# Online Appendix B: Transfer Students

## 1  Combining Transfer Students and Four-year Beginners

Two-year colleges provide a critical entry point for higher education, especially as college experiences have become less linear and more financially taxing (Stevens and Kirst 2015). Moreover, transferring from two-year to four-year colleges represents an important pathway to bachelor's degree (BA) completion among underrepresented minority students, in particular (Bailey 2015; Bowen et al. 2009; Fink and Jenkins 2017; Jenkins and Fink 2016). Yet the inclusion of transfer students in analyses of college completion can pose a challenge due to the multiple selection processes that transfers navigate to enter four-year college (Melguizo et al. 2011; Reynolds and DesJardins 2009). Unlike four-year beginning students, who move from high school directly to four-year college, transfer students first select into two-year college and subsequently select into four-year college. Additionally, transfer students can enroll in four-year college at varying points of their two-year trajectory. This variation means that the transfer population is heterogeneous in terms of the number of college credits that students have accumulated and whether or not they have earned an associate's degree (Jenkins and Fink 2016; Monaghan and Attewell 2015). Nonetheless, we incorporate transfer students into our analyses of college entry and departure in this appendix in order to assess the implications of doing so for the conclusions we report in the main text.

Extant research has demonstrated that transfer students differ from four-year beginning students in meaningful ways: they possess lower average family income and lower academic achievement in high school; they represent a higher proportion of traditionally underrepresented minority students; and they are older, more likely to work while attending college, and more likely to be the first in their family to attend higher education, among other attributes (American Association of Community Colleges 2012; Handel and Williams 2012). However, researchers also have found that the rate of college completion among transfer students is about equal to that of four-year beginners, net of controls for appropriate covariates (Andrews et al. 2014; Melguizo et al. 2011; Monaghan and Attewell 2015).

In order to make strong conclusions about the extent of difference between transfer stu-

dents and four-year beginners, an adequate sample size of transfer students is required. This requirement is challenging even for a large and longitudinal study such as the Education Longitudinal Study (ELS), because black transfer students are only a small proportion of the total cohort. Thus, while we discuss below the differences in our main results for analyses based on four-year beginners, on transfer students, and on the combined sample of four-year beginners and transfer students, we do not comprehensively explore coefficient differences for estimates comparing transfer students with four-year beginners. We take this approach both because of sample size limitations and because the question of how transfer students and four-year beginners differ is not the central issue of our paper.

## 2    Data and Methodological Considerations

To produce results incorporating transfer students, we draw on the same data as employed in our comparison of black and white four-year beginning students, the ELS and the Integrated Postsecondary Education Data System (IPEDS). Our focal population is all black and white students who have completed a high school diploma or GED; we exclude students who have dropped out of high school since these students would be largely ineligible for college entry. From this initial pool, we complete our analyses using several distinct sub-samples to account for differences in results given either the route or timing of students' transitions into four-year college.

Regarding routes, students either can start at a four-year college or start at a two-year college and then transfer to a four-year college. Regarding timing, we use two different temporal windows: an "immediate" college entry window for students who are part of the 2002 sophomore sample and begin college by September 2004 (87 percent of four-year beginners and 88 percent of transfer students), and also an "extended" college entry window for 2002 cohort students who begin college by September 2006 (94 percent of four-year beginners and 98 percent of transfer students). Transfer students either can be part of the immediate or the extended college entry group, but must transfer by September 2006 to remain in the college-level analysis. We also have analyzed different attendance windows when incorporating transfer students to ensure that our results remain stable whether we evaluate the first year of transfer students' experience as if it resembled the first or third year of four- year beginners' journeys. These parameters give us a

seven- to nine-year window to observe whether students complete BAs.

Importantly, our results change very little given students' enrollment timing. We highlight the minor differences that emerge when we include both four-year beginners and transfer students below; these results are for all four-year beginners and transfer students who have started at a four-year college by September 2006 (hereafter, the "combined sample"). In the ELS data, 1,570 black students and 7,410 white students who were part of the sophomore class of 2002 earned a high school diploma or GED by the fall of 2006.[1] Of this group, 45.4 percent (710 students) of black high school graduates enrolled in four-year college by the fall of 2006; 58.8 percent (4,360) of the sample of white high school graduates similarly enrolled in four-year college. Of the black combined sample, 17 percent (120 students) are transfer students, while that figure is 19 percent (830 students) for the white combined sample.

Observing the distribution of departure in the combined sample by year (see Table 1), we find that while dropout is highest in students' first two years of college attendance (88 percent of students enroll by September 2004), students leave college at all points within our observation window. For the population of students coded as "dropouts" in our sample, 10 percent in fact are still enrolled in college but have not completed by the end of our observation window. On the whole, the departure pattern for the combined sample is very similar to the pattern for four-year college beginners.

For the black combined sample, 50.8 percent depart college or otherwise fail to earn a BA degree by the end of the seven- to nine-year observation window in our data, a percentage nearly double the 26.5 percent rate for the combined white sample. Yet no statistical difference exists between black transfer students' rate of dropout, 52.4 percent, and black four-year beginners' rate, 50.4 percent ($f$=0.74). Though we find a statistical difference between the dropout rates of white transfer students, at 30.4 percent, and white four-year beginners, at 25.4 percent ($f$<0.02), both rates are far lower than those observed either for black transfers or black four-year beginners.

These differences between the combined sample and four-year beginners impact our results only slightly. In regards to the black-white BA completion gap, the inclusion of black and white transfer students lessens the gap, although only by 0.7 percentage points (25 percentage points

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[1]The National Center of Education Statistics (NCES) requires rounding sample counts to the nearest 10.

between the BA completion rates of black and white four-year beginners versus 24.3 percentage points between black and white students in the combined sample). In regards to the BA attainment gap, including black and white transfer students in the analysis widens the gap from 17.2 (35.9-18.7) percentage points when we include only four-year beginners to 21 percentage points (43.2 - 22.2) for the combined sample. The main reasons for this more substantial increase in the attainment gap is the addition of a slightly larger proportion of white students to the overall white college-going sample once we include transfer students, together with the relatively low dropout rate of this group as compared to black transfer students. However, the attainment gap in the combined sample would be 6 percent larger, i.e., 22.3 percentage points, if not for paradoxical persistence.[2] In other words, the paradoxical persistence effect that we report in the main text for the process of entering four-year college directly from high school also is found when we include transfer students (see Figure 1, panels A and B below).

Two methodological considerations are worth noting. First, for our analysis of college entry when using the combined sample, our dependent variable is an indicator of whether students have started four-year college by September 2006, regardless of whether they are four-year beginners or transfer students. Second, most non-curricular college experience measures are drawn from the 2006 ELS wave, which asks students to reflect on their current institution. As a result, this information applies to two-year rather than four-year institutions for those transfer students who have not yet reached their four-year at the time when the 2006 ELS wave data were collected (5 percent of transfer students in the focal sample). To address this issue, we take several approaches: running college-level analyses only including curricular variables, restricting college-level analyses only to students without missing non-curricular information, imputing college non-curricular experience information for transfer students from their reports about community college into the four-year analysis, and using multiple imputation to assign values to all students with missing information. Regardless of the strategy, our results do not change substantively, and so we report results for the full sample below.

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[2]If the combined sample of black students were to enter college in the same way as the combined sample of white students, the (counterfactual) BA attainment rate for black students would be 20.9 percent as compared with an actual BA attainment rate in the combined sample of 22.2 percent.

# 3 Comparing Results for the Combined Sample with Results for Four-year Beginning Students

In general, our results do not change substantially when we analyze the combined sample instead of the sample of four-year beginners. That said, there are several differences worth noting. First, we find that the distribution of pre-college resources explains slightly less (62 percent) of the black-white dropout gap in the combined sample as compared with the sample of four-year beginners (76 percent, see Table 2). This result emerges largely because the distribution of pre-college resources is a less powerful explanation for the BA completion gap between black and white transfer students, an issue we explore at greater length below.

Second, in examining the role of college quality for the combined sample, we find a significant interaction effect between race and college quality – an effect that shows no statistical significance among the pool of four-year beginners (see Table 4, Column 4 in this appendix versus Table 4, Column 4 in the main text). In other words, higher quality colleges have a greater protective effect against dropout for the black students in the combined sample who have higher dropout risk.

Third, in Table 5, which reports results for our analysis of college experiences on dropout, we find that the interaction effect between GPA and race that we report in the main text for four-year beginners is not statistically significant in the combined sample (Figure 3, Panel B presents this result graphically). We also find that the effect of transfer student status on dropout is negative (though not statistically significant) when we also control for the extensive array of covariates described in the main text. We discuss both of these findings in greater detail below as we explore specific differences between transfer students, four-year beginning students and the combined sample of transfer students and four-year beginners.

Taken together, we find some differences when analyzing the combined sample instead of four-year beginners. However, none of these differences provides evidence to contradict the conclusions we reach in the main text.

# 4  Comparing Results for Transfer Students and for Four-year Beginning Students

The primary difference between our results focused solely on transfer students and those pertaining to either four-year beginners or the combined sample is that pre-college resource variables explain less of the black-white BA gap for transfer students. A Fairlie decomposition of the dropout gap between black and white transfer students shows that while pre-college factors explain 76 percent of the dropout gap between black and white four-year beginning students, they only explain 14 percent of the gap between black and white transfer students (see Table 8). There are two main reasons for the difference. The first is that the pre-college academic performance differences between black and white transfer students are smaller than are the differences for four-year beginners. Consequently, while the pre-college academic performance and curricular risk discrepancy produces 15 percentage points of difference in college dropout rates for the four-year beginners, it only produces 6 percentage points of difference for the transfer students. Second, attitudes towards college and career actually produce a dropout difference in favor of black transfer students, offsetting the explanatory effect of academic differences. The total result is that pre-college factors account for 19 of the 25 percentage points of difference for the four-year beginners, but only 3 of 22 percentage points of difference for the transfer students.

At the point of matching to college (Figure 7), we find substantial parallels between transfer students, four-year beginners, and the combined sample. Both black and white transfer students who match to the selective and most selective colleges possess higher pre-college dropout risk than their four-year beginning peers (see Figure 2 in the main text), but the matching process for both black and white transfer students appears generally similar to that of four-year beginners (see Figure 7, Panel B in this appendix versus Figure 2, panel B in the main text). We further find that attending high quality colleges is associated with lower dropout for transfer students (see Table 9, Model 3) and that there is no evidence that this effect differs for white and black transfer students (see Table 9, Model 4).

In examining transfer students' college experiences, we report the results from two hierarchical models for the combined sample of transfer students and four-year beginners. The first model includes two-way interactions between transfer status and all covariates, focusing attention

on contrasts between all transfer students and four-year beginners (see Table 10). The second includes two-way interactions between race and all covariates and between transfer status and all covariates, as well as three-way interactions between race, transfer status, and all covariates (see Table 11). This second model focuses attention on the differences between black and white transfer students.

From the first model, the coefficient estimates suggest that, net of all the other pre-college, institutional, and college experience covariates in the model, transfer students have higher dropout rates if they are black and lower dropout rates if they are female, relative to four-year beginners. The estimates suggest that attending a high quality college is less protective against dropout for transfer students than for four-year beginners. They additionally indicate that high levels of social engagement are less protective for transfer students than for four-year beginning students, while we can't reject the hypothesis that high GPA is equally protective for transfer students and four-year beginners. We conclude that these results do not contradict our finding for the (larger) sample of four-year college beginners that college GPA has a larger effect than social engagement on college dropout (see Figure 8).

Our second model includes three-way interactions involving race and transfer status. In general, the three-way interaction effects are not statistically significant, which is perhaps not surprising given the relatively small proportion of the ELS sample comprised of black transfer students. We find heightened protection from being a black transfer student in a college with a higher percentage of black students and of being a black transfer student with a STEM major, but we caution against drawing any strong substantive conclusion from these estimates. Both of these effects are statistically significant only at the 0.05 level, and none of the other three-way estimates achieve this level of statistical significance. There are twenty-one three-way interaction terms in the model, and we would expect that at least two of these twenty-one coefficients would be statistically significant at the 0.05 level more than 28% of the time by chance alone. Consequently, there is very little evidence in the ELS data that black transfer students are different from white transfer students in the way their probability of dropout is shaped by the pre-college, institutional, and college-experience variables in our model. Additional data with even larger sample sizes or with a sampling design that overweights black and transfer students is needed to explore this issue further.

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# 5   Tables and Figures

Table 1: Distribution of Student Departure by Year Among Non-Completers in the Combined Sample

|  | Percent of Student Dropouts |
|---|---|
| June 2005 | 12.1 |
| June 2006 | 14.3 |
| June 2007 | 10.5 |
| June 2008 | 9.0 |
| June 2009 | 10.3 |
| June 2010 | 7.5 |
| June 2011 | 7.4 |
| June 2012 | 7.9 |
| June 2013 | 11.0 |
| Still Enrolled | 10.0 |
| All non-completers | 100.0 |

*Source: ELS 2012 & postsecondary transcript data.*

Table 2: Fairlie Decomposition of the Proportion of the Dropout Gap Explained by Pre-College Factors for the Combined Sample ($n$=5,070)

|  | Descriptive Data |
|---|---|
| Black dropout rate | 0.508 |
| White dropout | 0.265 |
| Difference | -0.243 |
|  | **Amount Explained by Factors & Variables** |
| Female | 0.00002 |
| Pre-College SES & Family Composition | -0.02 |
| Pre-College Academic Performance | -0.09 |
| Pre-College Curricular Risk | -0.03 |
| Attitudes Towards College & Career | 0.009 |
| Connection to Home | -0.01 |
| **Total Explained** | -0.15 (62%) |

*Note: The decomposition is performed using black students as the reference group and factors and variables are inserted into the decomposition randomly to ensure robustness of results. However, results are similar regardless of which group (black, white, or pooled) serves as the reference and of whether variables are inserted randomly or not.*
*Source: ELS 2002, 2004, 2012 & postsecondary transcript data.*

## Table 3: Four-year College Entry Directly from High School or Via Transfer for the Combined Sample, By Race

| | Black *(n=1,570)* | | White *(n=7,410)* | |
|---|---|---|---|---|
| | *Coef.* | *Std. Err.* | *Coef.* | *Std. Err.* |
| Female | -0.12 | 0.149 | -0.19*** | 0.071 |
| Age | -0.46* | 0.148 | -0.21*** | 0.052 |
| Income $35-$50K | 0.18 | 0.200 | 0.02 | 0.108 |
| Income $50-$75K | 0.43 | 0.222 | 0.21* | 0.106 |
| Income $75-$100K | 1.06*** | 0.331 | 0.41** | 0.121 |
| Income > $100K | 0.45 | 0.340 | 0.46*** | 0.129 |
| Parents Married | 0.27 | 0.233 | -0.01 | 0.144 |
| Dad Present | -0.43 | 0.248 | -0.35* | 0.149 |
| Mother's Ed: College or More | 0.17 | 0.160 | 0.20* | 0.074 |
| Father's Ed: College or More | 0.19 | 0.158 | 0.33*** | 0.075 |
| HS GPA: Mid-Group | 0.30 | 0.175 | 0.39*** | 0.094 |
| HS GPA: Highest Group | 0.73*** | 0.210 | 0.73*** | 0.092 |
| HS Curric: Intense | 0.99*** | 0.309 | 0.19 | 0.127 |
| HS Curric: Less Intense | 0.25 | 0.232 | -0.04 | 0.095 |
| HS Curric: Least Intense | -0.44 | 0.246 | -0.54*** | 0.110 |
| Academic Risk: One Risk Factor | 0.05 | 0.210 | -0.24** | 0.091 |
| Academic Risk: Two or More Risk Factors | -0.07 | 0.246 | -0.35** | 0.136 |
| Talk to Parents about Courses: Sometimes | -0.20 | 0.186 | 0.11 | 0.093 |
| Talk to Parents about Courses: Often | -0.21 | 0.208 | 0.19 | 0.108 |
| Hours per Week on Homework | 0.06 | 0.041 | 0.02 | 0.021 |
| Hours per Week on Extracurriculars | 0.06 | 0.040 | 0.05* | 0.019 |
| College Financial Aid Offered | 1.44*** | 0.145 | 0.78*** | 0.071 |
| Highest Selectivity of College Acceptance: Moderate | 1.65*** | 0.178 | 1.86*** | 0.082 |
| Highest Selectivity of College Acceptance: Most | 1.85*** | 0.259 | 1.97*** | 0.106 |
| Expects blue-collar job | 0.17 | 0.211 | -0.48*** | 0.091 |
| Expects white-collar job | 0.42* | 0.178 | 0.09 | 0.079 |
| Importance of Getting Away: Somewhat | 0.18 | 0.164 | -0.001 | 0.076 |
| Importance of Getting Away: Very | 0.08 | 0.183 | -0.05 | 0.096 |
| Importance of Making Money: Somewhat | 0.41 | 0.309 | -0.02 | 0.101 |
| Importance of Making Money: Very | 0.64* | 0.307 | 0.03 | 0.114 |
| Importance of College Reputation: Somewhat | 0.64* | 0.277 | 0.67*** | 0.115 |
| Importance of College Reputation: Very | 0.71** | 0.268 | 0.74*** | 0.116 |
| Importance of College Racial Comp.: Somewhat | 0.27 | 0.175 | 0.08 | 0.078 |
| Importance of College Racial Comp.: Very | 0.24 | 0.192 | 0.02 | 0.129 |
| Importance of Easy Admission Policy: Somewhat | -0.44* | 0.200 | 0.01 | 0.082 |
| Importance of Easy Admission Policy: Very | -0.87*** | 0.214 | -0.09 | 0.110 |
| Importance of Living at Home: Somewhat | -0.31 | 0.175 | -0.41*** | 0.087 |
| Importance of Living at Home: Very | -0.35 | 0.186 | -0.19*** | 0.094 |
| Hours worked per week in HS: 25 hours or less | 0.23 | 0.159 | 0.03 | 0.075 |
| Hours worked per week in HS: More than 25 hours | 0.26 | 0.189 | -0.23* | 0.102 |
| Frequency of Hanging Out with Friends: Most days | 0.08 | 0.211 | 0.21 | 0.123 |

Table 3: Four-year College Entry Directly from High School or
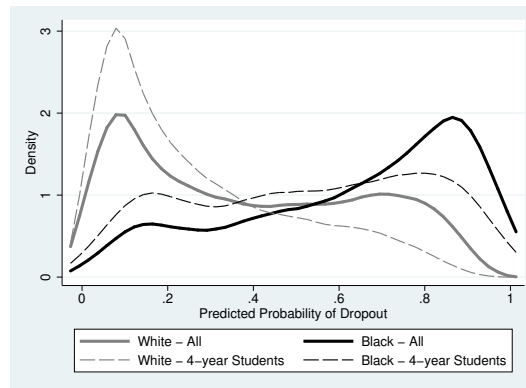Via Transfer for the Combined Sample, By Race

| | | | | |
|---|---|---|---|---|
| Frequency of Hanging Out with Friends: Everyday | 0.11 | 0.193 | 0.17 | 0.121 |
| Number of Friends Dropped out of High School | -0.09 | 0.101 | -0.15* | 0.053 |
| Constant | -2.95*** | 0.602 | -1.76*** | 0.281 |
| Actual Predicted Entry Rate (percentage) | 0.45 | 0.009 | 0.59 | 0.004 |
| Counterfactual Predicted Entry Rate (percentage) | 0.43 | 0.008 | 0.60 | 0.004 |

*Note: Coefficients reported as effects on log odds; ***z<.001 **z<.01 *z<.05.*
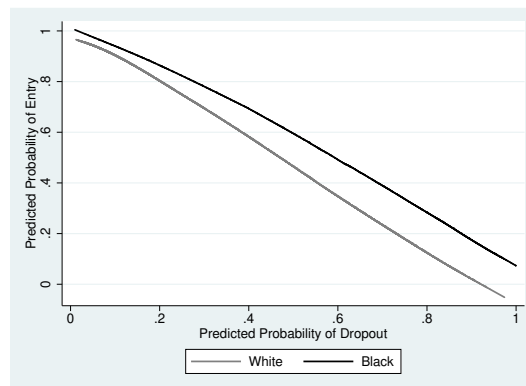
*Source: ELS 2002, 2004, 2012 & postsecondary transcript data.*

Figure 1: Dropout Risk and College Entry for the Combined Sample
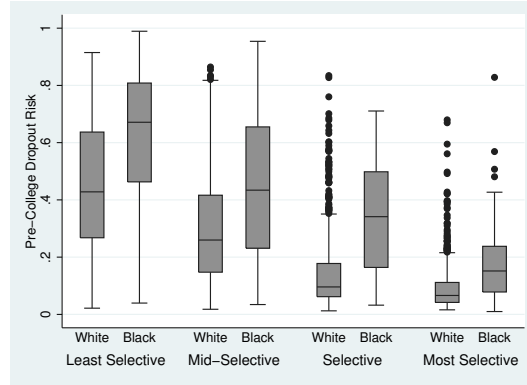
A. The Distribution of Dropout Risk



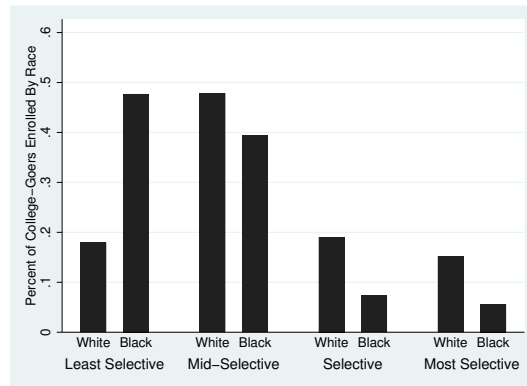C. Entry Probability by Dropout Risk



*Source: ELS 2002, 2004, 2012 & postsecondary transcript data.*

Figure 2: Entry Decisions and College Selectivity for the Combined Sample

A. College Entry by Pre-College Dropout Risk and
Selectivity

C. Percent of College-goers Enrolled within College
Selectivity Categories

*Sources: ELS 2002, 2004, 2012 & postsecondary transcript data; Barron's Profile of American Colleges, 2016.*

Table 4: Effects of College Quality on Dropout Given Race and Dropout Risk for the Combined Sample

| | Model 1: Combined Sample:White (n=4,360) | | Model 2: Combined Sample: Black (n=710) | | Model 3: Combined Sample: White and Black (n=5,070) | | Model 4: Combined Sample: White and Black (n=5,070) | |
|---|---|---|---|---|---|---|---|---|
| | *Coef.* | *Std. Err.* | *Coef.* | *Std. Err* | *Coef.* | *Std. Err* | *Coef.* | *Std. Err* |
| Black | — | — | — | — | 0.01 | 0.122 | 0.09 | 0.276 |
| Female | -0.06 | 0.097 | -0.06 | 0.213 | -0.06 | 0.088 | -0.06 | 0.088 |
| Transfer | -0.27* | 0.125 | -0.31 | 0.286 | 0.26 | 0.113* | -0.28* | 0.114 |
| Dropout Risk | 4.67*** | 0.287 | 4.23*** | 0.535 | 4.56*** | 0.235 | 4.68*** | 0.285 |
| Institutional Quality | -0.62*** | 0.110 | -0.12 | 0.283 | -0.50*** | 0.064 | -0.62*** | 0.110 |
| Institutional Quality * Dropout Risk | 0.52 | 0.338 | -1.18* | 0.573 | | | 0.52 | 0.302 |
| Black * Dropout Risk | — | — | — | — | | | -0.46 | 0.597 |
| Black * Institutional Quality | — | — | — | — | | | 0.50 | 0.302 |
| Black * Dropout Risk * Institutional Quality | — | — | — | — | | | -1.72** | 0.662 |
| Constant | -2.38*** | 0.109 | -2.29*** | 0.298 | -2.38*** | 0.099 | -2.38*** | 0.106 |

*Note: Results reported in log odds; standard errors reported below for two-tailed tests; ***p<0.001 **p<0.01 *p<0.05.*

*Sources: ELS 2002, 2004, 2012 & postsecondary transcript data; Barron's Profile of American Colleges, 2016; IPEDS, 2004-2009.*

Table 5: Dropout Given Race, Pre-College, Institution-Level, and College Experience Factors for the Combined Sample (n=5,070)

|  | Coef. | Std. Err. |
|---|---|---|
| **Demographics** | | |
| Black | 0.13 | 0.455 |
| Female | 0.19 | 0.118 |
| Black*Female | -0.25 | 0.296 |
| **Pre-college Variables** | | |
| Pre-College Academic Performance Factor | -0.24** | 0.079 |
| Pre-College Curricular Risk Factor | 0.21** | 0.069 |
| Pre-College Family Structure & SES Factor | -0.13 | 0.068 |
| Pre-College Connection to Home | 0.11 | 0.065 |
| Pre-College Attitudes towards College & Career | -0.12 | 0.063 |
| Black*Pre-College Academic Performance | -0.23 | 0.174 |
| Black*Pre-College Curricular Risk | -0.36* | 0.182 |
| Black*Pre-College Family SES | -0.18 | 0.146 |
| Black*Pre-College Connection to Home | 0.09 | 0.163 |
| Black*Pre-College Attitudes towards College & Career | 0.16 | 0.141 |
| **Institutional Variables** | | |
| College Quality Factor | -0.58*** | 0.090 |
| College Curricular Experience Factor | 0.04 | 0.081 |
| College Financial Support Factor | -0.01 | 0.077 |
| College Location Factor | -0.10 | 0.068 |
| Percent White | -0.01 | 0.106 |
| Percent Black | -0.31* | 0.143 |
| Black*College Quality | -0.14 | 0.232 |
| Black*College Curricular Experience | 0.32 | 0.189 |
| Black*College Financial Support | -0.09 | 0.171 |
| Black*College Location | -0.09 | 0.171 |
| Black*Percent White | 0.12 | 0.258 |
| Black*Percent Black | 0.40 | 0.244 |
| **College Experience Variables** | | |
| Transfer Student | -0.28 | 0.142 |
| College GPA | -1.21*** | 0.094 |
| College Curricular Risk Factor | 0.42*** | 0.070 |
| College Academic Integration Factor | -0.09 | 0.065 |
| College Social Engagement Factor | -0.51*** | 0.076 |
| STEM | -0.64*** | 0.166 |
| Arts, Humanities & Social Science | -0.89*** | 0.172 |
| Business, Education & Trades | -1.15*** | 0.148 |
| Live at Home with Parents | 0.26 | 0.142 |
| Live on Campus | -0.32* | 0.149 |
| Black*Transfer | 0.18 | 0.368 |

Table 5: Dropout Given Race, Pre-College, Institution-Level, and College Experience Factors for the Combined Sample (*n=5,070*)
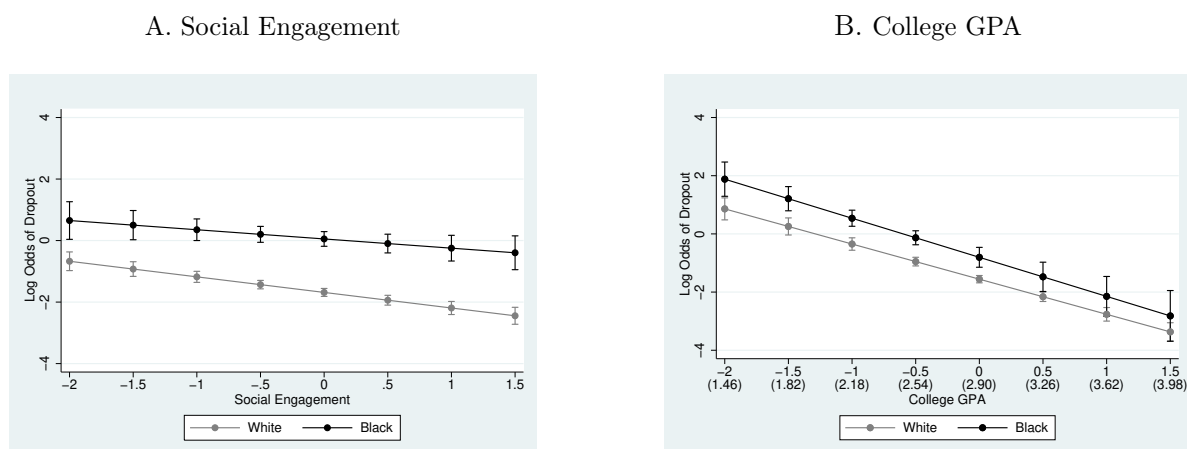
| | | |
|---|---:|---:|
| Black*College GPA | -0.13 | 0.222 |
| Black*College Curricular Risk | -0.18 | 0.136 |
| Black*Academic Integration | 0.02 | 0.146 |
| Black*Social Engagement | 0.21 | 0.172 |
| Black*STEM | -0.17 | 0.384 |
| Black*Arts, Humanities & Soc. Sci. | -0.49 | 0.462 |
| Black*Business, Education & Trades | -0.22 | 0.365 |
| Black*Live with Parents | 0.18 | 0.375 |
| Black*Live on Campus | -0.12 | 0.358 |
| Constant | -0.87*** | 0.152 |

*Notes: Results reported as effects on log odds;*
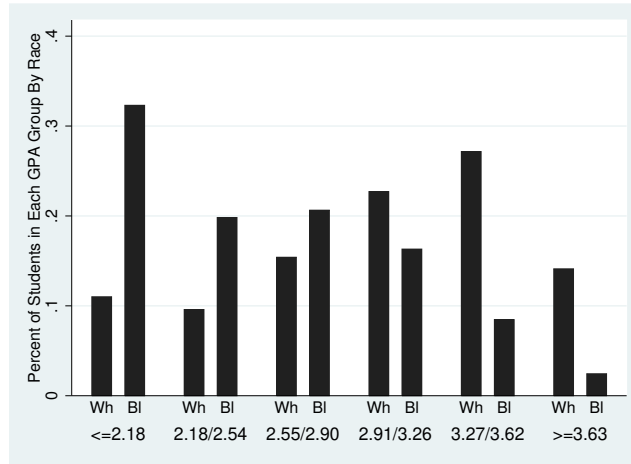
****z<0.001 **z<0.01 *z<0.05.*

*Sources: ELS 2002, 2004, 2006, 2012 & postsecondary transcript data; Barron's*
*Profile of American Colleges, 2016; IPEDS, 2004-2009.*

Figure 3: Predicted Black and White Dropout Rates Given Social Engagement and College GPA for the Combined Sample

A. Social Engagement

B. College GPA



*Sources: ELS 2002, 2004, 2006, 2012 & postsecondary transcript data; Barron's Profile of American Colleges, 2016; IPEDS, 2004-2009.*

Figure 4: Distribution of College GPA for the Combined Sample



*Source: ELS 2006, 2012 & postsecondary transcript data.*

Table 6: Fairlie Decomposition of the Proportion of the Dropout Gap Explained by Pre-College, College-level, and College Experience Factors and Variables for the Combined Sample($n=5,070$)

|  | Descriptive Data |
| --- | --- |
| Black dropout rate | 0.508 |
| White dropout | 0.265 |
| Difference | -0.243 |
|  | Amount Explained by Factors & Variables |
| Female | -0.0002 |
| Transfer | -0.001 |
| Pre-College SES & Family Composition | -0.01 |
| Pre-College Academic Performance | -0.02 |
| Pre-College Curricular Risk | -0.02 |
| Attitudes towards College & Career | -0.01 |
| Connection to Home | -0.004 |
| College Quality | -0.02 |
| College Curricular Experience | -0.0009 |
| College Financial Support | -0.0003 |
| College Location | 0.002 |
| College Percent Black | 0.06 |
| College Percent White | -0.002 |
| College Academic Achievement (GPA) | -0.13 |
| College Curricular Risk | -0.03 |
| College Academic Integration | 0.003 |
| College Social Engagement | -0.01 |
| STEM Major | 0.01 |
| Arts & Humanities Major | -0.01 |
| Business Major | -0.01 |
| Living at Home | -0.002 |
| Living on Campus | 0.001 |
| **Total Explained** | -0.17 (71%) |

*Note: The decomposition is performed using black students as the reference group and variables are inserted into the decomposition randomly to ensure robustness of results. However, results are similar regardless of which group (black, white, or pooled) serves as the reference and of whether variables are inserted randomly or not.*

*Sources: ELS 2002, 2004, 2012 & postsecondary transcript data; Barron's Profile of American Colleges, 2016; IPEDS, 2004-2009.*
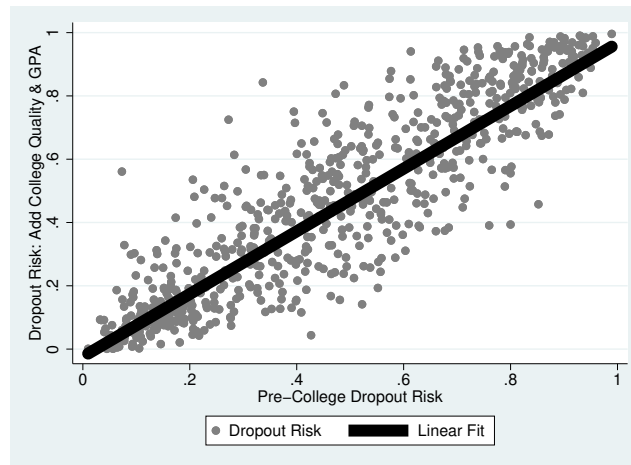
Table 7: The Effect of Race, Pre-College Factors, and College Quality on College GPA for the Combined Sample *(n=5,070)*

|  | Coef. | Std. Err. |
|---|---|---|
| Black | -0.52*** | 0.052 |
| Female | 0.28*** | 0.029 |
| Pre-College Academic Performance Factor | 0.26*** | 0.020 |
| Pre-College Academic Risk Factor | -0.06*** | 0.018 |
| Pre-College Family Structure & SES Factor | 0.01 | 0.017 |
| Pre-College Attitudes towards College & Career | -0.03 | 0.017 |
| Pre-College Connection to Home | -0.05*** | 0.018 |
| College Quality | 0.07*** | 0.014 |
| Constant | -0.09*** | 0.024 |

*Note: Results reported as effects on log odds; ***p<0.001 **p<0.01 *p<0.05.*
*Sources: ELS 2002, 2004, 2006, 2012 & postsecondary transcript data; Barron's* Profile of American Colleges, *2016; IPEDS, 2004-2009.*

Figure 5: Pre-College versus College Risk Distributions for the Combined Sample



*Sources: ELS 2002, 2004, 2006, 2012 & postsecondary transcript data; Barron's* Profile of American Colleges, *2016; IPEDS, 2004-2009.*

Table 8: Fairlie Decomposition of the Proportion of the Dropout Gap Explained by Pre-College Factors for Transfer Students (*n=950*)
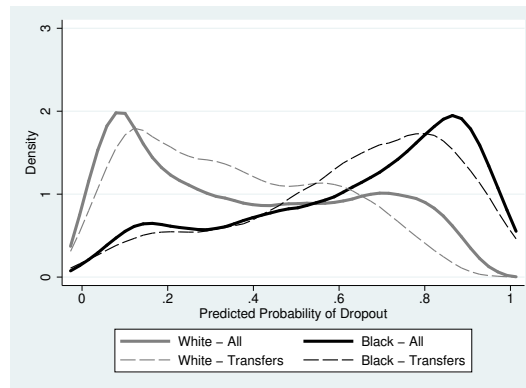
|  | Descriptive Data |
|---|---|
| Black dropout rate | 0.524 |
| White dropout | 0.304 |
| Difference | -0.220 |

|  | Amount Explained by Factors & Variables |
|---|---|
| Female | 0.001 |
| Pre-College SES & Family Composition | 0.001 |
| Pre-College Academic Performance | -0.04 |
| Pre-College Curricular Risk | -0.02 |
| Attitudes towards College & Career | 0.03 |
| Connection to Home | -0.001 |
| **Total Explained** | -0.03 (14%) |

*Note: The decomposition is performed using black students as the reference group and factors and variables are inserted into the decomposition randomly to ensure robustness of results. However, results are similar regardless of which group (black, white, or pooled) serves as the reference and of whether variables are inserted randomly or not.*
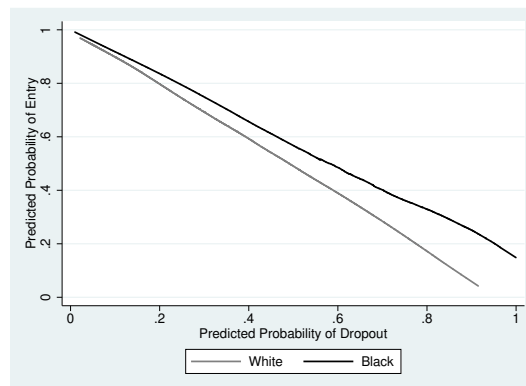*Source: ELS 2002, 2004, 2012 & postsecondary transcript data.*

Figure 6: Dropout Risk and College Entry for Transfer Students
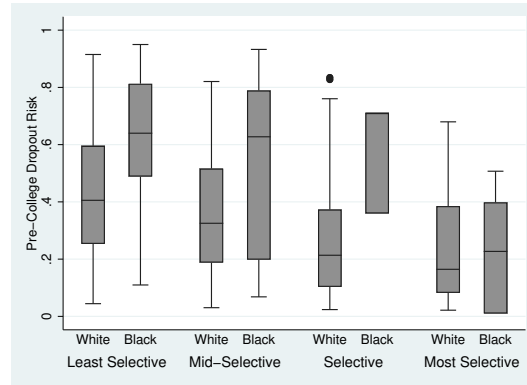
A. The Distribution of Dropout Risk



B. Entry Probability by Dropout Risk
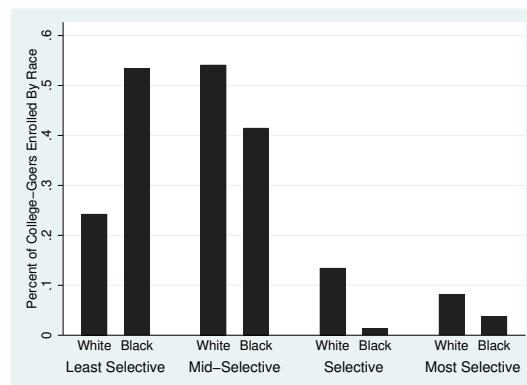


*Source: ELS 2002, 2004, 2012 & postsecondary transcript data.*

Figure 7: Entry Decisions and College Selectivity for Transfer Students

A. College Entry by Pre-College Dropout Risk
and Selectivity



B. Percent of College-goers Enrolled within
College Selectivity Categories



*Sources: ELS 2002, 2004, 2012 & postsecondary transcript data; Barron's* Profile of American Colleges,
*2016.*

Table 9: Effects of College Quality on Dropout Given Race and Dropout Risk for Transfer Students

| | Model 1: Transfer Students: White (n=830) | | Model 2: Transfer Students: Black (n=120) | | Model 3: Transfer Students: White and Black (n=950) | | Model 4: Transfer Students: White and Black (n=950) | |
|---|---|---|---|---|---|---|---|---|
| | *Coef.* | *Std. Err.* | *Coef.* | *Std. Err* | *Coef.* | *Std. Err* | *Coef.* | *Std. Err* |
| Black | — | — | — | — | 0.34 | 0.241 | -0.48 | 0.475 |
| Female | -0.21 | 0.184 | -0.46 | 0.501 | -0.23 | 0.172 | -0.24 | 0.173 |
| Dropout Risk | 2.38*** | 0.457 | 3.31** | 1.162 | 2.56*** | 0.401 | 2.37*** | 0.457 |
| Institutional Quality | -0.13 | 0.201 | -1.03 | 1.016 | -0.35** | 0.064 | -0.14 | 0.200 |
| Institutional Quality * Dropout Risk | -0.35 | 0.556 | -0.19 | 1.561 | | | -0.35 | 0.556 |
| Black * Dropout Risk | — | — | — | — | | | 0.96 | 1.228 |
| Black * Institutional Quality | — | — | — | — | | | -0.89 | 1.008 |
| Black * Dropout Risk * Institutional Quality | — | — | — | — | | | 0.22 | 0.662 |
| Constant | -1.63*** | 0.218 | -1.96* | 0.803 | -1.70*** | 0.207 | -1.64*** | 0.214 |

*Note: Results reported in log odds; standard errors reported below for two-tailed tests; ***p<0.001 **p<0.01 *p<0.05.*

*Sources: ELS 2002, 2004, 2012 & postsecondary transcript data; Barron's Profile of American Colleges, 2016; IPEDS, 2004-2009.*

Table 10: College Dropout Model for the Combined Sample, including Two-Way Interactions between Transfer Status and Pre-College, Institution-Level, and College Experience Factors (n=5,070)

|  | Coef. | Std. Err. |
|---|---|---|
| **Demographics & College Entry Pathway** |  |  |
| Black | -0.18 | 0.194 |
| Female | 0.29* | 0.127 |
| Transfer Student | 0.59 | 0.308 |
| Transfer*Black | 0.84* | 0.399 |
| Transfer*Female | -0.47* | 0.238 |
| **Pre-college Variables** |  |  |
| Pre-College Academic Performance Factor | -0.27** | 0.085 |
| Pre-College Curricular Risk Factor | 0.15* | 0.074 |
| Pre-College Family Structure & SES Factor | -0.15* | 0.067 |
| Pre-College Connection to Home | 0.19** | 0.071 |
| Pre-College Attitudes towards College & Career | -0.05 | 0.066 |
| Transfer*Pre-College Academic Performance | 0.05 | 0.145 |
| Transfer*Pre-College Curricular Risk | -0.01 | 0.147 |
| Transfer*Pre-College Family SES | 0.03 | 0.132 |
| Transfer*Pre-College Connection to Home | -0.21 | 0.124 |
| Transfer*Pre-College Attitudes towards College & Career | -0.08 | 0.123 |
| **Institutional Variables** |  |  |
| College Quality Factor | -0.69*** | 0.099 |
| College Curricular Experience Factor | 0.002 | 0.095 |
| College Financial Support Factor | 0.06 | 0.081 |
| College Location Factor | -0.03 | 0.072 |
| Percent White | -0.02 | 0.112 |
| Percent Black | -0.07 | 0.099 |
| Transfer*College Quality | 0.40* | 0.176 |
| Transfer*College Curricular Experience | 0.16 | 0.141 |
| Transfer*College Financial Support | -0.25 | 0.148 |
| Transfer*College Location | -0.20 | 0.1 |
| Transfer*Percent White | 0.05 | 0.195 |
| Transfer*Percent Black | -0.05 | 0.203 |
| **College Experience Variables** |  |  |
| College GPA | -1.32*** | 0.101 |
| College Curricular Risk Factor | 0.35*** | 0.067 |
| College Academic Integration Factor | -0.10 | 0.069 |
| College Social Engagement Factor | -0.55*** | 0.079 |
| STEM | -0.62*** | 0.172 |
| Arts, Humanities & Social Science | -0.92*** | 0.189 |
| Business, Education & Trades | -1.26*** | 0.162 |
| Live at Home with Parents | 0.38* | 0.156 |

Table 10: College Dropout Model for the Combined Sample, including Two-Way Interactions between Transfer Status and Pre-College, Institution-Level, and College Experience Factors (n=5,070)

| | | |
|---|---:|---:|
| Live on Campus | -0.18 | 0.157 |
| Transfer*College GPA | 0.23 | 0.183 |
| Transfer*College Curricular Risk | -0.03 | 0.133 |
| Transfer*Academic Integration | 0.01 | 0.125 |
| Transfer*Social Engagement | 0.36* | 0.151 |
| Transfer*STEM | 0.28 | 0.326 |
| Transfer*Arts, Humanities & Soc. Sci. | -0.23 | 0.363 |
| Transfer*Business, Education & Trades | 0.19 | 0.293 |
| Transfer*Live with Parents | -0.43 | 0.275 |
| Transfer*Live on Campus | -0.64* | 0.316 |
| Constant | -0.93*** | 0.164 |

Notes: Results reported as effects on log odds;

***z<0.001 **z<0.01 *z<0.05.

Sources: ELS 2002, 2004, 2006, 2012 & postsecondary transcript data; Barron's Profile of American Colleges, 2016; IPEDS, 2004-2009.

Table 11: College Dropout Model for the Combined Sample, including Three-Way Interactions between Race, Transfer Status and Pre-College, Institution-Level, and College Experience Factors (n=5,070)

|  | Coef. | Std. Err. |
|---|---|---|
| **Demographics** | | |
| Black | -0.12 | 0.579 |
| Female | 0.31 | 0.143 |
| Black*Female | -0.25 | 0.352 |
| Transfer*Female | -0.42 | 0.261 |
| Black*Transfer*Female | -0.49 | 0.731 |
| **Pre-college Variables** | | |
| Pre-College Academic Performance Factor | -0.31** | 0.098 |
| Pre-College Curricular Risk Factor | 0.22** | 0.081 |
| Pre-College Family Structure & SES Factor | -0.12 | 0.079 |
| Pre-College Connection to Home | 0.16* | 0.079 |
| Pre-College Attitudes towards College & Career | -0.07 | 0.077 |
| Black*Pre-College Academic Performance | 0.03 | 0.198 |
| Black*Pre-College Curricular Risk | -0.48* | 0.214 |
| Black*Pre-College Family SES | -0.22 | 0.160 |
| Black*Pre-College Connection to Home | 0.21 | 0.197 |
| Black*Pre-College Attitudes towards College and Career | -0.03 | 0.159 |
| Transfer*Pre-College Academic Performance | 0.18 | 0.167 |
| Transfer*Pre-College Curricular Risk | -0.07 | 0.161 |
| Transfer*Pre-College Family SES | -0.03 | 0.149 |
| Transfer*Connection to Home | -0.16 | 0.141 |
| Transfer*Attitudes towards College and Career | -0.15 | 0.140 |
| Black*Transfer*Pre-College Academic Performance | -0.93 | 0.501 |
| Black*Transfer*Pre-College Curricular Risk | 0.306 | 0.468 |
| Black*Transfer*Pre-College Family SES | -0.05 | 0.383 |
| Black*Transfer*Connection to Home | -0.22 | 0.359 |
| Black*Transfer*Attitudes towards College and Career | 0.609 | 0.396 |
| **Institutional Variables** | | |
| College Quality Factor | -0.69*** | 0.109 |
| College Curricular Experience Factor | 0.02 | 0.104 |
| College Financial Support Factor | 0.11 | 0.095 |
| College Location Factor | -0.01 | 0.083 |
| Percent White | -0.07 | 0.126 |
| Percent Black | -0.51** | 0.177 |
| Black*College Quality | -0.11 | 0.289 |
| Black*College Curricular Experience | 0.34 | 0.270 |
| Black*College Financial Support | -0.27 | 0.182 |

Table 11: College Dropout Model for the Combined Sample, including Three-Way Interactions between Race, Transfer Status and Pre-College, Institution-Level, and College Experience Factors (n=5,070)

| | | |
|---|---|---|
| Black*College Location | -0.14 | 0.193 |
| Black*Percent White | 0.44 | 0.275 |
| Black*Percent Black | 0.86** | 0.263 |
| Transfer*College Quality | 0.45* | 0.190 |
| Transfer*College Curricular Experience | 0.08 | 0.160 |
| Transfer*College Financial Support | -0.34* | 0.169 |
| Transfer*College Location | -0.21 | 0.148 |
| Transfer*Percent White | 0.11 | 0.218 |
| Transfer*Percent Black | 0.46 | 0.299 |
| Black*Transfer*College Quality | -0.85 | 0.569 |
| Black*Transfer*College Curricular Experience | 0.14 | 0.400 |
| Black*Transfer*College Financial Support | 0.50 | 0.403 |
| Black*Transfer*College Location | -0.03 | 0.404 |
| Black*Transfer*Percent White | -0.75 | 0.518 |
| Black*Transfer*Percent Black | -1.13* | 0.505 |
| *College Experience Variables* | | |
| Transfer Student | 0.73* | 0.345 |
| College GPA | -1.22*** | 0.115 |
| College Curricular Risk Factor | 0.45*** | 0.083 |
| College Academic Integration Factor | -0.13 | 0.078 |
| College Social Engagement Factor | -0.61*** | 0.096 |
| STEM | -0.83*** | 0.199 |
| Arts, Humanities & Social Science | -0.83*** | 0.205 |
| Business, Education & Trades | -1.23*** | 0.179 |
| Live at Home with Parents | 0.37* | 0.173 |
| Live on Campus | -0.07 | 0.175 |
| Black*Transfer | 0.14 | 1.183 |
| Black*College GPA | -0.53* | 0.248 |
| Black*College Curricular Risk | -0.30 | 0.166 |
| Black*Academic Integration | 0.15 | 0.174 |
| Black*Social Engagement | 0.18 | 0.208 |
| Black*STEM | 0.36 | 0.459 |
| Black*Arts, Humanities & Soc. Sci. | -0.80 | 0.574 |
| Black*Business, Education & Trades | -0.01 | 0.448 |
| Black*Live with Parents | 0.42 | 0.471 |
| Black*Live on Campus | -0.55 | 0.425 |
| Transfer*College GPA | 0.03 | 0.201 |
| Transfer*College Curricular Risk | -0.12 | 0.158 |
| Transfer*Academic Integration | 0.09 | 0.139 |
| Transfer*Social Engagement | 0.38* | 0.171 |
| Transfer*STEM | 0.58 | 0.370 |

Table 11: College Dropout Model for the Combined Sample, including Three-Way Interactions between Race, Transfer Status and Pre-College, Institution-Level, and College Experience Factors ($n=5,070$)

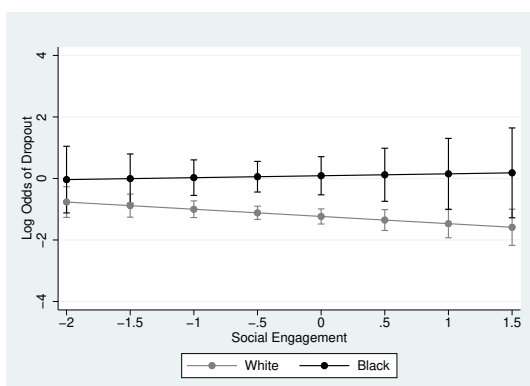| | | |
|---|---|---|
| Transfer*Arts, Humanities & Soc. Sci. | -0.43 | 0.387 |
| Transfer*Business, Education & Trades | 0.19 | 0.326 |
| Transfer*Live with Parents | -0.37 | 0.296 |
| Transfer*Live on Campus | -1.00** | 0.347 |
| Black*Transfer*College GPA | 0.59 | 0.579 |
| Black*Transfer*College Curricular Risk | 0.23 | 0.310 |
| Black*Transfer*Academic Integration | -0.69 | 0.396 |
| Black*Transfer*Social Engagement | 0.12 | 0.423 |
| Black*Transfer*STEM | -2.19* | 1.074 |
| Black*Transfer*Arts, Humanities & Soc. Sci. | 0.97 | 1.023 |
| Black*Transfer*Business, Education & Trades | -0.70 | 0.849 |
| Black*Transfer*Live with Parents | -1.06 | 0.951 |
| Black*Transfer*Live on Campus | 1.29 | 0.880 |
| Constant | -1.10*** | 0.183 |

*Notes: Results reported as effects on log odds;*
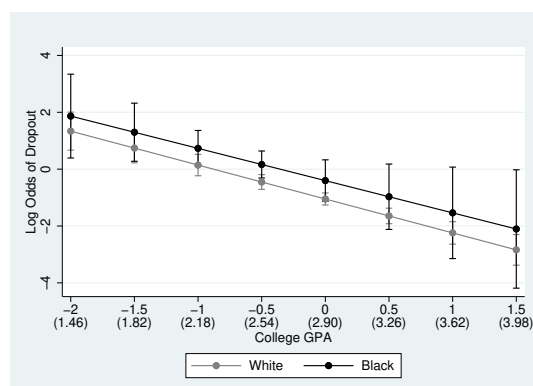
****z<0.001 **z<0.01 *z<0.05.*

*Sources: ELS 2002, 2004, 2006, 2012 & postsecondary transcript data; Barron's*
Profile of American Colleges, *2016; IPEDS, 2004-2009.*

Figure 8: Predicted Black and White Dropout Rates Given Social Engagement and College GPA for Transfer Students

A. Social Engagement    B. College GPA



*Sources: ELS 2002, 2004, 2006, 2012 & postsecondary transcript data; Barron's* Profile of American Colleges, *2016; IPEDS, 2004-2009.*

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