{1+e^{a_j - \mathbf{X}_i\beta}} - \frac{e^{a_{j-1} - \mathbf{X}_i\beta}}{1+e^{a_{j-1} - \mathbf{X}_i\beta}},$$

where $\mathbf{x}_i$ is the set of individual characteristics that are listed above.

After running the ordered probit regression, we found that neither ability nor interest played a role in determining individuals' levels of job satisfaction. The effects of both variables were not significant (see Appendix D). Additionally, we found no significant effects of gender on job satisfaction. However, both socioeconomic index ($p \approx 0.000$) and high school grades ($p = 0.05$) are positively related to job satisfaction. Both students coming from high-income backgrounds and high-achieving students are happier in their jobs.

5. Discussion

Our work shows with the McFadden's Choice Model that interests matter and are taken into account when a student chooses a career. For each of the different occupation categories in our analysis, the marginal effects of interest in every particular category were positive and significant at the $p \approx 0.000$ level. This indicates that an increase in interest in a field increases the probability of an individual entering that field. These values were larger than the marginal effects of ability levels. Thus, interests are important to the decision-making process, often more than ability. We allow for gender differences in preferences and show that despite controlling for ability and interest, women prefer certain occupations over others.

While ability and interest affect a students choice of occupation, we did not find many significant effects of either variable or the interaction of both on an individual's wages or level of job satisfaction. This could also be due to loss of information when we select broad categories of occupations, ability measures, and interest categories.

As we previously noted, Project TALENT does have some limitations that should be taken into account when generalizing with these results. Because response rates dropped with each wave of follow-up testing, it is important to be careful and recognize that results could be skewed. Additionally, our racial data is very sparse, so any generalizations regarding race and its effect on wages or job satisfaction may not be entirely consistent with the actual population statistics. Finally, Project TALENT is limited in the sense that the characteristics of the high school student population have changed drastically since the 1970s. Today, women are much more likely to pursue occupations, like engineering or medicine, that were traditionally male roles.

In addition, Project TALENT was conducted during the era of racial integration, and high schools today may not be as well-integrated and blacks may not have access to the same opportunities as before.

Still, much can be learned from Project TALENT regarding the way people make decisions. Decisions are ultimately based on the utility that individuals derive. A student will only choose an occupation if it gives them higher utility than all other occupations. Thus, we can see based on the eleven-year reported occupations which subjects give students utility and which variables affect that utility.

A. Data Summary

The following tables show the data summaries for the all variables used throughout the paper and analysis.

General Variables

Variable	Number	Frequency
Gender		
Male	188,174	49.91
Female	188,841	50.09
Race		
White or Caucasian	147,355	39.24
Black	6,533	1.74
Oriental	999	0.27
American-Indian	239	0.06
Mexican-American	323	0.09
Puerto-Rican American	37	0.01
Eskimo	1	0.00
Cuban	1	0.00
Unknown	220,061	58.60
Job satisfaction		
1 (lowest)	794	3.77
2	1,674	7.94
3	4,668	22.14
4	8,977	42.58
5 (highest)	4,972	23.58
Year 11 response status		
Regular respondent	85,342	22.64
Special respondent or nonrespondent	8,692	2.31
Special survey nonrespondent	2,649	0.70
Other nonrespondent	280,333	74.36

Variable	Observations	Mean	Std. Dev.	Min	Max
Socioeconomic Index	358,030	97.73	10.20	58	131
High school grades (as percent)	353,421	50.65	20.12	0	100

Variables used for McFadden's Choice Model

Variable	Obs.	Mean	Std. Dev.	Min	Max
Interest					
Physical science	368,098	2.53	0.92	0	5
Biological science	368,098	2.60	0.90	0	5
Social science, linguistics	368,097	2.55	0.88	0	5
Social service	368,097	2.87	0.87	0	5
Music and arts	368,097	2.62	0.94	0	5
Outdoor recreation, farming	368,097	2.81	0.94	0	5
Business management	368,098	2.78	0.81	0	5
Sales	367,934	2.40	0.91	0	5
Computation	368,098	2.48	0.84	0	5
Office Work	368,097	2.61	0.95	0	5
Technical jobs	367,000	2.60	1.05	0	5
Mechanical-technical jobs	368,098	2.20	0.98	0	5
Construction Trades	368,086	1.99	0.86	0	5
General labor	368,086	2.02	0.59	0	5
Protection and military	367,908	2.60	1.05	0	5
Ability (as percent)					
Science	377,016	44.68	17.81	0	98.85
Social science	377,016	53.34	19.43	0	100
Music and arts	377,016	45.66	18.83	0	100
Outdoor recreation, farming	377,016	45.90	16.60	0	100
Social service	377,016	45.85	16.65	0	100
Business	377,016	36.99	19.52	0	100
Mechanical-technical	377,016	42.06	19.35	0	100
Miscellaneous	377,016	37.51	16.39	0	100
Language	377,016	58.83	17.17	0	99.22
Complex intellectual aptitude	377,016	48.33	18.70	0	100
Visualization	377,016	50.61	21.23	0	100
Mathematics	377,016	38.26	17.88	0	100
Clerical	377,016	41.22	13.52	0	99.61

Variable	Number	Freq.
Occupation chosen		
Physical science	3,378	5.50
Biological science	3,595	5.86
Social science, linguistics	2,643	4.31
Social service	9,159	14.92
Music and arts	990	1.61
Outdoor recreation, farming	1,488	2.42
Business management	7,999	13.03
Sales	2,325	3.79
Computation	3,915	6.38
Office Work	7,011	11.42
Technical jobs	3,531	5.75
Mechanical-technical jobs	4,181	6.81
Construction Trades	2,574	4.19
General labor	6,853	11.16
Protection and military	1,745	2.84

Variables used for wage and job satisfaction regressions

Variable	Obs.	Mean	Std. Dev.	Min	Max
Interest					
Science	368,098	2.56	0.81	0	5
Social science and arts	368,097	2.57	0.83	0	5
Business	368,098	2.44	0.59	0	5
Miscellaneous	368,098	2.62	0.73	0	5
Ability (as percent)					
Science	377,016	43.87	17.16	0	99.21
Social science, arts, and business	377,016	48.22	18.11	0	98.84
Language	377,016	43.88	13.78	0	89.91
Math, CIA, visual, and clerical	377,016	58.83	17.17	0	99.22
Miscellaneous	377,016	42.71	12.70	0	96.07

Variable	Number	Freq.
Occupation chosen		
Science	10,504	17.11
Social science, arts, and business	3,633	5.92
Business	14,239	23.20
Miscellaneous	33,011	53.78

B. Choice Model Regression Tables

The following tables show the regression results for the McFadden's Choice Model. There is a table for each occupational choice with results for the marginal effects of the different ability, interest, and socioeconomic variables.

Pr(choice = physical science, engineering, math | 1 selected) = 0.03083676

Variable	dp / dx	Std. Err	z	P > |z|
Interest:				
Physical science	0.000563	0.000021	26.66	0.000
Biological science	-0.000037	0.000002	-23.15	0.000
Social science, linguistics	-0.000015	0.000001	-18.59	0.000
Social service	-0.000102	0.000004	-25.22	0.000
Music and arts	-0.000011	0.000001	-18.11	0.000
Outdoor recreation, farming	-0.000012	0.000001	-17.62	0.000
Business management	-0.000102	0.000004	-25.16	0.000
Sales	-0.000023	0.000001	-20.52	0.000
Computation	-0.000052	0.000002	-24.21	0.000
Office Work	-0.000057	0.000002	-23.79	0.000
Technical jobs	-0.000044	0.000002	-23.65	0.000
Mechanical-technical jobs	-0.000021	0.000001	-18.04	0.000
Construction Trades	-0.000011	0.000001	-14.2	0.000
General labor	-0.000066	0.000003	-24.41	0.000
Protection and military	-0.000012	0.000001	-15.12	0.000
Ability:				
Science	0.000497	0.000079	6.32	0.000
Social science	-0.000184	0.000067	-2.74	0.006
Music and arts	-0.000123	0.000043	-2.88	0.004
Outdoor recreation, farming	-0.000326	0.000038	-8.48	0.000
Social service	-0.000039	0.000031	-1.24	0.215
Business	0.000210	0.000061	3.43	0.001
Mechanical-technical	0.000106	0.000044	2.42	0.016
Miscellaneous	0.000178	0.000038	4.72	0.000
Language	-0.000297	0.000051	-5.84	0.000
Complex intellectual aptitude	0.000209	0.000050	4.15	0.000
Visualization	0.000214	0.000033	6.48	0.000
Mathematics	0.000593	0.000050	11.98	0.000
Other:				
Female	-0.023577	0.002367	-9.96	0.000
Socioeconomic index	0.000076	0.000025	3.07	0.002
High school grades	0.000422	0.000025	16.94	0.000

Pr(choice = biological science, medicine | 1 selected) = 0.06292503

Variable	dp / dx	Std. Err	z	P > |z|
Interest:				
Physical science	-0.000037	0.000002	-23.15	0.000
Biological science	0.001111	0.000026	42.61	0.000
Social science, linguistics	-0.000031	0.000001	-22.33	0.000
Social service	-0.000209	0.000006	-37.12	0.000
Music and arts	-0.000022	0.000001	-21.37	0.000
Outdoor recreation, farming	-0.000024	0.000001	-20.53	0.000
Business management	-0.000207	0.000006	-37.31	0.000
Sales	-0.000046	0.000002	-25.66	0.000
Computation	-0.000107	0.000003	-34.29	0.000
Office Work	-0.000116	0.000004	-33.37	0.000
Technical jobs	-0.000090	0.000003	-32.83	0.000
Mechanical-technical jobs	-0.000043	0.000002	-21.19	0.000
Construction Trades	-0.000022	0.000001	-15.59	0.000
General labor	-0.000134	0.000004	-35.02	0.000
Protection and military	-0.000025	0.000002	-16.85	0.000
Ability:				
Science	0.000479	0.000117	4.090	0.000
Social science	-0.000299	0.000106	-2.820	0.005
Music and arts	-0.000074	0.000080	-0.920	0.358
Outdoor recreation, farming	-0.000219	0.000067	-3.270	0.001
Social service	0.000372	0.000062	5.990	0.000
Business	0.000156	0.000092	1.700	0.089
Mechanical-technical	-0.000039	0.000068	-0.57	0.569
Miscellaneous	0.000043	0.000067	0.650	0.515
Language	0.000243	0.000091	2.680	0.007
Complex intellectual aptitude	-0.000238	0.000076	-3.140	0.002
Visualization	-0.000207	0.000052	-3.980	0.000
Mathematics	0.000415	0.000077	5.41	0.000
Other:				
Female	0.058412	0.003531	16.540	0.000
Socioeconomic index	0.000097	0.000045	2.16	0.031
High school grades	0.000437	0.000043	10.19	0.000

Pr(choice = social science, linguistics | 1 selected) = 0.02615926

Variable	dp / dx	Std. Err	z	P > |z|
Interest:				
Physical science	-0.000015	0.000001	-18.59	0.000
Biological science	-0.000031	0.000001	-22.33	0.000
Social science, linguistics	0.000480	0.000019	25.47	0.000
Social service	-0.000087	0.000004	-24.17	0.000
Music and arts	-0.000009	0.000001	-17.73	0.000
Outdoor recreation, farming	-0.000010	0.000001	-17.25	0.000
Business management	-0.000086	0.000004	-24.15	0.000
Sales	-0.000019	0.000001	-19.96	0.000
Computation	-0.000044	0.000002	-23.32	0.000
Office Work	-0.000048	0.000002	-22.97	0.000
Technical jobs	-0.000037	0.000002	-22.84	0.000
Mechanical-technical jobs	-0.000018	0.000001	-17.64	0.000
Construction Trades	-0.000009	0.000001	-14.00	0.000
General labor	-0.000056	0.000002	-23.48	0.000
Protection and military	-0.000010	0.000001	-14.89	0.000
Ability:				
Science	0.000150	0.000071	2.12	0.034
Social science	0.000198	0.000064	3.08	0.002
Music and arts	0.000116	0.000045	2.58	0.010
Outdoor recreation, farming	-0.000172	0.000036	-4.73	0.000
Social service	0.000004	0.000030	0.13	0.896
Business	0.000094	0.000055	1.69	0.091
Mechanical-technical	-0.000198	0.000036	-5.55	0.000
Miscellaneous	0.000202	0.000039	5.22	0.000
Language	0.000398	0.000052	7.61	0.000
Complex intellectual aptitude	-0.000125	0.000043	-2.92	0.003
Visualization	-0.000069	0.000028	-2.48	0.013
Mathematics	0.000119	0.000043	2.78	0.005
Other:				
Female	-0.028246	0.001953	-14.47	0.000
Socioeconomic index	0.000510	0.000028	18.50	0.000
High school grades	0.000315	0.000024	13.20	0.000

Pr(choice = social service | 1 selected) = 0.17592857

Variable	dp / dx	Std. Err	z	P > |z|
Interest:				
Physical science	-0.000102	0.000004	-25.22	0.000
Biological science	-0.000209	0.000006	-37.12	0.000
Social science, linguistics	-0.000087	0.000004	-24.17	0.000
Social service	0.002733	0.000044	62.39	0.000
Music and arts	-0.000062	0.000003	-22.98	0.000
Outdoor recreation, farming	-0.000066	0.000003	-21.95	0.000
Business management	-0.000580	0.000012	-48.52	0.000
Sales	-0.000129	0.000005	-28.58	0.000
Computation	-0.000298	0.000007	-42.41	0.000
Office Work	-0.000325	0.000008	-40.58	0.000
Technical jobs	-0.000250	0.000006	-39.83	0.000
Mechanical-technical jobs	-0.000121	0.000005	-22.75	0.000
Construction Trades	-0.000060	0.000004	-16.18	0.000
General labor	-0.000375	0.000009	-43.79	0.000
Protection and military	-0.000069	0.000004	-17.61	0.000
Ability:				
Science	0.001408	0.000191	7.35	0.000
Social science	0.001140	0.000175	6.51	0.000
Music and arts	0.000113	0.000133	0.85	0.395
Outdoor recreation, farming	-0.000018	0.000112	-0.16	0.870
Social service	0.000230	0.000101	2.28	0.023
Business	0.000271	0.000150	1.81	0.070
Mechanical-technical	-0.001528	0.000112	-13.63	0.000
Miscellaneous	-0.000641	0.000110	-5.80	0.000
Language	0.000813	0.000149	5.46	0.000
Complex intellectual aptitude	-0.000783	0.000125	-6.25	0.000
Visualization	-0.000444	0.000087	-5.12	0.000
Mathematics	0.000449	0.000125	3.58	0.000
Other:				
Female	0.050920	0.005918	8.60	0.000
Socioeconomic index	0.000789	0.000076	10.41	0.000
High school grades	0.001241	0.000071	17.49	0.000

Pr(choice = music and arts | 1 selected) = 0.01881929

Variable	dp / dx	Std. Err	z	P > |z|
Interest:				
Physical science	-0.000011	0.000001	-18.11	0.000
Biological science	-0.000022	0.000001	-21.37	0.000
Social science, linguistics	-0.000009	0.000001	-17.73	0.000
Social service	-0.000062	0.000003	-22.98	0.000
Music and arts	0.000348	0.000014	24.10	0.000
Outdoor recreation, farming	-0.000007	0.000000	-16.80	0.000
Business management	-0.000062	0.000003	-22.98	0.000
Sales	-0.000014	0.000001	-19.27	0.000
Computation	-0.000032	0.000001	-22.23	0.000
Office Work	-0.000035	0.000002	-21.94	0.000
Technical jobs	-0.000027	0.000001	-21.82	0.000
Mechanical-technical jobs	-0.000013	0.000001	-17.17	0.000
Construction Trades	-0.000006	0.000000	-13.76	0.000
General labor	-0.000040	0.000002	-22.42	0.000
Protection and military	-0.000007	0.000001	-14.60	0.000
Ability:				
Science	0.000204	0.000065	3.12	0.002
Social science	-0.000113	0.000059	-1.93	0.053
Music and arts	0.000322	0.000044	7.35	0.000
Outdoor recreation, farming	-0.000302	0.000035	-8.66	0.000
Social service	-0.000069	0.000034	-2.06	0.039
Business	-0.000083	0.000049	-1.67	0.095
Mechanical-technical	0.000060	0.000040	1.50	0.132
Miscellaneous	-0.000081	0.000036	-2.26	0.024
Language	-0.000087	0.000049	-1.78	0.075
Complex intellectual aptitude	0.000224	0.000044	5.05	0.000
Visualization	0.000110	0.000031	3.56	0.000
Mathematics	-0.000123	0.000040	-3.07	0.002
Other:				
Female	-0.008986	0.002031	-4.42	0.000
Socioeconomic index	0.000185	0.000026	7.13	0.000
High school grades	-0.000037	0.000023	-1.56	0.118

Pr(choice = outdoor recreation, farming | 1 selected) = 0.019837

Variable	dp / dx	Std. Err	z	P > |z|
Interest:				
Physical science	-0.000012	0.000001	-17.62	0.000
Biological science	-0.000024	0.000001	-20.53	0.000
Social science, linguistics	-0.000010	0.000001	-17.25	0.000
Social service	-0.000066	0.000003	-21.95	0.000
Music and arts	-0.000007	0.000000	-16.80	0.000
Outdoor recreation, farming	0.000366	0.000016	22.93	0.000
Business management	-0.000065	0.000003	-21.97	0.000
Sales	-0.000015	0.000001	-18.66	0.000
Computation	-0.000034	0.000002	-21.30	0.000
Office Work	-0.000037	0.000002	-21.06	0.000
Technical jobs	-0.000028	0.000001	-20.94	0.000
Mechanical-technical jobs	-0.000014	0.000001	-16.69	0.000
Construction Trades	-0.000007	0.000001	-13.50	0.000
General labor	-0.000042	0.000002	-21.46	0.000
Protection and military	-0.000008	0.000001	-14.32	0.000
Ability:				
Science	-0.000100	0.000052	-1.91	0.057
Social science	-0.000243	0.000048	-5.04	0.000
Music and arts	-0.000310	0.000037	-8.46	0.000
Outdoor recreation, farming	0.000421	0.000033	12.80	0.000
Social service	0.000068	0.000030	2.28	0.023
Business	-0.000031	0.000041	-0.77	0.441
Mechanical-technical	0.000150	0.000034	4.35	0.000
Miscellaneous	-0.000206	0.000031	-6.72	0.000
Language	-0.000229	0.000042	-5.51	0.000
Complex intellectual aptitude	0.000114	0.000035	3.20	0.001
Visualization	-0.000025	0.000025	-1.00	0.316
Mathematics	0.000084	0.000035	2.38	0.017
Other:				
Female	-0.009626	0.002238	-4.30	0.000
Socioeconomic index	-0.000007	0.000022	-0.34	0.738
High school grades	-0.000006	0.000020	-0.28	0.780

Pr(choice = business management | 1 selected) = 0.17476747

Variable	dp / dx	Std. Err	z	P > |z|
Interest:				
Physical science	-0.000102	0.000004	-25.16	0.000
Biological science	-0.000207	0.000006	-37.31	0.000
Social science, linguistics	-0.000086	0.000004	-24.15	0.000
Social service	-0.000580	0.000012	-48.52	0.000
Music and arts	-0.000062	0.000003	-22.98	0.000
Outdoor recreation, farming	-0.000065	0.000003	-21.97	0.000
Business management	0.002718	0.000043	62.58	0.000
Sales	-0.000128	0.000005	-28.55	0.000
Computation	-0.000296	0.000007	-42.41	0.000
Office Work	-0.000323	0.000008	-40.51	0.000
Technical jobs	-0.000249	0.000006	-39.81	0.000
Mechanical-technical jobs	-0.000120	0.000005	-22.80	0.000
Construction Trades	-0.000060	0.000004	-16.20	0.000
General labor	-0.000373	0.000009	-43.80	0.000
Protection and military	-0.000068	0.000004	-17.61	0.000
Ability:				
Science	-0.000870	0.000197	-4.41	0.000
Social science	0.000262	0.000178	1.47	0.142
Music and arts	0.000188	0.000131	1.44	0.151
Outdoor recreation, farming	0.000155	0.000115	1.35	0.178
Social service	-0.000282	0.000101	-2.80	0.005
Business	0.000377	0.000152	2.48	0.013
Mechanical-technical	0.000100	0.000119	0.84	0.402
Miscellaneous	0.000099	0.000110	0.90	0.366
Language	0.000004	0.000148	0.03	0.979
Complex intellectual aptitude	0.000173	0.000130	1.33	0.184
Visualization	-0.000046	0.000089	-0.52	0.602
Mathematics	0.000173	0.000125	1.38	0.168
Other:				
Female	-0.111831	0.006541	-17.10	0.000
Socioeconomic index	0.000942	0.000077	12.20	0.000
High school grades	-0.000174	0.000071	-2.47	0.014

Pr(choice = sales | 1 selected) = 0.03891747

Variable	dp / dx	Std. Err	z	P > |z|
Interest:				
Physical science	-0.000023	0.000001	-20.52	0.000
Biological science	-0.000046	0.000002	-25.66	0.000
Social science, linguistics	-0.000019	0.000001	-19.96	0.000
Social service	-0.000129	0.000005	-28.58	0.000
Music and arts	-0.000014	0.000001	-19.27	0.000
Outdoor recreation, farming	-0.000015	0.000001	-18.66	0.000
Business management	-0.000128	0.000005	-28.55	0.000
Sales	0.000705	0.000023	30.80	0.000
Computation	-0.000066	0.000002	-27.16	0.000
Office Work	-0.000072	0.000003	-26.64	0.000
Technical jobs	-0.000055	0.000002	-26.44	0.000
Mechanical-technical jobs	-0.000027	0.000001	-19.16	0.000
Construction Trades	-0.000013	0.000001	-14.73	0.000
General labor	-0.000083	0.000003	-27.51	0.000
Protection and military	-0.000015	0.000001	-15.76	0.000
Ability:				
Science	-0.000196	0.000088	-2.23	0.026
Social science	-0.000131	0.000079	-1.64	0.100
Music and arts	-0.000036	0.000058	-0.61	0.539
Outdoor recreation, farming	0.000232	0.000052	4.46	0.000
Social service	-0.000097	0.000045	-2.15	0.031
Business	0.000098	0.000067	1.46	0.143
Mechanical-technical	0.000071	0.000053	1.34	0.182
Miscellaneous	0.000140	0.000049	2.86	0.004
Language	-0.000045	0.000066	-0.68	0.494
Complex intellectual aptitude	0.000077	0.000058	1.33	0.182
Visualization	-0.000035	0.000040	-0.87	0.385
Mathematics	-0.000090	0.000055	-1.63	0.103
Other:				
Female	-0.050453	0.003190	-15.82	0.000
Socioeconomic index	0.000356	0.000035	10.15	0.000
High school grades	-0.000172	0.000032	-5.41	0.000

Pr(choice = computation | 1 selected) = 0.08996701

Variable	dp / dx	Std. Err	z	P > |z|
Interest:				
Physical science	-0.000052	0.000002	-24.21	0.000
Biological science	-0.000107	0.000003	-34.29	0.000
Social science, linguistics	-0.000044	0.000002	-23.32	0.000
Social service	-0.000298	0.000007	-42.41	0.000
Music and arts	-0.000032	0.000001	-22.23	0.000
Outdoor recreation, farming	-0.000034	0.000002	-21.30	0.000
Business management	-0.000296	0.000007	-42.41	0.000
Sales	-0.000066	0.000002	-27.16	0.000
Computation	0.001543	0.000030	50.99	0.000
Office Work	-0.000166	0.000005	-36.74	0.000
Technical jobs	-0.000128	0.000004	-36.23	0.000
Mechanical-technical jobs	-0.000062	0.000003	-22.05	0.000
Construction Trades	-0.000031	0.000002	-15.92	0.000
General labor	-0.000192	0.000005	-39.19	0.000
Protection and military	-0.000035	0.000002	-17.27	0.000
Ability:				
Science	-0.000543	0.000142	-3.83	0.000
Social science	0.000109	0.000129	0.85	0.397
Music and arts	0.000021	0.000100	0.21	0.833
Outdoor recreation, farming	0.000080	0.000086	0.93	0.353
Social service	0.000130	0.000078	1.67	0.095
Business	0.000065	0.000112	0.58	0.562
Mechanical-technical	-0.000377	0.000088	-4.29	0.000
Miscellaneous	0.000376	0.000083	4.54	0.000
Language	0.000322	0.000112	2.89	0.004
Complex intellectual aptitude	-0.000359	0.000095	-3.78	0.000
Visualization	0.000053	0.000067	0.80	0.426
Mathematics	0.000173	0.000095	1.83	0.068
Other:				
Female	0.050690	0.004562	11.11	0.000
Socioeconomic index	-0.000164	0.000058	-2.84	0.005
High school grades	-0.000329	0.000054	-6.09	0.000

Pr(choice = office work | 1 selected) = 0.09795797

Variable	dp / dx	Std. Err	z	P > |z|
Interest:				
Physical science	-0.000057	0.000002	-23.79	0.000
Biological science	-0.000116	0.000004	-33.37	0.000
Social science, linguistics	-0.000048	0.000002	-22.97	0.000
Social service	-0.000325	0.000008	-40.58	0.000
Music and arts	-0.000035	0.000002	-21.94	0.000
Outdoor recreation, farming	-0.000037	0.000002	-21.06	0.000
Business management	-0.000323	0.000008	-40.51	0.000
Sales	-0.000072	0.000003	-26.64	0.000
Computation	-0.000166	0.000005	-36.74	0.000
Office Work	0.001665	0.000035	47.71	0.000
Technical jobs	-0.000139	0.000004	-35.05	0.000
Mechanical-technical jobs	-0.000067	0.000003	-21.79	0.000
Construction Trades	-0.000033	0.000002	-15.83	0.000
General labor	-0.000209	0.000006	-37.60	0.000
Protection and military	-0.000038	0.000002	-17.14	0.000
Ability:				
Science	-0.000687	0.000125	-5.50	0.000
Social science	0.000489	0.000114	4.28	0.000
Music and arts	0.000398	0.000092	4.35	0.000
Outdoor recreation, farming	-0.000180	0.000078	-2.32	0.021
Social service	-0.000246	0.000071	-3.45	0.001
Business	-0.000210	0.000099	-2.12	0.034
Mechanical-technical	-0.000136	0.000081	-1.67	0.095
Miscellaneous	-0.000093	0.000076	-1.23	0.219
Language	0.000875	0.000100	8.76	0.000
Complex intellectual aptitude	-0.000168	0.000085	-1.97	0.048
Visualization	-0.000070	0.000060	-1.17	0.242
Mathematics	-0.000665	0.000085	-7.82	0.000
Other:				
Female	0.139607	0.004267	32.72	0.000
Socioeconomic index	-0.000518	0.000053	-9.79	0.000
High school grades	-0.000274	0.000050	-5.50	0.000

Pr(choice = technical jobs | 1 selected) = 0.07553371

Variable	dp / dx	Std. Err	z	P > |z|
Interest:				
Physical science	-0.000044	0.000002	-23.65	0.000
Biological science	-0.000090	0.000003	-32.83	0.000
Social science, linguistics	-0.000037	0.000002	-22.84	0.000
Social service	-0.000250	0.000006	-39.83	0.000
Music and arts	-0.000027	0.000001	-21.82	0.000
Outdoor recreation, farming	-0.000028	0.000001	-20.94	0.000
Business management	-0.000249	0.000006	-39.81	0.000
Sales	-0.000055	0.000002	-26.44	0.000
Computation	-0.000128	0.000004	-36.23	0.000
Office Work	-0.000139	0.000004	-35.05	0.000
Technical jobs	0.001316	0.000028	46.60	0.000
Mechanical-technical jobs	-0.000052	0.000002	-21.64	0.000
Construction Trades	-0.000026	0.000002	-15.77	0.000
General labor	-0.000161	0.000004	-37.08	0.000
Protection and military	-0.000029	0.000002	-17.07	0.000
Ability:				
Science	0.000705	0.000135	5.24	0.000
Social science	-0.000410	0.000122	-3.36	0.001
Music and arts	-0.000164	0.000089	-1.85	0.065
Outdoor recreation, farming	-0.000213	0.000078	-2.75	0.006
Social service	-0.000099	0.000069	-1.42	0.154
Business	-0.000272	0.000102	-2.67	0.008
Mechanical-technical	0.000317	0.000084	3.77	0.000
Miscellaneous	0.000211	0.000074	2.84	0.005
Language	-0.000470	0.000100	-4.70	0.000
Complex intellectual aptitude	0.000522	0.000091	5.76	0.000
Visualization	0.000235	0.000062	3.77	0.000
Mathematics	-0.000034	0.000085	-0.40	0.690
Other:				
Female	0.018126	0.004699	3.86	0.000
Socioeconomic index	-0.000322	0.000052	-6.21	0.000
High school grades	-0.000262	0.000048	-5.45	0.000

Pr(choice = mechanical-technical jobs | 1 selected) = 0.03641627

Variable	dp / dx	Std. Err	z	P > |z|
Interest:				
Physical science	-0.000021	0.000001	-18.04	0.000
Biological science	-0.000043	0.000002	-21.19	0.000
Social science, linguistics	-0.000018	0.000001	-17.64	0.000
Social service	-0.000121	0.000005	-22.75	0.000
Music and arts	-0.000013	0.000001	-17.17	0.000
Outdoor recreation, farming	-0.000014	0.000001	-16.69	0.000
Business management	-0.000120	0.000005	-22.80	0.000
Sales	-0.000027	0.000001	-19.16	0.000
Computation	-0.000062	0.000003	-22.05	0.000
Office Work	-0.000067	0.000003	-21.79	0.000
Technical jobs	-0.000052	0.000002	-21.64	0.000
Mechanical-technical jobs	0.000661	0.000028	23.83	0.000
Construction Trades	-0.000012	0.000001	-13.65	0.000
General labor	-0.000078	0.000004	-22.21	0.000
Protection and military	-0.000014	0.000001	-14.54	0.000
Ability:				
Science	-0.000171	0.000062	-2.77	0.006
Social science	-0.000173	0.000057	-3.02	0.003
Music and arts	-0.000163	0.000043	-3.78	0.000
Outdoor recreation, farming	0.000022	0.000036	0.61	0.539
Social service	0.000003	0.000035	0.09	0.931
Business	-0.000069	0.000047	-1.46	0.144
Mechanical-technical	0.000571	0.000044	12.90	0.000
Miscellaneous	-0.000040	0.000035	-1.14	0.254
Language	-0.000451	0.000050	-9.02	0.000
Complex intellectual aptitude	0.000228	0.000042	5.42	0.000
Visualization	0.000149	0.000030	4.99	0.000
Mathematics	-0.000247	0.000041	-6.01	0.000
Other:				
Female	-0.060896	0.002975	-20.47	0.000
Socioeconomic index	-0.000381	0.000028	-13.55	0.000
High school grades	-0.000232	0.000025	-9.34	0.000

Pr(choice = construction trades | 1 selected) = 0.01813162

Variable	dp / dx	Std. Err	z	P > |z|
Interest:				
Physical science	-0.000011	0.000001	-14.20	0.000
Biological science	-0.000022	0.000001	-15.59	0.000
Social science, linguistics	-0.000009	0.000001	-14.00	0.000
Social service	-0.000060	0.000004	-16.18	0.000
Music and arts	-0.000006	0.000000	-13.76	0.000
Outdoor recreation, farming	-0.000007	0.000001	-13.50	0.000
Business management	-0.000060	0.000004	-16.20	0.000
Sales	-0.000013	0.000001	-14.73	0.000
Computation	-0.000031	0.000002	-15.92	0.000
Office Work	-0.000033	0.000002	-15.83	0.000
Technical jobs	-0.000026	0.000002	-15.77	0.000
Mechanical-technical jobs	-0.000012	0.000001	-13.65	0.000
Construction Trades	0.000336	0.000020	16.56	0.000
General labor	-0.000039	0.000002	-15.97	0.000
Protection and military	-0.000007	0.000001	-12.29	0.000
Ability:				
Science	-0.000135	0.000039	-3.49	0.000
Social science	-0.000136	0.000036	-3.79	0.000
Music and arts	-0.000063	0.000028	-2.28	0.022
Outdoor recreation, farming	0.000120	0.000023	5.20	0.000
Social service	0.000007	0.000023	0.31	0.759
Business	-0.000062	0.000030	-2.09	0.037
Mechanical-technical	0.000156	0.000025	6.17	0.000
Miscellaneous	-0.000048	0.000022	-2.15	0.031
Language	-0.000256	0.000033	-7.77	0.000
Complex intellectual aptitude	0.000084	0.000026	3.29	0.001
Visualization	0.000070	0.000018	3.80	0.000
Mathematics	-0.000116	0.000026	-4.45	0.000
Other:				
Female	-0.039497	0.001860	-21.23	0.000
Socioeconomic index	-0.000200	0.000019	-10.62	0.000
High school grades	-0.000111	0.000016	-7.07	0.000

Pr(choice = general labor | 1 selected) = 0.11314008

Variable	dp / dx	Std. Err	z	P > |z|
Interest:				
Physical science	-0.000066	0.000003	-24.41	0.000
Biological science	-0.000134	0.000004	-35.02	0.000
Social science, linguistics	-0.000056	0.000002	-23.48	0.000
Social service	-0.000375	0.000009	-43.79	0.000
Music and arts	-0.000040	0.000002	-22.42	0.000
Outdoor recreation, farming	-0.000042	0.000002	-21.46	0.000
Business management	-0.000373	0.000009	-43.80	0.000
Sales	-0.000083	0.000003	-27.51	0.000
Computation	-0.000192	0.000005	-39.19	0.000
Office Work	-0.000209	0.000006	-37.60	0.000
Technical jobs	-0.000161	0.000004	-37.08	0.000
Mechanical-technical jobs	-0.000078	0.000004	-22.21	0.000
Construction Trades	-0.000039	0.000002	-15.97	0.000
General labor	0.001891	0.000036	53.15	0.000
Protection and military	-0.000044	0.000003	-17.35	0.000
Ability:				
Science	-0.000550	0.000140	-3.92	0.000
Social science	-0.000651	0.000128	-5.08	0.000
Music and arts	-0.000184	0.000100	-1.85	0.065
Outdoor recreation, farming	0.000494	0.000084	5.87	0.000
Social service	0.000049	0.000080	0.61	0.543
Business	-0.000517	0.000110	-4.72	0.000
Mechanical-technical	0.000629	0.000090	7.03	0.000
Miscellaneous	-0.000317	0.000082	-3.87	0.000
Language	-0.000770	0.000109	-7.10	0.000
Complex intellectual aptitude	0.000002	0.000094	0.03	0.980
Visualization	0.000047	0.000066	0.72	0.474
Mathematics	-0.000594	0.000094	-6.30	0.000
Other:				
Female	0.060443	0.004802	12.59	0.000
Socioeconomic index	-0.001270	0.000058	-21.93	0.000
High school grades	-0.000751	0.000054	-14.00	0.000

Pr(choice = protection and military | 1 selected) = 0.02068113

Variable	dp / dx	Std. Err	z	P > |z|
Interest:				
Physical science	-0.000012	0.000001	-15.12	0.000
Biological science	-0.000025	0.000002	-16.85	0.000
Social science, linguistics	-0.000010	0.000001	-14.89	0.000
Social service	-0.000069	0.000004	-17.61	0.000
Music and arts	-0.000007	0.000001	-14.60	0.000
Outdoor recreation, farming	-0.000008	0.000001	-14.32	0.000
Business management	-0.000068	0.000004	-17.61	0.000
Sales	-0.000015	0.000001	-15.76	0.000
Computation	-0.000035	0.000002	-17.27	0.000
Office Work	-0.000038	0.000002	-17.14	0.000
Technical jobs	-0.000029	0.000002	-17.07	0.000
Mechanical-technical jobs	-0.000014	0.000001	-14.54	0.000
Construction Trades	-0.000007	0.000001	-12.29	0.000
General labor	-0.000044	0.000003	-17.35	0.000
Protection and military	0.000382	0.000021	18.09	0.000
Ability:				
Science	-0.000191	0.000054	-3.56	0.000
Social science	0.000142	0.000049	2.93	0.003
Music and arts	-0.000041	0.000036	-1.14	0.255
Outdoor recreation, farming	-0.000093	0.000031	-3.01	0.003
Social service	-0.000031	0.000029	-1.08	0.282
Business	-0.000026	0.000040	-0.64	0.522
Mechanical-technical	0.000116	0.000034	3.46	0.001
Miscellaneous	0.000175	0.000031	5.67	0.000
Language	-0.000051	0.000040	-1.27	0.204
Complex intellectual aptitude	0.000041	0.000035	1.18	0.238
Visualization	0.000017	0.000024	0.71	0.476
Mathematics	-0.000135	0.000034	-3.97	0.000
Other:				
Female	-0.045086	0.002069	-21.79	0.000
Socioeconomic index	-0.000094	0.000021	-4.40	0.000
High school grades	-0.000067	0.000020	-3.40	0.001

C. Wage Regression Tables

The following tables show the regression results for the wage equation.

Source	SS	df	MS
Model	1478737.130000	119	12426.362500
Residual	8842770.880000	56,688	155.990172
Total	10321508.000000	56,807	181.694299

Number of obs = 56,808
F(30, 3135) = 79.66
Prob > F = 0.0000
R-squared = 0.1433
Adj R-squared = 0.1415
Root MSE = 12.49

	Variable: wages (log)	Coef.	Std. Err	t	P > t
Single variable	**Science interest**				
Occupation	Miscellaneous	0.010408	0.010108	1.03	0.303
	Science	0.038706	0.019665	1.97	0.049
	Social science and arts	0.034383	0.039455	0.87	0.384
	Business	0.012096	0.016379	0.74	0.460
Single variable	**Social science and arts interest**				
Occupation	Miscellaneous	-0.020422	0.010520	-1.94	0.052
	Science	0.017628	0.024281	0.73	0.468
	Social science and arts	-0.006141	0.043375	-0.14	0.887
	Business	0.013913	0.018531	0.75	0.453
Single variable	**Business interest**				
Occupation	Miscellaneous	0.021460	0.011709	1.83	0.067
	Science	0.034903	0.027404	1.27	0.203
	Social science and arts	0.017411	0.052990	0.33	0.742
	Business	-0.002348	0.019442	-0.12	0.904
Single variable	**Miscellaneous interest**				
Occupation	Miscellaneous	0.003690	0.010058	0.37	0.714
	Science	-0.058400	0.023554	-2.48	0.013
	Social science and arts	-0.058475	0.045306	-1.29	0.197
	Business	0.012863	0.017577	0.73	0.464
Single variable	**Science ability**				
Occupation	Miscellaneous	0.009432	0.010959	0.86	0.389
	Science	0.037499	0.022921	1.64	0.102
	Social science and arts	0.030529	0.047750	0.64	0.523
	Business	0.002755	0.018975	0.15	0.885
Single variable	**Social science, arts, and business ability**				
Occupation	Miscellaneous	0.071478	0.015151	4.72	0.000
	Science	-0.014541	0.032997	-0.44	0.659
	Social science and arts	-0.043752	0.063394	-0.69	0.490
	Business	0.044525	0.025621	1.74	0.082
Single variable	**Language ability**				
Occupation	Miscellaneous	0.000438	0.011380	0.04	0.969
	Science	0.006643	0.024440	0.27	0.786
	Social science and arts	0.005206	0.044455	0.12	0.907
	Business	0.000299	0.019138	0.02	0.988
Single variable	**Math, CIA, visual, and clerical ability**				
Occupation	Miscellaneous	0.033726	0.008987	3.75	0.000
	Science	0.075471	0.019959	3.78	0.000
	Social science and arts	0.044580	0.036196	1.23	0.218
	Business	0.015829	0.015150	1.04	0.296
Single variable	**Miscellaneous ability**				
Occupation	Miscellaneous	-0.038392	0.011987	-3.20	0.001
	Science	-0.009297	0.025156	-0.37	0.712
	Social science and arts	0.034482	0.047388	0.73	0.467
	Business	0.028209	0.020165	1.40	0.162
	Female	-8.270375	0.155439	-53.21	0.000
	Socioeconomic status	0.015352	0.002146	7.15	0.000
	High school grades	0.008195	0.002016	4.07	0.000
	Constant	41.424450	0.390881	105.98	0.000

Source	SS	df	MS
Model	1478737.130000	119	12426.362500
Residual	8842770.880000	56,688	155.990172
Total	10321508.000000	56,807	181.694299

Number of obs = 56,808
F(30, 3135) = 79.66
Prob > F = 0.0000
R-squared = 0.1433
Adj R-squared = 0.1415
Root MSE = 12.49

	Variable: wages (log)	Coef.	Std. Err	t	P > t
Interaction	**Science interest * science ability**				
Occupation	Miscellaneous	-0.000049	0.000207	-0.24	0.811
	Science	-0.000392	0.000398	-0.98	0.325
	Social science and arts	0.000042	0.000696	0.06	0.952
	Business	0.000166	0.000315	0.53	0.599
Interaction	**Science interest * social science, arts, and business ability**				
Occupation	Miscellaneous	-0.000466	0.000287	-1.62	0.104
	Science	0.000238	0.000547	0.43	0.664
	Social science and arts	0.000733	0.000951	0.77	0.441
	Business	-0.000248	0.000421	-0.59	0.555
Interaction	**Science interest * language ability**				
Occupation	Miscellaneous	-0.000055	0.000216	-0.25	0.801
	Science	-0.000472	0.000396	-1.19	0.233
	Social science and arts	0.000641	0.000710	0.90	0.367
	Business	-0.000187	0.000317	-0.59	0.554
Interaction	**Science interest * math, CIA, visual, and clerical ability**				
Occupation	Miscellaneous	0.000094	0.000176	0.53	0.595
	Science	-0.000177	0.000331	-0.54	0.592
	Social science and arts	-0.001371	0.000572	-2.40	0.017
	Business	0.000484	0.000259	1.87	0.061
Interaction	**Science interest * miscellaneous ability**				
Occupation	Miscellaneous	0.000352	0.000229	1.54	0.124
	Science	0.000468	0.000410	1.14	0.254
	Social science and arts	-0.000530	0.000701	-0.76	0.450
	Business	-0.000166	0.000338	-0.49	0.624

Source	SS	df	MS
Model	1478737.130000	119	12426.362500
Residual	8842770.880000	56,688	155.990172
Total	10321508.000000	56,807	181.694299

Number of obs = 56,808
F(30, 3135) = 79.66
Prob > F = 0.0000
R-squared = 0.1433
Adj R-squared = 0.1415
Root MSE = 12.49

	Variable: wages (log)	Coef.	Std. Err	t	P > t
Interaction	**Social science and arts interest * science ability**				
Occupation	Miscellaneous	-0.000704	0.000207	-3.41	0.001
	Science	0.000221	0.000426	0.52	0.605
	Social science and arts	0.000117	0.000722	0.16	0.871
	Business	-0.000647	0.000332	-1.95	0.051
Interaction	**Social science and arts interest * social science, arts, and business ability**				
Occupation	Miscellaneous	0.000797	0.000286	2.79	0.005
	Science	0.000465	0.000590	0.79	0.431
	Social science and arts	0.000046	0.000958	0.05	0.962
	Business	0.000404	0.000447	0.90	0.366
Interaction	**Social science and arts interest * language ability**				
Occupation	Miscellaneous	0.000451	0.000221	2.04	0.042
	Science	0.000358	0.000417	0.86	0.390
	Social science and arts	-0.000851	0.000706	-1.21	0.228
	Business	0.000389	0.000342	1.14	0.255
Interaction	**Social science and arts interest * math, CIA, visual, and clerical ability**				
Occupation	Miscellaneous	-0.000014	0.000178	-0.08	0.935
	Science	-0.000490	0.000349	-1.40	0.160
	Social science and arts	0.000065	0.000559	0.12	0.907
	Business	-0.000085	0.000282	-0.30	0.764
Interaction	**Social science and arts interest * miscellaneous ability**				
Occupation	Miscellaneous	-0.000380	0.000232	-1.64	0.101
	Science	-0.000949	0.000444	-2.14	0.033
	Social science and arts	0.000673	0.000690	0.98	0.329
	Business	-0.000297	0.000365	-0.81	0.416

Source	SS	df	MS
Model	1478737.130000	119	12426.362500
Residual	8842770.880000	56,688	155.990172
Total	10321508.000000	56,807	181.694299

Number of obs = 56,808
F(30, 3135) = 79.66
Prob > F = 0.0000
R-squared = 0.1433
Adj R-squared = 0.1415
Root MSE = 12.49

	Variable: wages (log)	Coef.	Std. Err	t	P > t
Interaction	**Business interest * science ability**				
Occupation	Miscellaneous	-0.000078	0.000242	-0.32	0.746
	Science	-0.000231	0.000477	-0.48	0.629
	Social science and arts	-0.001554	0.000841	-1.85	0.065
	Business	-0.000494	0.000362	-1.37	0.172
Interaction	**Business interest * social science, arts, and business ability**				
Occupation	Miscellaneous	-0.000073	0.000335	-0.22	0.829
	Science	-0.001198	0.000663	-1.81	0.071
	Social science and arts	0.001466	0.001136	1.29	0.197
	Business	0.000364	0.000497	0.73	0.463
Interaction	**business interest * language ability**				
Occupation	Miscellaneous	0.000140	0.000254	0.55	0.581
	Science	0.000894	0.000475	1.88	0.060
	Social science and arts	0.000448	0.000847	0.53	0.597
	Business	-0.000418	0.000378	-1.11	0.269
Interaction	**Business interest * math, CIA, visual, and clerical ability**				
Occupation	Miscellaneous	-0.000447	0.000207	-2.16	0.031
	Science	-0.000531	0.000400	-1.33	0.184
	Social science and arts	0.000386	0.000696	0.55	0.579
	Business	0.000514	0.000308	1.67	0.095
Interaction	**Business interest * miscellaneous ability**				
Occupation	Miscellaneous	0.000369	0.000272	1.35	0.176
	Science	0.001152	0.000502	2.30	0.022
	Social science and arts	-0.000328	0.000843	-0.39	0.698
	Business	0.000362	0.000397	0.91	0.362

Source	SS	df	MS
Model	1478737.130000	119	12426.362500
Residual	8842770.880000	56,688	155.990172
Total	10321508.000000	56,807	181.694299

Number of obs = 56,808
F(30, 3135) = 79.66
Prob > F = 0.0000
R-squared = 0.1433
Adj R-squared = 0.1415
Root MSE = 12.49

	Variable: wages (log)	Coef.	Std. Err	t	P > t
Interaction	**Miscellaneous interest * science ability**				
Occupation	Miscellaneous	0.000776	0.000218	3.56	0.000
	Science	-0.000175	0.000445	-0.39	0.694
	Social science and arts	0.001319	0.000809	1.63	0.103
	Business	0.000851	0.000346	2.46	0.014
Interaction	**Miscellaneous interest * social science, arts, and business ability**				
Occupation	Miscellaneous	-0.000690	0.000294	-2.34	0.019
	Science	0.001369	0.000580	2.36	0.018
	Social science and arts	-0.001489	0.001033	-1.44	0.149
	Business	-0.000174	0.000443	-0.39	0.695
Interaction	**Miscellaneous interest * language ability**				
Occupation	Miscellaneous	-0.000250	0.000226	-1.11	0.268
	Science	-0.000500	0.000420	-1.19	0.234
	Social science and arts	-0.000186	0.000764	-0.24	0.808
	Business	0.000232	0.000340	0.68	0.496
Interaction	**Miscellaneous interest * math, CIA, clerical, and visual ability**				
Occupation	Miscellaneous	-0.000020	0.000182	-0.11	0.911
	Science	0.000365	0.000349	1.05	0.295
	Social science and arts	0.000593	0.000599	0.99	0.321
	Business	-0.000534	0.000277	-1.93	0.054
Interaction	**Miscellaneous interest * miscellaneous ability**				
Occupation	Miscellaneous	0.000002	0.000237	0.01	0.995
	Science	-0.000626	0.000426	-1.47	0.142
	Social science and arts	0.000234	0.000769	0.30	0.760
	Business	-0.000738	0.000356	-2.07	0.038

D. Job Satisfaction Regression Tables

The following tables show the regression results for the ordered probit for job satisfaction.

Iteration 0: log likelihood = -17398.869
Iteration 1: log likelihood = -17235.813
Iteration 2: log likelihood = -17235.783
Iteration 3: log likelihood = -17235.783
log likelihood = -17235.783

Number of obs = 12,989
LR chi2(119) = 326.17
Prob > chi2 = 0.000
Pseudo R2 = 0.0094

	Variable: job satisfaction	Coef.	Std. Err	t	P > t
Single variable	**Science interest**				
Occupation	Miscellaneous	-0.001867	0.001688	-1.11	0.269
	Science	-0.001240	0.003271	-0.38	0.705
	Social science and arts	0.000388	0.006008	0.06	0.949
	Business	0.001096	0.002800	0.39	0.695
Single variable	**Social science and arts interest**				
Occupation	Miscellaneous	-0.001025	0.001779	-0.58	0.564
	Science	0.001194	0.004136	0.29	0.773
	Social science and arts	0.008003	0.007476	1.07	0.284
	Business	-0.002804	0.003183	-0.88	0.378
Single variable	**Business interest**				
Occupation	Miscellaneous	0.003379	0.002080	1.62	0.104
	Science	-0.008416	0.004884	-1.72	0.085
	Social science and arts	0.011170	0.008845	1.26	0.207
	Business	0.001448	0.003612	0.40	0.689
Single variable	**Miscellaneous interest**				
Occupation	Miscellaneous	-0.000964	0.001704	-0.57	0.572
	Science	0.007602	0.003866	1.97	0.049
	Social science and arts	-0.017014	0.007472	-2.28	0.023
	Business	0.002100	0.003097	0.68	0.498
Single variable	**Science ability**				
Occupation	Miscellaneous	-0.000816	0.001906	-0.43	0.669
	Science	-0.006406	0.003834	-1.67	0.095
	Social science and arts	0.007136	0.007647	0.93	0.351
	Business	0.007045	0.003352	2.10	0.036
Single variable	**Social science, arts, and business ability**				
Occupation	Miscellaneous	-0.007930	0.002602	-3.05	0.002
	Science	-0.001841	0.005471	-0.34	0.737
	Social science and arts	-0.007631	0.009943	-0.77	0.443
	Business	-0.006870	0.004232	-1.62	0.105
Single variable	**Language ability**				
Occupation	Miscellaneous	-0.002643	0.001954	-1.35	0.176
	Science	-0.000998	0.004204	-0.24	0.812
	Social science and arts	-0.021235	0.007674	-2.77	0.006
	Business	-0.004254	0.003233	-1.32	0.188
Single variable	**Math, CIA, visual, and clerical ability**				
Occupation	Miscellaneous	0.004251	0.001539	2.76	0.006
	Science	0.003589	0.003217	1.12	0.265
	Social science and arts	0.015456	0.005531	2.79	0.005
	Business	0.001049	0.002547	0.41	0.680
Single variable	**Miscellaneous ability**				
Occupation	Miscellaneous	0.002631	0.002016	1.31	0.192
	Science	0.004103	0.004313	0.95	0.341
	Social science and arts	0.008451	0.007639	1.11	0.269
	Business	-0.000788	0.003475	-0.23	0.821
	Female	0.021388	0.027293	0.78	0.433
	Socioeconomic status	0.001518	0.000381	3.98	0.000
	High school grades	0.001185	0.000355	3.34	0.001

Iteration 0: log likelihood = -17398.869
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log likelihood = -17235.783

Number of obs = 12,989
LR chi2(119) = 326.17
Prob > chi2 = 0.000
Pseudo R2 = 0.0094

	Variable: job satisfaction	Coef.	Std. Err	t	P > t
Interaction	**Science interest * science ability**				
Occupation	Miscellaneous	-0.000030	0.000040	-0.75	0.454
	Science	-0.000070	0.000070	-1.00	0.317
	Social science and arts	-0.000151	0.000116	-1.30	0.194
	Business	-0.000069	0.000060	-1.15	0.250
Interaction	**Science interest * social science, arts, and business ability**				
Occupation	Miscellaneous	0.000061	0.000053	1.15	0.250
	Science	-0.000002	0.000096	-0.02	0.980
	Social science and arts	0.000100	0.000143	0.70	0.484
	Business	0.000029	0.000077	0.37	0.709
Interaction	**Science interest * language ability**				
Occupation	Miscellaneous	-0.000032	0.000041	-0.78	0.434
	Science	0.000028	0.000072	0.38	0.700
	Social science and arts	0.000105	0.000117	0.90	0.370
	Business	0.000029	0.000059	0.49	0.625
Interaction	**Science interest * math, CIA, visual, and clerical ability**				
Occupation	Miscellaneous	-0.000021	0.000033	-0.64	0.521
	Science	0.000005	0.000059	0.08	0.934
	Social science and arts	-0.000089	0.000093	-0.96	0.338
	Business	-0.000063	0.000049	-1.29	0.196
Interaction	**Science interest * miscellaneous ability**				
Occupation	Miscellaneous	0.000016	0.000041	0.39	0.698
	Science	0.000069	0.000072	0.95	0.341
	Social science and arts	-0.000043	0.000115	-0.38	0.707
	Business	0.000023	0.000064	0.35	0.723

Iteration 0: log likelihood = -17398.869
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log likelihood = -17235.783

Number of obs = 12,989
LR chi2(119) = 326.17
Prob > chi2 = 0.000
Pseudo R2 = 0.0094

	Variable: job satisfaction	Coef.	Std. Err	t	P > t
Interaction	**Social science and arts interest * science ability**				
Occupation	Miscellaneous	0.000030	0.000041	0.73	0.468
	Science	0.000007	0.000076	0.09	0.929
	Social science and arts	-0.000005	0.000121	-0.04	0.970
	Business	-0.000087	0.000064	-1.35	0.177
Interaction	**Social science and arts interest * social science, arts, and business ability**				
Occupation	Miscellaneous	-0.000035	0.000056	-0.63	0.528
	Science	-0.000092	0.000110	-0.84	0.402
	Social science and arts	-0.000127	0.000153	-0.83	0.408
	Business	-0.000019	0.000082	-0.24	0.813
Interaction	**Social science and arts interest * language ability**				
Occupation	Miscellaneous	0.000031	0.000045	0.69	0.489
	Science	0.000089	0.000081	1.10	0.271
	Social science and arts	0.000060	0.000126	0.48	0.633
	Business	0.000113	0.000066	1.70	0.089
Interaction	**Social science and arts interest * math, CIA, visual, and clerical ability**				
Occupation	Miscellaneous	-0.000003	0.000036	-0.08	0.933
	Science	-0.000052	0.000067	-0.77	0.443
	Social science and arts	-0.000059	0.000092	-0.63	0.526
	Business	0.000039	0.000053	0.73	0.463
Interaction	**Social science and arts interest * miscellaneous ability**				
Occupation	Miscellaneous	-0.000004	0.000045	-0.09	0.931
	Science	-0.000001	0.000085	-0.01	0.991
	Social science and arts	0.000031	0.000110	0.28	0.776
	Business	0.000000	0.000068	0.00	0.997
	/cut1	-1.833268	0.06	-1.955	-1.711489
	/cut2	-1.234834	0.06	-1.353	-1.116652
	/cut3	-0.482281	0.06	-0.599	-0.3654272
	/cut4	0.721002	0.06	0.604	0.8380605

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LR chi2(119) = 326.17
Prob > chi2 = 0.000
Pseudo R2 = 0.0094

	Variable: job satisfaction	Coef.	Std. Err	t	P > t
Interaction	**Business interest * science ability**				
Occupation	Miscellaneous	-0.0000913	0.0000500	-1.83	0.068
	Science	-0.0000065	0.0000881	-0.07	0.941
	Social science and arts	0.0000935	0.0001499	0.62	0.533
	Business	0.0000103	0.0000738	0.14	0.889
Interaction	**Business interest * social science, arts, and business ability**				
Occupation	Miscellaneous	0.0001069	0.0000663	1.61	0.107
	Science	0.0001655	0.0001218	1.36	0.174
	Social science and arts	-0.0000180	0.0001790	-0.10	0.920
	Business	-0.0000005	0.0000962	-0.01	0.996
Interaction	**business interest * language ability**				
Occupation	Miscellaneous	-0.0000440	0.0000516	-0.85	0.394
	Science	-0.0001520	0.0000889	-1.71	0.087
	Social science and arts	-0.0001662	0.0001590	-1.04	0.296
	Business	-0.0001186	0.0000757	-1.57	0.117
Interaction	**Business interest * math, CIA, visual, and clerical ability**				
Occupation	Miscellaneous	0.0000138	0.0000421	0.33	0.743
	Science	0.0001164	0.0000787	1.48	0.139
	Social science and arts	0.0000482	0.0001153	0.42	0.676
	Business	0.0000622	0.0000603	1.03	0.302
Interaction	**Business interest * miscellaneous ability**				
Occupation	Miscellaneous	-0.0000314	0.0000533	-0.59	0.556
	Science	0.0000328	0.0000966	0.34	0.734
	Social science and arts	-0.0000605	0.0001325	-0.46	0.648
	Business	0.0000640	0.0000778	0.82	0.411

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Pseudo R2 = 0.0094

	Variable: job satisfaction	Coef.	Std. Err	t	P > t
Interaction	**Business interest * science ability**				
Occupation	Miscellaneous	0.000105	0.000042	2.51	0.012
	Science	0.000090	0.000078	1.15	0.249
	Social science and arts	-0.000073	0.000140	-0.52	0.604
	Business	0.000058	0.000064	0.92	0.359
Interaction	**Business interest * social science, arts, and business ability**				
Occupation	Miscellaneous	-0.000055	0.000056	-0.99	0.324
	Science	-0.000026	0.000098	-0.26	0.793
	Social science and arts	0.000042	0.000168	0.25	0.802
	Business	-0.000041	0.000082	-0.49	0.622
Interaction	**business interest * language ability**				
Occupation	Miscellaneous	0.000009	0.000044	0.20	0.839
	Science	-0.000100	0.000076	-1.32	0.188
	Social science and arts	-0.000015	0.000133	-0.11	0.913
	Business	-0.000033	0.000065	-0.51	0.612
Interaction	**Business interest * math, CIA, visual, and clerical ability**				
Occupation	Miscellaneous	0.000023	0.000044	0.53	0.599
	Science	-0.000022	0.000075	-0.29	0.772
	Social science and arts	0.000369	0.000142	2.61	0.009
	Business	0.000006	0.000065	0.09	0.932
Interaction	**Business interest * miscellaneous ability**				
Occupation	Miscellaneous	-0.000024	0.000036	-0.66	0.507
	Science	-0.000073	0.000063	-1.17	0.243
	Social science and arts	-0.000112	0.000103	-1.09	0.276
	Business	-0.000013	0.000052	-0.25	0.802

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ACADEMIC VITA
SURABHI GHAI

EDUCATION

The Pennsylvania State University May 2017
Schreyer Honors College

Major: Economics (B.S.); Mathematics (B.S.)
Minor: Statistics

Relevant Coursework: Calculus I, II, and III, Matrices, Discrete Math, Differential Equations, Real Analysis, Probability Theory, Development Economics, Labor Economics, Econometrics

RELEVANT EXPERIENCE

Research Experience for Undergraduates Jan 2016 – present
Penn State Department of Economics and Bates White

- Worked with Professor Kala Krishna to analyze gender differences within the Turkish education system, particularly students' preferences for colleges and majors
- Used STATA to reshape and merge datasets, create regressions, and analyze variables relevant to the gender differences

Penn State University Economics Association Aug 2013 – present
Social Education Coordinator, Education Committee

- Conducted weekly discussions, presentations, and simulations regarding socioeconomic topics for general body meetings; designed custom Prezis to accompany presentations
- Hired a group of associate members to help the Social Education team create effective presentations
- Worked closely with the entire Education Committee to finalize presentation topics and timelines

The Boeing Company May 2015 – Aug 2015
Estimating and Pricing Intern

- Created and analyzed cost-estimating relationships between variables measured in airplane test programs
- Authored and documented a regression to estimate refurbishment labor hours for test airplanes; collaborated with other Core Estimating members to present the regression to the entire Estimating and Pricing team in the Puget Sound Area
- Integrated several sources of non-recurring airplane test data into a single database
- Researched manufacturing and assembly processes for the Boeing 787 composite wing and documented an assembly guide to supplement the 787 wing cost model

Penn State University Department of Economics Jan 2014 – present
Undergraduate Teaching Assistant

- Introductory Microeconomics (102); Introductory Macroeconomics (104); Growth and Development (471)
- Helped professors create lesson plans, guide discussions, and grade student work for undergraduate economics courses

OTHER ACTIVITIES

General Motors Innovation Challenge Oct 2014
National Winning Team

- Worked with a multidisciplinary team and created an invention using wearable technology and augmented reality to improve GM manufacturing processes
- Created a cost model to represent the finances and feasibility of the project
- Signed over the product to GM to be implemented in certain manufacturing facilities

Judith Donato Productions May 2013 – Aug 2014
Intern for Emmy and Writer's Guild Award-winning author

- Researched target audiences of Donato's novels and contacted them with queries
- Edited rough draft manuscripts of Donato's unpublished novels
- Created a database of literary agents in the US, UK, and Canada

SKILLS

Microsoft Excel, Stata, C++, MATLAB, LaTeX
Hindi (fluent), French (working proficiency), Mandarin (working proficiency)