

Are Work-Based Professional Skills Associated with Postsecondary Entrance and Persistence? Novel Evidence from the Cristo Rey Network*

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Abstract

Professional skills such as initiative, communication, and adaptability are thought to shape postsecondary success, but most evidence comes from self- or teacher-reported measures collected in school settings. This study uses employer ratings of students' professional skills gathered through corporate internships undertaken by economically disadvantaged high school students. After controlling for high school GPA and ACT scores, these externally assessed professional skills do not predict whether students enroll in college or whether they enter two- versus four-year institutions. However, above median professional-skill ratings are associated with greater likelihood of earning a four-year degree, especially within four years of college enrollment. Among students who enroll, this association persists even after controlling for selectivity of the institution of initial enrollment.

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Introduction

There is growing recognition among educators and policymakers that student abilities beyond academic skills and knowledge are essential for success in college and the labor market. Often termed professional skills, soft skills, durable skills, or social-emotional learning, these factors may not only influence school performance in the K-12 setting but may also have an independent impact on postsecondary entrance and success. Although studies differ in their conceptualization of these “professional skills”, they often involve behaviors (punctuality, reliability, goal-setting), attitudes and mindsets (enthusiasm, growth mindset, willingness to learn), and/or social skills (teamwork, collaboration, communication) (Farrington et al., 2012). Despite recognition of the importance of these skills, evidence remains limited on how such competencies influence students’ educational trajectories beyond high school.

Our study uses data from the Cristo Rey Network, a set of private high schools across 24 states that exclusively serve economically disadvantaged students. Cristo Rey schools combine a college preparatory academic approach with an innovative work study program; all students must work as interns for a local employer one day per week all four years of high school.¹ As part of students’ internship experiences, work supervisors assess students’ performance via a standardized Student Annual Performance Review (SAPR) questionnaire. In addition to giving students an overall rating on a scale of 1-5 (varying from “rarely meets expectations of the position” to “consistently exceeds expectations of the position”), supervisors also rate students in ten professional subskill categories: judgment, work efficiency, reliability, willingness to learn, adaptability, initiative, enthusiasm, professionalism, teamwork & collaboration, and communication, with each of these subskills accompanied by a written definition to guide evaluators. We link each student’s most recent performance review (usually from the end of senior year) with their cumulative high school GPA, test scores, college application lists, and postsecondary entry and completion information from the Na-

¹Employment partners include corporations, hospitals and healthcare providers, law firms, and nonprofit organizations.

tional Student Clearinghouse. Since these ratings come from a non-school setting, they avoid shared-environment bias that plagues self and teacher-report measures of professional skills (Duckworth and Yeager, 2015) and provide a unique opportunity to examine whether workplace performance measures observed during high school predict students' postsecondary trajectories.

Consistent with prior research, we find that traditional academic indicators—high school GPA and ACT scores—are strong predictors of postsecondary outcomes, including college enrollment and degree completion (Allensworth and Clark, 2020). Above and beyond these academic measures, however, employer-rated professional skills are strongly associated with four-year college completion, particularly on-time graduation. Controlling for demographics and academic measures, having an above median professional skills rating is associated with a 9 percentage point increase in four-year college completion. In our models that include separate measures of ten different professional skills, enthusiasm stands out as a particularly strong predictor of on-time college completion; holding all else equal, a high enthusiasm rating is associated with a 14 percentage point increase in the probability of on-time four-year graduation. In contrast, externally assessed professional skills do not meaningfully predict application behavior or initial college enrollment once academic performance is taken into account.

We explore whether professional skills predict postsecondary outcomes because they affect where students enroll or because they foster success within institutions. Controlling for selectivity of the institution of initial enrollment, our estimated effect of a high overall rating (relative to medium) falls only slightly and is still statistically significant. This suggests that although externally assessed professional skills may reflect college readiness in ways that influence where students enroll, they are also associated with directly promoting persistence once in college.

Literature Review

It has long been recognized that academic skills alone are an inadequate measure of student readiness for college and labor market success (Heckman et al., 2006; Heckman and Kautz, 2014). Yet, there is still considerable disagreement on how these “other” abilities should be conceived of, named, measured, and validated. Many take issue with the term “noncognitive skills” on the grounds that all aspects of human behavior involve some amount of cognition (Borghans et al., 2008; Farrington et al., 2012; Duckworth and Yeager, 2015). We use the term “professional skills” rather than “noncognitive skills” throughout this article.

Some of the earliest work conceived of professional skills as largely character or personality traits. Heckman et al. (2006) use five academic sections of Armed Services Vocational Aptitude Battery test and Rotter Locus of Control Scale measures in the National Longitudinal Study of Youth (1979) to assess correlations with adult earnings. They find that both their cognitive and professional measures matter and identify education as a key mediator for the effects. However, even conditional on level of schooling, cognitive and professional test scores predict wages. Other studies also show that the Big Five traits—especially conscientiousness—predict academic performance above and beyond IQ (Poropat, 2009; Duckworth et al., 2011).

More recent work has documented the role of pre-K and K-12 teachers in developing professional skills in their students and how these skills are linked to high-school graduation, crime, teenage pregnancy, and intended college going (Deming, 2009; Jackson, 2018). Some studies do not directly measure these skills but rather hypothesize that professional factors can explain effects of interventions on longer-term outcomes when test score impacts fade out (Deming, 2009). Other work has attempted to measure the impacts of professional skills through administrative data collected within a secondary school setting (e.g. attendance, disciplinary violations, GPA) (Jacob, 2002; Jackson, 2018).

GPA is a commonly used measure for professional skills even though it may also reflect academic abilities and knowledge. Farrington et al. (2012) point out that grades are more

predictive than test scores for college performance and later life outcomes.² They argue that this is because while test scores capture content knowledge and academic skills (“cognitive skills”), grades capture content knowledge, academic skills, *and* professional factors. However, high school grades may not reflect all professional factors that may be relevant for postsecondary or labor market success. Although high school grades capture some academic behaviors like reliably attending class, completing homework, participating in class, and studying, higher-level postsecondary coursework may require somewhat different skills including navigating bureaucracy, proactively initiating contact with faculty or advisors, or adapting to a new cultural or collaborative environment. Our setting for this study allows us to separately disentangle the role of test scores, grades, and other non-academic skills not captured in GPA in explaining postsecondary enrollment and success.

When professional skills have been explicitly assessed using questionnaires, raters are typically the students themselves or their teachers, presenting challenges for interpretation and validity (West et al., 2016). Self-reported measures of professional skill can be heavily influenced by social context. West et al. (2016) document positive causal impacts of charter schools on achievement and attendance but negative impacts on students’ self-reported professional skills. Rather than reflecting actual declines in professional skills, they attribute declines to changes in students’ reference bias. Teacher questionnaires also have notable limitations. Teachers may misinterpret student behavior and may do so in ways correlated with the course grades they assign (Duckworth and Yeager, 2015). The measures of skills we use in our analysis have the benefit of being externally evaluated and based on real-world workplace performance.

²Allensworth and Clark (2020) is a notable study showing that the relationship of ACT scores with college graduation is weak and smaller than high school GPA effects.

Data

The central advantage of our data is the ability to observe externally evaluated professional skills *prior to* college entry and link them to long-run postsecondary outcomes. To construct the analytical data set, we draw on two primary sources: the Cristo Rey Network and the National Student Clearinghouse (NSC). Data from the Cristo Rey Network cover cohorts of students who graduated from high school between 2011 and 2020. However, due to changes in the professional skills assessments beginning in 2019, we focus on students who completed their corporate internships in 2018 and earlier. Although students receive professional skills assessments in all four years of high school, our analysis uses the most recent assessment for each student (usually senior year). We do so because this measure most closely precedes college entry and therefore best reflects students’ professional skills at the point when postsecondary enrollment decisions are made.

Sample

Our analytic sample consists of 1,940 Cristo Rey students who graduated from high school between 2012 and 2020 and for whom we can reliably link professional skills assessments to academic and postsecondary records. Constructing this sample required merging three primary datasets: (1) Student Associate Performance Reviews from the Cristo Rey Corporate Work Study Program, (2) student-level administrative records from Cristo Rey schools, which include demographic characteristics, high school GPA at the time of college application, ACT test score records, and college application lists, and (3) postsecondary enrollment and completion outcomes from the National Student Clearinghouse.

Because professional skills assessments prior to 2018 were not recorded with student names or unique student identifiers, we link performance reviews to student-level academic records using high school, grade level, employer, and internship year. We retain only observations for which this linkage is unique—specifically, cases in which a single student from a

given school and grade was placed with a particular employer in a given year. This restriction ensures a high degree of confidence in the match between professional skills assessments and student records, though it necessarily reduces the sample size.

We impose two additional sample restrictions to ensure comparability across students and completeness of key measures. First, students are required to have a valid ACT score recorded during high school; when multiple scores are available, we use the most recent score. Second, students must have a complete professional skills assessment, including ratings for all ten individual skill domains as well as the overall professional skill rating. Together, these restrictions ensure that all students in the analytic sample are observed on the full set of academic and professional skill measures used in the analysis.

Figure B2 summarizes the sample construction process and documents the proportion of observations retained at each stage of the merge. While these restrictions limit the analytic sample relative to the full population of Cristo Rey students, they are necessary to ensure data availability and measurement integrity. As such, the resulting sample represents the largest set of students for whom we can reliably observe externally assessed professional skills during high school and link them to postsecondary enrollment and completion outcomes.

Variables

Professional Skills Rating. We leverage ratings from the Student Associate Performance Review (SAPR), which includes evaluations of students' workplace performance provided by Corporate Work Study Program supervisors. During this time period, SAPR ratings were not incorporated into students' academic GPAs or a course grade.³ Each review contains ratings for ten professional skill domains—judgment, work efficiency, reliability, willingness to learn, adaptability, initiative, enthusiasm, professionalism, teamwork and collaboration, and communication—as well as an overall professional skill rating. Appendix Figure A1

³During this time period, it was common for students to be enrolled in a Corporate Work Study class, but the class was graded pass/fail, and as long as the student attended work consistently, they would pass the course.

displays the portion of the SAPR questionnaire used in this analysis. In an attempt to make ratings more comparable across supervisors, Cristo Rey provided supervisors with a guide accompanying the review which included more detailed descriptions and sample behaviors.

All skills are rated on a five-point scale, where 1 indicates “rarely meets expectations” and 5 indicates “consistently exceeds expectations.” Figures 1 and 2 show the distributions of the overall rating and the ten individual skill ratings, respectively. These distributions are highly skewed, with relatively few observations below 3 and the majority of students receiving ratings of 4 or 5. To facilitate interpretation and reduce the influence of sparse lower-tail categories, we classify each skill rating into three categories: low (scores of 1–3), medium (score of 4), and high (score of 5). Since a score of 4 corresponds to both the mean and median for the overall rating and each individual skill, medium ratings serve as the reference category in our analyses. In our primary specifications, we use indicators for high and low values of the overall professional skill rating. In supplementary analyses, we replace the overall rating with a vector of indicators for high and low values of each of the ten individual skill domains.

Academic Performance Measures. Academic performance is captured using students’ high school GPA and ACT composite scores. Because schools employ different grading scales, we rescale all GPAs to a standardized four-point scale to ensure comparability across schools.⁴ ACT scores are obtained from school records, and when multiple scores are available for a student, we use the most recent score recorded during high school. These measures serve as conventional indicators of academic preparation and allow us to assess whether employer-rated professional skills predict postsecondary outcomes above and beyond commonly used academic metrics.

⁴Cohort-level grading scales were identified based on observed GPA ranges. Cohorts in which any student recorded a GPA greater than 4.0 and below 5.0 were categorized as using a 5-point scale, with all GPAs normalized to a 4-point scale by multiplying by 0.8. Cohorts with GPA values ranging from 5.0 to 10.0 were classified as using a 10-point scale, and GPAs were normalized by applying a conversion factor of 0.4.

Postsecondary records. The NSC contributes longitudinal postsecondary records, including the timing of initial enrollment, term-by-term enrollment, and eventual graduation. We construct indicators for enrollment in a two-year or four-year institution within six months of high school graduation, as well as indicators for degree completion. For two-year colleges, we measure completion within three years; for four-year colleges, we measure completion within four and six years of initial enrollment. These time windows align with standard definitions of on-time and extended completion in the higher education literature.

College Selectivity. To account for differences in institutional contexts, we construct a measure of college selectivity based on institutional admission rates from 2015, obtained from the Integrated Postsecondary Education Data System (IPEDS). (U.S. Department of Education, National Center for Education Statistics, 2015). To operationalize this measure, we construct our own selectivity categories, drawing loosely on the admission-rate component of the Barron’s institutional classifications. Consistent with common practice in higher education research, we group institutions into five selectivity tiers based on their admission-rate thresholds:

- *Most Competitive*: admission rate ≤ 0.33
- *Highly Competitive*: $0.33 < \text{admission rate} \leq 0.50$
- *Competitive*: $0.50 < \text{admission rate} < 0.85$
- *Less Competitive*: $0.85 \leq \text{admission rate} < 0.98$
- *Nonselective*: admission rate ≥ 0.98

This measure is used as a control in models examining college completion, allowing us to assess whether associations between professional skills and persistence operate through institutional sorting or within-institution mechanisms.

Demographic Characteristics. The Cristo Rey Network provides demographic and background information, including students’ gender, race/ethnicity, and grade level at the time of the professional skills assessment. All Cristo Rey students are from low-income backgrounds. During our time period, enrolling students were required to have adjusted available family income below 75% of the national median household income.⁵

Methods

Analytic Approach

This study descriptively examines the degree to which professional skills, observed and externally assessed in workplace settings during high school, predict postsecondary access and success beyond typical academic indicators, such as standardized tests and grade point average. Our analyses proceed in three stages, each corresponding to students’ postsecondary trajectories: (1) college applications; (2) college enrollment; and (3) college completion. While temporality issues between the measurement of professional skills and academic indicators do not allow for formal mediation analyses in this study, we leverage a “block-added” model approach, which allows us to observe changes in predictor associations when new blocks of predictors are added. We begin with baseline models including only professional-skill indicators, demographic characteristics, and fixed effects of time (i.e., year) (Model 1); then we add academic characteristics (Model 2); finally, we include fixed effects of place (i.e., high school) (Model 3).

For analyses of college completion, we extend the model to include controls for the selectivity of the initial postsecondary institution, following our classifications of nonselective, less competitive, competitive, highly competitive, and most competitive institutions. These

⁵In the case of households with 3 or more members, the 75% of the per capita household median income times their household size is larger than 75% of household median income, and schools were allowed to use this slightly higher per capita income threshold instead. For schools in cities where the local median household income is higher than 75% of the national median household income, schools were allowed to use the local median household income for their thresholds rather than national median household income.

models help distinguish whether skill effects on college completion operate through institutional sorting (i.e., students with higher professional-skill ratings enrolling in more selective colleges that often promote higher rates of graduation).

As our primary interest lies in interpreting the marginal effects of professional-skill ratings in the presence of various fixed effects, we use linear probability models (LPMs). Following Angrist and Pischke (2009), LPMs can provide unbiased and easily interpretable estimates of differences in probability, particularly when samples are relatively large and when predicted probabilities are relatively proportional (i.e., the average occurrence is not near 0 or 1). In doing so, our coefficients in models predicting binary outcomes can be interpreted as percentage-point differences in probability of a given outcome occurring associated with moving from a medium to high (or low) professional-skill rating, holding other factors constant.

Model Specification

For each outcome (Y_i), such as the number of college applications submitted, the probability of college enrollment within six months of high school graduation, or the probability of earning a college degree within six years for a given student, we estimate the following:

$$Y_i = \alpha + \beta_1 \text{HighSkill}_i + \beta_2 \text{LowSkill}_i + \beta_3 \text{GPA}_i + \beta_4 \text{ACT}_i + \gamma X_i + \delta_c + \theta_t + \varepsilon_i \quad (1)$$

where HighSkill_i is an indicator for student i 's employer-rated professional skill being above the median (i.e. a score of 5), and LowSkill_i is an indicator for the skill score being below the median (i.e. a score of 1, 2, or 3). The omitted group is a median skill score (i.e. score of 4). GPA_i is the student's GPA; ACT_i is the student's ACT score; X_i is a vector of demographic characteristics (gender, race/ethnicity, school grade level); δ_c and θ_t represent fixed effects for high school graduation year and high school, respectively, and ε_i represents

the error term. In some models, HighSkill_i and LowSkill_i are based on the student's overall skill rating. In other models, we replace these with a vector of indicators corresponding to whether the student has high or low scores on all of the ten individual professional skills.

Subsample Analysis

To explore potential heterogeneity in the association between professional skills and postsecondary outcomes, we estimate separate models by gender (female, male) and race/ethnicity (Hispanic, Black, and other groups). These subgroup models allow us to examine the degree to which professional skills operate differently across key demographic characteristics. We note that gender is missing for 4% of our sample and race is missing for 45% of our sample (Table 1), so the sample on which we can perform this subgroup analysis is considerably smaller than the main sample for race. Here, it is important to note that because all Cristo Rey students are low-income, we did not estimate separate models by socioeconomic status.

Results

Sample Description

Table 1 presents descriptive statistics for the analytic sample of 1,940 Cristo Rey students who graduated between 2012 and 2020. Approximately 58 percent identified as female and 38 percent as male. Almost half of our sample is missing race/ethnicity information (45%), but among the 55% with information the majority identify as Hispanic (29 percent) or Black (20 percent). A plurality of records (35 percent) came from seniors. The average ACT composite score was 18.3, and the average high school GPA was 2.77 (Figures 3 and 4). Table 2 reports means for our key outcome variables. Students in our sample apply to 13.8 colleges on average. Ten percent enroll in a two-year college within six months of graduating high school, and 57% enroll in a four-year college within six months of graduating high school. Only 2% of the sample graduates with a two-year degree within three years and 28%

of the sample graduates with a four-year degree within four years.

Figure 5 shows correlation coefficients between academic performance measures (ACT and GPA) and a students' overall performance rating and ten individual skills ratings. Academic performance measures are only weakly correlated with students' overall ratings or ratings on any of the ten individual skill areas with correlation coefficients ranging from 0.095 to 0.207.

College Applications

We begin by examining whether overall professional-skill ratings are associated with students' college application behavior (Table 3). The number of college applications submitted is a meaningful intermediate outcome because it reflects students' engagement in the postsecondary transition process and the ability to manage admissions risk by assembling a broader choice set. Because all Cristo Rey students in our sample apply to at least one college, we focus on the intensive margin— number of applications submitted— rather than whether students apply at all.⁶

In our baseline model (column 1), having a high (relative to medium) overall professional skill rating was significantly associated with applying to 1.39 ($p < 0.01$) more colleges. However, this association attenuates substantially once traditional academic indicators are introduced. After controlling for high school GPA and ACT scores, the estimated association declines to 0.79 additional applications and is only marginally statistically significant ($p < 0.1$). This attenuation suggests that part of the relationship between professional-skill ratings and application behavior reflects underlying academic preparation rather than independent effects of professional skills per se.

When we further include high school fixed effects, the association between overall professional-skill ratings and the number of applications submitted becomes small and statistically insignificant. At the same time, model fit increases substantially, with the R^2 rising from 0.16 to

⁶College & Career Counseling courses in Cristo Rey schools support students as they build college lists, complete the application process, write essays, and explore future educational and career paths.

0.42. This pattern indicates that differences across Cristo Rey schools—likely reflecting variation in counseling practices, institutional norms, or application requirements—explain much of the observed variation in application counts. In this context, employer-rated professional skills appear to add little explanatory power once academic performance and school-level factors are taken into account.

We next disaggregate the overall professional-skill measure into the ten skill domains (Table 4). In models without academic controls, several individual skills are associated with application behavior. In particular, both low and high ratings of enthusiasm, as well as high ratings of judgment, are positively associated with the number of applications submitted, while high initiative is associated with fewer applications. However, these patterns weaken considerably once GPA and ACT scores are included. The associations for judgment and enthusiasm decline in magnitude and statistical significance, suggesting that these skills overlap with or proxy for academic performance. In contrast, low reliability becomes positively associated with the number of applications submitted once academic controls are added, though the interpretation of this pattern is not straightforward.

As with the overall rating, including high school fixed effects further reduces the magnitude and significance of most individual skill coefficients. Only three associations remain statistically significant at the 5% level: students with low willingness-to-learn ratings and high levels of initiative submit fewer applications than their peers with medium ratings while students with low reliability submit about one more application on average. Notably, the few individual skill coefficients that remain statistically significant in the models with high school fixed effects do not exhibit consistent or theoretically intuitive patterns. In particular, the direction of these associations is not monotonic across skill levels and, in some cases, runs counter to expectations. Given the large number of skills examined and the sensitivity of these estimates to model specification, we interpret these isolated findings with caution and do not view them as evidence of systematic relationships between professional skills and college application behavior. Our overall conclusion is that employer-rated professional

skills do not meaningfully predict college application intensity once academic performance and school context are accounted for.

College Enrollment

Next, we examine whether overall professional-skill ratings are associated with the probability of enrolling in a two-year or four-year college within six months of high school graduation (Table 5).⁷ When accounting for demographic characteristics and time fixed effects in our baseline model (column 1), having a high (relative to medium) overall professional-skill rating was significantly associated with a 3.7-percentage-point decrease in the probability of enrolling in a two-year college ($p < 0.05$). However, when we account for ACT and GPA (column 2), this association decreases in magnitude and loses statistical significance, suggesting that part of the relationship between overall skill ratings and two-year enrollment is explained by typical academic performance indicators. Once high school fixed effects are included (column 3), the association remains nonsignificant.

Turning to four-year colleges, we find the opposite pattern in our baseline model where having a low (relative to medium) overall professional-skill rating was significantly associated with a 7.3 percentage-point decrease in the probability of enrolling in a four-year college ($p < 0.05$). However, like the two-year college results, when we account for ACT and GPA (column 5), this association decreases and loses statistical significance. When high school fixed effects are added (column 6), this relationship remains nonsignificant.

We then consider individual professional-skills ratings (Table 6). With the exception of professionalism and judgment, we see no consistent patterns across all three models of associations between individual skills and college enrollment. Having a low judgment rating is associated with a 5 percentage point increase in the probability of enrolling in a two-year college but no change in the probability of four-year college enrollment. This finding may suggest a lower ability to judge the returns of a four-year college degree. Although there

⁷See Appendix ?? for estimates with an alternative enrollment time window of ever enrolling by September 2025.

are statistically significant associations between professionalism ratings and two-year, as well as four-year, college enrollment, these associations are not intuitive or monotonic. Having a low level of professionalism is associated with lower rates of attending a two-year and higher rates of attending a four-year college; however, having a high rating is associated with higher rates of four-year college enrollment. Similar to the previous set of findings on college applications, these findings suggest that professional skills assessed by employers are not largely predictive of college entrance.

College Completion

Next, we examine whether overall professional-skill ratings are associated with the probability of completing a two-year or four-year college within a given time frame (Table 7). When accounting for demographic characteristics and time fixed effects in our baseline model (column 1), having a high (relative to medium) overall professional-skill rating was not significantly associated with completing a two-year degree within three years. This pattern remains consistent when we account for ACT and GPA (column 2) and when we include high school fixed effects (column 3).

Turning to four-year college completion, we find a different pattern. In our baseline model (column 4), having a high (relative to medium) overall professional-skill rating was significantly associated with a 9.7 percentage-point increase in the probability of earning a four-year degree within four years ($p < 0.001$), while having a low overall professional-skill rating was significantly associated with a 6.7 percentage-point decrease in the probability of earning a four-year degree within four years ($p < 0.01$). When we account for ACT and GPA (column 5), the effect of having a low overall level of professional skills decreases in size and loses statistical significance; the association between having a high overall level of professional skills decreases slightly to 6.4 percentage points but remains statistically significant ($p < 0.05$). This association holds when accounting for high school fixed effects

(column 6).⁸

These findings show that above-median professional-skill ratings can predict college completion beyond traditional academic performance indicators. Given that all Cristo Rey students come from low-income families, it is possible that their Corporate Work Study experiences impart certain professional skills—that these students would otherwise not be exposed to—that ultimately increase their college persistence. These skills may translate into academic habits (e.g. studying, time-management, etc.) that increase college persistence or may motivate students to complete college so that they can gain a professional position that requires a four-year college degree. While additional research is needed to further unpack the behavioral mechanisms at play, these findings represent a clear improvement on previous research. Although prior research (Heckman et al., 2006) has demonstrated the predictive nature of professional skills on postsecondary educational outcomes, these studies often focus on a measure of academic skills and a measure of a psycho-social trait, which may be less malleable in an academic setting. Even new research that includes academic ability, high school grades, and a third element related to professional skills (Zamarro et al., 2025) measures these professional skills by psycho-social traits, as opposed to professional skills. Thus, by combining ACT scores, GPAs, and professional skills measured at a local employer, we are able to add insights into core constructs that directly relate to professional employment, which—importantly—are measured by other professionals in a non-academic setting. Given the importance of four-year college persistence in gaining professional employment, our findings are novel, yet intuitive.

In columns 7-10, we focus on four-year college graduation within six years. Note that our sample is somewhat smaller since we do not observe a full six year time window for the 2019 and 2020 high school graduation cohorts, so we drop them from this analysis. For the 2012-2018 high school graduation cohorts, we find even larger associations between the overall

⁸As a robustness check, we also estimated standard errors clustering on high school using wild bootstrapped standard errors because we only have 25 schools. These results appear in Appendix Table C2. Standard errors are almost identical to the robust standard errors shown in Table 7.

rating and four-year college graduation. The point estimate from column 9 indicates that having a high rather than medium overall rating is associated with an 8.8 percentage point increase in the probability of graduating college with a four-year degree within six years. These slightly larger associations suggest that professional skills may be more important for students who take longer to graduate. Here, professional skills may be particularly salient for more marginal students.

Table 8 reports results for the ten individual professional-skill ratings. However, we are cautious in interpreting these effects in light of the large number of ratings being assessed and multiple hypothesis testing concerns. We observe some marginally significant associations with high initiative and two-year college graduation (within three years), though estimates are small in magnitude. Patterns are more striking for enthusiasm and four-year college outcomes. We find that having a high level of enthusiasm is associated with a 6-7 percentage point increase in graduating on time with a four-year degree, but this effect becomes only marginally significant once we include high school fixed effects (column 6). A high level of enthusiasm is even more predictive of graduating with a four-year degree within six years. Across columns 7-9, we see a 14-17 percentage point increase in the probability of earning a four-year degree within six years, and these effects are all statistically significant at the 1% level or lower. Enthusiasm may signal the desire to obtain a professional job that requires a four-year degree, which may motivate students to persist in college, which may be particularly salient over an extended period of time.

Mechanisms

To interpret these findings, we next examine two possible, though not mutually exclusive, explanations for the strong association between overall skills and four-year college completion: institutional sorting and direct skill effects on persistence. On the one hand, strong professional skills net of academic skills could influence the institutions where students enroll even if such skills do not benefit them once at a particular college. There is a growing

body of literature documenting that *where* students initially enroll is one of the most consequential decisions they will make because colleges differ widely in their causal effects on completion (Cohodes and Goodman, 2014; Goodman et al., 2017; Mountjoy and Hickman, 2021; Delaney, 2024; Barr and Castleman, 2025). Although selectivity itself is not perfectly predictive of causal impacts on graduation, moderately or highly selective institutions tend to be well-resourced institutions better able to promote completion (Cohodes and Goodman, 2014; Goodman et al., 2017; Pike and Robbins, 2020; Mountjoy and Hickman, 2021). Therefore, if students with stronger professional skills are more likely to enroll in selective institutions, this could explain why they have significantly higher graduation probabilities. On the other hand, a high overall professional skills rating could be reflective of skills or abilities beneficial for promoting college completion even within a given institution. For example, students with stronger professional skills may exhibit stronger executive functioning, maintain productive relationships with faculty and advisors, or effectively balance academic and nonacademic demands.

To explore the sorting mechanism, we re-estimate the association between a student’s overall skill rating and college completion adding in a control for selectivity of the college in which the student initially enrolls (Table 9).⁹ Since we only observe college of initial enrollment for Cristo Rey students who actually enroll in college, our analysis sample is slightly smaller. We begin with a base model to establish a comparison with our main estimate from the full sample. Estimated effects of a high rating on four-year completion (within four years) are slightly smaller but still positive and highly statistically significant for the college-going sample (column 1). Then, in column 2 we add the four indicators for college selectivity (nonselective is the omitted group). Consistent with prior work, we find the selectivity of the college of initial enrollment is highly predictive of on-time completion. Holding all else equal (i.e. overall professional rating, ACT, GPA, demographics), students who enroll in a less competitive college rather than a nonselective one have on-time four-year

⁹In Appendix Table E23 we include selectivity controls in the model with all ten separate skills.

graduation rates 14 percentage points higher (column 2). Graduation rates rise monotonically across the college-selectivity distribution. Students who initially enroll in a “most competitive” institution graduate on-time at rates roughly 41 percentage points higher than otherwise comparable students who begin at nonselective colleges. Similar patterns exist for four-year graduation within six years (columns 4-6), though the selectivity-graduation gradient is flatter for graduation within six years compared to on-time graduation.

Notably, controlling for college selectivity reduces the association between overall professional skills and graduation by only about 1 percentage point (column 2 vs. column 1 for on-time graduation and column 5 vs. column 4 for graduation within six years). Although this small attenuation indicates some positive sorting—students with stronger professional skills tend to enroll in more selective institutions—differences in selectivity explain only a small share of the relationship. Substantial scope therefore remains for unobserved skills, abilities, or advantages correlated with or represented by the professional skills measure to influence college completion even within similar institutional settings.

Heterogeneity

Our primary analyses estimate average associations between employer-rated professional skills and postsecondary outcomes across the full Cristo Rey sample. However, theory and prior research suggest that the returns to professional skills may not be uniform across students. Instead, the salience of particular skills may depend on students’ social identities and the institutional and structural contexts in which those skills are evaluated and rewarded.

From a contextual perspective, students are embedded within overlapping systems—including schools, labor markets, and postsecondary institutions—that may differentially shape how professional behaviors translate into educational outcomes (Bronfenbrenner, 1994). Moreover, non-academic skills may be differentially rewarded across race and gender due to structural inequalities and historically patterned forms of advantage and exclusion (Neumark, 2018; Chetty et al., 2020). For students from historically marginalized groups, professional

skills may either serve as compensatory resources that facilitate persistence or, alternatively, yield weaker returns if institutional barriers constrain their effectiveness.

Motivated by these frameworks, we examine whether associations between professional skills and postsecondary outcomes vary across key demographic dimensions—specifically race/ethnicity and gender. Sample sizes are substantially smaller—particularly for race/ethnicity which is missing for nearly half of the sample— and we examine multiple outcomes and skill dimensions.¹⁰ Accordingly, we focus on broad patterns rather than individual coefficient estimates and interpret results with caution. Tables D3-D6 report results for college applications, Tables D7-D14 report results for college enrollment, and Tables D15-D21 report results for college completion.

Across outcomes, we find little evidence of systematic heterogeneity in the effects of overall professional-skill ratings. In models that include academic controls and high school fixed effects, overall skill ratings are generally not differentially associated with college application behavior, enrollment, or completion across racial and ethnic groups. Gender differences are similarly limited, with no consistent evidence that overall professional skills matter more for one gender than another.

Greater heterogeneity emerges when we examine individual professional skills, particularly for four-year college outcomes. Most notably, enthusiasm stands out as a recurring predictor of four-year degree completion for Hispanic students, mirroring its importance in the full-sample results. We also observe suggestive evidence that teamwork and collaboration are more strongly associated with four-year completion among Black students. These results align with theoretical accounts emphasizing the role of motivation and social integration in college persistence.

For earlier outcomes—college applications and initial enrollment—subgroup-specific associations across individual skills are inconsistent in sign and statistical significance. These

¹⁰While demographic sorting can occur across Cristo Rey high schools, which can lead to school effects that are highly correlated with race and gender effects, in a subsample analysis this becomes less of an issue, as we are focused on a subset of “sorted” schools.

patterns do not form a coherent narrative and are sensitive to specification, suggesting that employer-rated professional skills do not play a systematic role in shaping postsecondary access differentially across demographic groups.

The heterogeneity analyses yield two main conclusions. First, the association between overall professional skills and college completion appears broadly similar across race and gender. Second, to the extent that heterogeneity exists, it is concentrated in specific skills related to persistence rather than access for Black and Hispanic students. These findings highlight potentially fruitful directions for future research.

Conclusion

Our analyses offer novel insights into whether and how professional skills can explain differences in postsecondary outcomes, above and beyond typical measures of college readiness such as GPA and college-entrance exams. Using novel data from Cristo Rey schools' innovative corporate work study model, we find that receiving above median ratings on an overall assessment of professional skills does explain additional variation in college outcomes, particularly college completion.

These insights are important for understanding what factors, potentially malleable, are consequential in pursuing success in postsecondary education and completion, in particular. Some studies of the impact of programs on college outcomes necessarily use interim outcomes such as access or persistence, often based on data limitations. However, there is now enough evidence that while some interventions improve college entry, they may not ultimately improve completion outcomes. Understanding the potential to impact completion is paramount given that we know the economic benefits of college are most fully realized after degree attainment. Thus, observing the role of professional skills, measured independent of the schools or educators, offers important insight into understanding factors associated with college completion.

Although our results should not be interpreted as causal, features of our setting help mitigate some common concerns about selection. Cristo Rey students are uniformly low-income and screened on pre-high school academic performance, which limits heterogeneity along dimensions often confounded with both skill development and postsecondary outcomes. Moreover, the magnitude of the estimated associations suggests that any omitted variables bias would need to be substantial to fully explain our findings. For example, adding GPA and ACT scores attenuates the association between professional skills and college completion by roughly 25 to 33 percent, but the majority of the relationship remains intact. This persistence, combined with modest correlations between professional skills and academic measures, strengthens the interpretation that these skills capture distinct dimensions of readiness relevant for postsecondary persistence.

Setting aside causality, our data are imperfect in ways that present opportunities for scholars and practitioners alike. Specifically, the measures of professional skills we use have not been validated in a classical measurement sense, and further work to understand or refine the measurement properties of these tools is important for understanding their ability to detect differences in underlying skills. The desire to capture these skills in school and workplace settings is high and so, while imperfect, these measures offer an opportunity from which to build.

A second limitation is that while all Cristo Rey students participate in work study, not all available student records are easily merged with the NSC data. For example, while we have skill ratings for many students, we are not able to conclusively match the student record with the NSC records for many others. This creates two challenges. First, our analytic sample is limited in ways that might restrict the ability to generalize to larger populations, including the full population of Cristo Rey students. And second, to the extent that the relationship between professional skills and outcomes may change across cohorts of students, or across Cristo Rey schools, we cannot fully address such variation given the current limits of our sample.

This paper represents a meaningful step forward in the ability of policymakers, practitioners, and scholars to understand the relationship between professional skills, academic skills, and postsecondary educational outcomes. The novelty of both the data and the institutional context underscores the value of innovative educational models like the Cristo Rey Network for advancing research and practice, even as it cautions against overgeneralization. As policymakers, practitioners, and scholars continue to seek effective strategies for promoting social mobility—particularly among students from economically disadvantaged backgrounds—our findings suggest that professional skills developed and observed in authentic workplace settings may play an important role in supporting college completion.

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Declaration of generative AI and AI-assisted technologies in the manuscript preparation process

During the preparation of this work the authors used ChatGPT in order to assist with identifying related work, identifying typos, and revising short sections of text. After using this tool/service, the authors reviewed and edited the content as needed and take full responsibility for the content of the published article.

Figures

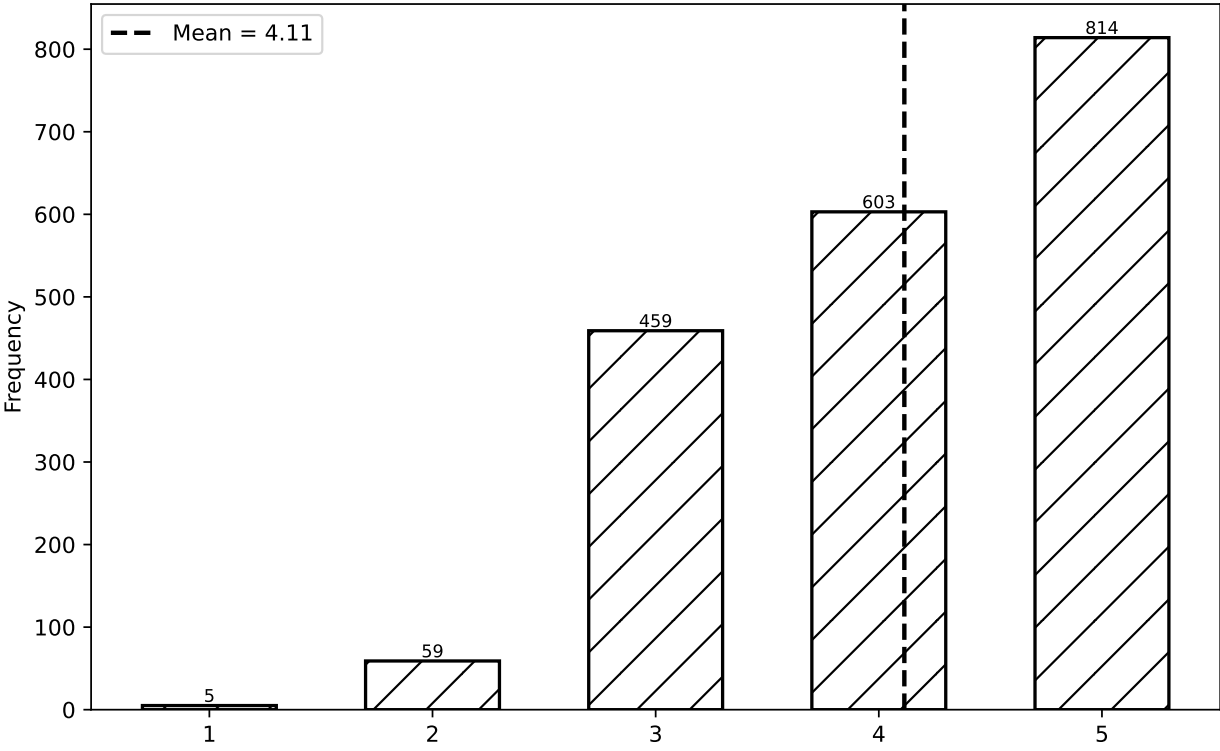


Figure 1: Histogram of Overall Rating

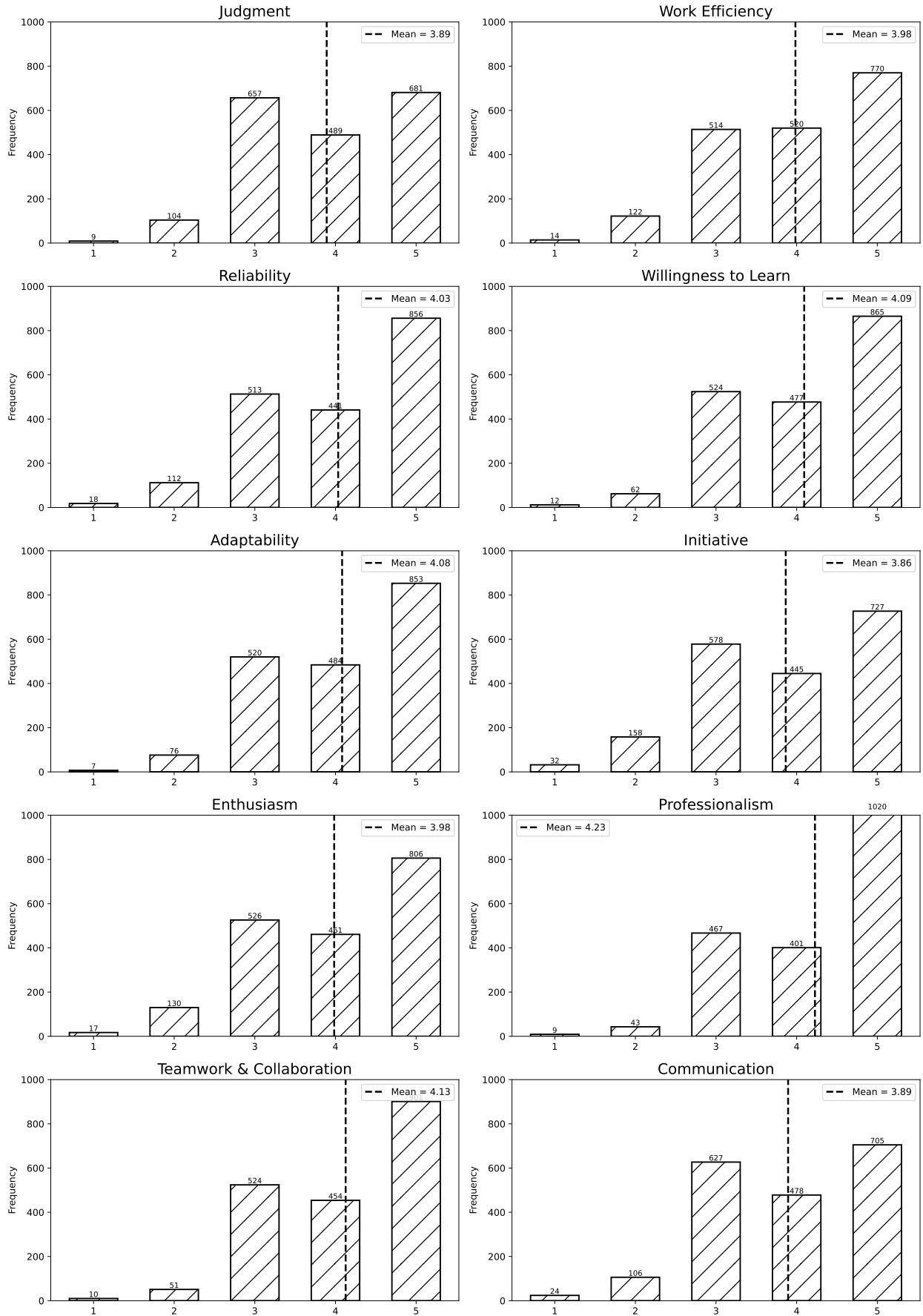


Figure 2: Histograms of Ten Individual Professional Skills

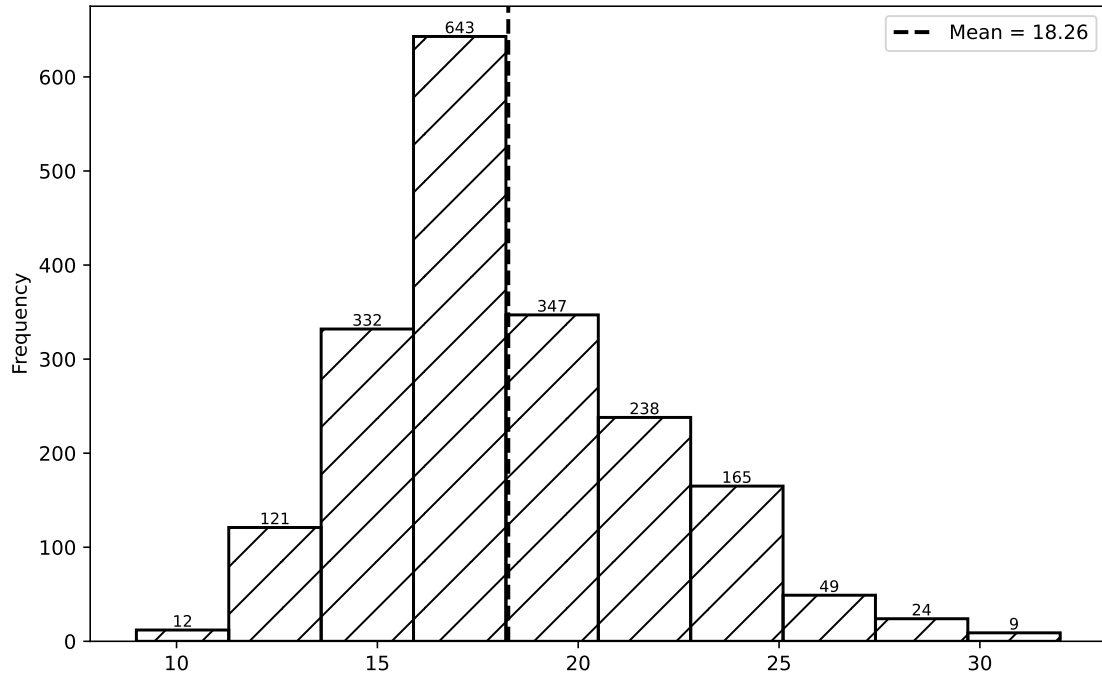


Figure 3: Histogram of ACT Scores

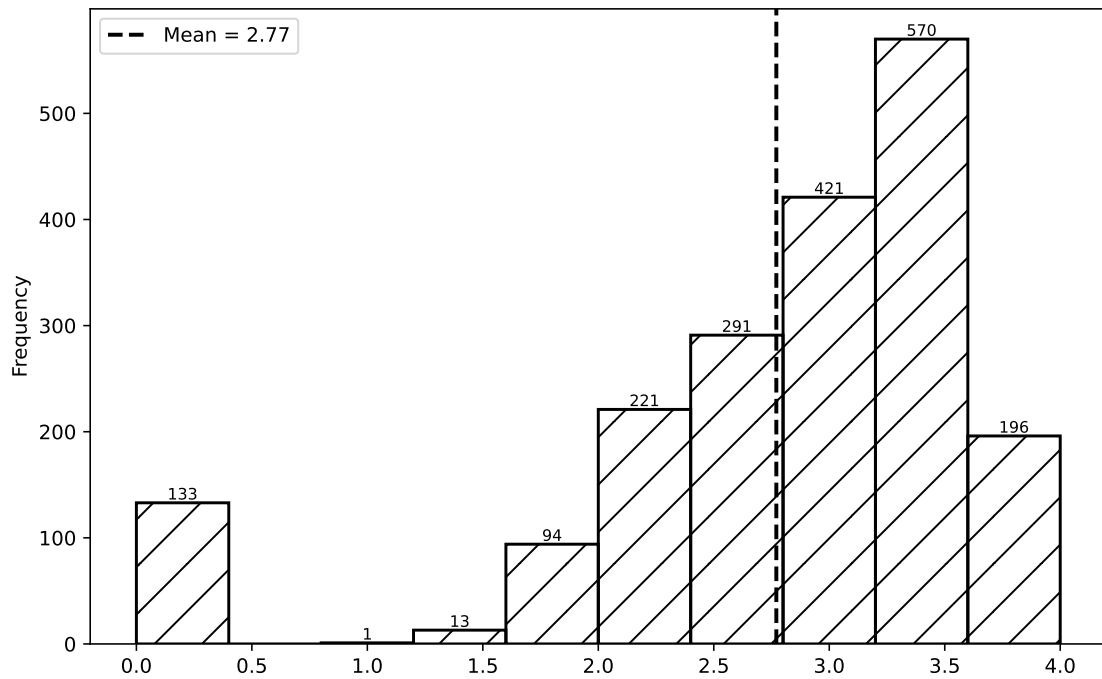


Figure 4: Histogram of GPAs

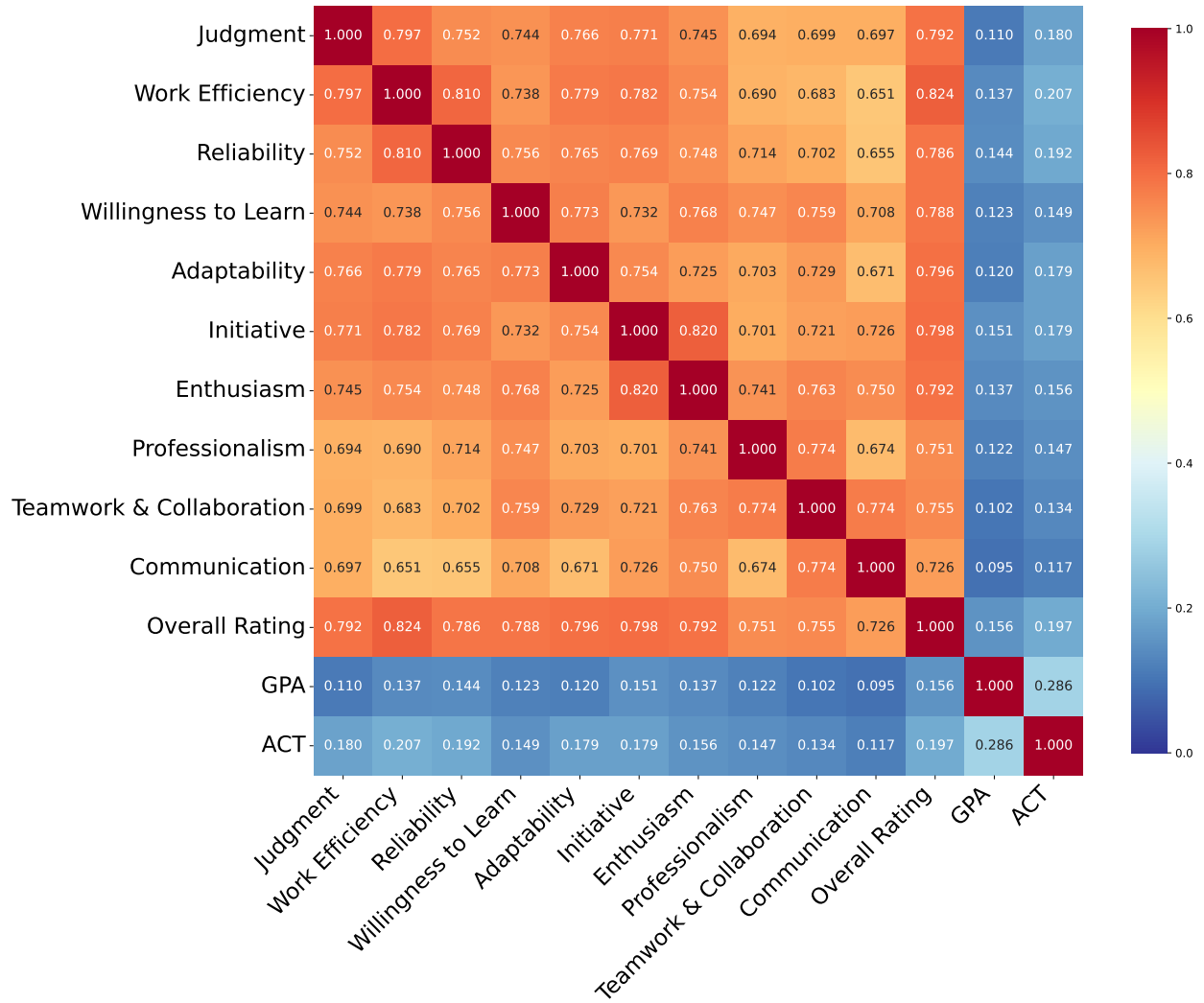


Figure 5: Correlation Matrix: Skills, GPA, and ACT

Tables

Table 1: Descriptive Statistics

Variable	<i>n</i>	%
<i>Gender</i>		
Female	1120	57.7%
Male	741	38.2%
Unknown	79	4.1%
<i>Race</i>		
Unknown	874	45.1%
Hispanic or Latino	569	29.3%
Black or African American	380	19.6%
Other	55	2.8%
White	42	2.2%
Asian	20	1.0%
<i>Grade</i>		
9	305	15.7%
10	450	23.2%
11	515	26.5%
12	670	34.5%
<i>City</i>		
New York	344	17.7%
Cleveland	322	16.6%
San Francisco	167	8.6%
Los Angeles	124	6.4%
Waukegan	123	6.3%
Tucson	121	6.2%
Baltimore	107	5.5%
Kansas City	88	4.5%
Houston	68	3.5%
Cincinnati	67	3.5%
Chicago CTK	60	3.1%
Washington DC	42	2.2%
Sacramento	42	2.2%
Atlanta	40	2.1%
Boston	34	1.8%
Indianapolis	28	1.4%
Chicago Pilsen	27	1.4%
Newark	25	1.3%
Philadelphia	24	1.2%
Brooklyn	24	1.2%
Twin Cities	18	0.9%
Birmingham	18	0.9%
Detroit	14	0.7%
Dallas	11	0.6%
Milwaukee	2	0.1%
<i>HS Graduation Year</i>		
2012	48	2.5%
2013	51	2.6%
2014	223	11.5%
2015	308	15.9%
2016	351	18.1%
2017	49	2.5%
2018	430	22.2%
2019	332	17.1%
2020	148	7.6%
Total	1940	100.0%

Note. Frequencies and percentages for categorical variables.

Table 2: Descriptive Statistics for Main Continuous Variables

Variable	Mean	SD
College Count	13.83	7.93
Enrolled in 2-Year College (6 months)	0.10	0.30
Enrolled in 4-Year College (6 months)	0.57	0.49
Graduated from 2-Year College (3 years)	0.02	0.14
Graduated from 4-Year College (4 years)	0.28	0.45

Note. Means and standard deviations for continuous variables. Enrollment and graduation variables are coded as binary indicators (0 = No, 1 = Yes).

Table 3: Overall Professional Skill Effect on College Applications

	College Applications		
	(1)	(2)	(3)
<i>Overall Rating (ref: Medium)</i>			
Low	-0.750 (0.453)	-0.205 (0.441)	-0.340 (0.368)
High	1.389** (0.429)	0.789 (0.411)	0.275 (0.340)
GPA		1.340*** (0.221)	1.575*** (0.220)
ACT		0.497*** (0.049)	0.165*** (0.045)
<i>Gender (ref: Female)</i>			
Male	-1.158** (0.366)	-0.976** (0.356)	-1.722*** (0.306)
Unknown	2.870** (1.023)	4.084*** (0.958)	1.206 (0.880)
<i>Race (ref: Hispanic or Latino)</i>			
Asian	0.725 (1.764)	-0.501 (1.907)	-0.584 (1.890)
Black or African American	1.345* (0.556)	2.290*** (0.542)	1.842** (0.561)
Other	0.018 (1.004)	-0.753 (0.942)	0.580 (0.847)
Unknown	1.215** (0.404)	1.082** (0.388)	0.622 (0.491)
White	-0.602 (1.029)	-1.680 (0.987)	-0.757 (0.867)
City FE	No	No	Yes
Grade FE	Yes	Yes	Yes
HS Graduation Year FE	Yes	Yes	Yes
Observations	1940	1940	1940
R^2	0.078	0.161	0.421
Adj. R^2	0.068	0.151	0.406

Notes. Intercept terms are excluded from the table. Robust standard errors appear in parentheses. . $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 4: Ten Individual Professional Skill Effects on College Applications

	College Applications		
	(1)	(2)	(3)
<i>Adaptability (ref: Medium)</i>			
Low	-0.731 (0.645)	-0.522 (0.617)	-0.233 (0.508)
High	0.623 (0.631)	0.716 (0.594)	0.151 (0.493)
<i>Communication (ref: Medium)</i>			
Low	0.389 (0.603)	0.328 (0.575)	0.139 (0.479)
High	0.053 (0.620)	0.118 (0.591)	-0.077 (0.495)
<i>Enthusiasm (ref: Medium)</i>			
Low	1.511* (0.641)	1.267* (0.612)	0.646 (0.514)
High	2.351*** (0.639)	2.102*** (0.604)	0.970 (0.514)
<i>Initiative (ref: Medium)</i>			
Low	-0.961 (0.648)	-0.853 (0.611)	-0.644 (0.510)
High	-1.506* (0.632)	-1.580** (0.591)	-1.139* (0.515)
<i>Judgment (ref: Medium)</i>			
Low	-0.640 (0.662)	-0.748 (0.624)	-0.434 (0.513)
High	1.385* (0.620)	1.048 (0.590)	0.453 (0.501)
<i>Professionalism (ref: Medium)</i>			
Low	-1.092 (0.641)	-1.041 (0.621)	-0.570 (0.510)
High	0.052 (0.625)	-0.263 (0.596)	-0.937 (0.505)
<i>Reliability (ref: Medium)</i>			
Low	0.918 (0.650)	1.278* (0.624)	1.007* (0.510)
High	-0.671 (0.650)	-0.797 (0.608)	-0.462 (0.530)
<i>Teamwork and Collaboration (ref: Medium)</i>			
Low	0.419 (0.674)	0.313 (0.640)	-0.056 (0.530)
High	-0.461 (0.665)	-0.176 (0.628)	0.447 (0.530)
<i>Willingness to Learn (ref: Medium)</i>			
Low	-0.302 (0.622)	-0.657 (0.610)	-1.205* (0.499)
High	0.763 (0.656)	0.563 (0.614)	0.332 (0.525)
<i>Work Efficiency (ref: Medium)</i>			
Low	-0.245 (0.630)	0.462 (0.602)	0.715 (0.520)
High	-0.926 (0.614)	-0.684 (0.571)	0.310 (0.476)
<hr/>			
GPA		1.332*** (0.221)	1.598*** (0.222)
ACT		0.501*** (0.049)	0.180*** (0.045)
<i>Gender (ref: Female)</i>			
Male	-1.219** (0.371)	-1.058** (0.361)	-1.782*** (0.312)
Unknown	2.726** (1.034)	3.959*** (0.968)	1.136 (0.899)
<i>Race (ref: Hispanic or Latino)</i>			
Asian	0.590 (1.652)	-0.428 (1.777)	-0.434 (1.817)
Black or African American	1.307* (0.559)	2.203*** (0.544)	1.853** (0.565)
Other	0.205 (1.015)	-0.638 (0.955)	0.658 (0.860)
Unknown	1.321** (0.404)	1.113** (0.388)	0.674 (0.486)
White	-0.596 (0.979)	-1.759 (0.951)	-0.820 (0.855)
City FE	No	No	Yes
Grade FE	Yes	Yes	Yes
HS Graduation Year FE	Yes	Yes	Yes
<hr/>			
Observations	1940	1940	1940
R^2	0.096	0.178	0.430
Adj. R^2	0.078	0.161	0.410

Notes. Intercept terms are excluded from the table. Robust standard errors appear in parentheses. . $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 5: Overall Professional Skill Effect on College Enrollment

	2-Year College Enrollment		4-Year College Enrollment			
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Overall Rating (ref: Medium)</i>						
Low	0.018 (0.019)	0.000 (0.019)	-0.006 (0.019)	-0.073* (0.030)	-0.045 (0.029)	-0.038 (0.029)
High	-0.037* (0.016)	-0.016 (0.015)	-0.009 (0.015)	0.045 (0.027)	0.011 (0.026)	-0.001 (0.026)
GPA		-0.043*** (0.007)	-0.070*** (0.010)		0.051*** (0.014)	0.084*** (0.017)
ACT		-0.017*** (0.002)	-0.012*** (0.002)		0.031*** (0.003)	0.024*** (0.004)
<i>Gender (ref: Female)</i>						
Male	0.038** (0.014)	0.032* (0.014)	0.032* (0.015)	-0.020 (0.023)	-0.015 (0.023)	-0.036 (0.025)
Unknown	0.048 (0.039)	0.010 (0.040)	0.035 (0.041)	-0.009 (0.058)	0.034 (0.059)	-0.015 (0.069)
<i>Race (ref: Hispanic or Latino)</i>						
Asian	-0.087*** (0.018)	-0.045 (0.025)	-0.023 (0.030)	-0.107 (0.110)	-0.179 (0.102)	-0.151 (0.108)
Black or African American	-0.011 (0.021)	-0.043* (0.020)	-0.055* (0.027)	-0.053 (0.033)	-0.002 (0.033)	0.005 (0.042)
Other	-0.046 (0.037)	-0.021 (0.035)	-0.037 (0.037)	0.104 (0.070)	0.064 (0.069)	0.091 (0.072)
Unknown	-0.025 (0.017)	-0.020 (0.016)	-0.030 (0.022)	0.069* (0.027)	0.065* (0.026)	0.050 (0.036)
White	-0.041 (0.042)	-0.004 (0.040)	-0.000 (0.044)	0.027 (0.077)	-0.041 (0.073)	0.007 (0.078)
City FE	No	No	Yes	No	No	Yes
Grade FE	Yes	Yes	Yes	Yes	Yes	Yes
HS Graduation Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1940	1940	1940	1940	1940	1940
R^2	0.020	0.087	0.137	0.036	0.099	0.125
Adj. R^2	0.010	0.077	0.116	0.026	0.089	0.104

Notes. Intercept terms are excluded from the table. Robust standard errors appear in parentheses. . $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 6: Ten Individual Professional Skill Effects on College Enrollment

	2-Year College Enrollment (1)	College Enrollment (2)	Enrollment (3)	4-Year College Enrollment (4)	College Enrollment (5)	Enrollment (6)
<i>Adaptability (ref: Medium)</i>						
Low	0.031 (0.026)	0.024 (0.025)	0.023 (0.024)	-0.044 (0.040)	-0.031 (0.038)	-0.032 (0.038)
High	0.029 (0.027)	0.026 (0.026)	0.035 (0.025)	0.008 (0.041)	0.012 (0.039)	0.001 (0.039)
<i>Communication (ref: Medium)</i>						
Low	-0.041 (0.024)	-0.039 (0.023)	-0.041 (0.023)	0.035 (0.039)	0.031 (0.037)	0.030 (0.037)
High	-0.011 (0.024)	-0.013 (0.023)	-0.015 (0.023)	-0.008 (0.038)	-0.002 (0.037)	-0.004 (0.037)
<i>Enthusiasm (ref: Medium)</i>						
Low	-0.053 (0.029)	-0.045 (0.028)	-0.036 (0.027)	0.056 (0.041)	0.041 (0.040)	0.038 (0.039)
High	-0.039 (0.025)	-0.031 (0.024)	-0.015 (0.024)	0.013 (0.041)	0.000 (0.039)	-0.016 (0.039)
<i>Initiative (ref: Medium)</i>						
Low	0.043 (0.027)	0.040 (0.026)	0.033 (0.025)	-0.052 (0.042)	-0.049 (0.039)	-0.053 (0.039)
High	-0.003 (0.026)	-0.000 (0.025)	-0.002 (0.024)	-0.002 (0.041)	-0.006 (0.038)	-0.003 (0.038)
<i>Judgment (ref: Medium)</i>						
Low	0.047 (0.026)	0.051* (0.025)	0.052* (0.024)	0.008 (0.039)	0.004 (0.037)	-0.001 (0.037)
High	-0.022 (0.024)	-0.011 (0.023)	-0.011 (0.023)	0.031 (0.041)	0.011 (0.040)	0.008 (0.039)
<i>Professionalism (ref: Medium)</i>						
Low	-0.051 (0.028)	-0.053* (0.026)	-0.059* (0.026)	0.080 (0.043)	0.080* (0.041)	0.095* (0.041)
High	-0.040 (0.024)	-0.030 (0.023)	-0.024 (0.023)	0.110** (0.039)	0.093* (0.037)	0.086* (0.037)
<i>Reliability (ref: Medium)</i>						
Low	0.003 (0.027)	-0.009 (0.026)	-0.008 (0.025)	-0.004 (0.041)	0.017 (0.040)	0.010 (0.039)
High	0.034 (0.027)	0.038 (0.026)	0.030 (0.025)	-0.006 (0.042)	-0.011 (0.040)	-0.012 (0.040)
<i>Teamwork and Collaboration (ref: Medium)</i>						
Low	-0.013 (0.028)	-0.009 (0.026)	-0.008 (0.026)	-0.026 (0.043)	-0.031 (0.040)	-0.034 (0.040)
High	0.007 (0.025)	-0.003 (0.024)	-0.004 (0.024)	-0.005 (0.041)	0.009 (0.039)	0.011 (0.039)
<i>Willingness to Learn (ref: Medium)</i>						
Low	0.004 (0.025)	0.015 (0.024)	0.027 (0.024)	0.013 (0.041)	-0.007 (0.039)	-0.016 (0.039)
High	-0.022 (0.026)	-0.015 (0.026)	-0.014 (0.025)	0.011 (0.041)	0.001 (0.040)	0.004 (0.040)
<i>Work Efficiency (ref: Medium)</i>						
Low	0.027 (0.027)	0.003 (0.026)	-0.007 (0.025)	-0.073 (0.040)	-0.035 (0.039)	-0.021 (0.038)
High	0.021 (0.025)	0.013 (0.024)	0.008 (0.023)	-0.049 (0.042)	-0.038 (0.041)	-0.029 (0.041)
GPA		-0.043*** (0.008)	-0.071*** (0.010)		0.051*** (0.014)	0.084*** (0.017)
ACT		-0.017*** (0.002)	-0.012*** (0.002)		0.030*** (0.003)	0.023*** (0.004)
<i>Gender (ref: Female)</i>						
Male	0.034* (0.014)	0.029* (0.014)	0.030* (0.015)	-0.016 (0.024)	-0.013 (0.023)	-0.033 (0.025)
Unknown	0.053 (0.039)	0.013 (0.039)	0.044 (0.042)	-0.021 (0.058)	0.024 (0.059)	-0.031 (0.069)
<i>Race (ref: Hispanic or Latino)</i>						
Asian	-0.086*** (0.019)	-0.052* (0.025)	-0.036 (0.030)	-0.118 (0.113)	-0.177 (0.105)	-0.148 (0.111)
Black or African American	-0.016 (0.021)	-0.046* (0.021)	-0.057* (0.027)	-0.046 (0.034)	0.002 (0.033)	0.005 (0.042)
Other	-0.055 (0.038)	-0.027 (0.036)	-0.043 (0.037)	0.116 (0.069)	0.073 (0.068)	0.099 (0.071)
Unknown	-0.031 (0.017)	-0.024 (0.016)	-0.032 (0.022)	0.077** (0.027)	0.068** (0.026)	0.051 (0.036)
White	-0.037 (0.041)	0.003 (0.040)	0.003 (0.044)	0.028 (0.077)	-0.043 (0.073)	0.005 (0.078)
City FE	No	No	Yes	No	No	Yes
Grade FE	Yes	Yes	Yes	Yes	Yes	Yes
HS Graduation Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1940	1940	1940	1940	1940	1940
R ²	0.037	0.101	0.150	0.046	0.106	0.131
Adj. R ²	0.018	0.082	0.121	0.027	0.087	0.102

Notes. Intercept terms are excluded from the table. Robust standard errors appear in parentheses. . $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 7: Overall Professional Skill Effect on College Graduation

	2-Year College Graduation (1)	2-Year College Graduation (2)	4-Year College Graduation (3)	4-Year College On-time Graduation (4)	4-Year College On-time Graduation (5)	4-Year College Graduation (6)	4-Year College Graduation (7)	4-Year College Graduation (8)	4-Year College Graduation (9)
<i>Overall Rating (ref: Medium)</i>									
Low	-0.003 (0.009)	-0.003 (0.009)	-0.004 (0.009)	-0.062* (0.024)	-0.034 (0.024)	-0.031 (0.024)	-0.045 (0.034)	0.005 (0.033)	0.006 (0.033)
High	-0.003 (0.008)	-0.003 (0.008)	-0.003 (0.009)	0.097*** (0.024)	0.067** (0.024)	0.064** (0.024)	0.127*** (0.031)	0.099*** (0.030)	0.088** (0.030)
GPA		0.005 (0.003)	0.011* (0.005)		0.074*** (0.012)	0.081*** (0.015)		0.102*** (0.017)	0.143*** (0.021)
ACT		-0.001 (0.001)	-0.001 (0.001)		0.024*** (0.003)	0.018*** (0.003)		0.028*** (0.004)	0.020*** (0.004)
<i>Gender (ref: Female)</i>									
Male	-0.001 (0.007)	0.000 (0.007)	0.004 (0.008)	-0.123*** (0.020)	-0.112*** (0.020)	-0.127*** (0.021)	-0.107*** (0.026)	-0.095*** (0.025)	-0.088** (0.028)
Unknown	0.006 (0.020)	0.011 (0.021)	0.025 (0.024)	-0.062 (0.052)	0.006 (0.052)	-0.013 (0.059)	-0.022 (0.100)	0.082 (0.098)	0.067 (0.112)
<i>Race (ref: Hispanic or Latino)</i>									
Asian	-0.023** (0.008)	-0.022** (0.008)	-0.024* (0.011)	0.152 (0.113)	0.091 (0.110)	0.130 (0.116)	0.131 (0.123)	0.039 (0.123)	0.047 (0.125)
Black or African American	-0.003 (0.011)	-0.002 (0.011)	-0.002 (0.012)	-0.016 (0.029)	0.032 (0.028)	0.046 (0.037)	-0.032 (0.040)	0.009 (0.038)	0.070 (0.048)
Other	0.011 (0.026)	0.010 (0.026)	0.009 (0.025)	-0.013 (0.056)	-0.053 (0.054)	-0.020 (0.055)	-0.007 (0.071)	-0.054 (0.069)	-0.022 (0.071)
Unknown	-0.008 (0.008)	-0.009 (0.008)	-0.004 (0.011)	0.030 (0.024)	0.022 (0.023)	0.021 (0.033)	0.035 (0.031)	0.015 (0.030)	0.042 (0.043)
White	-0.024*** (0.007)	-0.023** (0.007)	-0.018 (0.010)	-0.019 (0.070)	-0.072 (0.063)	0.019 (0.067)	-0.031 (0.093)	-0.095 (0.087)	-0.035 (0.089)
City FE	No	No	Yes	No	No	Yes	No	No	Yes
Grade FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
HS Graduation Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1940	1940	1940	1940	1940	1940	1460	1460	1460
R^2	0.006	0.007	0.019	0.060	0.127	0.154	0.048	0.133	0.165
Adj. R^2	-0.005	-0.005	-0.005	0.050	0.117	0.133	0.036	0.121	0.140

Notes. Intercept terms are excluded from the table. Robust standard errors appear in parentheses. .
 $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 8: Ten Individual Professional Skill Effects on College Graduation

	2-Year College Graduation (1)	2-Year College Graduation (2)	4-Year College Graduation (3)	4-Year College On-time Graduation (4)	4-Year College On-time Graduation (5)	4-Year College Graduation (6)	4-Year College Graduation (7)	4-Year College Graduation (8)	4-Year College Graduation (9)
<i>Adaptability (ref: Medium)</i>									
Low	0.006 (0.010)	0.006 (0.010)	0.008 (0.010)	-0.002 (0.035)	0.008 (0.034)	0.006 (0.034)	0.017 (0.047)	0.040 (0.045)	0.043 (0.045)
High	-0.010 (0.012)	-0.009 (0.012)	-0.011 (0.012)	-0.047 (0.037)	-0.042 (0.034)	-0.041 (0.034)	-0.027 (0.047)	-0.014 (0.044)	-0.024 (0.044)
<i>Communication (ref: Medium)</i>									
Low	0.007 (0.009)	0.007 (0.009)	0.009 (0.009)	-0.004 (0.035)	-0.007 (0.033)	-0.017 (0.033)	0.098* (0.044)	0.091* (0.042)	0.081 (0.042)
High	0.015 (0.012)	0.015 (0.013)	0.015 (0.012)	-0.040 (0.036)	-0.037 (0.035)	-0.042 (0.035)	-0.042 (0.044)	-0.028 (0.043)	-0.033 (0.043)
<i>Enthusiasm (ref: Medium)</i>									
Low	-0.009 (0.011)	-0.008 (0.011)	-0.012 (0.011)	0.026 (0.035)	0.014 (0.033)	0.022 (0.033)	0.034 (0.048)	0.028 (0.045)	0.030 (0.045)
High	-0.021 (0.011)	-0.021 (0.011)	-0.023* (0.011)	0.084* (0.038)	0.072* (0.037)	0.063 (0.036)	0.174*** (0.047)	0.155*** (0.046)	0.138** (0.046)
<i>Initiative (ref: Medium)</i>									
Low	-0.004 (0.012)	-0.003 (0.012)	-0.001 (0.013)	-0.063 (0.036)	-0.056 (0.035)	-0.064 (0.035)	-0.071 (0.049)	-0.069 (0.047)	-0.070 (0.046)
High	0.027* (0.013)	0.027* (0.013)	0.027* (0.013)	-0.001 (0.039)	-0.004 (0.036)	-0.001 (0.037)	-0.000 (0.047)	-0.008 (0.043)	-0.013 (0.043)
<i>Judgment (ref: Medium)</i>									
Low	-0.017 (0.012)	-0.017 (0.012)	-0.019 (0.012)	0.014 (0.036)	0.008 (0.034)	0.008 (0.035)	0.115* (0.045)	0.095* (0.043)	0.096* (0.043)
High	-0.008 (0.009)	-0.007 (0.009)	-0.007 (0.010)	0.039 (0.038)	0.022 (0.036)	0.022 (0.036)	0.020 (0.048)	-0.004 (0.045)	-0.014 (0.046)
<i>Professionalism (ref: Medium)</i>									
Low	0.011 (0.015)	0.011 (0.014)	0.011 (0.014)	-0.030 (0.035)	-0.026 (0.034)	-0.019 (0.034)	-0.020 (0.048)	0.001 (0.046)	-0.000 (0.045)
High	-0.011 (0.011)	-0.011 (0.011)	-0.010 (0.011)	0.002 (0.034)	-0.014 (0.033)	-0.021 (0.033)	0.047 (0.045)	0.031 (0.042)	0.012 (0.043)
<i>Reliability (ref: Medium)</i>									
Low	0.012 (0.012)	0.011 (0.011)	0.009 (0.011)	-0.019 (0.035)	-0.001 (0.034)	-0.009 (0.034)	0.020 (0.048)	0.031 (0.046)	0.022 (0.047)
High	0.019 (0.016)	0.019 (0.016)	0.020 (0.015)	0.002 (0.038)	-0.005 (0.036)	-0.006 (0.036)	-0.004 (0.048)	-0.003 (0.045)	0.015 (0.045)
<i>Teamwork and Collaboration (ref: Medium)</i>									
Low	0.002 (0.012)	0.002 (0.012)	0.001 (0.013)	0.033 (0.037)	0.028 (0.035)	0.028 (0.035)	-0.007 (0.049)	-0.019 (0.046)	-0.018 (0.046)
High	0.003 (0.012)	0.003 (0.012)	0.004 (0.012)	0.072 (0.037)	0.087* (0.036)	0.089* (0.036)	0.081 (0.047)	0.090* (0.046)	0.099* (0.045)
<i>Willingness to Learn (ref: Medium)</i>									
Low	-0.012 (0.011)	-0.012 (0.011)	-0.014 (0.011)	-0.008 (0.034)	-0.026 (0.033)	-0.028 (0.033)	-0.057 (0.046)	-0.077 (0.045)	-0.080 (0.044)
High	-0.009 (0.012)	-0.009 (0.012)	-0.012 (0.013)	0.019 (0.037)	0.009 (0.035)	0.013 (0.035)	0.027 (0.047)	0.005 (0.045)	0.013 (0.045)
<i>Work Efficiency (ref: Medium)</i>									
Low	-0.007 (0.010)	-0.006 (0.010)	-0.004 (0.010)	-0.035 (0.038)	0.001 (0.037)	0.006 (0.036)	-0.097* (0.048)	-0.040 (0.046)	-0.033 (0.046)
High	-0.013 (0.014)	-0.012 (0.014)	-0.011 (0.014)	-0.053 (0.039)	-0.041 (0.037)	-0.026 (0.037)	-0.054 (0.047)	-0.033 (0.044)	-0.024 (0.045)
GPA		0.004 (0.003)	0.011* (0.005)		0.072*** (0.012)	0.079*** (0.015)		0.099*** (0.017)	0.138*** (0.021)
ACT		-0.001 (0.001)	-0.001 (0.001)		0.025*** (0.003)	0.018*** (0.003)		0.027*** (0.004)	0.019*** (0.004)
<i>Gender (ref: Female)</i>									
Male	0.001 (0.007)	0.002 (0.007)	0.005 (0.008)	-0.122*** (0.020)	-0.113*** (0.020)	-0.128*** (0.022)	-0.104*** (0.026)	-0.092*** (0.025)	-0.085** (0.028)
Unknown	0.008 (0.020)	0.012 (0.022)	0.027 (0.025)	-0.063 (0.052)	0.004 (0.052)	-0.018 (0.059)	-0.020 (0.098)	0.082 (0.096)	0.068 (0.112)
<i>Race (ref: Hispanic or Latino)</i>									
Asian	-0.021* (0.009)	-0.020* (0.009)	-0.021 (0.012)	0.132 (0.118)	0.082 (0.114)	0.118 (0.119)	0.101 (0.128)	0.026 (0.128)	0.020 (0.130)
Black or African American	-0.001 (0.010)	-0.000 (0.011)	0.001 (0.012)	-0.009 (0.029)	0.037 (0.028)	0.051 (0.037)	-0.020 (0.040)	0.016 (0.038)	0.072 (0.048)
Other	0.012 (0.026)	0.011 (0.026)	0.011 (0.025)	-0.012 (0.057)	-0.056 (0.055)	-0.024 (0.055)	-0.001 (0.070)	-0.057 (0.068)	-0.032 (0.069)
Unknown	-0.007 (0.008)	-0.007 (0.008)	-0.001 (0.010)	0.045 (0.024)	0.034 (0.024)	0.031 (0.033)	0.056 (0.031)	0.030 (0.030)	0.051 (0.043)
White	-0.028*** (0.008)	-0.027** (0.008)	-0.020 (0.011)	-0.011 (0.069)	-0.068 (0.063)	0.023 (0.066)	-0.011 (0.093)	-0.078 (0.087)	-0.019 (0.088)
City FE	No	No	Yes	No	No	Yes	No	No	Yes
Grade FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
HS Graduation Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1940	1940	1940	1940	1940	1940	1460	1460	1460
R^2	0.016	0.017	0.030	0.067	0.134	0.162	0.077	0.156	0.185
Adj. R^2	-0.004	-0.004	-0.004	0.049	0.116	0.133	0.053	0.133	0.150

Notes. Intercept terms are excluded from the table. Robust standard errors appear in parentheses. .
 $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 9: Overall Professional Skill Effect on Graduation (Controlling for College Selectivity)

	4-Year College On-time Graduation		4-Year College Graduation			
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Overall Rating (ref: Medium)</i>						
Low	-0.037 (0.028)	-0.034 (0.027)	-0.033 (0.027)	0.006 (0.035)	0.018 (0.034)	0.017 (0.034)
High	0.071** (0.025)	0.062* (0.024)	0.063* (0.024)	0.105*** (0.031)	0.095** (0.030)	0.088** (0.030)
GPA	0.071*** (0.013)	0.052*** (0.012)	0.058*** (0.015)	0.094*** (0.017)	0.050** (0.016)	0.084*** (0.020)
ACT	0.024*** (0.003)	0.012*** (0.003)	0.008* (0.004)	0.027*** (0.004)	0.014** (0.004)	0.009* (0.004)
<i>Gender (ref: Female)</i>						
Male	-0.116*** (0.022)	-0.115*** (0.021)	-0.123*** (0.023)	-0.091*** (0.027)	-0.085*** (0.026)	-0.070* (0.028)
Unknown	0.011 (0.057)	-0.001 (0.055)	-0.001 (0.063)	0.167 (0.105)	0.127 (0.100)	0.141 (0.112)
<i>Selectivity (ref: Nonselective)</i>						
Less Competitive		0.139*** (0.039)	0.143*** (0.040)		0.344*** (0.046)	0.348*** (0.047)
Competitive		0.217*** (0.027)	0.207*** (0.028)		0.395*** (0.034)	0.373*** (0.035)
Highly Competitive		0.295*** (0.037)	0.286*** (0.039)		0.429*** (0.045)	0.417*** (0.047)
Most Competitive		0.409*** (0.052)	0.408*** (0.054)		0.486*** (0.064)	0.470*** (0.066)
<i>Race (ref: Hispanic or Latino)</i>						
Asian	0.103 (0.105)	0.123 (0.103)	0.149 (0.105)	0.059 (0.126)	0.080 (0.119)	0.037 (0.122)
Black or African American	0.029 (0.031)	0.023 (0.031)	0.038 (0.038)	-0.001 (0.041)	0.001 (0.039)	0.056 (0.048)
Other	-0.062 (0.064)	-0.063 (0.062)	-0.040 (0.064)	-0.067 (0.076)	-0.085 (0.072)	-0.070 (0.074)
Unknown	0.009 (0.025)	-0.004 (0.025)	0.006 (0.034)	-0.007 (0.032)	-0.011 (0.031)	0.024 (0.041)
White	-0.072 (0.075)	-0.031 (0.073)	0.043 (0.078)	-0.084 (0.094)	-0.067 (0.089)	-0.038 (0.095)
City FE	No	No	Yes	No	No	Yes
Grade FE	Yes	Yes	Yes	Yes	Yes	Yes
HS Graduation Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1773	1773	1773	1341	1341	1341
R^2	0.122	0.169	0.188	0.124	0.215	0.236
Adj. R^2	0.111	0.157	0.165	0.110	0.200	0.209

Notes. Intercept terms are excluded from the table. Robust standard errors appear in parentheses. . $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

Appendix

A Professional Skills Questionnaire

Part III: Professional Skills

Read the definition and select the rating that best reflects the performance of the student employee. The Review Guide that accompanies this document provides detailed definitions and sample behaviors to assist you in completing this section.

		Performance Scale				
		1	2	3	4	5
		Rarely Meets Expectations of the Position	Occasionally Meets Expectations of the Position	Meets Expectations of the Position	Occasionally Exceeds Expectations of the Position	Consistently Exceeds Expectations of the Position
<u>Professional Skill</u>	<u>Definition</u>					
Judgment	The ability of the student employee to make decisions wisely and responsibly					
Work Efficiency	The ability of the student employee to complete projects quickly and accurately					
Reliability	The ability to work independently and follow-through.					
Willingness to Learn	The ability of the student employee to accept constructive feedback					
Adaptability	The ability of the student employee to retain previously taught skills					

		Performance Scale				
		1	2	3	4	5
		Rarely Meets Expectations of the Position	Occasionally Meets Expectations of the Position	Meets Expectations of the Position	Occasionally Exceeds Expectations of the Position	Consistently Exceeds Expectations of the Position
<u>Professional Skill</u>	<u>Definition</u>					
Initiative	The extent to which the student employee is self-motivated					
Enthusiasm	The extent to which the student employee is eager to succeed					
Professionalism	The extent to which the student employee's behavior and appearance demonstrate respect for authority and the work environment					
Teamwork & Collaboration	The extent to which the student employee is willing to cooperate with others and develop positive working relationships					
Communication	The ability of the student employee to engage with peers and supervisors					
Custom Skill 1						
Custom Skill 2						
Overall Rating	Please rate the student employee's overall performance.					

Figure A1: Professional Skills Assessment Portion of the Student Associate Performance Review

B Sample Construction

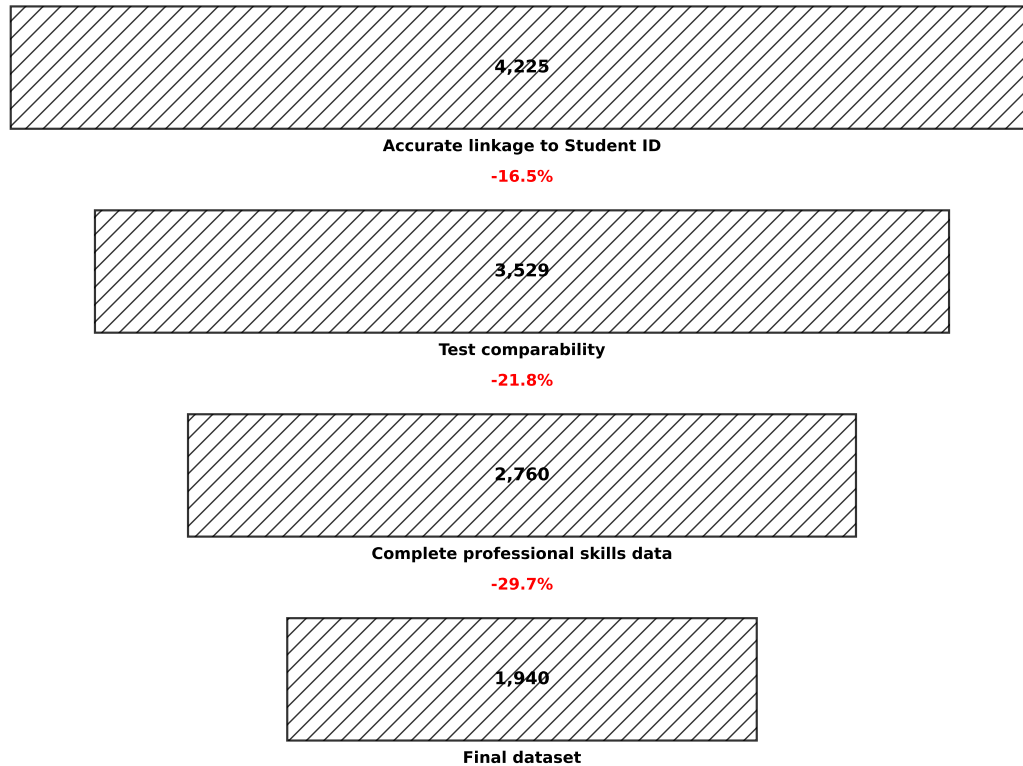


Figure B2: Sample Restrictions Data Waterfall Chart

Notes: Sample begins with 4,225 student records where student has ACT or SAT test score data and can be uniquely linked to a Student Associate Performance Review (SAPR). In the second step, we link to school-level data (GPA, demographics, and college applications information) using a Salesforce ID. In step 3, we drop records with SAT rather than ACT scores to ensure test comparability across students. In the last step, we drop any students who are missing portions of their Student Associate Performance Review (e.g. students who have an overall rating but not a rating for all 10 performance skill categories).

Table B1: Sample Distribution by High School Graduation Year and School City

2012–2016			2017–2020			
Year	City	Count	Year	City	Count	
2012	Los Angeles	7	2017	Cleveland	49	
	New York	20	2018	Atlanta	14	
	San Francisco	9		Baltimore	22	
	Twin Cities	7		Birmingham	9	
	Washington DC	5		Boston	12	
Brooklyn	6	Chicago CTK		11		
2013	Cleveland	11	Houston	24		
	Los Angeles	6	Indianapolis	7		
	New York	9	Kansas City	17		
	San Francisco	3	Los Angeles	20		
	Tucson	3	Newark	10		
2014	Twin Cities	2	New York	61		
	Washington DC	7	Sacramento	18		
	Baltimore	7	San Francisco	32		
	Brooklyn	10	Tucson	25		
	Chicago CTK	7	Waukegan	34		
2015	Cleveland	50	2019	Atlanta	17	
	Indianapolis	1		Baltimore	24	
	Kansas City	6		Birmingham	4	
	Los Angeles	19		Boston	14	
	Newark	1		Chicago CTK	14	
	New York	64	Chicago Pilsen	1		
	Sacramento	1	Cincinnati	12		
	San Francisco	21	Cleveland	44		
	Tucson	16	Dallas	4		
	Waukegan	8	Indianapolis	7		
	Washington DC	5	Kansas City	11		
	2016	Baltimore	15	2020	Los Angeles	15
		Brooklyn	3		Newark	2
		Chicago CTK	5		New York	43
		Cincinnati	14		Atlanta	9
Cleveland		60	Baltimore		13	
Indianapolis		6	Birmingham		4	
Kansas City		23	Boston		8	
Los Angeles		25	Chicago CTK		9	
Newark		5	Cincinnati		15	
New York		62	Cleveland		4	
Sacramento		5	Dallas		7	
San Francisco		29	Indianapolis		1	
Tucson		18	Kansas City		6	
Waukegan		25	Los Angeles		11	
Baltimore		26	Milwaukee		1	
Birmingham	1	New York	14			
Brooklyn	5	Sacramento	3			
Chicago CTK	14	San Francisco	13			
Chicago Pilsen	26	Tucson	7			
Cincinnati	11	Twin Cities	4			
Cleveland	30	Houston	19			
Indianapolis	6					
Kansas City	21					
Los Angeles	21					
Newark	7					
New York	71					
Sacramento	7					
San Francisco	35					
Tucson	26					
Waukegan	25					
Washington DC	8					

Note. Cell entries represent counts of observations.

C Standard Error Robustness: Wild Bootstrap Clustered Standard Errors

Table C2: Overall Professional Skill Effect on College Graduation

	2-Year College Graduation (1)	College Graduation (2)	(3)	4-Year College Graduation (4)	College On-time Graduation (5)	(6)	4-Year College Graduation (7)	College Graduation (8)	(9)
<i>Overall Rating (ref: Medium)</i>									
Low	-0.003 (0.009)	-0.003 (0.009)	-0.004 (0.009)	-0.062** (0.023)	-0.034 (0.024)	-0.031 (0.024)	-0.045 (0.028)	0.005 (0.028)	0.006 (0.029)
High	-0.003 (0.007)	-0.003 (0.007)	-0.003 (0.008)	0.097*** (0.024)	0.067** (0.024)	0.064** (0.024)	0.127*** (0.031)	0.099** (0.032)	0.088** (0.031)
GPA		0.005 (0.003)	0.011** (0.004)		0.074*** (0.017)	0.081*** (0.020)		0.102*** (0.028)	0.143*** (0.030)
ACT		-0.001 (0.001)	-0.001 (0.001)		0.024*** (0.004)	0.018*** (0.004)		0.028*** (0.005)	0.020*** (0.005)
<i>Gender (ref: Female)</i>									
Male	-0.001 (0.006)	0.000 (0.007)	0.004 (0.007)	-0.123*** (0.018)	-0.112*** (0.019)	-0.127*** (0.020)	-0.107*** (0.023)	-0.095*** (0.022)	-0.088*** (0.025)
Unknown	0.006 (0.017)	0.011 (0.018)	0.025 (0.022)	-0.062 (0.058)	0.006 (0.062)	-0.013 (0.064)	-0.022 (0.093)	0.082 (0.106)	0.067 (0.114)
<i>Race (ref: Hispanic or Latino)</i>									
Asian	-0.023** (0.007)	-0.022** (0.007)	-0.024* (0.011)	0.152 (0.111)	0.091 (0.109)	0.130 (0.109)	0.131 (0.129)	0.039 (0.131)	0.047 (0.132)
Black or African American	-0.003 (0.009)	-0.002 (0.010)	-0.002 (0.012)	-0.016 (0.036)	0.032 (0.034)	0.046 (0.036)	-0.032 (0.037)	0.009 (0.032)	0.070 (0.038)
Other	0.011 (0.023)	0.010 (0.023)	0.009 (0.021)	-0.013 (0.068)	-0.053 (0.066)	-0.020 (0.063)	-0.007 (0.077)	-0.054 (0.077)	-0.022 (0.080)
Unknown	-0.008 (0.008)	-0.009 (0.008)	-0.004 (0.009)	0.030 (0.036)	0.022 (0.030)	0.021 (0.035)	0.035 (0.044)	0.015 (0.034)	0.042 (0.045)
White	-0.024*** (0.006)	-0.023*** (0.007)	-0.018 (0.010)	-0.019 (0.075)	-0.072 (0.068)	0.019 (0.071)	-0.031 (0.095)	-0.095 (0.087)	-0.035 (0.097)
City FE	No	No	Yes	No	No	Yes	No	No	Yes
Grade FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
HS Graduation Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1940	1940	1940	1940	1940	1940	1460	1460	1460
R^2	0.006	0.007	0.019	0.060	0.127	0.154	0.048	0.133	0.165
Adj. R^2	-0.005	-0.005	-0.005	0.050	0.117	0.133	0.036	0.121	0.140

Notes. Intercept terms are excluded from the table. Wild bootstrap clustered standard errors appear in parentheses. Clustering is by school. . $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

D Subsample Estimates

This appendix presents exploratory subgroup analyses examining whether associations between employer-rated professional skills and postsecondary outcomes differ by gender and race/ethnicity. We report results separately for college applications, enrollment, and completion

D.1 College Applications

Table D3: Overall Professional Skill Effect on College Applications (Race Subgroups)

	Hispanic			Black		
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Overall Rating (ref: Medium)</i>						
Low	-1.026 (0.811)	-1.009 (0.809)	-1.131 (0.719)	-0.014 (1.094)	0.005 (1.071)	0.025 (0.864)
High	1.702* (0.800)	1.725* (0.785)	0.224 (0.703)	1.284 (1.115)	1.342 (1.109)	-0.221 (0.973)
GPA			1.565*** (0.441)			1.818*** (0.496)
ACT			0.213* (0.094)			0.210 (0.139)
City FE	No	No	Yes	No	No	Yes
Grade FE	Yes	No	Yes	Yes	No	Yes
HS Graduation Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	569	569	569	380	380	380
R^2	0.119	0.119	0.357	0.125	0.122	0.448
Adj. R^2	0.098	0.103	0.316	0.094	0.098	0.398

Notes. Intercept terms are excluded from the table. Robust standard errors appear in parentheses. . $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

Table D4: Overall Professional Skill Effect on College Applications (Gender Subgroups)

	Male			Female		
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Overall Rating (ref: Medium)</i>						
Low	-1.035 (0.711)	-0.983 (0.706)	-0.814 (0.592)	-0.409 (0.616)	-0.284 (0.615)	-0.243 (0.494)
High	1.953** (0.734)	1.894** (0.725)	0.388 (0.592)	1.106* (0.544)	0.943 (0.546)	0.222 (0.430)
GPA			1.640*** (0.352)			1.674*** (0.308)
ACT			0.111 (0.076)			0.134* (0.058)
City FE	No	No	Yes	No	No	Yes
Grade FE	Yes	No	Yes	Yes	No	Yes
HS Graduation Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	741	741	741	1120	1120	1120
R^2	0.073	0.071	0.427	0.077	0.066	0.430
Adj. R^2	0.057	0.059	0.396	0.066	0.057	0.410

Notes. Intercept terms are excluded from the table. Robust standard errors appear in parentheses. . $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

Table D5: Ten Individual Professional Skill Effects on College Applications (Race Subgroups)

	(1)	Hispanic (2)	(3)	(4)	Black (5)	(6)
<i>Adaptability (ref: Medium)</i>						
Low	-0.983 (1.073)	-0.949 (1.035)	-0.861 (0.929)	-3.350* (1.574)	-3.697* (1.524)	-2.455. (1.343)
High	1.311 (1.224)	1.173 (1.212)	0.586 (1.055)	-0.057 (1.598)	-0.916 (1.508)	-0.524 (1.222)
<i>Communication (ref: Medium)</i>						
Low	0.850 (1.089)	0.843 (1.059)	0.853 (0.971)	1.541 (1.453)	1.477 (1.384)	1.373 (1.186)
High	1.241 (1.183)	1.168 (1.158)	0.033 (1.083)	0.436 (1.770)	0.443 (1.663)	-1.085 (1.396)
<i>Enthusiasm (ref: Medium)</i>						
Low	1.900 (1.166)	1.444 (1.131)	0.711 (1.028)	5.562*** (1.563)	4.213** (1.545)	1.816 (1.417)
High	2.261 (1.188)	2.086 (1.181)	1.283 (1.030)	2.058 (1.412)	2.191 (1.285)	0.340 (1.187)
<i>Initiative (ref: Medium)</i>						
Low	-1.920 (1.142)	-1.954 (1.099)	-1.337 (1.042)	-0.571 (1.441)	0.106 (1.428)	0.683 (1.147)
High	-2.444* (1.068)	-2.289* (1.042)	-1.467 (0.934)	0.336 (1.622)	-0.131 (1.476)	0.973 (1.395)
<i>Judgment (ref: Medium)</i>						
Low	-1.024 (1.095)	-0.984 (1.043)	-0.233 (0.940)	-1.046 (1.606)	-0.876 (1.544)	-0.605 (1.349)
High	0.279 (1.040)	0.152 (1.029)	0.427 (0.953)	1.628 (1.385)	1.503 (1.344)	1.410 (1.321)
<i>Professionalism (ref: Medium)</i>						
Low	-1.903. (1.137)	-1.902. (1.126)	-0.174 (1.009)	-1.434 (1.543)	-0.576 (1.504)	-0.573 (1.372)
High	0.752 (1.172)	0.493 (1.153)	-0.196 (1.059)	-0.677 (1.445)	-0.209 (1.423)	-1.552 (1.190)
<i>Reliability (ref: Medium)</i>						
Low	2.658* (1.133)	3.038** (1.099)	1.706. (1.004)	0.077 (1.551)	0.600 (1.412)	0.041 (1.409)
High	0.629 (1.341)	0.809 (1.304)	0.463 (1.141)	-1.504 (1.612)	-2.021 (1.528)	-0.486 (1.454)
<i>Teamwork and Collaboration (ref: Medium)</i>						
Low	-0.854 (1.132)	-0.745 (1.102)	-1.198 (1.014)	0.915 (1.906)	0.548 (1.809)	-0.190 (1.478)
High	-0.515 (1.346)	-0.824 (1.311)	0.309 (1.172)	-1.633 (1.577)	-1.289 (1.520)	-0.188 (1.283)
<i>Willingness to Learn (ref: Medium)</i>						
Low	-0.172 (0.993)	-0.451 (0.992)	-0.957 (0.882)	-1.080 (1.823)	-0.624 (1.736)	-1.079 (1.774)
High	-0.175 (1.341)	0.106 (1.321)	-0.352 (1.104)	0.243 (1.666)	0.198 (1.552)	-0.295 (1.303)
<i>Work Efficiency (ref: Medium)</i>						
Low	1.114 (1.075)	1.419 (1.050)	0.946 (0.974)	-0.017 (1.582)	-0.034 (1.522)	0.981 (1.351)
High	-0.700 (1.020)	-0.734 (0.991)	-0.073 (0.922)	1.035 (1.619)	1.243 (1.540)	0.865 (1.307)
GPA		0.305 (0.362)	1.610*** (0.463)		1.677*** (0.438)	1.930*** (0.507)
ACT		0.443*** (0.100)	0.219* (0.095)		0.509*** (0.150)	0.163 (0.145)
City FE	No	No	Yes	No	No	Yes
Grade FE	Yes	Yes	Yes	Yes	Yes	Yes
HS Graduation Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	569	569	569	380	380	380
R^2	0.156	0.191	0.372	0.189	0.257	0.470
Adj. R^2	0.107	0.141	0.309	0.116	0.186	0.392

Notes. Intercept terms are excluded from the table. Robust standard errors appear in parentheses. . $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

Table D6: Ten Individual Professional Skill Effects on College Applications (Gender Subgroups)

	(1)	Male (2)	(3)	(4)	Female (5)	(6)
<i>Adaptability (ref: Medium)</i>						
Low	-0.074 (1.003)	0.129 (0.976)	0.113 (0.774)	-1.090 (0.904)	-0.911 (0.865)	-0.190 (0.713)
High	1.056 (1.034)	1.394 (0.963)	0.397 (0.803)	1.347 (0.808)	1.335 (0.769)	0.712 (0.649)
<i>Communication (ref: Medium)</i>						
Low	0.577 (0.871)	0.419 (0.831)	-0.272 (0.725)	0.044 (0.828)	0.029 (0.789)	0.323 (0.685)
High	0.644 (1.027)	0.906 (0.995)	0.625 (0.837)	-0.833 (0.819)	-0.755 (0.760)	-0.444 (0.653)
<i>Enthusiasm (ref: Medium)</i>						
Low	0.653 (1.067)	0.492 (1.038)	0.280 (0.834)	2.254** (0.809)	1.882* (0.769)	0.873 (0.692)
High	2.275* (1.068)	2.053* (1.007)	0.761 (0.885)	2.510** (0.842)	2.195** (0.802)	1.199 (0.674)
<i>Initiative (ref: Medium)</i>						
Low	-1.256 (0.991)	-0.591 (0.942)	-0.981 (0.737)	-0.658 (0.894)	-0.872 (0.844)	0.039 (0.720)
High	-2.654* (1.198)	-2.939** (1.116)	-2.617** (0.995)	-1.088 (0.784)	-1.125 (0.736)	-0.399 (0.640)
<i>Judgment (ref: Medium)</i>						
Low	-1.789 (0.981)	-2.290* (0.936)	-1.470 (0.760)	0.323 (0.935)	0.414 (0.885)	0.422 (0.734)
High	1.853 (1.095)	1.829 (1.052)	1.421 (0.863)	1.466 (0.785)	0.998 (0.760)	0.201 (0.623)
<i>Professionalism (ref: Medium)</i>						
Low	-0.657 (1.057)	-0.321 (1.055)	-0.278 (0.840)	-1.862* (0.872)	-1.926* (0.828)	-1.399* (0.684)
High	-0.632 (1.050)	-0.856 (1.035)	-1.654 (0.862)	-0.088 (0.823)	-0.446 (0.768)	-0.766 (0.664)
<i>Reliability (ref: Medium)</i>						
Low	2.653** (0.990)	2.918** (0.967)	1.935** (0.710)	-0.040 (0.922)	0.452 (0.885)	0.626 (0.752)
High	1.005 (1.061)	0.442 (1.010)	0.022 (0.815)	-2.375** (0.875)	-2.256** (0.815)	-1.502* (0.742)
<i>Teamwork and Collaboration (ref: Medium)</i>						
Low	0.007 (1.046)	-0.177 (1.009)	-0.312 (0.869)	0.785 (0.925)	0.882 (0.877)	0.476 (0.713)
High	-0.497 (1.066)	-0.220 (1.025)	0.460 (0.878)	-0.714 (0.865)	-0.276 (0.805)	0.270 (0.694)
<i>Willingness to Learn (ref: Medium)</i>						
Low	-0.704 (1.015)	-1.061 (1.000)	-1.130 (0.821)	-0.318 (0.846)	-0.583 (0.829)	-1.599* (0.674)
High	0.257 (1.094)	-0.046 (1.043)	0.455 (0.878)	1.462 (0.856)	1.429 (0.797)	0.584 (0.697)
<i>Work Efficiency (ref: Medium)</i>						
Low	0.014 (0.981)	0.418 (0.954)	0.728 (0.780)	-0.173 (0.868)	0.677 (0.829)	0.263 (0.739)
High	-0.721 (1.067)	-0.559 (0.982)	0.307 (0.758)	-0.601 (0.785)	-0.506 (0.736)	0.536 (0.642)
GPA		1.877*** (0.350)	1.725*** (0.363)		0.908** (0.310)	1.690*** (0.316)
ACT		0.370*** (0.083)	0.136 (0.075)		0.512*** (0.064)	0.142* (0.059)
City FE	No	No	Yes	No	No	Yes
Grade FE	Yes	Yes	Yes	Yes	Yes	Yes
HS Graduation Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	741	741	741	1120	1120	1120
R^2	0.102	0.183	0.451	0.107	0.181	0.442
Adj. R^2	0.062	0.145	0.407	0.082	0.156	0.413

Notes. Intercept terms are excluded from the table. Robust standard errors appear in parentheses. . $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

D.2 College Enrollment

Table D7: Overall Professional Skill Effect on 2-year College Enrollment (Race Subgroups)

	(1)	Hispanic (2)	(3)	(4)	Black (5)	(6)
<i>Overall Rating (ref: Medium)</i>						
Low	0.020 (0.037)	0.015 (0.036)	0.007 (0.037)	-0.006 (0.042)	-0.017 (0.041)	-0.016 (0.041)
High	-0.049 (0.030)	-0.027 (0.028)	-0.018 (0.029)	-0.063 (0.038)	-0.042 (0.037)	-0.029 (0.037)
GPA		-0.031* (0.013)	-0.064** (0.021)		-0.025* (0.010)	-0.057** (0.018)
ACT		-0.017*** (0.004)	-0.010** (0.004)		-0.018*** (0.004)	-0.014** (0.005)
City FE	No	No	Yes	No	No	Yes
Grade FE	Yes	Yes	Yes	Yes	Yes	Yes
HS Graduation Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	569	569	569	380	380	380
R^2	0.056	0.099	0.157	0.047	0.089	0.140
Adj. R^2	0.034	0.074	0.103	0.013	0.052	0.063

Notes. Intercept terms are excluded from the table. Robust standard errors appear in parentheses. . $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

Table D8: Overall Professional Skill Effect on 2-year College Enrollment (Gender Subgroups)

	(1)	Male (2)	(3)	(4)	Female (5)	(6)
<i>Overall Rating (ref: Medium)</i>						
Low	0.012 (0.034)	-0.009 (0.032)	-0.012 (0.032)	0.021 (0.023)	0.001 (0.023)	0.005 (0.024)
High	-0.048 (0.030)	-0.020 (0.028)	-0.004 (0.028)	-0.027 (0.019)	-0.010 (0.018)	-0.004 (0.019)
GPA		-0.061*** (0.014)	-0.083*** (0.018)		-0.037*** (0.010)	-0.063*** (0.013)
ACT		-0.018*** (0.003)	-0.013*** (0.004)		-0.014*** (0.002)	-0.009*** (0.002)
City FE	No	No	Yes	No	No	Yes
Grade FE	Yes	Yes	Yes	Yes	Yes	Yes
HS Graduation Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	741	741	741	1120	1120	1120
R^2	0.012	0.094	0.160	0.025	0.084	0.127
Adj. R^2	-0.005	0.075	0.116	0.014	0.072	0.097

Notes. Intercept terms are excluded from the table. Robust standard errors appear in parentheses. . $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

Table D9: Ten Individual Professional Skill Effects on 2-year College Enrollment (Race Subgroups)

	(1)	Hispanic (2)	(3)	(4)	Black (5)	(6)
<i>Adaptability (ref: Medium)</i>						
Low	0.043 (0.047)	0.042 (0.045)	0.051 (0.045)	-0.067 (0.060)	-0.069 (0.057)	-0.077 (0.060)
High	0.042 (0.050)	0.045 (0.048)	0.040 (0.048)	-0.103 (0.064)	-0.089 (0.063)	-0.080 (0.064)
<i>Communication (ref: Medium)</i>						
Low	-0.027 (0.046)	-0.029 (0.044)	-0.026 (0.042)	0.015 (0.054)	0.016 (0.054)	0.013 (0.057)
High	0.016 (0.042)	0.023 (0.041)	0.022 (0.041)	0.079 (0.072)	0.083 (0.070)	0.080 (0.070)
<i>Enthusiasm (ref: Medium)</i>						
Low	-0.106. (0.057)	-0.087 (0.056)	-0.085 (0.056)	-0.152* (0.069)	-0.117 (0.072)	-0.084 (0.074)
High	-0.094. (0.048)	-0.085. (0.047)	-0.059 (0.047)	-0.052 (0.049)	-0.051 (0.049)	-0.039 (0.050)
<i>Initiative (ref: Medium)</i>						
Low	0.135** (0.052)	0.137** (0.050)	0.116* (0.048)	0.057 (0.065)	0.054 (0.066)	0.024 (0.069)
High	0.046 (0.051)	0.042 (0.050)	0.031 (0.050)	-0.042 (0.059)	-0.031 (0.058)	-0.030 (0.062)
<i>Judgment (ref: Medium)</i>						
Low	0.032 (0.046)	0.036 (0.044)	0.034 (0.044)	0.085. (0.048)	0.085. (0.048)	0.077 (0.052)
High	-0.035 (0.049)	-0.031 (0.048)	-0.038 (0.048)	0.083. (0.044)	0.085. (0.044)	0.065 (0.045)
<i>Professionalism (ref: Medium)</i>						
Low	-0.049 (0.056)	-0.049 (0.054)	-0.067 (0.055)	-0.032 (0.059)	-0.045 (0.059)	-0.049 (0.060)
High	0.004 (0.046)	0.014 (0.044)	0.010 (0.043)	-0.001 (0.053)	-0.012 (0.052)	-0.007 (0.056)
<i>Reliability (ref: Medium)</i>						
Low	-0.025 (0.050)	-0.042 (0.048)	-0.025 (0.048)	0.014 (0.061)	0.003 (0.061)	0.006 (0.065)
High	0.014 (0.059)	0.007 (0.056)	0.013 (0.056)	0.047 (0.069)	0.063 (0.068)	0.044 (0.072)
<i>Teamwork and Collaboration (ref: Medium)</i>						
Low	-0.028 (0.054)	-0.032 (0.052)	-0.037 (0.050)	-0.038 (0.070)	-0.032 (0.067)	-0.010 (0.069)
High	-0.045 (0.045)	-0.034 (0.043)	-0.040 (0.044)	-0.032 (0.069)	-0.051 (0.069)	-0.036 (0.071)
<i>Willingness to Learn (ref: Medium)</i>						
Low	0.025 (0.048)	0.033 (0.045)	0.061 (0.045)	0.086 (0.059)	0.072 (0.059)	0.084 (0.060)
High	0.020 (0.047)	0.009 (0.045)	0.029 (0.044)	-0.085 (0.062)	-0.088 (0.061)	-0.082 (0.061)
<i>Work Efficiency (ref: Medium)</i>						
Low	-0.008 (0.051)	-0.023 (0.049)	-0.027 (0.047)	0.015 (0.058)	0.004 (0.058)	-0.009 (0.058)
High	-0.018 (0.048)	-0.017 (0.047)	-0.020 (0.047)	0.059 (0.061)	0.067 (0.062)	0.074 (0.062)
GPA		-0.034* (0.014)	-0.070** (0.022)		-0.020. (0.012)	-0.051** (0.019)
ACT		-0.017*** (0.004)	-0.010* (0.004)		-0.018*** (0.005)	-0.014* (0.006)
City FE	No	No	Yes	No	No	Yes
Grade FE	Yes	Yes	Yes	Yes	Yes	Yes
HS Graduation Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	569	569	569	380	380	380
R^2	0.091	0.136	0.192	0.096	0.131	0.173
Adj. R^2	0.039	0.082	0.111	0.016	0.049	0.050

Notes. Intercept terms are excluded from the table. Robust standard errors appear in parentheses. . $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

Table D10: Ten Individual Professional Skill Effects on 2-year College Enrollment (Gender Subgroups)

	(1)	Male (2)	(3)	(4)	Female (5)	(6)
<i>Adaptability (ref: Medium)</i>						
Low	0.068 (0.047)	0.059 (0.043)	0.064 (0.043)	-0.004 (0.030)	-0.009 (0.029)	-0.013 (0.029)
High	0.018 (0.046)	0.003 (0.044)	0.010 (0.043)	0.029 (0.036)	0.029 (0.034)	0.035 (0.034)
<i>Communication (ref: Medium)</i>						
Low	-0.089* (0.040)	-0.082* (0.038)	-0.094* (0.039)	-0.035 (0.031)	-0.034 (0.030)	-0.034 (0.030)
High	-0.026 (0.044)	-0.037 (0.041)	-0.034 (0.040)	0.004 (0.030)	0.002 (0.029)	0.003 (0.029)
<i>Enthusiasm (ref: Medium)</i>						
Low	-0.025 (0.046)	-0.015 (0.045)	-0.024 (0.044)	-0.073 (0.040)	-0.062 (0.038)	-0.051 (0.037)
High	-0.034 (0.045)	-0.027 (0.044)	-0.012 (0.043)	-0.044 (0.031)	-0.035 (0.030)	-0.024 (0.030)
<i>Initiative (ref: Medium)</i>						
Low	0.034 (0.045)	0.010 (0.044)	0.014 (0.044)	0.039 (0.035)	0.044 (0.033)	0.030 (0.034)
High	-0.032 (0.044)	-0.018 (0.042)	-0.018 (0.042)	0.007 (0.033)	0.008 (0.032)	0.006 (0.032)
<i>Judgment (ref: Medium)</i>						
Low	0.023 (0.045)	0.042 (0.043)	0.050 (0.042)	0.065* (0.031)	0.063* (0.030)	0.061* (0.029)
High	-0.049 (0.040)	-0.046 (0.039)	-0.053 (0.039)	0.002 (0.031)	0.016 (0.030)	0.021 (0.030)
<i>Professionalism (ref: Medium)</i>						
Low	-0.020 (0.040)	-0.032 (0.038)	-0.035 (0.038)	-0.059 (0.037)	-0.058 (0.036)	-0.060 (0.036)
High	-0.029 (0.042)	-0.021 (0.039)	-0.013 (0.040)	-0.056 (0.031)	-0.045 (0.029)	-0.042 (0.030)
<i>Reliability (ref: Medium)</i>						
Low	0.022 (0.047)	0.011 (0.045)	0.020 (0.043)	-0.002 (0.031)	-0.016 (0.031)	-0.020 (0.030)
High	-0.003 (0.045)	0.017 (0.044)	0.022 (0.043)	0.038 (0.036)	0.036 (0.035)	0.024 (0.034)
<i>Teamwork and Collaboration (ref: Medium)</i>						
Low	-0.022 (0.044)	-0.016 (0.042)	-0.015 (0.044)	-0.000 (0.035)	-0.003 (0.033)	-0.003 (0.034)
High	0.061 (0.037)	0.053 (0.036)	0.058 (0.036)	-0.026 (0.035)	-0.040 (0.033)	-0.046 (0.033)
<i>Willingness to Learn (ref: Medium)</i>						
Low	-0.001 (0.045)	0.014 (0.043)	0.031 (0.042)	0.037 (0.030)	0.046 (0.029)	0.058* (0.029)
High	-0.013 (0.045)	0.001 (0.044)	-0.003 (0.043)	-0.010 (0.032)	-0.007 (0.031)	0.001 (0.031)
<i>Work Efficiency (ref: Medium)</i>						
Low	0.030 (0.046)	0.011 (0.043)	-0.007 (0.042)	0.018 (0.033)	-0.009 (0.032)	-0.007 (0.032)
High	0.061 (0.043)	0.055 (0.042)	0.053 (0.042)	0.007 (0.031)	0.003 (0.030)	-0.004 (0.030)
GPA		-0.061*** (0.014)	-0.084*** (0.019)		-0.038*** (0.010)	-0.066*** (0.013)
ACT		-0.018*** (0.003)	-0.013*** (0.003)		-0.014*** (0.002)	-0.009*** (0.002)
City FE	No	No	Yes	No	No	Yes
Grade FE	Yes	Yes	Yes	Yes	Yes	Yes
HS Graduation Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	741	741	741	1120	1120	1120
R^2	0.038	0.112	0.181	0.048	0.106	0.147
Adj. R^2	-0.005	0.071	0.115	0.020	0.079	0.102

Notes. Intercept terms are excluded from the table. Robust standard errors appear in parentheses. . $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

Table D11: Overall Professional Skill Effect on 4-year College Enrollment (Race Subgroups)

	(1)	Hispanic (2)	(3)	(4)	Black (5)	(6)
<i>Overall Rating (ref: Medium)</i>						
Low	-0.077 (0.054)	-0.071 (0.053)	-0.062 (0.053)	-0.031 (0.064)	-0.015 (0.063)	-0.037 (0.064)
High	0.044 (0.050)	0.002 (0.048)	-0.009 (0.049)	0.107 (0.063)	0.078 (0.064)	0.058 (0.065)
GPA		0.046* (0.023)	0.129*** (0.030)		0.029 (0.025)	0.067. (0.035)
ACT		0.034*** (0.006)	0.023*** (0.007)		0.027** (0.008)	0.017. (0.010)
City FE	No	No	Yes	No	No	Yes
Grade FE	Yes	Yes	Yes	Yes	Yes	Yes
HS Graduation Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	569	569	569	380	380	380
R^2	0.040	0.102	0.162	0.050	0.082	0.120
Adj. R^2	0.018	0.078	0.109	0.016	0.045	0.041

Notes. Intercept terms are excluded from the table. Robust standard errors appear in parentheses. . $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

Table D12: Overall Professional Skill Effect on 4-year College Enrollment (Gender Subgroups)

	(1)	Male (2)	(3)	(4)	Female (5)	(6)
<i>Overall Rating (ref: Medium)</i>						
Low	-0.026 (0.048)	0.009 (0.046)	-0.002 (0.045)	-0.119** (0.040)	-0.085* (0.039)	-0.084* (0.039)
High	0.086. (0.045)	0.041 (0.042)	0.010 (0.043)	0.022 (0.035)	-0.008 (0.034)	-0.016 (0.034)
GPA		0.087*** (0.022)	0.109*** (0.027)		0.061** (0.021)	0.105*** (0.024)
ACT		0.033*** (0.005)	0.027*** (0.006)		0.026*** (0.004)	0.017*** (0.005)
City FE	No	No	Yes	No	No	Yes
Grade FE	Yes	Yes	Yes	Yes	Yes	Yes
HS Graduation Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	741	741	741	1120	1120	1120
R^2	0.019	0.112	0.164	0.039	0.093	0.134
Adj. R^2	0.002	0.094	0.120	0.027	0.081	0.103

Notes. Intercept terms are excluded from the table. Robust standard errors appear in parentheses. . $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

Table D13: Ten Individual Professional Skill Effects on 4-year College Enrollment (Race Subgroups)

	(1)	Hispanic (2)	(3)	(4)	Black (5)	(6)
<i>Adaptability (ref: Medium)</i>						
Low	0.142* (0.071)	0.144* (0.070)	0.131. (0.069)	-0.208* (0.095)	-0.208* (0.093)	-0.220* (0.094)
High	0.075 (0.074)	0.068 (0.070)	0.061 (0.071)	-0.056 (0.106)	-0.079 (0.105)	-0.079 (0.107)
<i>Communication (ref: Medium)</i>						
Low	0.058 (0.067)	0.061 (0.063)	0.056 (0.064)	-0.056 (0.096)	-0.058 (0.094)	-0.047 (0.093)
High	-0.041 (0.074)	-0.053 (0.070)	-0.074 (0.074)	0.076 (0.105)	0.071 (0.102)	0.091 (0.107)
<i>Enthusiasm (ref: Medium)</i>						
Low	0.165* (0.072)	0.130. (0.069)	0.128. (0.069)	0.186. (0.096)	0.134 (0.097)	0.110 (0.101)
High	-0.033 (0.077)	-0.048 (0.071)	-0.082 (0.071)	0.067 (0.092)	0.067 (0.091)	0.066 (0.094)
<i>Initiative (ref: Medium)</i>						
Low	-0.204** (0.074)	-0.208** (0.068)	-0.194** (0.067)	-0.042 (0.097)	-0.033 (0.097)	-0.029 (0.099)
High	0.012 (0.079)	0.020 (0.074)	0.037 (0.072)	-0.106 (0.101)	-0.123 (0.100)	-0.106 (0.106)
<i>Judgment (ref: Medium)</i>						
Low	-0.040 (0.069)	-0.045 (0.066)	-0.050 (0.064)	-0.027 (0.087)	-0.027 (0.086)	-0.042 (0.088)
High	0.072 (0.077)	0.064 (0.075)	0.079 (0.077)	-0.057 (0.097)	-0.060 (0.098)	-0.052 (0.100)
<i>Professionalism (ref: Medium)</i>						
Low	-0.029 (0.079)	-0.030 (0.076)	0.009 (0.076)	0.121 (0.092)	0.143 (0.091)	0.160. (0.093)
High	0.062 (0.072)	0.043 (0.070)	0.040 (0.070)	0.074 (0.088)	0.090 (0.089)	0.073 (0.092)
<i>Reliability (ref: Medium)</i>						
Low	-0.029 (0.070)	0.002 (0.068)	-0.030 (0.068)	-0.025 (0.090)	-0.009 (0.090)	0.037 (0.088)
High	0.024 (0.082)	0.036 (0.078)	0.018 (0.081)	0.050 (0.125)	0.027 (0.124)	0.064 (0.131)
<i>Teamwork and Collaboration (ref: Medium)</i>						
Low	-0.086 (0.074)	-0.077 (0.069)	-0.063 (0.069)	0.054 (0.102)	0.045 (0.098)	0.026 (0.096)
High	-0.036 (0.079)	-0.059 (0.074)	-0.038 (0.077)	-0.017 (0.100)	0.009 (0.099)	-0.026 (0.104)
<i>Willingness to Learn (ref: Medium)</i>						
Low	0.019 (0.072)	0.001 (0.069)	-0.027 (0.069)	-0.014 (0.098)	0.007 (0.097)	-0.005 (0.097)
High	-0.051 (0.077)	-0.029 (0.077)	-0.045 (0.076)	0.092 (0.098)	0.096 (0.099)	0.083 (0.103)
<i>Work Efficiency (ref: Medium)</i>						
Low	-0.029 (0.068)	-0.001 (0.065)	0.008 (0.063)	0.047 (0.091)	0.060 (0.089)	0.064 (0.087)
High	-0.020 (0.080)	-0.022 (0.081)	-0.000 (0.086)	0.046 (0.127)	0.038 (0.125)	0.017 (0.129)
GPA		0.053* (0.024)	0.144*** (0.030)		0.036 (0.026)	0.075* (0.037)
ACT		0.033*** (0.006)	0.021** (0.007)		0.025** (0.009)	0.016 (0.010)
City FE	No	No	Yes	No	No	Yes
Grade FE	Yes	Yes	Yes	Yes	Yes	Yes
HS Graduation Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	569	569	569	380	380	380
R ²	0.072	0.132	0.193	0.095	0.125	0.160
Adj. R ²	0.018	0.078	0.111	0.015	0.041	0.035

Notes. Intercept terms are excluded from the table. Robust standard errors appear in parentheses. . $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

Table D14: Ten Individual Professional Skill Effects on 4-year College Enrollment (Gender Subgroups)

	(1)	Male (2)	(3)	(4)	Female (5)	(6)
<i>Adaptability (ref: Medium)</i>						
Low	0.004 (0.065)	0.019 (0.060)	0.018 (0.058)	-0.070 (0.056)	-0.061 (0.054)	-0.073 (0.054)
High	0.121. (0.070)	0.146* (0.065)	0.137* (0.066)	-0.026 (0.055)	-0.026 (0.052)	-0.035 (0.051)
<i>Communication (ref: Medium)</i>						
Low	0.067 (0.063)	0.055 (0.059)	0.059 (0.059)	-0.003 (0.053)	-0.004 (0.051)	0.009 (0.050)
High	-0.033 (0.063)	-0.013 (0.058)	-0.034 (0.058)	-0.026 (0.051)	-0.023 (0.049)	-0.011 (0.050)
<i>Enthusiasm (ref: Medium)</i>						
Low	0.084 (0.066)	0.065 (0.063)	0.081 (0.061)	0.031 (0.057)	0.011 (0.055)	0.006 (0.053)
High	0.038 (0.070)	0.028 (0.064)	0.015 (0.064)	0.004 (0.054)	-0.014 (0.052)	-0.026 (0.052)
<i>Initiative (ref: Medium)</i>						
Low	-0.038 (0.066)	0.001 (0.061)	-0.023 (0.061)	-0.051 (0.057)	-0.061 (0.055)	-0.042 (0.054)
High	-0.015 (0.075)	-0.039 (0.069)	-0.035 (0.069)	-0.003 (0.052)	-0.005 (0.049)	-0.000 (0.050)
<i>Judgment (ref: Medium)</i>						
Low	-0.010 (0.063)	-0.040 (0.058)	-0.046 (0.057)	0.014 (0.054)	0.018 (0.053)	-0.001 (0.052)
High	0.018 (0.069)	0.014 (0.065)	0.014 (0.065)	0.026 (0.054)	0.002 (0.053)	-0.001 (0.053)
<i>Professionalism (ref: Medium)</i>						
Low	0.084 (0.070)	0.103 (0.066)	0.093 (0.065)	0.104. (0.057)	0.103. (0.055)	0.102. (0.054)
High	0.058 (0.067)	0.043 (0.063)	0.020 (0.062)	0.162** (0.052)	0.145** (0.049)	0.144** (0.049)
<i>Reliability (ref: Medium)</i>						
Low	0.007 (0.067)	0.025 (0.063)	0.008 (0.060)	-0.008 (0.057)	0.017 (0.055)	0.022 (0.055)
High	0.035 (0.070)	0.002 (0.068)	-0.006 (0.069)	-0.021 (0.059)	-0.016 (0.056)	-0.026 (0.057)
<i>Teamwork and Collaboration (ref: Medium)</i>						
Low	-0.099 (0.073)	-0.108 (0.068)	-0.106 (0.068)	0.005 (0.058)	0.010 (0.054)	0.010 (0.053)
High	-0.040 (0.067)	-0.030 (0.062)	-0.005 (0.062)	-0.013 (0.056)	0.010 (0.053)	0.010 (0.054)
<i>Willingness to Learn (ref: Medium)</i>						
Low	0.017 (0.067)	-0.009 (0.063)	-0.013 (0.064)	-0.016 (0.055)	-0.031 (0.054)	-0.040 (0.053)
High	-0.047 (0.067)	-0.072 (0.065)	-0.073 (0.064)	0.028 (0.055)	0.024 (0.054)	0.019 (0.055)
<i>Work Efficiency (ref: Medium)</i>						
Low	-0.099 (0.064)	-0.064 (0.059)	-0.059 (0.057)	-0.065 (0.056)	-0.020 (0.055)	-0.015 (0.053)
High	-0.038 (0.073)	-0.027 (0.072)	-0.031 (0.073)	-0.053 (0.055)	-0.046 (0.053)	-0.029 (0.055)
GPA		0.093*** (0.022)	0.112*** (0.028)		0.063** (0.021)	0.108*** (0.024)
ACT		0.032*** (0.005)	0.026*** (0.006)		0.025*** (0.005)	0.016** (0.005)
City FE	No	No	Yes	No	No	Yes
Grade FE	Yes	Yes	Yes	Yes	Yes	Yes
HS Graduation Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	741	741	741	1120	1120	1120
R^2	0.035	0.128	0.180	0.051	0.103	0.143
Adj. R^2	-0.007	0.087	0.114	0.024	0.076	0.098

Notes. Intercept terms are excluded from the table. Robust standard errors appear in parentheses. . $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

D.3 College Graduation

Table D15: Overall Professional Skill Effect on 2-Year College Graduation (Race Subgroups)

	(1)	Hispanic (2)	(3)	(4)	Black (5)	(6)
<i>Overall Rating (ref: Medium)</i>						
Low	-0.021 (0.017)	-0.021 (0.017)	-0.022 (0.017)	-0.006 (0.021)	-0.005 (0.021)	-0.005 (0.022)
High	-0.002 (0.018)	0.000 (0.018)	0.002 (0.019)	-0.016 (0.021)	-0.018 (0.021)	-0.019 (0.023)
GPA		0.003 (0.005)	-0.004 (0.007)		0.003 (0.008)	0.007 (0.011)
ACT		-0.002 (0.002)	-0.000 (0.002)		0.001 (0.002)	0.002 (0.002)
City FE	No	No	Yes	No	No	Yes
Grade FE	Yes	Yes	Yes	Yes	Yes	Yes
HS Graduation Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	569	569	569	380	380	380
R^2	0.022	0.024	0.039	0.019	0.020	0.047
Adj. R^2	-0.001	-0.003	-0.022	-0.016	-0.020	-0.038

Notes. Intercept terms are excluded from the table. Robust standard errors appear in parentheses. . $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

Table D16: Overall Professional Skill Effect on 2-Year College Graduation (Gender Subgroups)

	(1)	Male (2)	(3)	(4)	Female (5)	(6)
<i>Overall Rating (ref: Medium)</i>						
Low	-0.019 (0.014)	-0.019 (0.014)	-0.018 (0.015)	0.005 (0.012)	0.005 (0.011)	0.003 (0.012)
High	-0.023 (0.015)	-0.023 (0.015)	-0.023 (0.015)	0.003 (0.010)	0.003 (0.011)	0.004 (0.011)
GPA		0.008** (0.003)	0.017. (0.009)		0.002 (0.007)	0.007 (0.007)
ACT		-0.001 (0.001)	-0.003. (0.001)		-0.001 (0.002)	-0.001 (0.002)
City FE	No	No	Yes	No	No	Yes
Grade FE	Yes	Yes	Yes	Yes	Yes	Yes
HS Graduation Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	741	741	741	1120	1120	1120
R^2	0.020	0.022	0.045	0.012	0.012	0.028
Adj. R^2	0.002	0.002	-0.005	-0.000	-0.002	-0.006

Notes. Intercept terms are excluded from the table. Robust standard errors appear in parentheses. . $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

Table D17: Ten Individual Professional Skill Effects on 2-Year College Graduation (Race Subgroups)

	(1)	Hispanic (2)	(3)	(4)	Black (5)	(6)
<i>Adaptability (ref: Medium)</i>						
Low	-0.018 (0.022)	-0.018 (0.022)	-0.021 (0.023)	0.048* (0.024)	0.048. (0.025)	0.045. (0.026)
High	-0.046* (0.021)	-0.046* (0.021)	-0.042* (0.021)	0.019 (0.033)	0.017 (0.034)	0.018 (0.035)
<i>Communication (ref: Medium)</i>						
Low	0.015 (0.016)	0.015 (0.016)	0.014 (0.016)	-0.002 (0.024)	-0.002 (0.024)	0.004 (0.025)
High	0.050. (0.030)	0.050 (0.031)	0.053. (0.031)	-0.011 (0.036)	-0.011 (0.037)	-0.009 (0.037)
<i>Enthusiasm (ref: Medium)</i>						
Low	-0.028 (0.019)	-0.027 (0.020)	-0.031 (0.021)	0.015 (0.022)	0.013 (0.023)	0.008 (0.024)
High	-0.027 (0.021)	-0.027 (0.021)	-0.023 (0.022)	0.020 (0.025)	0.020 (0.025)	0.020 (0.027)
<i>Initiative (ref: Medium)</i>						
Low	-0.018 (0.026)	-0.018 (0.027)	-0.019 (0.028)	0.038 (0.033)	0.039 (0.035)	0.035 (0.034)
High	0.033 (0.025)	0.032 (0.025)	0.029 (0.023)	0.037 (0.029)	0.036 (0.029)	0.036 (0.028)
<i>Judgment (ref: Medium)</i>						
Low	-0.003 (0.019)	-0.004 (0.020)	-0.001 (0.021)	-0.052. (0.030)	-0.052. (0.030)	-0.057. (0.031)
High	-0.017 (0.019)	-0.017 (0.019)	-0.014 (0.020)	-0.024 (0.023)	-0.025 (0.023)	-0.029 (0.025)
<i>Professionalism (ref: Medium)</i>						
Low	0.044. (0.023)	0.044. (0.023)	0.041. (0.022)	-0.022 (0.035)	-0.021 (0.036)	-0.016 (0.040)
High	0.015 (0.017)	0.015 (0.017)	0.017 (0.016)	-0.034 (0.027)	-0.033 (0.028)	-0.021 (0.028)
<i>Reliability (ref: Medium)</i>						
Low	0.032 (0.021)	0.032 (0.021)	0.039. (0.022)	-0.006 (0.027)	-0.005 (0.026)	0.001 (0.029)
High	0.036 (0.028)	0.035 (0.028)	0.036 (0.029)	0.017 (0.042)	0.016 (0.042)	0.007 (0.043)
<i>Teamwork and Collaboration (ref: Medium)</i>						
Low	-0.008 (0.019)	-0.008 (0.020)	-0.007 (0.019)	-0.019 (0.035)	-0.020 (0.036)	-0.018 (0.039)
High	-0.028 (0.024)	-0.028 (0.024)	-0.029 (0.025)	0.010 (0.038)	0.011 (0.039)	0.006 (0.038)
<i>Willingness to Learn (ref: Medium)</i>						
Low	-0.029 (0.018)	-0.028 (0.018)	-0.029 (0.019)	0.032 (0.021)	0.033 (0.022)	0.036 (0.022)
High	0.007 (0.023)	0.006 (0.023)	0.002 (0.023)	0.010 (0.021)	0.010 (0.021)	0.013 (0.023)
<i>Work Efficiency (ref: Medium)</i>						
Low	-0.020 (0.016)	-0.020 (0.016)	-0.016 (0.015)	-0.029 (0.027)	-0.028 (0.028)	-0.031 (0.028)
High	-0.032 (0.020)	-0.032 (0.020)	-0.033 (0.020)	-0.047 (0.031)	-0.047 (0.032)	-0.046 (0.033)
GPA		0.001 (0.005)	-0.006 (0.008)		0.002 (0.009)	0.003 (0.013)
ACT		-0.001 (0.002)	0.001 (0.002)		0.001 (0.002)	0.002 (0.003)
City FE	No	No	Yes	No	No	Yes
Grade FE	Yes	Yes	Yes	Yes	Yes	Yes
HS Graduation Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	569	569	569	380	380	380
R^2	0.065	0.065	0.079	0.058	0.059	0.084
Adj. R^2	0.011	0.007	-0.013	-0.026	-0.031	-0.053

Notes. Intercept terms are excluded from the table. Robust standard errors appear in parentheses. . $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

Table D18: Ten Individual Professional Skill Effects on 2-Year College Graduation (Gender Subgroups)

	(1)	Male (2)	(3)	(4)	Female (5)	(6)
<i>Adaptability (ref: Medium)</i>						
Low	0.001 (0.015)	0.001 (0.015)	0.004 (0.016)	0.008 (0.015)	0.008 (0.015)	0.010 (0.015)
High	0.018 (0.024)	0.018 (0.024)	0.016 (0.025)	-0.027* (0.012)	-0.027* (0.012)	-0.025* (0.013)
<i>Communication (ref: Medium)</i>						
Low	0.019 (0.015)	0.019 (0.016)	0.022 (0.015)	0.003 (0.012)	0.003 (0.012)	0.001 (0.011)
High	0.018 (0.022)	0.018 (0.022)	0.017 (0.022)	0.018 (0.014)	0.018 (0.014)	0.018 (0.014)
<i>Enthusiasm (ref: Medium)</i>						
Low	-0.021 (0.022)	-0.020 (0.022)	-0.020 (0.020)	-0.003 (0.012)	-0.002 (0.012)	-0.007 (0.012)
High	-0.036 (0.021)	-0.037 (0.021)	-0.043 (0.023)	-0.004 (0.012)	-0.004 (0.012)	-0.007 (0.012)
<i>Initiative (ref: Medium)</i>						
Low	-0.004 (0.020)	-0.003 (0.019)	-0.003 (0.020)	-0.003 (0.017)	-0.003 (0.017)	0.001 (0.017)
High	0.037 (0.023)	0.037 (0.024)	0.043 (0.024)	0.025 (0.015)	0.025 (0.015)	0.024 (0.015)
<i>Judgment (ref: Medium)</i>						
Low	-0.045* (0.018)	-0.046* (0.018)	-0.051* (0.020)	-0.001 (0.018)	-0.001 (0.018)	-0.001 (0.018)
High	-0.020 (0.016)	-0.019 (0.016)	-0.018 (0.016)	-0.009 (0.010)	-0.008 (0.010)	-0.008 (0.011)
<i>Professionalism (ref: Medium)</i>						
Low	-0.021 (0.021)	-0.020 (0.021)	-0.020 (0.019)	0.028 (0.021)	0.029 (0.021)	0.026 (0.021)
High	-0.033 (0.023)	-0.033 (0.023)	-0.034 (0.023)	-0.003 (0.011)	-0.003 (0.011)	-0.001 (0.011)
<i>Reliability (ref: Medium)</i>						
Low	0.022 (0.019)	0.022 (0.019)	0.017 (0.018)	0.012 (0.016)	0.012 (0.016)	0.012 (0.015)
High	0.037 (0.023)	0.036 (0.023)	0.034 (0.023)	0.027 (0.019)	0.027 (0.019)	0.029 (0.020)
<i>Teamwork and Collaboration (ref: Medium)</i>						
Low	0.026 (0.024)	0.025 (0.024)	0.021 (0.025)	-0.015 (0.015)	-0.015 (0.015)	-0.014 (0.015)
High	0.017 (0.022)	0.019 (0.022)	0.024 (0.023)	-0.014 (0.014)	-0.014 (0.014)	-0.015 (0.014)
<i>Willingness to Learn (ref: Medium)</i>						
Low	-0.013 (0.019)	-0.013 (0.020)	-0.012 (0.019)	-0.013 (0.016)	-0.013 (0.016)	-0.016 (0.016)
High	-0.046 (0.024)	-0.046 (0.024)	-0.049* (0.025)	0.006 (0.015)	0.006 (0.015)	0.005 (0.016)
<i>Work Efficiency (ref: Medium)</i>						
Low	-0.008 (0.016)	-0.008 (0.017)	-0.006 (0.017)	-0.007 (0.013)	-0.007 (0.012)	-0.005 (0.011)
High	-0.034 (0.025)	-0.034 (0.025)	-0.032 (0.025)	-0.010 (0.017)	-0.010 (0.017)	-0.011 (0.018)
GPA		0.008** (0.003)	0.017 (0.009)		0.001 (0.007)	0.006 (0.007)
ACT		-0.001 (0.001)	-0.003* (0.001)		-0.000 (0.002)	-0.001 (0.002)
City FE	No	No	Yes	No	No	Yes
Grade FE	Yes	Yes	Yes	Yes	Yes	Yes
HS Graduation Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	741	741	741	1120	1120	1120
R^2	0.056	0.059	0.084	0.026	0.026	0.041
Adj. R^2	0.015	0.015	0.011	-0.002	-0.004	-0.009

Notes. Intercept terms are excluded from the table. Robust standard errors appear in parentheses. . $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

Table D19: Overall Professional Skill Effect on 4-Year College On-time Graduation (Race Subgroups)

	(1)	Hispanic		(4)	Black	
		(2)	(3)		(5)	(6)
<i>Overall Rating (ref: Medium)</i>						
Low	-0.013 (0.047)	-0.005 (0.046)	0.002 (0.047)	-0.057 (0.051)	-0.038 (0.050)	-0.050 (0.051)
High	0.062 (0.045)	0.037 (0.044)	0.046 (0.045)	0.058 (0.057)	0.023 (0.056)	0.013 (0.058)
GPA		0.064** (0.023)	0.072* (0.028)		0.072*** (0.022)	0.116*** (0.029)
ACT		0.017** (0.006)	0.010 (0.006)		0.022** (0.007)	0.016 (0.009)
City FE	No	No	Yes	No	No	Yes
Grade FE	Yes	Yes	Yes	Yes	Yes	Yes
HS Graduation Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	569	569	569	380	380	380
R^2	0.033	0.069	0.127	0.031	0.093	0.147
Adj. R^2	0.010	0.044	0.072	-0.003	0.056	0.071

Notes. Intercept terms are excluded from the table. Robust standard errors appear in parentheses. . $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

Table D20: Overall Professional Skill Effect on 4-Year College On-time Graduation (Gender Subgroups)

	(1)	Male		(4)	Female	
		(2)	(3)		(5)	(6)
<i>Overall Rating (ref: Medium)</i>						
Low	-0.043 (0.034)	-0.022 (0.034)	-0.014 (0.034)	-0.062 (0.036)	-0.021 (0.035)	-0.017 (0.035)
High	0.102** (0.037)	0.075* (0.036)	0.080* (0.036)	0.105** (0.033)	0.074* (0.033)	0.070* (0.033)
GPA		0.055** (0.018)	0.065** (0.021)		0.085*** (0.019)	0.099*** (0.023)
ACT		0.019*** (0.004)	0.015** (0.005)		0.026*** (0.004)	0.017*** (0.005)
City FE	No	No	Yes	No	No	Yes
Grade FE	Yes	Yes	Yes	Yes	Yes	Yes
HS Graduation Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	741	741	741	1120	1120	1120
R^2	0.046	0.099	0.148	0.048	0.123	0.162
Adj. R^2	0.029	0.081	0.103	0.036	0.111	0.132

Notes. Intercept terms are excluded from the table. Robust standard errors appear in parentheses. . $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

Table D21: Ten Individual Professional Skill Effects on 4-Year College On-time Graduation (Race Subgroups)

	(1)	Hispanic		(4)	Black	(6)
		(2)	(3)		(5)	
<i>Adaptability (ref: Medium)</i>						
Low	0.067 (0.061)	0.067 (0.059)	0.059 (0.060)	0.118 (0.086)	0.109 (0.084)	0.101 (0.082)
High	-0.103 (0.064)	-0.103 (0.062)	-0.078 (0.063)	0.109 (0.081)	0.076 (0.079)	0.074 (0.081)
<i>Communication (ref: Medium)</i>						
Low	-0.046 (0.062)	-0.040 (0.060)	-0.091 (0.060)	-0.059 (0.073)	-0.062 (0.070)	-0.047 (0.071)
High	-0.029 (0.069)	-0.042 (0.070)	-0.044 (0.071)	-0.122 (0.092)	-0.124 (0.089)	-0.144 (0.090)
<i>Enthusiasm (ref: Medium)</i>						
Low	0.052 (0.065)	0.034 (0.063)	0.062 (0.064)	0.112 (0.084)	0.053 (0.084)	0.040 (0.090)
High	0.159* (0.072)	0.149* (0.072)	0.145* (0.071)	-0.066 (0.077)	-0.063 (0.076)	-0.057 (0.077)
<i>Initiative (ref: Medium)</i>						
Low	-0.064 (0.066)	-0.067 (0.066)	-0.069 (0.066)	-0.020 (0.080)	0.002 (0.079)	0.017 (0.074)
High	-0.104 (0.072)	-0.103 (0.070)	-0.106 (0.071)	0.152 (0.082)	0.132 (0.081)	0.169* (0.084)
<i>Judgment (ref: Medium)</i>						
Low	0.020 (0.065)	0.010 (0.062)	0.010 (0.062)	0.057 (0.077)	0.061 (0.075)	0.069 (0.076)
High	0.019 (0.068)	0.015 (0.066)	0.002 (0.066)	0.020 (0.083)	0.015 (0.084)	0.023 (0.085)
<i>Professionalism (ref: Medium)</i>						
Low	0.025 (0.066)	0.024 (0.065)	0.062 (0.069)	-0.206* (0.087)	-0.174* (0.086)	-0.146 (0.087)
High	0.001 (0.063)	-0.009 (0.061)	-0.015 (0.061)	-0.124 (0.074)	-0.104 (0.072)	-0.091 (0.076)
<i>Reliability (ref: Medium)</i>						
Low	-0.074 (0.058)	-0.055 (0.058)	-0.087 (0.058)	-0.129 (0.091)	-0.108 (0.087)	-0.117 (0.090)
High	-0.022 (0.067)	-0.016 (0.063)	-0.017 (0.065)	-0.044 (0.097)	-0.068 (0.093)	-0.085 (0.096)
<i>Teamwork and Collaboration (ref: Medium)</i>						
Low	0.029 (0.063)	0.034 (0.062)	0.008 (0.063)	0.089 (0.088)	0.075 (0.086)	0.034 (0.088)
High	0.099 (0.072)	0.087 (0.071)	0.053 (0.071)	0.213* (0.087)	0.234** (0.085)	0.221* (0.086)
<i>Willingness to Learn (ref: Medium)</i>						
Low	-0.093 (0.058)	-0.099 (0.057)	-0.099 (0.057)	-0.137 (0.088)	-0.116 (0.086)	-0.132 (0.086)
High	-0.062 (0.067)	-0.050 (0.065)	-0.049 (0.063)	-0.072 (0.092)	-0.072 (0.092)	-0.102 (0.094)
<i>Work Efficiency (ref: Medium)</i>						
Low	0.009 (0.064)	0.029 (0.062)	0.028 (0.062)	0.074 (0.099)	0.080 (0.095)	0.085 (0.096)
High	0.077 (0.062)	0.077 (0.059)	0.090 (0.062)	-0.036 (0.109)	-0.035 (0.108)	-0.013 (0.110)
GPA		0.059* (0.023)	0.066* (0.029)		0.060** (0.023)	0.110*** (0.030)
ACT		0.017** (0.006)	0.010 (0.006)		0.025*** (0.007)	0.018* (0.008)
City FE	No	No	Yes	No	No	Yes
Grade FE	Yes	Yes	Yes	Yes	Yes	Yes
HS Graduation Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	569	569	569	380	380	380
R^2	0.067	0.100	0.161	0.099	0.154	0.209
Adj. R^2	0.013	0.045	0.077	0.019	0.074	0.091

Notes. Intercept terms are excluded from the table. Robust standard errors appear in parentheses. . $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

Table D22: Ten Individual Professional Skill Effects on 4-Year College On-time Graduation (Gender Subgroups)

	(1)	Male (2)	(3)	(4)	Female (5)	(6)
<i>Adaptability (ref: Medium)</i>						
Low	-0.079 (0.048)	-0.070 (0.047)	-0.055 (0.048)	0.054 (0.050)	0.064 (0.049)	0.058 (0.050)
High	-0.144* (0.058)	-0.129* (0.055)	-0.152** (0.057)	0.032 (0.050)	0.033 (0.046)	0.027 (0.047)
<i>Communication (ref: Medium)</i>						
Low	0.086. (0.049)	0.079 (0.048)	0.062 (0.050)	-0.060 (0.049)	-0.062 (0.047)	-0.063 (0.048)
High	-0.036 (0.051)	-0.024 (0.049)	-0.034 (0.048)	-0.078 (0.051)	-0.075 (0.050)	-0.076 (0.050)
<i>Enthusiasm (ref: Medium)</i>						
Low	0.071. (0.042)	0.059 (0.041)	0.060 (0.041)	0.050 (0.054)	0.028 (0.052)	0.039 (0.051)
High	0.168** (0.058)	0.163** (0.056)	0.164** (0.055)	0.065 (0.051)	0.045 (0.050)	0.032 (0.050)
<i>Initiative (ref: Medium)</i>						
Low	-0.065 (0.049)	-0.042 (0.048)	-0.066 (0.048)	-0.051 (0.054)	-0.060 (0.052)	-0.073 (0.053)
High	0.007 (0.066)	-0.008 (0.061)	-0.015 (0.062)	-0.015 (0.051)	-0.018 (0.047)	-0.011 (0.048)
<i>Judgment (ref: Medium)</i>						
Low	0.010 (0.050)	-0.008 (0.048)	0.013 (0.048)	0.020 (0.052)	0.024 (0.051)	0.014 (0.051)
High	0.022 (0.056)	0.020 (0.054)	0.010 (0.055)	0.059 (0.054)	0.033 (0.051)	0.013 (0.052)
<i>Professionalism (ref: Medium)</i>						
Low	-0.056 (0.047)	-0.045 (0.048)	-0.056 (0.048)	-0.029 (0.050)	-0.029 (0.049)	-0.015 (0.049)
High	-0.007 (0.049)	-0.016 (0.047)	-0.017 (0.048)	0.019 (0.048)	-0.001 (0.046)	-0.001 (0.046)
<i>Reliability (ref: Medium)</i>						
Low	0.034 (0.048)	0.045 (0.047)	0.014 (0.046)	-0.080 (0.053)	-0.052 (0.052)	-0.044 (0.052)
High	0.033 (0.052)	0.014 (0.051)	0.004 (0.051)	0.006 (0.059)	0.010 (0.054)	0.002 (0.053)
<i>Teamwork and Collaboration (ref: Medium)</i>						
Low	0.004 (0.054)	-0.001 (0.052)	0.003 (0.052)	0.048 (0.051)	0.054 (0.049)	0.054 (0.048)
High	0.037 (0.056)	0.042 (0.056)	0.054 (0.054)	0.080 (0.051)	0.107* (0.049)	0.115* (0.050)
<i>Willingness to Learn (ref: Medium)</i>						
Low	-0.065 (0.048)	-0.080. (0.047)	-0.054 (0.047)	0.022 (0.049)	0.004 (0.048)	-0.012 (0.047)
High	0.083 (0.054)	0.068 (0.053)	0.093. (0.053)	-0.047 (0.053)	-0.053 (0.050)	-0.048 (0.050)
<i>Work Efficiency (ref: Medium)</i>						
Low	0.022 (0.057)	0.042 (0.055)	0.057 (0.053)	-0.070 (0.053)	-0.018 (0.053)	-0.016 (0.052)
High	-0.052 (0.060)	-0.046 (0.057)	-0.027 (0.058)	-0.049 (0.054)	-0.039 (0.050)	-0.023 (0.050)
GPA		0.053** (0.018)	0.062** (0.021)		0.083*** (0.019)	0.096*** (0.024)
ACT		0.019*** (0.004)	0.015** (0.005)		0.026*** (0.004)	0.018*** (0.005)
City FE	No	No	Yes	No	No	Yes
Grade FE	Yes	Yes	Yes	Yes	Yes	Yes
HS Graduation Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	741	741	741	1120	1120	1120
R^2	0.081	0.131	0.180	0.059	0.134	0.172
Adj. R^2	0.041	0.091	0.114	0.033	0.107	0.128

Notes. Intercept terms are excluded from the table. Robust standard errors appear in parentheses. . $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

E Estimates Controlling for College Selectivity

Table E23: Ten Individual Professional Skill Effects on Graduation (Controlling for College Selectivity)

	4-Year (1)	College On-time (2)	Graduation (3)	4-Year (4)	College (5)	Graduation (6)
<i>Adaptability (ref: Medium)</i>						
Low	0.008 (0.038)	0.002 (0.037)	-0.001 (0.037)	0.035 (0.049)	0.028 (0.046)	0.028 (0.046)
High	-0.042 (0.038)	-0.041 (0.037)	-0.039 (0.037)	-0.008 (0.046)	-0.018 (0.044)	-0.025 (0.044)
<i>Communication (ref: Medium)</i>						
Low	-0.009 (0.036)	-0.008 (0.035)	-0.019 (0.035)	0.084 (0.046)	0.082 (0.043)	0.074 (0.043)
High	-0.038 (0.036)	-0.031 (0.035)	-0.036 (0.035)	-0.021 (0.044)	-0.020 (0.042)	-0.029 (0.042)
<i>Enthusiasm (ref: Medium)</i>						
Low	0.019 (0.038)	0.016 (0.037)	0.025 (0.038)	0.036 (0.049)	0.019 (0.047)	0.018 (0.047)
High	0.081* (0.038)	0.071 (0.037)	0.070 (0.037)	0.169*** (0.048)	0.141** (0.046)	0.136** (0.046)
<i>Initiative (ref: Medium)</i>						
Low	-0.051 (0.039)	-0.048 (0.038)	-0.060 (0.038)	-0.064 (0.050)	-0.079 (0.048)	-0.080 (0.048)
High	0.003 (0.038)	0.001 (0.037)	0.001 (0.037)	-0.003 (0.046)	-0.021 (0.044)	-0.031 (0.044)
<i>Judgment (ref: Medium)</i>						
Low	0.001 (0.037)	0.008 (0.036)	0.009 (0.036)	0.095* (0.047)	0.115* (0.045)	0.122** (0.045)
High	0.016 (0.038)	0.001 (0.037)	-0.005 (0.038)	-0.012 (0.048)	-0.011 (0.046)	-0.017 (0.046)
<i>Professionalism (ref: Medium)</i>						
Low	-0.032 (0.040)	-0.042 (0.039)	-0.037 (0.039)	0.003 (0.052)	-0.026 (0.049)	-0.029 (0.049)
High	-0.011 (0.036)	-0.019 (0.035)	-0.026 (0.035)	0.039 (0.046)	0.029 (0.044)	0.015 (0.044)
<i>Reliability (ref: Medium)</i>						
Low	0.000 (0.039)	-0.001 (0.038)	-0.011 (0.038)	0.031 (0.049)	0.029 (0.047)	0.019 (0.047)
High	-0.008 (0.040)	-0.015 (0.039)	-0.019 (0.039)	0.001 (0.049)	-0.007 (0.047)	0.007 (0.047)
<i>Teamwork and Collaboration (ref: Medium)</i>						
Low	0.035 (0.040)	0.036 (0.039)	0.044 (0.039)	-0.010 (0.051)	0.007 (0.048)	0.014 (0.048)
High	0.084* (0.038)	0.083* (0.038)	0.083* (0.038)	0.075 (0.048)	0.073 (0.045)	0.077 (0.046)
<i>Willingness to Learn (ref: Medium)</i>						
Low	-0.027 (0.038)	-0.025 (0.037)	-0.027 (0.037)	-0.071 (0.048)	-0.054 (0.046)	-0.054 (0.046)
High	0.007 (0.037)	0.006 (0.036)	0.014 (0.037)	0.008 (0.047)	0.031 (0.045)	0.042 (0.045)
<i>Work Efficiency (ref: Medium)</i>						
Low	-0.005 (0.038)	0.002 (0.037)	0.005 (0.037)	-0.056 (0.048)	-0.036 (0.046)	-0.033 (0.046)
High	-0.047 (0.039)	-0.025 (0.038)	-0.019 (0.038)	-0.047 (0.048)	-0.023 (0.045)	-0.019 (0.046)
GPA	0.069*** (0.013)	0.051*** (0.013)	0.056*** (0.015)	0.092*** (0.017)	0.048** (0.016)	0.078*** (0.020)
ACT	0.025*** (0.003)	0.013*** (0.003)	0.009* (0.004)	0.026*** (0.004)	0.013** (0.004)	0.009* (0.004)
<i>Gender (ref: Female)</i>						
Male	-0.118*** (0.022)	-0.118*** (0.022)	-0.126*** (0.023)	-0.091*** (0.027)	-0.087*** (0.027)	-0.072* (0.028)
Unknown	0.007 (0.057)	-0.005 (0.055)	-0.010 (0.063)	0.165 (0.106)	0.121 (0.100)	0.128 (0.113)
<i>Selectivity (ref: Nonselective)</i>						
Less Competitive		0.135*** (0.039)	0.139*** (0.040)		0.334*** (0.046)	0.340*** (0.047)
Competitive		0.213*** (0.027)	0.202*** (0.028)		0.391*** (0.034)	0.375*** (0.035)
Highly Competitive		0.290*** (0.037)	0.282*** (0.039)		0.419*** (0.045)	0.411*** (0.047)
Most Competitive		0.410*** (0.053)	0.409*** (0.054)		0.485*** (0.064)	0.472*** (0.066)
<i>Race (ref: Hispanic or Latino)</i>						
Asian	0.091 (0.106)	0.112 (0.103)	0.137 (0.106)	0.053 (0.126)	0.077 (0.119)	0.021 (0.123)
Black or African American	0.035 (0.031)	0.028 (0.031)	0.043 (0.039)	0.009 (0.041)	0.009 (0.039)	0.058 (0.048)
Other	-0.065 (0.064)	-0.067 (0.062)	-0.045 (0.064)	-0.066 (0.076)	-0.084 (0.072)	-0.078 (0.074)
Unknown	0.022 (0.025)	0.008 (0.025)	0.015 (0.034)	0.012 (0.032)	0.006 (0.031)	0.034 (0.042)
White	-0.070 (0.075)	-0.029 (0.074)	0.046 (0.078)	-0.068 (0.094)	-0.050 (0.090)	-0.025 (0.095)
City FE	No	No	Yes	No	No	Yes
Grade FE	Yes	Yes	Yes	Yes	Yes	Yes
HS Graduation Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1773	1773	1773	1341	1341	1341
R ²	0.129	0.175	0.195	0.146	0.233	0.254
Adj. R ²	0.109	0.154	0.163	0.121	0.208	0.216

Notes. Intercept terms are excluded from the table. Robust standard errors appear in parentheses. . $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.