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The Effects of Skill Acquisition in Youth Jobs on Future Work and Earnings

Kyrstin Shadle
Iowa State University

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Kyrstin Shadle

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Peter Orazem, Major Professor
Georgeanne Artz
Brent Kreider

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TABLE OF CONTENTS

ABSTRACT

Many studies have examined the effects that working as a youth has on work in the future. This study examines the effects of skill acquisition in youth jobs on future work and earnings. Data from a longitudinal survey of youth between the ages of 12-17 when first interviewed and between the ages of 25-31 when reported working as an adult are used to estimate income and pay from the adult occupation, ratings of skills used in the adult occupation, and the probability of working as an adult. The results predict that working as a youth and gaining general skills as well as the cumulative number of hours worked as a youth prove to have positive and significant effects on almost all examined aspects of the future adult work experience.

CHAPTER 1. INTRODUCTION

People spend most of their lives trying to build a repertoire of skills to find higher paying jobs. Whether these skills come from education or previous work experience, they can help in the search for employment, and even previous work experience alone can prove to be beneficial to one's future employment prospects. Specifically, working as a youth can have many benefits, one of which is the acquisition of basic skills, and having a foundation of skills can be very appealing to future employers. This study aims to focus on the skills acquired through working during one's high school years and how those skills affect future outcomes in adult life such as income, hourly pay, educational attainment, and skills required for the adult occupation.

This study focuses on work performed as an employee during high school. Experience gained through working, whether learning to be responsible or learning skills not commonly acquired in the classroom, may be important to future work and earnings. We characterize the nature of those work experiences by focusing on the mix of skills associated with the last job held in high school or the job with the most hours worked. Similarly, the occupation worked as an adult was defined as the last observed occupation. This study measures the extent to which job skills acquired in high school are correlated with the skills and earnings associated with the adult occupation.

Although the main focus of this study is to analyze whether or not working as a youth affects future work and earnings in adult life, it is important to account for factors outside of the high school work-related variables that could potentially influence work and life choices (Light 1999). Here, to ensure that there is little or no selection bias in the final subsample used in analysis, variables pertaining to parental information such as highest grade completed by either biological parent and gross household income from the year in which the chosen youth

occupation occurred as well as the results of an ASVAB test to measure cognitive abilities were used to account for some of the potential endogeneity within the models. Other variables pertaining to geographical location while working as a youth and educational attainment of the individual being observed were also included as those can also influence work and life choices. Tests were also performed between the used subsample of the data and the deleted portion of the data to test for differences in means of the common regressors as well as to test for systematic variation between the common regressors and the probability of being included in the sample.

Focusing on skill acquisition in youth jobs, the results of this study show that working as a youth can be beneficial to future work and earnings due to both the skills acquired in the youth job as well as the amount of time spent working and acquiring skills. Variables representing general skills gained from work experience as a youth have the most widespread statistical significance, positively affecting all but one model used in this study. Acquiring these general skills in a youth job is predicted to increase income from the adult occupation by about 3%, increase hourly pay from the adult occupation by around 2%, increase the probability that the individual works as an adult, and increase the probability of receiving a bachelor's degree. This general work experience is also predicted to increase the magnitude of general work skills used in the adult occupation. Both cumulative hours worked while of high school age and not working as a youth are statistically significant with positive marginal effects in most of the models representing adult work life. Overall, the general skills gained through working as a youth are predicted to positively affect hourly pay and income from the adult occupation, the probability of working as an adult, skills used in the adult occupation, and educational attainment.

CHAPTER 2. LITERATURE REVIEW

Skills obtained during work have been an important part of the human capital literature. In a study on a sample of the British workforce ages 20 to 60, a conducted survey focused on the importance of certain skills within an occupation. Although the study examined separately the effects on women's pay and the effects on men's pay, it was found that many skills such as computer, professional communication and problem solving, and verbal were predicted to either increase pay or have a pay premium (Green, 1998).

Another important aspect of the human capital literature is the study of youth workers and the transition from school to work. One study finds that of males with only a high school diploma, there are benefits to working during high school due to the skill acquisition from such jobs. The males that worked during high school were also more likely to take vocational classes instead of other classes and were predicted to work more after high school, allowing for stronger skill acquisition after high school, as opposed to those who worked less or did not work in high school. Due to working in high school and the choices made about the types of classes taken in high school, the skills acquired from both proved to have positive effects on future wages (Light, 1999). Another study finds that those who worked during their senior year of high school were expected to receive higher annual earnings and higher hourly pay than those who did not work (Ruhm, 1995). The study by Meyer and Wise (1982) focuses on three potential types of youth preparation for adult work: education, vocational training, and work as a youth. This study looks at males that graduated from high school and finds that both academics and work experiences during high school positively affect work experiences in the future, and so programs focusing on both academics and work experiences have the best chance of improving work experiences in the future. They find a strong positive relationship between the total number of hours a youth male

works while in high school and the total number of weeks worked each year at an adult job after graduation (Meyer and Wise, 1982).

Other studies focus on the effects of working as a youth on education. One such study focuses on the effects that working in high school at ages sixteen and seventeen has on attending college. The study focuses on effects of those working or not working on educational attainment by the age of thirty and finds that by the age of thirty, of those working an average of twenty hours or less per week in high school, more than half had at least some college education, and of those working more than twenty hours per week or those not working in high school, less than half had at least some college education. The same study also finds that the more number of weeks an individual worked during school at ages sixteen and seventeen, the more weeks that individual worked between the ages of eighteen and thirty (Rothstein, 2001). A second study by Light (2001) shows that additional schooling as well as work experience after school both have positive impacts on wages. The study then corrects for bias caused by omitting variables such as ability and experience gained from work while in school, and it is found that the effect of education on future wages when out of school is smaller and employment while in school has a more positive effect when the bias is corrected for (Light, 2001).

In this study, we focus specifically on skills acquired in youth jobs and how those skills affect future work and earnings in adult life as well as educational attainment. If worked during high school, the youth job focused on was the one held closest to high school graduation. One difference this study provides is the effect skills acquired in youth jobs have on the specific skills required for the types of jobs held as adults. This study also includes both males and females as well as those with any level of educational attainment, not specifically those who are only high school graduates.

CHAPTER 3. DATA

3.1 Data Sources

The data used came from two main sources. The first source was the National Longitudinal Survey of Youth 1997 (NLSY97). The NLSY97 is a survey that follows a group of American respondents born in the years 1980-1984 with the first round of the survey occurring in 1997 and the most recent round of the survey with data posted occurring in 2011. The surveyed youth were between ages 12-17 when first interviewed. I make use of the annual surveys conducted while each respondent was of high school age. Those surveys were used to obtain the variables related to youth occupation, demographics, education, geographic information, and adult occupation. I then use the most recent wave of the survey available to measure length of time in school and earnings when the youth mature into adulthood.

In the first round of the NLSY97 data, there were a total of 8,984 individuals interviewed, and of those individuals, there were 4,599 males and 4,385 females. For this study, data from the survey years 1997-2004 and 2009-2011 were used. From this universe, we extracted a working sample of 7,317 survey respondents that had the required information on hours worked and occupational status while of high school age. The methods of choosing this subsample are described below.

The second source of data came from the Occupational Information Network (O*NET). This publicly available data set provides information on 274 occupational attributes such as the training offered, skill requirements, job effort and responsibility, and working conditions of 974 different occupations. The information is compiled from surveys of workers from the various occupations.

These two data sources were combined using occupation codes of jobs held during the teenage years. The NLSY97 data contains the 2002 Census Occupation Code for the specific job which can be linked to the O*NET Standard Occupational Classification (SOC) codes using a translation program provided by the NLSY97. This allowed me to generate a vector of job characteristics for the jobs held by teenagers in the NLSY97.

It is important to note that negative responses from (-5) to (-1) are used in the NLSY97 data to represent that the respondent did not respond to that question. Specifically, a value of (-1) means that the respondent refused to answer the question, a value of (-2) means that the respondent did not know the answer to the question, a value of (-3) means that the respondent should have answered the question but instead had an invalid skip of the question, a value of (-4) means that the respondent did not need to answer the question and had a valid skip of the question, and a value of (-5) means that the respondent was not interviewed in that survey year.

3.2 Refining the Data

3.2.1 Choosing High School and Adult Occupations

The first step in defining high school jobs was to establish the date of high school graduation. To ensure there were no missing responses for the high school graduation year, three variables from the NLSY97 data were combined to create a high school graduation year variable. First, the variable that was created to represent data on an individual accrued across all rounds for the date the respondent received his or her high school diploma was used. If that measure was unavailable, then the estimated high school graduation date from the 1997 or 1998 surveys was used. Finally, if there still was no value for graduation date, the year the respondent turned eighteen was used as the graduation year if he or she was born in January through August, and

the year after the respondent turned eighteen was used for the graduation year if he or she was born in September through December.

Next, for those individuals that did not have their graduation year chosen by age, the graduation year had to be checked against their age. If the respondent was over the age of eighteen at the time of their reported graduation, then the year the respondent should have graduated based on age was used. If the respondent's age had to be used, then the same rule stated above was applied: the year the respondent turned eighteen was used as the graduation year if he or she was born in January through August, and the year after the respondent turned eighteen was used if he or she was born in September through December. Also, if the respondent seemed to be too young to be graduating in the year reported, in this case if they were sixteen years old or younger at the time of the reported graduation, then the same age rule was also applied and used for the final graduation year. Once all of these rules were checked, a variable for final high school graduation year was complete.

My choice of a representative high school job was based on the designated high school graduation date. Occupation information was compiled on each individual in the year of graduation plus the three prior survey years. For each survey year, the job with the most number of weeks worked was picked as the relevant occupation for that year. The last job worked while in high school or of high school age was selected as the chosen occupation. If there was no positive occupation code from the surveys during the respondent's high school years, then each year would have had a negative, non-answer response, so the largest of the negative numbers over all of the high school years was used in place of the high school occupation code. Once the subsample used in this study was finalized, those remaining with a negative value in place of the occupation code were considered to not be working during high school or while high school age.

Of those working as a youth, the respondents ranged in age from 14-19 years old at the time of the survey in which their chosen youth occupation was reported.

In similar fashion, we identify the adult occupation by examining up to two jobs in each of the 2009-2011 surveys. The occupation with the most number of weeks worked in each survey year was chosen as the relevant occupation. The last occupation worked was chosen as the adult occupation. If all three years contained only negative, non-response answers, the largest of the negative numbers was used in place of the adult occupation code. Once the subsample used in this study was finalized, those remaining with a negative value in place of the occupation code were considered to not be working during adult years. The respondents ranged in age from 25-31 years old during their chosen adult occupation.

Once both the youth and adult occupations were chosen, other factors from the survey the year of the chosen occupation were extracted. These variables included the hourly pay, number of weeks worked, and hours per week from the chosen occupation. Other variables included those representing geographical data such as the urban versus rural variable and the region of the country the respondent lived in as well as the age of the respondent from the survey from which the occupation was reported. For the age during the survey of the adult occupation, a variable was created by subtracting birth year from the chosen survey year to ensure that there were no missing responses for adult age.

3.2.2 Merging the Datasets

Using the crosswalk between the 2002 Census Occupation Code and the SOC equivalents provided by the NLSY97 website, the O*NET-SOC codes were manually lined up to the corresponding SOC equivalent in the crosswalk provided by the NLSY97 website. Some of the O*NET-SOC codes perfectly matched the SOC equivalent. For the O*NET-SOC codes that had

a small variation from the SOC equivalent, the descriptions provided with each of the codes were matched up as closely as possible. In some cases, the system from O*NET split the SOC equivalent from the NLSY97 file to become more than one code. For example, in the NLSY97 file, the SOC equivalent 11-2020 represented Marketing and Sales Managers, but for the O*NET-SOC code, this was split into two different codes, 11-2021.00 which represented Marketing Managers and 11-2022.00 which represented Sales Managers. In these cases, either the most descriptive of the multiple O*NET-SOC codes was used, or if the multiple 2010 O*NET-SOC codes were equally similar to the NLSY97 SOC equivalent description, like in the previous example, one of the multiple O*NET-SOC codes was chosen to represent that occupation. In most cases where the multiple O*NET-SOC codes were equally similar to the NLSY97 SOC equivalent, the chosen code was the one that appeared first numerically.

Since the main focus of this study is on the skills acquired by youth workers, another important factor to take into consideration when matching the codes from the NLSY97 and the codes from O*NET was that the O*NET code matched to the NLSY97 code needed to appear on the file from O*NET that contained the importance and level skills ratings. There were some cases where the code provided by O*NET that was matched to the NLSY97 code did not appear in the skills list from O*NET, and since this skills list provided the importance and level ratings of different skills for each occupation, it was imperative to choose an alternate O*NET-SOC code that did appear on the skills list for that occupation. In these cases, the next closest match to the NLSY97 SOC equivalent that did appear on the skills list was chosen. Most of these cases included a code that described "All Other" occupations of a certain type. For example, there is a code for "Physical Scientists, All Other" that appears after a list of different types of physical scientists. These "All Other" codes did not appear on the skills list, so as an alternative, one of

the O*NET-SOC codes from that category that did appear on the skills list was chosen to represent this specific job title. In the above example, the O*NET-SOC code for "Hydrologists" was chosen to represent "Physical Scientists, All Other" from the list of NLSY97 SOC equivalents. In some cases where there were only two occupations of a certain occupation type before the "All Other" category appeared, the average of the skills measures for the two occupations was used as a measure of the skills for the "All Other" category.

3.2.3 Deleted Respondents

In order to have meaningful results not hindered by answers to survey questions that have no meaning other than to represent that the question was not answered due to an invalid reason, some respondents from the survey were deleted. The most important information for this study is the occupation information, both youth and adult, so a respondent was deleted if he or she had an invalid skip, non-interview, refusal, or did not know the answer to questions addressing occupations held while in high school. In this way, we only include individuals for whom we could clearly establish whether or not they worked and if working, what occupation they held. We also dropped respondents reporting negative pay or who skipped answering questions regarding hourly pay, hours per week, and number of weeks worked in either youth or adult occupations as this information is also a key part of this study. In total, there were 216 respondents deleted due to missing youth occupation information. For each teenage respondent included in the analysis, we generated measures of total hours worked and labor income during high school as well as earnings and hours in the chosen occupation. For those who did not work during the high school ages, these variables were set to zero. Similar measures were generated for all individuals who worked as adults. Any adult respondent with an invalid skip, non-interview, or refusal or inability to answer occupational questions were also deleted. In total, there were 1,379 respondents deleted due to missing adult occupation information.

Other deleted respondents included those with an occupation code indicating they worked in the armed forces either as their youth or adult occupation. Also, any respondent with an occupation code that represents that their occupation was "uncodable" was also deleted because there was no way to find the rating values of the skills for such jobs. There were 37 respondents deleted for having such codes for their youth occupation and 35 respondents deleted for having such codes for their adult occupation. After all of the above were removed, this subsample contained 7,317 observations.

3.2.4 Additional Refinement

Since the remaining respondents left in the sample were those with either meaningful, positive answers or the (-4) valid skip answer for the occupation data, and since the negative value of a valid skip answer serves as nothing more than an indicator that the question was a valid skip, these answers needed to be replaced in the data set. After looking over the survey questionnaires, it seems that a valid skip for occupation information means that an individual did not have to answer that question because there was no occupation to answer about. So, if an individual had a valid skip (-4) as their value for hours worked per week, hourly pay, number of weeks worked, total hours for that job, or total income for that job, that number was replaced with a zero because they were assumed to not be working if they did not need to answer those questions.

3.2.5 Important Created Variables

Important variables other than those appearing in the NLSY97 data and the O*NET data were also created for analysis. One such variable was total hours for the occupation, both in high school and as an adult, which was created by multiplying hours per week by total number of

weeks for that job. Another created variable was total income for the adult occupation, which was created by multiplying total hours by hourly pay for that job.

Cumulative hours worked over the high school years was also a created variable and was a combination of different variables. Cumulative high school hours worked was set equal to the provided variable from NLSY97 for cumulative teen hours if that value was not missing. If there was a missing value for cumulative teen hours, cumulative high school hours was set to equal a variable created by combining all hours worked in the first two jobs reported in each year's survey starting with the survey in the year the respondent would have been a freshman in high school up to and including the survey in the year the respondent would have been a senior in high school. If there was still a missing value, then cumulative high school hours was set to equal the total hours worked in the chosen high school occupation. After combining these three different variables in this way, there were no missing values for cumulative high school hours worked. There were 388 respondents that had a positive value for cumulative high school hours worked but had a valid skip (-4) for their high school occupation code, and thus were considered not working in high school, so the variable for the cumulative high school hours worked for these individuals was replaced with a zero.

Dummy variables were also created to represent whether or not the individual was working. As stated above, an individual was coded as not working if he or she had a (-4) valid skip for the occupation data, and since the remaining data only contained those with either a positive code or a (-4) valid skip for the O*NET-SOC occupation code in both high school and as an adult, the individual was classified as working if the O*NET-SOC occupation code was positive and not working if the O*NET-SOC occupation code was negative. So, based on this rule, the dummy variable to represent that the individual was working was set to equal one if the

individual was working and zero otherwise, and the dummy variable to represent that the individual was not working was set to equal one if the individual was not working and zero otherwise. The working and not working dummy variables were created for both the high school years as well as the adult years, using their respective O*NET-SOC occupation codes to determine if the individual was working or not. In total there were 6,641 individuals working in high school and 6,717 working in adult years.

Educational attainment was measured by highest degree received across all rounds of the survey. If there was a missing response from that variable, the highest degree received from the most recent survey in 2011 was used. If there was still a missing response after combining those two variables, the highest degree received from the 2010 survey was used, and finally, for any remaining missing responses, the highest degree received from the 2009 survey was used. Combing these allowed for the creation of a highest degree received variable with no missing responses.

3.3 Occupational Skills

I needed to develop an index of skills related to high school and adult occupations. From the 274 job characteristics included for each occupation in O*NET, I developed a subset of seventeen skills which were chosen based on the descriptions provided by O*NET. After reading through the descriptions of all of the skills in the O*NET database, I chose the final seventeen skills because they appeared relevant for entry level jobs of the sort filled by teenagers but that could apply to future occupations as well. Selected occupational attributes included critical thinking, time management, judgment and decision making, active listening, active learning, complex problem solving, speaking, monitoring, reading comprehension, coordination, persuasion, negotiation, writing, mathematics, social perceptiveness, service orientation, and

management of personnel resources. The definitions for the 17 occupational attributes are shown in Table A.1. Most jobs tend to require at least basic skills in writing, mathematics, speaking, reading comprehension, and critical thinking, and having the ability to manage time well, make judgments and decisions in any situation, and independently solve problems are also good skills to have when searching for a job. Another important set of skills to have are interpersonal skills such as active listening, speaking, coordination, persuasion, negotiation, and social perceptiveness. In some situations, even more benefit can come from having a set of managerial and leadership skills such as time management, judgment and decision making, active learning, negotiation, monitoring, service orientation, and management of personnel resources.

For each skill, there are two separate ratings from O*NET to describe how much of that skill is used for that occupation. First, each skill is rated based off of the importance of that skill to that occupation. The importance of a skill is rated on a scale from one to five, one being not important and five being extremely important. Second, each skill is rated based off of the level of that skill required to perform that occupation. The level of a skill is ranked on a scale from zero to seven. Each regression is run once using the importance rating of skills and a second time using the level rating of skills.

CHAPTER 4. DATA ANALYSIS, MODELS, AND RESULTS

4.1 Data Analysis

In this section, a description of analysis on the data is provided. First, the skills variables were analyzed through correlation tests. Then, due to the results of the correlation tests, the skills were analyzed in a principal component analysis and eventually reduced from seventeen skills variables for each rating scale of skills to a smaller set of one, two, or three skills representatives, depending on the results of the specific principal component analysis, for both the high school occupation and the adult occupation. Second, analysis on the selected subsample of 7,317 respondents was performed to ensure that the subsample was an accurate representation of the original sample. To do this, summary statistics were produced, and a t-test was performed to test if there was a difference in means of the variables representing the background information about the individuals between the used subsample and the deleted respondents. A second test was also run by regressing the probability that the respondent has full information on the set of common regressors available for both the used respondents and the deleted respondents. This allowed for the testing of systematic variation between the common regressors and the probability of being included in the sample.

4.1.1 Correlation of Skills

It was suspected that there could be high correlation between the skills variables for an individual who was working, so correlation matrices were generated for both adult and teenage occupations. Tables A.2 through A.5 in Appendix A report the correlation matrices for both the importance rating of the skills variables and the level rating of skills variables for both the youth occupation and the adult occupation. All skills are positively correlated so that occupations with high levels of one skill have high levels of others as well. Moreover, these correlations are large

enough to suggest that many of these skills measures are measuring the same or similar skills, so we need a mechanism to aggregate them into a more manageable subset that can yield interpretable results.

4.1.2 Principal Component Analysis, High School and Adult Occupations

Due to the correlation between these skills variables, a principal component analysis was performed on the skills variables for those individuals who were working, one for each of the importance ratings of the skills and the level ratings of the skills for both the high school occupation and the adult occupation. The results of the principal component analysis can be seen in tables A.6 through A.9 in Appendix A. From these results, new skills variables were created from the linearly uncorrelated principal components by taking the linear combination of the skills for each relevant component with the weights coming from the elements of the eigenvector. Following convention, I retained only the eigenvectors with eigenvalues greater than one.

Three principal components of the importance ratings of the selected skills in the high school occupation had eigenvalues greater than one. As reported in Table A.6 these three components combined describe 79.2% of the total variance of these skills variables. So, from the seventeen chosen skills, three new skills variables were created to represent the importance rating in the high school occupation. The first component, contains all positive weights of nearly equal magnitude for the skills, so this first new skills aggregation can be viewed as *General Work Experience*. The second component provides both positive and negative weights for the different skills and places the greatest positive weight on *Interpersonal Skills*. The third component also provides both positive and negative weights for the different skills, but this component places positive weights mostly on *Managerial Skills*.

Two principal components of the level ratings of the selected skills in the high school occupation had eigenvalues greater than one. As reported in Table A.7, these two components describe 79.6% of the total variance of these skills variables. So, from the seventeen chosen skills, two new skills variables were created to represent the level rating of skills in the high school occupation. The first component contains all positive weights for the skills of nearly equal magnitude, so it reflects *General Work Experience*. The second component provides both positive and negative weights for the different skills with positive weights reflecting *Managerial Skills*.

Two principal components of the importance ratings of the selected skills in the adult occupation had eigenvalues greater than one. As reported in Table A.8, these two components describe 77.4% of the total variance of these skills variables. From these two components, two new skills variables were created to represent the importance rating of skills in the adult occupation. The first component contains all positive weights for the skills of nearly equal magnitude, so it reflects *General Work Experience*. The second component, containing both positive and negative weights for the skills, has positive weights mostly on *Interpersonal Skills*.

One principal component of the level ratings of the selected skills in the adult occupation had eigenvalues greater than one. As reported in Table A.9, this component describes 79.1% of the total variance of these skills variables. So, one new skills variable was created from this component to represent the level rating of skills in the adult occupation. All weights in this first component are positive and have nearly equal magnitude, so it reflects *General Work Experience*.

4.1.3 Testing That Used Subsample Was Accurate Representation of Sample

In order to ensure that the used subsample was a proper representation of the entire sample, difference of means tests were run between the means of the variables in the used subsample and the means of the variables in the deleted portion of the sample. The results of these tests can be seen in Table A.11. Since the deleted respondents were deleted mostly due to the lack of occupation information in either youth years or adult years, these tests on the difference of means were performed for those in the data containing deleted respondents that had meaningful responses for pay and hours worked, and the tests were not performed on the skills measures for the different occupations. Of the tests that were performed, most of the results show that the null hypothesis that the means are the same between the used subsample and the deleted respondents is rejected. However, the differences in means are actually quite small as can be seen in the last two columns of the table. From this, we can conclude that, while we reject the null hypothesis that the included and excluded youth are drawn from the same sample, the included sample is still reasonably representative of the complete sample of youth.

A second test was run to test for the systematic variation between common regressors and the probability of being included in the sample. To do this, a probit regression was performed by regressing the probability that the respondent has full information on the set of common regressors available for both the used respondents and the deleted respondents. In particular, the common variables available in the high school years that are used as independent variables are those that represent demographics, parental information, and cognitive scores, and the dependent variable is a dummy variable equal to one if the respondent was included in the sample and thus has full information and zero if the respondent was deleted from the sample and thus does not have full information. The results of this regression can be seen in Table A.12. Here, the

dummy variable for male is statistically significant at the 1% level and predicts that if an individual is male, the probability that they have full information and thus are included in the sample decreases by 0.034. Other variables that are statistically significant and decrease the probability that the individual has full information and thus is included in the sample are *HighestParentHGC*, *GrossHHIncHS*, *dParentHGCMissing*, *dHHIncHSMissing*, and *dASVABMissing*. The dummy variable that the individual lived in an urban area while working in high school is statistically significant at the 5% level, and it predicts that if an individual lived in an urban area while working in high school, the probability that they have full information and thus are included in the sample increases by 0.023. The dummy variable that the individual lived in the south while working in high school is statistically significant at the 1% level, and it predicts that if an individual lived in the south while working in high school, the probability that they have full information and thus are included in the sample increases by 0.034. The remaining variables are not statistically significant.

Overall, only about 2% of the variation in the probability of being included in the used sample can be explained by the observed youth and family attributes. Even that is an overestimate because the dummy variables indicating missing data on parental education, household income and measured ability almost certainly takes the value of one for youth who did not report their academic or job activities while in high school. When we exclude those variables, only 1% of the variation is explained by the observed youth attributes. The results indicate that our used sample will underrepresent males by 4%. Urban youth and those residing in Western states are 2% more likely to be included while youth in the South are 4% more likely to be included. Departures from a true random sample are small.

4.2 Variables and Regression Results

In this section, the final variables from the models used for analysis will be described followed by the results of running the regressions. With the exception of the final three models, the only difference between the two models for each dependent variable is the scale on which the skills from the high school occupation were measured. The first model of the set uses the created skills variables representing the importance ratings of the skills and the second uses the created skills variables representing the level ratings of the skills. Also, for any model with a dependent variable related to the adult occupation, the sample used for those models includes only those individuals who were not currently enrolled in school during the survey from which the adult occupation was chosen. All variable names and descriptions can be found in Table A.10.

4.2.1 Variables

The various dependent variables reflect different aspects of adult life. In the first two models, reported in Table A.13 and Table A.14, the dependent variable is the natural log of the earnings from the chosen adult occupation, *ln(AdultOccInc)*. In the next two models, reported in Table A.15 and Table A.16, the dependent variable is the natural log of the hourly pay from the chosen adult occupation, *ln(HrlyPayAdult)*. The dependent variable in the next two models, reported in Table A.17 and Table A.18, is *WorkAdult* which is equal to one if the respondent is working as an adult and zero otherwise. The dependent variable in the models reported in Table A.19 and Table A.20 is *dBach* which is equal to one if the respondent's highest degree received is a bachelor's degree and zero otherwise. In the final three models reported in Tables A.21-A.23, the dependent variables are the new skills variables created from the principal component analysis on the skills of the adult occupation. Specifically, these dependent variables are the adult importance rating of *General Work Experience*, the adult importance rating of *Interpersonal Skills*, and the adult level rating of *General Work Experience*, respectively.

The regressors represent different aspects such as demographics, educational attainment, high school geographical information, high school occupation information, parental information during high school, and cognitive test scores during high school. Specifically, most or all of the models contain the regressors *Male*, *AdultAge*, *(AdultAge)*^{2}, *dNoWorkHS*, *dUrbanHS*, *dNEHS*, *dSouthHS*, *dWestHS*, *dGED*, *dHS*, *dAssoc*, *dBach*, *dMaster*, *dPhD*, *dPro*, *dBlack*, *dHispanic*, *dNBNH*, *TtlHrsHS*, *CumulativeHrsHS*, *HighestParentHGC*, *dParentHGCMissing*, *GrossHHIncHS*, *dHHIncHSMissing*, *ASVAB*, *dASVABMissing*, and the high school occupation skills variables created from the principal component analysis. Brief descriptions of these variables can be found in Table A.10.

It is important here to discuss further the ASVAB cognitive test score. The ASVAB variable value represents the percentile in which the individual scored. The ASVAB test itself is a test in various areas such as mathematical knowledge, arithmetic reasoning, word knowledge, and paragraph comprehension.

4.2.2 Results

The regression results can be found in Table A.13 through Table A.23. The results in Table A.13 illustrate that the high school importance rating of *General Work Experience* is statistically significant at the 10% level and predicts that a one standard deviation increase in *General Work Experience* leads to a 0.072 standard deviation increase in *ln(AdultOccInc)*. In the same model, the high school importance rating of *Managerial Skills is* statistically significant at the 5% level and predicts that a one standard deviation increase in *Managerial Skills* leads to a 0.026 standard deviation increase in *ln(AdultOccInc)*. Total hours worked in the chosen high school occupation and cumulative hours worked during high school in general are both statistically significant at the 1% level. It is predicted that a one standard deviation increase in

total hours worked in the chosen high school occupation leads to a 0.056 standard deviation increase in *ln(AdultOccInc)* and a one standard deviation increase in cumulative hours worked during high school in general leads to a 0.102 standard deviation increase in *ln(AdultOccInc)*. The dummy variable equal to one if the individual did not work in high school is statistically significant at the 5% level here, and it is predicted that *ln(AdultOccInc)* will be increased by 0.464 if the individual did not work in high school.

The results in Table A.14 show that the high school level rating of *General Work Experience* is statistically significant at the 5% level and predicts that a one standard deviation increase in *General Work Experience* leads to a 0.058 standard deviation increase in *ln(AdultOccInc)*. In this model, total hours worked in the chosen high school occupation and cumulative hours worked during high school in general are both statistically significant at the 1% level. It is predicted that a one standard deviation increase in total hours worked in the chosen high school occupation leads to a 0.057 standard deviation increase in *ln(AdultOccInc)* and a one standard deviation increase in cumulative hours worked during high school in general leads to a 0.102 standard deviation increase in *ln(AdultOccInc)*. The dummy variable equal to one if the individual did not work in high school is statistically significant at the 5% level here, and it is predicted that *ln(AdultOccInc)* will be increased by 0.333 if the individual did not work in high school.

The results in Table A.15 reveal that the high school importance rating of *General Work Experience* is statistically significant at the 1% level and predicts that a one standard deviation increase in *General Work Experience* leads to a 0.100 standard deviation increase in *ln(HrlyPayAdult)*. The high school importance rating of *Interpersonal Skills* is statistically significant at the 5% level and predicts that a one standard deviation increase in *Interpersonal*

Skills leads to a 0.028 standard deviation decrease in *ln(HrlyPayAdult)*. In this model, the variable for cumulative hours worked during high school is statistically significant at the 1% level, and it is predicted that a one standard deviation increase in cumulative hours worked during high school leads to a 0.085 standard deviation increase in *ln(HrlyPayAdult)*. The dummy variable equal to one if the individual did not work in high school is statistically significant at the 1% level here, and it is predicted that *ln(HrlyPayAdult)* will be increased by 0.235 if the individual did not work in high school.

The results in Table A.16 illustrate that the high school level rating of *General Work Experience* is statistically significant at the 1% level and predicts that a one standard deviation increase in *General Work Experience* leads to a 0.074 standard deviation increase in *ln(HrlyPayAdult)*. In this model, the variable for cumulative hours worked during high school is statistically significant at the 1% level, and it is predicted that a one standard deviation increase in cumulative hours worked during high school leads to a 0.084 standard deviation increase in *ln(HrlyPayAdult)*. The dummy variable equal to one if the individual did not work in high school is statistically significant at the 1% level here, and it is predicted that *ln(HrlyPayAdult)* will be increased by 0.161 if the individual did not work in high school.

The results in Table A.17 show that the high school importance rating of *General Work Experience* is statistically significant at the 5% level and predicts that a one unit increase in the importance rating of *General Work Experience* increases the probability of working as an adult by 0.005. In the same model, the variable for cumulative hours worked during high school is statistically significant at the 1% level and predicts that an increase of one hour in cumulative hours worked during high school increases the probability of working as an adult by 0.000005.

The dummy variable equal to one if the individual did not work in high school is not statistically significant here.

The results in Table A.18 reveal that the high school level rating of *General Work Experience* is statistically significant at the 5% level and predicts that a one unit increase in the level rating of *General Work Experience* increases the probability of working as an adult by 0.002. In the same model, the variable for cumulative hours worked during high school is statistically significant at the 1% level and predicts that an increase of one hour in cumulative hours worked during high school increases the probability of working as an adult by 0.000005. The dummy variable equal to one if the individual did not work in high school is not statistically significant here.

The results in Table A.19 illustrate that the high school importance rating of *General Work Experience* is statistically significant at the 1% level and predicts that a one unit increase in the importance rating of *General Work Experience* increases the probability that the highest degree received is a bachelor's degree by 0.019. In the same model, both the total hours worked in the chosen high school occupation and the cumulative hours worked during high school in general are statistically significant at the 1% level. It is predicted that a one hour increase in total hours worked in the chosen high school occupation increases the probability that the highest degree received is a bachelor's degree by 0.00001 and a one hour increase in cumulative hours worked during high school in general decreases the probability that the highest degree received is a bachelor's degree by 0.00002. The dummy variable equal to one if the individual did not work in high school is statistically significant at the 1% level here, and it is predicted that the probability that the highest degree received is a bachelor's degree will be increased by 0.712 if the individual did not work in high school.

The results Table A.20 show that the high school level rating of *General Work Experience* is statistically significant at the 1% level and predicts that a one unit increase in the level rating of *General Work Experience* increases the probability that the highest degree received is a bachelor's degree by 0.012. In the same model, both the total hours worked in the chosen high school occupation and the cumulative hours worked during high school in general are statistically significant at the 1% level. It is predicted that a one hour increase in total hours worked in the chosen high school occupation increases the probability that the highest degree received is a bachelor's degree by 0.00001 and a one hour increase in cumulative hours worked during high school in general decreases the probability that the highest degree received is a bachelor's degree by 0.00002. The dummy variable equal to one if the individual did not work in high school is statistically significant at the 5% level here, and it is predicted that the probability that the highest degree received is a bachelor's degree will be increased by 0.315 if the individual did not work in high school.

The results in Table A.21 reveal that the high school importance rating of *General Work Experience* is statistically significant at the 1% level and predicts that a one standard deviation increase in the high school importance rating of *General Work Experience* leads to a 0.139 standard deviation increase in the adult occupation importance rating of *General Work Experience*. In this model, the variable for cumulative hours worked during high school is statistically significant at the 1% level, and it is predicted that a one standard deviation increase in cumulative hours worked during high school leads to a 0.086 standard deviation increase in the adult occupation importance rating of *General Work Experience*. The dummy variable equal to one if the individual did not work in high school is statistically significant at the 5% level

here, and it is predicted that the adult occupation importance rating of *General Work Experience* will be increased by 0.914 if the individual did not work in high school.

The results in Table A.22 illustrate that the high school importance rating of *Interpersonal Skills* is statistically significant at the 1% level and predicts that a one standard deviation increase in the high school importance rating of *Interpersonal Skills* leads to a 0.045 standard deviation increase in the adult occupation importance rating of *Interpersonal Skills*. The high school importance rating of *Managerial Skills* is statistically significant at the 10% level here, and a one standard deviation increase in the importance rating of *Managerial Skills* in the youth job is predicted to lead to a 0.022 standard deviation decrease in the importance rating of *Interpersonal Skills* in the adult occupation. In this model, the variable for cumulative hours worked during high school is not statistically significant. The dummy variable equal to one if the individual did not work in high school is also not statistically significant here.

The results in Table A.23 show that the high school level rating of *General Work Experience* is statistically significant at the 1% level and predicts that a one standard deviation increase in the high school level rating of *General Work Experience* leads to a 0.118 standard deviation increase in the adult occupation level rating of *General Work Experience*. In this model, the variable for cumulative hours worked during high school is statistically significant at the 1% level, and it is predicted that a one standard deviation increase in cumulative hours worked during high school leads to a 0.088 standard deviation increase in the adult occupation level rating of *General Work Experience*. The dummy variable equal to one if the individual did not work in high school is statistically significant at the 5% level here, and it is predicted that the adult occupation level rating of *General Work Experience* will be increased by 0.704 if the individual did not work in high school.

CHAPTER 5. CONCLUSION

The results show that skills acquired in youth jobs are important to future job and educational aspects in adult life. With the exception of the model in Table A.22, all models show that the created *General Work Experience* variable for both the importance rating and the level rating of the skills acquired in the chosen high school occupation is statistically significant. In these models, the *General Work Experience* variable has positive marginal effects on the dependent variable. Having gained these *General Work Experience* skills in a youth job is predicted to increase income from the adult occupation. Specifically, if the rating of these *General Work Experience* skills in a youth job is increased by one unit, it is predicted to increase income from the adult occupation by about 3% for both scales from which the skills were measured. A similar prediction occurs for the hourly pay from the adult occupation. If the rating of the *General Work Experience* skills in a youth job is increased by one unit, it is expected to increase the hourly pay from the adult occupation by 2% if the importance rating of skills is used and 1.5% if the level rating of skills is used.

If an individual worked as a youth and gained these *General Work Experience* skills, it is expected that the probability of working as an adult will increase. A one unit increase in the rating of these *General Work Experience* skills in a youth job is predicted to increase the probability of working as an adult by 0.005 if using the importance rating of skills and by 0.002 if using the level rating of skills, and although these are small probability increases, these variables are both significant at the 5% level. Similarly, a one unit increase in the rating of these *General Work Experience* skills in a youth job is predicted to increase the probability of a bachelor's degree being the highest degree received by 0.019 if using the importance rating of skills and by 0.012 if using the level rating of skills, and again, although these are small probability increases, this variable in both models is highly significant at the 1% level.

By working as a youth and gaining these *General Work Experience* skills, it is also predicted to increase the *General Work Experience* skills in the adult occupation. Specifically, a one standard deviation increase in the importance rating of *General Work Experience* as a youth is expected to lead to a 0.139 standard deviation increase in the importance rating of *General Work Experience* skills in the adult occupation, and a one standard deviation increase in the level rating of *General Work Experience* as a youth is expected to lead to a 0.118 standard deviation increase in the level rating of *General Work Experience* skills in the adult occupation.

The other created skills variables are also statistically significant in some of the models. A one standard deviation increase in the importance rating of *Managerial Skills* in the youth job is predicted to lead to a 0.079 standard deviation increase in *ln(AdultOccInc)* as shown in Table A.13. A one standard deviation increase in the importance rating of *Interpersonal Skills* in the youth job is predicted to lead to a 0.028 standard deviation decrease in *ln(HrlyPayAdult)* as shown in Table A.15. This particular result seems counterintuitive as one would expect that any amount of background in interpersonal skills should be beneficial to any job in the future since many jobs require strong interpersonal skills. A one standard deviation increase in the importance rating of *Managerial Skills* in the youth job is predicted to lead to a 0.022 standard deviation decrease in the importance rating of *Interpersonal Skills* in the adult occupation as shown in Table A.22. This can potentially be due to the individual spending more time developing managerial skills in the youth job and not as much time developing interpersonal skills.

The variable for cumulative hours worked during high school is also statistically significant and has positive marginal effects in all of the models relating to work in adult life except for the model shown in Table A.22 where this variable is not statistically significant.

These results predict that spending more time working during high school, thus having more time to develop skills from the job, plays an important part in shaping the adult working life.

Although the variable for cumulative hours worked as a youth is significant and has positive effects on future outcomes in adult life, the dummy variable for not working as a youth is also statistically significant and has positive marginal effects for most of the models. This can potentially be due to factors such as an individual having more time to devote to school if not working thus allowing for the development of skills from education as opposed to skills from working that allow for positive effects on future occupation. This is somewhat reflected in the result that the models in which *dBach* is the dependent variable predict that not working in high school is statistically significant and increases the probability of earning a bachelor's degree.

There is also room for extension of and improvement on the methodology and models presented in this study. Some suggestions include creating a more accurate measure of skills for those occupations that did not have a close or exact match between the NLSY97 occupation code and the O*NET-SOC occupation code perhaps by taking the average of the skills ratings of related occupations instead of choosing one representative from the related occupations. On top of examining effects of acquired skills from a youth job, one could also examine different types of training provided by the youth job and the effects that training has on the occupation worked as an adult. It could also be interesting to examine gender effects and the differences between skill acquisition in men and women as a youth and the effects on their future earnings.

It seems that, from these results, although working as a youth can take time away from other important factors such as time allocation to academics, it is also beneficial to gain that work experience and spend time building up a marketable skill set outside of those skills learned in school. From this, implications for policy development based on these results lean towards

creating policies that promote working as a youth in order to encourage the youth to gain experiences through work that one might not otherwise receive by only focusing on school work.

The results of this study predict that working as a youth and gaining *General Work Experience* skills will be beneficial to attributes in adult life such as hourly pay and income from adult occupation, the probability of working as an adult, skills used in the adult occupation, and educational attainment. It is also predicted that the more hours worked as a youth, the more time spent building up the skills acquired in that job, and so the more positive affects working as a youth has on the adult working life. Hence, although not working as a youth is also predicted to have benefits on educational attainment and the adult working life, working as a youth as well as hours worked and the skills acquired from such jobs is also expected to positively impact future life outcomes.

APPENDIX

Table A.1: Descriptions and abbreviations for chosen skills. Descriptions come directly from the O*NET database.

Skill	Abbreviation	Description[1]
Critical Thinking	CT	Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.
Time Management	TM	Managing one's own time and the time of others.
Judgment and Decision Making	JDM	Considering the relative costs and benefits of potential actions to choose the most appropriate one.
Active Listening	ALST	Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
Active Learning	ALRN	Understanding the implications of new information for both current and future problem-solving and decision-making.
Complex Problem Solving	CPS	Identifying complex problems and reviewing related information to develop and evaluate options and implement solutions.
Speaking	S	Talking to others to convey information effectively.
Monitoring	M	Monitoring/Assessing performance of yourself, other individuals, or organizations to make improvements or take corrective action.
Reading Comprehension	RC	Understanding written sentences and paragraphs in work related documents.
Coordination	C	Adjusting actions in relation to others' actions.
Persuasion	P	Persuading others to change their minds or behavior.
Negotiation	N	Bringing others together and trying to reconcile differences.
Writing	W	Communicating effectively in writing as appropriate for the needs of the audience.
Mathematics	MTH	Using mathematics to solve problems.
Social Perceptiveness	SP	Being aware of others' reactions and understanding why they react as they do.
Service Orientation	SO	Actively looking for ways to help people.
Management of Personnel Resources	MPR	Motivating, developing, and directing people as they work, identifying the best people for the job.

[1]Descriptions come from: http://www.onetonline.org/find/descriptor/browse/Skills/

Table A.2: Correlation between importance ratings of chosen skills in high school occupation, if working.

	CT	TM	JDM	ALST	ALRN	CPS	S	M	RC	C	P	N	W	MTH	SP	SO	MPR
Critical Thinking	1.000																
Time Management	0.650	1.000															
Judgement and Decision Making	0.731	0.651	1.000														
Active Listening	0.508	0.433	0.619	1.000													
Active Learning	0.757	0.674	0.826	0.684	1.000												
Complex Problem Solving	0.744	0.605	0.727	0.526	0.800	1.000											
Speaking	0.535	0.477	0.625	0.912	0.702	0.560	1.000										
Monitoring	0.636	0.560	0.786	0.491	0.673	0.623	0.514	1.000									
Reading Comprehension	0.751	0.655	0.549	0.639	0.704	0.635	0.675	0.525	1.000								
Coordination	0.574	0.551	0.674	0.568	0.684	0.697	0.604	0.717	0.547	1.000							
Persuasion	0.507	0.364	0.473	0.778	0.631	0.517	0.827	0.400	0.587	0.569	1.000						
Negotiation	0.572	0.509	0.516	0.734	0.698	0.498	0.754	0.435	0.663	0.574	0.897	1.000					
Writing	0.776	0.700	0.668	0.661	0.734	0.623	0.703	0.598	0.911	0.592	0.576	0.668	1.000				
Mathematics	0.214	0.313	0.388	0.380	0.369	0.023	0.316	0.177	0.224	0.084	0.262	0.402	0.304	1.000			
Social Perceptiveness	0.481	0.387	0.635	0.842	0.667	0.565	0.841	0.563	0.499	0.669	0.799	0.724	0.559	0.264	1.000		
Service Orientation	0.229	0.282	0.441	0.768	0.525	0.244	0.768	0.369	0.364	0.480	0.723	0.710	0.457	0.426	0.758	1.000	
Management of Personnel Resources	0.665	0.690	0.687	0.468	0.677	0.517	0.460	0.592	0.553	0.598	0.408	0.592	0.603	0.476	0.485	0.350	1.000

Table A.3: Correlation between level ratings of chosen skills in high school occupation, if working.

	CT	TM	JDM	ALST	ALRN	CPS	S	M	RC	C	P	N	W	MTH	SP	SO	MPR
Critical Thinking	1.000																
Time Management	0.763	1.000															
Judgement and Decision Making	0.823	0.832	1.000														
Active Listening	0.860	0.753	0.760	1.000													
Active Learning	0.811	0.792	0.868	0.762	1.000												
Complex Problem Solving	0.756	0.789	0.839	0.756	0.824	1.000											
Speaking	0.837	0.754	0.771	0.930	0.805	0.785	1.000										
Monitoring	0.856	0.809	0.856	0.729	0.830	0.804	0.741	1.000									
Reading Comprehension	0.814	0.781	0.759	0.872	0.807	0.742	0.898	0.731	1.000								
Coordination	0.669	0.698	0.725	0.562	0.731	0.719	0.623	0.785	0.620	1.000							
Persuasion	0.740	0.625	0.731	0.757	0.681	0.671	0.785	0.678	0.693	0.632	1.000						
Negotiation	0.768	0.728	0.768	0.798	0.722	0.716	0.801	0.712	0.740	0.627	0.938	1.000					
Writing	0.826	0.816	0.797	0.866	0.773	0.762	0.869	0.766	0.905	0.662	0.733	0.790	1.000				
Mathematics	0.424	0.473	0.444	0.353	0.514	0.365	0.370	0.367	0.496	0.363	0.294	0.368	0.521	1.000			
Social Perceptiveness	0.778	0.718	0.786	0.761	0.810	0.667	0.846	0.782	0.787	0.670	0.763	0.773	0.770	0.335	1.000		
Service Orientation	0.702	0.616	0.619	0.715	0.573	0.515	0.728	0.596	0.665	0.524	0.819	0.817	0.736	0.306	0.704	1.000	
Management of Personnel Resources	0.665	0.845	0.762	0.599	0.721	0.713	0.619	0.770	0.627	0.744	0.543	0.619	0.734	0.490	0.654	0.546	1.000

Table A.4: Correlation between importance ratings of chosen skills in adult occupation, if working.

	CT	TM	JDM	ALST	ALRN	CPS	S	M	RC	C	P	N	W	MTH	SP	SO	MPR
Critical Thinking	1.000																
Time Management	0.728	1.000															
Judgement and Decision Making	0.884	0.770	1.000														
Active Listening	0.721	0.650	0.741	1.000													
Active Learning	0.874	0.745	0.885	0.791	1.000												
Complex Problem Solving	0.881	0.698	0.884	0.702	0.859	1.000											
Speaking	0.704	0.690	0.741	0.916	0.793	0.683	1.000										
Monitoring	0.775	0.706	0.812	0.634	0.764	0.704	0.646	1.000									
Reading Comprehension	0.816	0.745	0.751	0.792	0.794	0.752	0.785	0.647	1.000								
Coordination	0.697	0.724	0.754	0.674	0.715	0.659	0.722	0.782	0.618	1.000							
Persuasion	0.647	0.571	0.645	0.763	0.701	0.620	0.795	0.554	0.607	0.664	1.000						
Negotiation	0.690	0.660	0.680	0.752	0.723	0.635	0.768	0.629	0.658	0.723	0.904	1.000					
Writing	0.812	0.772	0.783	0.786	0.817	0.733	0.794	0.688	0.920	0.663	0.615	0.683	1.000				
Mathematics	0.470	0.417	0.505	0.391	0.517	0.440	0.383	0.387	0.418	0.344	0.372	0.392	0.442	1.000			
Social Perceptiveness	0.642	0.555	0.690	0.803	0.703	0.602	0.810	0.693	0.580	0.753	0.772	0.755	0.622	0.294	1.000		
Service Orientation	0.335	0.378	0.399	0.678	0.480	0.305	0.686	0.437	0.370	0.554	0.652	0.624	0.444	0.270	0.736	1.000	
Management of Personnel Resources	0.749	0.783	0.767	0.581	0.708	0.698	0.604	0.763	0.623	0.798	0.598	0.717	0.643	0.469	0.581	0.359	1.000

Table A.5: Correlation between level ratings of chosen skills in adult occupation, if working.

	CT	TM	JDM	ALST	ALRN	CPS	S	M	RC	C	P	N	W	MTH	SP	SO	MPR
Critical Thinking	1.000																
Time Management	0.835	1.000															
Judgement and Decision Making	0.891	0.870	1.000														
Active Listening	0.887	0.787	0.832	1.000													
Active Learning	0.914	0.851	0.920	0.860	1.000												
Complex Problem Solving	0.870	0.854	0.911	0.811	0.903	1.000											
Speaking	0.901	0.826	0.850	0.950	0.896	0.843	1.000										
Monitoring	0.854	0.881	0.878	0.765	0.884	0.861	0.813	1.000									
Reading Comprehension	0.902	0.826	0.865	0.916	0.904	0.859	0.926	0.817	1.000								
Coordination	0.752	0.837	0.799	0.665	0.781	0.775	0.721	0.863	0.707	1.000							
Persuasion	0.810	0.770	0.804	0.797	0.802	0.775	0.830	0.764	0.758	0.732	1.000						
Negotiation	0.787	0.796	0.779	0.776	0.773	0.748	0.815	0.756	0.728	0.739	0.942	1.000					
Writing	0.892	0.839	0.854	0.900	0.887	0.837	0.916	0.825	0.938	0.712	0.781	0.774	1.000				
Mathematics	0.660	0.604	0.662	0.533	0.694	0.676	0.571	0.616	0.641	0.569	0.528	0.509	0.598	1.000			
Social Perceptiveness	0.801	0.801	0.798	0.817	0.819	0.740	0.862	0.828	0.801	0.769	0.806	0.805	0.798	0.434	1.000		
Service Orientation	0.686	0.629	0.602	0.726	0.633	0.546	0.729	0.614	0.647	0.566	0.741	0.747	0.682	0.352	0.770	1.000	
Management of Personnel Resources	0.749	0.901	0.802	0.662	0.783	0.784	0.717	0.859	0.709	0.850	0.721	0.758	0.732	0.614	0.748	0.564	1.000

Table A.6: Results of principal component analysis on importance rating of skills from high school occupation. Number of observations = 6,641.

Variable	Component 1	Component 2	Component 3
CT	0.2461	-0.2933	-0.0096
TM	0.2235	-0.2849	0.2037
JDM	0.2595	-0.1853	0.0816
ALST	0.2609	0.2785	-0.0462
ALRN	0.2798	-0.1067	0.0265
CPS	0.2382	-0.2582	-0.2947
S	0.2680	0.2576	-0.1090
M	0.2291	-0.2240	-0.0904
RC	0.2501	-0.1252	-0.0262
C	0.2430	-0.0969	-0.2541
P	0.2455	0.3189	-0.1586
N	0.2585	0.2260	0.0566
W	0.2645	-0.1208	0.0446
MTH	0.1227	0.1559	0.7700
SP	0.2553	0.2640	-0.1757
SO	0.2081	0.4488	0.0602
MPR	0.2292	-0.1960	0.3450
Eigenvalue	10.3436	1.9417	1.1812
Proportion	0.6084	0.1142	0.0695
Cumulative	0.6084	0.7227	0.7921

Table A.7: Results of principal component analysis on level rating of skills from high school occupation. Number of observations = 6,641.

Variable	Component 1	Component 2
CT	0.2578	-0.0475
TM	0.2510	0.2099
JDM	0.2584	0.1298
ALST	0.2536	-0.2114
ALRN	0.2557	0.1724
CPS	0.2449	0.1447
S	0.2599	-0.1938
M	0.2523	0.1525
RC	0.2544	-0.0428
C	0.2223	0.2363
P	0.2380	-0.3625
N	0.2495	-0.2778
W	0.2616	-0.0162
MTH	0.1408	0.4616
SP	0.2485	-0.1292
SO	0.2195	-0.3895
MPR	0.2274	0.3642
Eigenvalue	12.4257	1.1108
Proportion	0.7309	0.0653
Cumulative	0.7309	0.7963

Table A.8: Results of principal component analysis on importance rating of skills from adult occupation. Number of observations = 6,717.

Variable	Component 1	Component 2
CT	0.2604	-0.2418
TM	0.2421	-0.1879
JDM	0.2654	-0.2012
ALST	0.2577	0.2006
ALRN	0.2687	-0.1156
CPS	0.2486	-0.2488
S	0.2607	0.2160
M	0.2426	-0.1273
RC	0.2489	-0.1538
C	0.2467	0.0530
P	0.2382	0.3052
N	0.2491	0.2166
W	0.2555	-0.1210
MTH	0.1508	-0.2012
SP	0.2408	0.3344
SO	0.1775	0.5661
MPR	0.2381	-0.1829
Eigenvalue	11.7304	1.4314
Proportion	0.6900	0.0842
Cumulative	0.6900	0.7742

Table A.9: Results of principal component analysis on level rating of skills from adult occupation. Number of observations = 6,717.

Variable	Component 1
CT	0.2569
TM	0.2517
JDM	0.2557
ALST	0.2480
ALRN	0.2590
CPS	0.2498
S	0.2567
M	0.2512
RC	0.2527
C	0.2319
P	0.2414
N	0.2390
W	0.2531
MTH	0.1837
SP	0.2426
SO	0.2022
MPR	0.2339
Eigenvalue	13.4512
Proportion	0.7912
Cumulative	0.7912

Table A.10: Variable names and descriptions.

Variable Name	Description
ln(AdultOccInc)	Natural log of the total income from the chosen adult occupation. Total income from the occupation calculated by multiplying total hours by hourly pay.
ln(HrlyPayAdult)	Natural log of the hourly pay from the chosen adult occupation.
Male	1 if male
AdultAge	Age of adult during survey the year from which adult occupation was chosen. Found by subtracting birth year from survey year.
$(AdultAge)^2$	(AdultAge)x(AdultAge)
dNoWorkHS	1 if did not work in high school (determined to have worked if had positive high school occupation code)
WorkAdult	1 if work as adult (determined as working if have positive adult occupation code)
dUrbanHS	1 if lived in an urban area during survey from which high school occupation was chosen
dNEHS	1 if lived in the northeast during survey from which high school occupation was chosen
dSouthHS	1 if lived in the south during survey from which high school occupation was chosen
dWestHS	1 if lived in the west during survey from which high school occupation was chosen
dGED	1 if highest degree received is a GED
dHS	1 if highest degree received is a high school diploma (regular 12 year program)
dAssoc	1 if highest degree received is from associate/junior college (AA)
dBach	1 if highest degree received is a bachelor's degree (BA, BS)
dMaster	1 if highest degree received is a master's degree (MA, MS)
dPhD	1 if highest degree received is a PhD
dPro	1 if highest degree received is a professional degree (DDS, JD, MD)
dBlack	1 if race/ethnicity is black
dHispanic	1 if race/ethnicity is Hispanic
dNBNH	1 if race/ethnicity is non-black, non-Hispanic
TtlHrsHS	Total hours worked at chosen high school job. Found by multiplying hours per week by total number of weeks worked.
CumulativeHrsHS	Cumulative hours worked during high school/teen years
HighestParentHGC	Highest grade completed by either biological parent
dParentHGCMissing	1 if missing information for parent's highest grade completed
GrossHHIncHS	Gross household income reported in survey from which high school occupation was chosen
dHHIncHSMissing	1 if missing information for gross household income during high school
ASVAB	Percentile score on ASVAB
dASVABMissing	1 if missing value for ASVAB percentile

Table A.10 continued: Variable names and descriptions.

Variable Name	Description
HS importance rating of *General Work Experience*	The created skills variable from component one of the principal component analysis on the importance ratings of the chosen skills, high school job.
HS importance rating of *Interpersonal Skills*	The created skills variable from component two of the principal component analysis on the importance ratings of the chosen skills, high school job.
HS importance rating of *Managerial Skills*	The created skills variable from component three of the principal component analysis on the importance ratings of the chosen skills, high school job.
HS level rating of *General Work Experience*	The created skills variable from component one of the principal component analysis on the level ratings of the chosen skills, high school job.
HS level rating of *Managerial Skills*	The created skills variable from component two of the principal component analysis on the level ratings of the chosen skills, high school job.
Adult importance rating of *General Work Experience*	The created skills variable from component one of the principal component analysis on the importance ratings of the chosen skills, adult job.
Adult importance rating of *Interpersonal Skills*	The created skills variable from component two of the principal component analysis on the importance ratings of the chosen skills, adult job.
Adult level rating of *General Work Experience*	The created skills variable from component one of the principal component analysis on the level ratings of the chosen skills, adult job.

Table A.11: Difference of means test results between used subsample and deleted respondents.

$$H_0 : \mu_{ik} = \mu_{jk}$$
$$H_A : \mu_{ik} \neq \mu_{jk}$$

where index *i* represents the mean from the used subsample, index *j* represents the mean from the deleted respondents, and index *k* represents the variable.

Variable Name	Pr(|T| > |t|)	Reject H_0 5% Significance Level	Used subsample mean, μ_{ik}	Deleted respondents mean, μ_{jk}
ln(AdultOccInc)	0.192	No	10.86	10.71
ln(HrlyPayAdult)	0.117	No	2.64	2.58
Male	0.000	Yes	0.50	0.56
Adult Age (at time of chosen adult occupation)	0.000	Yes	28.63	27.56
High School Age (at time of chosen high school occupation)	0.000	Yes	17.85	17.63
Urban Rural High School	0.332	No	0.81	0.82
dUrbanHS	0.0003	Yes	0.74	0.70
Census Region High School	0.005	Yes	2.67	2.59
dNEHS	0.036	Yes	0.17	0.19
dSouthHS	0.000	Yes	0.39	0.33
dWestHS	0.161	No	0.22	0.21
Highest Degree Received	0.000	Yes	2.33	2.77
dGED	0.000	Yes	0.13	0.08
dHS	0.000	Yes	0.44	0.36
dAssoc	0.000	Yes	0.07	0.16
dBach	0.000	Yes	0.20	0.11
dMaster	0.0002	Yes	0.04	0.07
dPhD	0.000	Yes	0.002	0.02
dPro	0.001	Yes	0.01	0.002
RaceEthnicity	0.000	Yes	2.74	2.99
dBlack	0.000	Yes	0.27	0.22
dHispanic	0.000	Yes	0.22	0.17
dNBNH	0.000	Yes	0.50	0.60
TtlHrsHS	0.000	Yes	1,030.22	845.82
CumulativeHrsHS	0.271	No	2,999.15	3,083.18
HighestParentHGC	0.045	Yes	12.39	12.63
GrossHHIncHS	0.128	No	29,631.44	27,571.09
ASVAB	0.241	No	35.97	34.95

Table A.12: Full information regression. Dependent variable is dummy variable equal to one if the respondent was included in the sample and thus has full information and zero if the respondent was deleted from the sample and thus does not have full information. Independent variables include demographics, parental information, and cognitive scores. N=8,984.

	(A.12.1) Marginal Effects (Standard Error)	(A.12.2) Marginal Effects (Standard Error)
Intercept	1.218*** (0.181)	0.799*** (0.164)
Male (=1)	-0.034*** (0.031)	-0.038*** (0.031)
Urban in high school (=1)	0.023** (0.036)	0.021** (0.036)
Census region in high school northeast (=1)	0.008 (0.048)	0.006 (0.048)
Census region in high school south (=1)	0.034*** (0.042)	0.040*** (0.041)
Census region in high school west (=1)	0.020 (0.048)	0.023* (0.048)
Race ethnicity black (=1)	0.026 (0.164)	0.033 (0.162)
Race ethnicity Hispanic (=1)	0.033 (0.164)	0.039 (0.163)
Race ethnicity non-black, non-Hispanic (=1)	-0.021 (0.161)	-0.012 (0.160)
Highest grade completed by either biological parent	-0.003* (0.006)	
Gross household income during chosen high school occupation	-0.0000002* (0.0000004)	
ASVAB percentile	-0.0002 (0.001)	
Missing value for parent's highest grade completed (=1)	-0.082*** (0.098)	
Missing value for gross household income during chosen high school occupation (=1)	-0.076*** (0.038)	
Missing ASVAB value (=1)	-0.084*** (0.048)	
Pseudo R^2	0.027	0.011
Chi-squared p-value	230.06***	96.63***

*** $p < 0.01$
** $p < 0.05$
* $p < 0.10$

Table A.13: Linear regression with *ln(AdultOccInc)* as the dependent variable with created importance measure of skills variables from youth occupation, among others, as independent variables. N=5,835.

	Coefficient	Standard Error	Beta
Intercept	6.154***	0.834	
Male (=1)	0.422***	0.042	0.131
Adult Age	0.065	0.049	0.060
(Adult Age)^2	0.002*	0.001	0.082
Did not work in high school (=1)	0.464**	0.208	0.079
Urban in high school (=1)	-0.104**	0.047	-0.028
Census region in high school northeast (=1)	0.138**	0.063	0.032
Census region in high school south (=1)	0.048	0.054	0.014
Census region in high school west (=1)	0.175***	0.062	0.045
Highest degree received GED (=1)	0.173**	0.084	0.036
Highest degree received High School Diploma (=1)	0.660***	0.072	0.203
Highest degree received Associate/Junior college (=1)	0.895***	0.101	0.143
Highest degree received Bachelor's (=1)	1.180***	0.087	0.295
Highest degree received Master's (=1)	1.378***	0.119	0.185
Highest degree received PhD (=1)	1.372***	0.407	0.042
Highest degree received Professional (=1)	1.331***	0.201	0.088
Race ethnicity black (=1)	-0.240	0.205	-0.064
Race ethnicity Hispanic (=1)	0.082	0.205	0.021
Race ethnicity non-black, non-Hispanic (=1)	-0.039	0.202	-0.012
Total hours worked in chosen high school occupation	0.0001***	0.00002	0.056
Cumulative hours worked during high school	0.0001***	0.00001	0.102
Highest grade completed by either biological parent	-0.018**	0.008	-0.044
Gross household income during chosen high school occupation	0.000002***	0.0000005	0.062
ASVAB percentile	0.004***	0.001	0.078
Missing value for parent's highest grade completed (=1)	-0.400***	0.136	-0.052
Missing value for gross household income during chosen high school occupation (=1)	0.098**	0.048	0.030
Missing ASVAB value (=1)	0.189***	0.062	0.046
High school importance rating of *General Work Experience*	0.034*	0.018	0.072
High school importance rating of *Interpersonal Skills*	-0.039	0.037	-0.015
High school importance rating of *Managerial Skills*	0.079**	0.039	0.026
R^2	0.157		

*** $p < 0.01$
** $p < 0.05$
* $p < 0.10$
Note: This only includes those who are not currently enrolled in any type of school during the survey from which adult occupation was chosen.

Table A.14: Linear regression with *ln(AdultOccInc)* as the dependent variable with created level measure of skills variables from youth occupation, among others, as independent variables. N=5,835.

	Coefficient	Standard Error	Beta
Intercept	6.297***	0.821	
Male (=1)	0.416***	0.041	0.129
Adult Age	0.064	0.049	0.059
(Adult Age)^2	0.002*	0.001	0.083
Did not work in high school (=1)	0.333**	0.138	0.057
Urban in high school (=1)	-0.102**	0.047	-0.028
Census region in high school northeast (=1)	0.138**	0.063	0.032
Census region in high school south (=1)	0.049	0.054	0.015
Census region in high school west (=1)	0.174***	0.062	0.045
Highest degree received GED (=1)	0.172**	0.084	0.036
Highest degree received High School Diploma (=1)	0.661***	0.072	0.204
Highest degree received Associate/Junior college (=1)	0.896***	0.101	0.143
Highest degree received Bachelor's (=1)	1.179***	0.087	0.295
Highest degree received Master's (=1)	1.379***	0.118	0.185
Highest degree received PhD (=1)	1.383***	0.407	0.042
Highest degree received Professional (=1)	1.332***	0.201	0.088
Race ethnicity black (=1)	-0.233	0.205	-0.062
Race ethnicity Hispanic (=1)	0.089	0.205	0.023
Race ethnicity non-black, non-Hispanic (=1)	-0.034	0.202	-0.011
Total hours worked in chosen high school occupation	0.0001***	0.00002	0.057
Cumulative hours worked during high school	0.0001***	0.00001	0.102
Highest grade completed by either biological parent	-0.018**	0.008	-0.045
Gross household income during chosen high school occupation	0.000002***	0.0000005	0.062
ASVAB percentile	0.004***	0.001	0.078
Missing value for parent's highest grade completed (=1)	-0.405***	0.136	-0.053
Missing value for gross household income during chosen high school occupation (=1)	0.098**	0.048	0.030
Missing ASVAB value (=1)	0.188***	0.062	0.046
High school level rating of *General Work Experience*	0.028**	0.011	0.058
High school level rating of *Managerial Skills*	0.039	0.034	0.014
R^2	0.157		

*** $p < 0.01$
** $p < 0.05$
* $p < 0.10$

Note: This only includes those who are not currently enrolled in any type of school during the survey from which adult occupation was chosen.

Table A.15: Linear regression with *ln(HrlyPayAdult)* as the dependent variable with created importance measure of skills variables from youth occupation, among others, as independent variables. N=5,839.

	Coefficient	Standard Error	Beta
Intercept	0.836**	0.354	
Male (=1)	0.188***	0.018	0.138
Adult Age	0.031	0.021	0.066
(Adult Age)^2	0.0003	0.000	0.032
Did not work in high school (=1)	0.235***	0.088	0.095
Urban in high school (=1)	0.015	0.020	0.009
Census region in high school northeast (=1)	0.124***	0.027	0.069
Census region in high school south (=1)	0.036	0.023	0.026
Census region in high school west (=1)	0.158***	0.026	0.097
Highest degree received GED (=1)	0.050	0.036	0.024
Highest degree received High School Diploma (=1)	0.123***	0.031	0.090
Highest degree received Associate/Junior college (=1)	0.274***	0.043	0.103
Highest degree received Bachelor's (=1)	0.396***	0.037	0.234
Highest degree received Master's (=1)	0.560***	0.050	0.178
Highest degree received PhD (=1)	0.764***	0.173	0.055
Highest degree received Professional (=1)	0.741***	0.085	0.116
Race ethnicity black (=1)	-0.119	0.087	-0.076
Race ethnicity Hispanic (=1)	-0.062	0.087	-0.038
Race ethnicity non-black, non-Hispanic (=1)	-0.077	0.086	-0.057
Total hours worked in chosen high school occupation	-0.00001	0.00001	-0.015
Cumulative hours worked during high school	0.00002***	0.000005	0.085
Highest grade completed by either biological parent	0.0003	0.003	0.002
Gross household income during chosen high school occupation	0.000001***	0.0000002	0.072
ASVAB percentile	0.002***	0.0004	0.101
Missing value for parent's highest grade completed (=1)	-0.065	0.058	-0.020
Missing value for gross household income during chosen high school occupation (=1)	0.036*	0.020	0.027
Missing ASVAB value (=1)	0.059**	0.026	0.034
High school importance rating of *General Work Experience*	0.020***	0.007	0.100
High school importance rating of *Interpersonal Skills*	-0.032**	0.016	-0.028
High school importance rating of *Managerial Skills*	0.024	0.016	0.019
R^2	0.148		

*** $p < 0.01$
** $p < 0.05$
* $p < 0.10$
Note: This only includes those who are not currently enrolled in any type of school during the survey from which adult occupation was chosen.

Table A.16: Linear regression with *ln(HrlyPayAdult)* as the dependent variable with created level measure of skills variables from youth occupation, among others, as independent variables. N=5,839.

	Coefficient	Standard Error	Beta
Intercept	0.915***	0.349	
Male (=1)	0.191***	0.017	0.140
Adult Age	0.030	0.021	0.066
(Adult Age)^2	0.0003	0.0004	0.033
Did not work in high school (=1)	0.161***	0.059	0.065
Urban in high school (=1)	0.014	0.020	0.009
Census region in high school northeast (=1)	0.124***	0.027	0.069
Census region in high school south (=1)	0.037	0.023	0.026
Census region in high school west (=1)	0.158***	0.026	0.097
Highest degree received GED (=1)	0.049	0.036	0.024
Highest degree received High School Diploma (=1)	0.122***	0.031	0.089
Highest degree received Associate/Junior college (=1)	0.272***	0.043	0.103
Highest degree received Bachelor's (=1)	0.394***	0.037	0.233
Highest degree received Master's (=1)	0.559***	0.050	0.177
Highest degree received PhD (=1)	0.770***	0.173	0.055
Highest degree received Professional (=1)	0.740***	0.085	0.116
Race ethnicity black (=1)	-0.120	0.087	-0.076
Race ethnicity Hispanic (=1)	-0.062	0.087	-0.038
Race ethnicity non-black, non-Hispanic (=1)	-0.077	0.086	-0.056
Total hours worked in chosen high school occupation	-0.00001	0.00001	-0.015
Cumulative hours worked during high school	0.00002***	0.000005	0.084
Highest grade completed by either biological parent	0.0001	0.003	0.0005
Gross household income during chosen high school occupation	0.000001***	0.0000002	0.072
ASVAB percentile	0.002***	0.0004	0.100
Missing value for parent's highest grade completed (=1)	-0.067	0.058	-0.021
Missing value for gross household income during chosen high school occupation (=1)	0.036*	0.020	0.026
Missing ASVAB value (=1)	0.058**	0.026	0.034
High school level rating of *General Work Experience*	0.015***	0.005	0.074
High school level rating of *Managerial Skills*	0.016	0.014	0.014
R^2	0.148		

*** $p < 0.01$
** $p < 0.05$
* $p < 0.10$

Note: This only includes those who are not currently enrolled in any type of school during the survey from which adult occupation was chosen.

Table A.17: Probit regression with *WorkAdult* as the dependent variable with created importance measure of skills variables from youth occupation, among others, as independent variables. N=6,432.

	Coefficient	Standard Error	Marginal Effects
Intercept	-12.093***	1.168	
Male (=1)	0.279***	0.059	0.019
Adult Age	0.444***	0.068	0.030
(Adult Age)^2	-0.001	0.001	-0.00004
Did not work in high school (=1)	0.391	0.307	0.020
Urban in high school (=1)	-0.013	0.066	-0.001
Census region in high school northeast (=1)	0.034	0.092	0.002
Census region in high school south (=1)	0.023	0.075	0.002
Census region in high school west (=1)	0.094	0.091	0.006
Highest degree received GED (=1)	0.221**	0.088	0.013
Highest degree received High School Diploma (=1)	0.387***	0.076	0.026
Highest degree received Associate/Junior college (=1)	0.761***	0.153	0.029
Highest degree received Bachelor's (=1)	1.019***	0.130	0.043
Highest degree received Master's (=1)	1.418***	0.317	0.034
Highest degree received Professional (=1)	1.162**	0.498	0.030
Race ethnicity black (=1)	-0.249	0.313	-0.019
Race ethnicity Hispanic (=1)	0.038	0.315	0.003
Race ethnicity non-black, non-Hispanic (=1)	-0.156	0.311	-0.011
Total hours worked in chosen high school occupation	0.00004	0.00003	0.000003
Cumulative hours worked during high school	0.0001***	0.00002	0.000005
Highest grade completed by either biological parent	0.002	0.012	0.0002
Gross household income during chosen high school occupation	0.000002*	0.000001	0.0000001
ASVAB percentile	0.004***	0.001	0.0003
Missing value for parent's highest grade completed (=1)	-0.096	0.175	-0.007
Missing value for gross household income during chosen high school occupation (=1)	0.140**	0.066	0.010
Missing ASVAB value (=1)	0.078	0.076	0.005
High school importance rating of *General Work Experience*	0.066**	0.027	0.005
High school importance rating of *Interpersonal Skills*	-0.077	0.056	-0.005
High school importance rating of *Managerial Skills*	-0.069	0.055	-0.005
Pseudo R^2	0.278		

*** $p < 0.01$
** $p < 0.05$
* $p < 0.10$
Note: This only includes those who are not currently enrolled in any type of school during the survey from which adult occupation was chosen. Also, dHDR_PhD was omitted and 14 observations not used because "dHDR_PhD != 0 predicts success perfectly."

Table A.18: Probit regression with *WorkAdult* as the dependent variable with created level measure of skills variables from youth occupation, among others, as independent variables. N=6,432.

	Coefficient	Standard Error	Marginal Effects
Intercept	-11.765***	1.142	
Male (=1)	0.296***	0.057	0.021
Adult Age	0.444***	0.068	0.031
(Adult Age)^2	-0.001	0.001	-0.00004
Did not work in high school (=1)	0.067	0.192	0.004
Urban in high school (=1)	-0.012	0.066	-0.001
Census region in high school northeast (=1)	0.034	0.092	0.002
Census region in high school south (=1)	0.022	0.075	0.001
Census region in high school west (=1)	0.097	0.091	0.006
Highest degree received GED (=1)	0.217**	0.088	0.013
Highest degree received High School Diploma (=1)	0.382***	0.076	0.026
Highest degree received Associate/Junior college (=1)	0.757***	0.153	0.029
Highest degree received Bachelor's (=1)	1.022***	0.130	0.043
Highest degree received Master's (=1)	1.414***	0.316	0.035
Highest degree received Professional (=1)	1.134**	0.487	0.030
Race ethnicity black (=1)	-0.255	0.311	-0.020
Race ethnicity Hispanic (=1)	0.031	0.313	0.002
Race ethnicity non-black, non-Hispanic (=1)	-0.158	0.308	-0.011
Total hours worked in chosen high school occupation	0.00003	0.00003	0.000002
Cumulative hours worked during high school	0.0001***	0.00002	0.000005
Highest grade completed by either biological parent	0.003	0.012	0.0002
Gross household income during chosen high school occupation	0.000002*	0.000001	0.0000001
ASVAB percentile	0.004***	0.001	0.0003
Missing value for parent's highest grade completed (=1)	-0.093	0.175	-0.007
Missing value for gross household income during chosen high school occupation (=1)	0.140**	0.066	0.010
Missing ASVAB value (=1)	0.080	0.076	0.005
High school level rating of *General Work Experience*	0.035**	0.018	0.002
High school level rating of *Managerial Skills*	0.037	0.050	0.003
Pseudo R^2	0.277		

*** $p < 0.01$
** $p < 0.05$
* $p < 0.10$

Note: This only includes those who are not currently enrolled in any type of school during the survey from which adult occupation was chosen. Also, dHDR_PhD was omitted and 14 observations not used because "dHDR_PhD != 0 predicts success perfectly."

Table A.19: Probit regression with *dBach* as the dependent variable with created importance measure of skills variables from youth occupation, among others, as independent variables. N=7,317.

	Coefficient	Standard Error	Marginal Effects
Intercept	-4.092***	0.785	
Male (=1)	-0.173***	0.039	-0.041
Adult Age	0.011	0.047	0.003
(Adult Age)^2	0.0005	0.001	0.0001
Did not work in high school (=1)	0.712***	0.196	0.216
Urban in high school (=1)	-0.033	0.044	-0.008
Census region in high school northeast (=1)	0.012	0.059	0.003
Census region in high school south (=1)	0.058	0.050	0.014
Census region in high school west (=1)	0.004	0.058	0.001
Race ethnicity black (=1)	-0.100	0.181	-0.023
Race ethnicity Hispanic (=1)	-0.050	0.181	-0.012
Race ethnicity non-black, non-Hispanic (=1)	0.020	0.177	0.005
Total hours worked in chosen high school occupation	0.0001***	0.00002	0.00001
Cumulative hours worked during high school	-0.0001***	0.00001	-0.00002
Highest grade completed by either biological parent	0.079***	0.007	0.019
Gross household income during chosen high school occupation	0.000003***	0.0000004	0.000001
ASVAB percentile	0.015***	0.001	0.004
Missing value for parent's highest grade completed (=1)	1.015***	0.134	0.336
Missing value for gross household income during chosen high school occupation (=1)	0.160***	0.046	0.038
Missing ASVAB value (=1)	0.563***	0.065	0.157
High school importance rating of *General Work Experience*	0.081***	0.016	0.019
High school importance rating of *Interpersonal Skills*	0.012	0.034	0.003
High school importance rating of *Managerial Skills*	-0.034	0.036	-0.008
Pseudo R^2	0.189		

*** $p < 0.01$
** $p < 0.05$
* $p < 0.10$

Note: The sample here includes everyone, even those still enrolled in any type of schooling during the survey from which adult occupation was chosen.

Table A.20: Probit regression with *dBach* as the dependent variable with created level measure of skills variables from youth occupation, among others, as independent variables. N=7,317.

	Coefficient	Standard Error	Marginal Effects
Intercept	-3.700***	0.773	
Male (=1)	-0.176***	0.038	-0.042
Adult Age	0.011	0.047	0.003
(Adult Age)^2	0.0004	0.001	0.0001
Did not work in high school (=1)	0.315**	0.131	0.085
Urban in high school (=1)	-0.034	0.044	-0.008
Census region in high school northeast (=1)	0.010	0.059	0.002
Census region in high school south (=1)	0.056	0.050	0.013
Census region in high school west (=1)	0.003	0.058	0.001
Race ethnicity black (=1)	-0.105	0.181	-0.024
Race ethnicity Hispanic (=1)	-0.053	0.181	-0.012
Race ethnicity non-black, non-Hispanic (=1)	0.018	0.177	0.004
Total hours worked in chosen high school occupation	0.0001***	0.00002	0.00001
Cumulative hours worked during high school	-0.0001***	0.00001	-0.00002
Highest grade completed by either biological parent	0.080***	0.007	0.019
Gross household income during chosen high school occupation	0.000003***	0.0000004	0.000001
ASVAB percentile	0.015***	0.001	0.004
Missing value for parent's highest grade completed (=1)	1.017***	0.134	0.337
Missing value for gross household income during chosen high school occupation (=1)	0.159***	0.046	0.038
Missing ASVAB value (=1)	0.562***	0.065	0.156
High school level rating of *General Work Experience*	0.050***	0.011	0.012
High school level rating of *Managerial Skills*	-0.040	0.032	-0.009
Pseudo R^2	0.188		

*** $p < 0.01$
** $p < 0.05$
* $p < 0.10$

Note: The sample here includes everyone, even those still enrolled in any type of schooling during the survey from which adult occupation was chosen.

Table A.21: Linear regression with the adult importance rating of *General Work Experience* as the dependent variable with created importance measure of skills variables from youth occupation, among others, as independent variables. N=6,446.

	Coefficient	Standard Error	Beta
Intercept	-12.880***	1.746	
Male (=1)	-0.067	0.089	-0.009
Adult Age	0.744***	0.104	0.301
(Adult Age)^2	-0.001	0.002	-0.033
Did not work in high school (=1)	0.914**	0.441	0.070
Urban in high school (=1)	0.080	0.100	0.009
Census region in high school northeast (=1)	0.188	0.134	0.019
Census region in high school south (=1)	0.217*	0.114	0.028
Census region in high school west (=1)	0.338**	0.132	0.037
Highest degree received GED (=1)	0.878***	0.170	0.078
Highest degree received High School Diploma (=1)	1.432***	0.145	0.186
Highest degree received Associate/Junior college (=1)	2.439***	0.213	0.160
Highest degree received Bachelor's (=1)	3.205***	0.181	0.331
Highest degree received Master's (=1)	3.613***	0.254	0.197
Highest degree received PhD (=1)	3.384***	0.905	0.041
Highest degree received Professional (=1)	3.983***	0.439	0.107
Race ethnicity black (=1)	-0.777*	0.434	-0.090
Race ethnicity Hispanic (=1)	-0.042	0.434	-0.005
Race ethnicity non-black, non-Hispanic (=1)	-0.441	0.428	-0.058
Total hours worked in chosen high school occupation	-0.00003	0.00004	-0.011
Cumulative hours worked during high school	0.0001***	0.00002	0.086
Highest grade completed by either biological parent	0.013	0.017	0.014
Gross household income during chosen high school occupation	0.000003***	0.000001	0.037
ASVAB percentile	0.011***	0.002	0.090
Missing value for parent's highest grade completed (=1)	-0.162	0.285	-0.009
Missing value for gross household income during chosen high school occupation (=1)	0.259**	0.101	0.034
Missing ASVAB value (=1)	0.208	0.129	0.022
High school importance rating of *General Work Experience*	0.149***	0.038	0.139
High school importance rating of *Interpersonal Skills*	-0.051	0.079	-0.008
High school importance rating of *Managerial Skills*	-0.033	0.082	-0.005
R^2	0.249		

*** $p < 0.01$
** $p < 0.05$
* $p < 0.10$
Note: This only includes those who are not currently enrolled in any type of school during the survey from which adult occupation was chosen.

Table A.22: Linear regression with the adult importance rating of *Interpersonal Skills* as the dependent variable with created importance measure of skills variables from youth occupation, among others, as independent variables. N=6,446.

	Coefficient	Standard Error	Beta
Intercept	-0.171	0.302	
Male (=1)	-0.265***	0.015	-0.222
Adult Age	0.029	0.0180	0.075
(Adult Age)^2	0.000	0.000	-0.007
Did not work in high school (=1)	0.005	0.076	0.003
Urban in high school (=1)	0.063***	0.017	0.046
Census region in high school northeast (=1)	0.012	0.023	0.007
Census region in high school south (=1)	-0.015	0.020	-0.012
Census region in high school west (=1)	0.007	0.023	0.005
Highest degree received GED (=1)	0.092***	0.029	0.052
Highest degree received High School Diploma (=1)	0.103***	0.025	0.086
Highest degree received Associate/Junior college (=1)	0.119***	0.037	0.050
Highest degree received Bachelor's (=1)	0.049	0.031	0.032
Highest degree received Master's (=1)	-0.149***	0.044	-0.052
Highest degree received PhD (=1)	-0.388**	0.157	-0.030
Highest degree received Professional (=1)	-0.164**	0.076	-0.028
Race ethnicity black (=1)	-0.033	0.075	-0.024
Race ethnicity Hispanic (=1)	-0.029	0.075	-0.020
Race ethnicity non-black, non-Hispanic (=1)	-0.103	0.07400	-0.086
Total hours worked in chosen high school occupation	-0.00001	0.00001	-0.016
Cumulative hours worked during high school	0.000004	0.000004	0.015
Highest grade completed by either biological parent	-0.00004	0.003	-0.0003
Gross household income during chosen high school occupation	-0.0000002	0.0000002	-0.016
ASVAB percentile	-0.0002	0.0003	-0.012
Missing value for parent's highest grade completed (=1)	0.024	0.049	0.009
Missing value for gross household income during chosen high school occupation (=1)	0.031*	0.017	0.026
Missing ASVAB value (=1)	-0.059***	0.022	-0.039
High school importance rating of *General Work Experience*	0.003	0.007	0.020
High school importance rating of *Interpersonal Skills*	0.045***	0.014	0.045
High school importance rating of *Managerial Skills*	-0.025*	0.014	-0.022
R^2	0.084		

*** $p < 0.01$
** $p < 0.05$
* $p < 0.10$

Note: This only includes those who are not currently enrolled in any type of school during the survey from which adult occupation was chosen.

Table A.23: Linear regression with the adult level rating of *General Work Experience* as the dependent variable with created level measure of skills variables from youth occupation, among others, as independent variables. N=6,446.

	Coefficient	Standard Error	Beta
Intercept	-13.897***	1.801	
Male (=1)	-0.066	0.090	-0.008
Adult Age	0.751***	0.109	0.280
(Adult Age)^2	-0.001	0.002	-0.030
Did not work in high school (=1)	0.704**	0.304	0.050
Urban in high school (=1)	0.071	0.104	0.008
Census region in high school northeast (=1)	0.224	0.141	0.020
Census region in high school south (=1)	0.268**	0.120	0.032
Census region in high school west (=1)	0.397***	0.139	0.040
Highest degree received GED (=1)	0.851***	0.178	0.070
Highest degree received High School Diploma (=1)	1.510***	0.152	0.181
Highest degree received Associate/Junior college (=1)	2.767***	0.223	0.168
Highest degree received Bachelor's (=1)	3.894***	0.190	0.371
Highest degree received Master's (=1)	4.384***	0.266	0.221
Highest degree received PhD (=1)	4.598***	0.949	0.052
Highest degree received Professional (=1)	5.492***	0.461	0.136
Race ethnicity black (=1)	-0.894**	0.455	-0.095
Race ethnicity Hispanic (=1)	-0.044	0.456	-0.004
Race ethnicity non-black, non-Hispanic (=1)	-0.473	0.449	-0.057
Total hours worked in chosen high school occupation	-0.0001	0.00004	-0.019
Cumulative hours worked during high school	0.0002***	0.00002	0.088
Highest grade completed by either biological parent	0.024	0.018	0.024
Gross household income during chosen high school occupation	0.000004***	0.000001	0.050
ASVAB percentile	0.015***	0.002	0.114
Missing value for parent's highest grade completed (=1)	0.025	0.299	0.001
Missing value for gross household income during chosen high school occupation (=1)	0.322***	0.106	0.039
Missing ASVAB value (=1)	0.338**	0.135	0.033
High school level rating of *General Work Experience*	0.140***	0.026	0.118
High school level rating of *Managerial Skills*	0.025	0.075	0.004
R^2	0.297		

*** $p < 0.01$
** $p < 0.05$
* $p < 0.10$

Note: This only includes those who are not currently enrolled in any type of school during the survey from which adult occupation was chosen.

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