Predicting Career Success in Thrive Scholars' College Class of 2022

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Abstract

This study examines the career success of high-achieving marginalized students in Thrive Scholars, a six-year program for college students. We conducted regression analyses to determine predictors of three elements of successful career entry post-graduation—attainment of meaningful first-destination, starting salary, and sense of control. Results indicate that, 1) STEM major was a significant predictor of starting salary (adding a mean of $20,827, holding other variables constant) and 2) having a professional network of three or more connections trended toward significance for landing a meaningful first-destination (20% more likely, holding other variables constant). Results underscore the importance of supporting academic success and social capital, with implications for programming and broader societal goals to increase economic mobility and top talent diversity.

AUTHORS

Emily Parrott, PhD
Senior Director of Research & Evaluation, Thrive Scholars

Jarell Skinner-Roy
Education Research Specialist, Thrive Scholars
PhD Candidate, University of Michigan

Purpose

Marginalized students (e.g., low-income students, first-generation students, and students of color) have been systematically disadvantaged by the current system in the US, simultaneously making these groups less likely to consider, apply to, and enroll in selective colleges (Hoxby & Avery, 2012) and giving them added benefits in terms of their own social and economic mobility when they do (Chetty et al., 2019, 2023).

Despite notable efforts to dismantle racial injustice and improve access for marginalized communities over the years, the stratification in higher education matriculation and graduation remain the same (Bastedo & Jaquette, 2011; Posselt et al., 2012), and disparities are particularly wide in STEM (Science, Technology, Engineering, Math) access and success (Morgan et al., 2022; Toven-Lindsey et al., 2015) which are the majors garnering the highest salaries for graduates (NCES, 2020). Additionally, research has shown persistent gaps in who is represented at the top of the income distribution and in corporate and civic leadership across the country (Chen, 2009; Museus et al., 2011; Chetty, 2023).

There are several important outcomes between college entry and career entry—such as academic success (including, but not limited to, STEM persistence), and career development (including, but not limited to, social capital)—all of which have been identified as important for students to land meaningful career first destinations that boost personal upward mobility as well as diversify top leadership in the US (Galbraith & Mondal, 2020; Parks-Yancy, 2005; Salticoff, 2017; Townsley et al., 2017). The current research study evaluates how one program, Thrive Scholars, may support marginalized students' successful career entry and upward economic mobility by providing support before, during, and after college.

Thrive Scholars Programming

Thrive Scholars is a six-year program for high-achieving students from economically disadvantaged backgrounds (i.e., low-income students of color and first-generation college students) that provides academic preparation, socio-emotional support, industry-specific career coaching, and financial scholarships to advance their economic mobility through admission to top colleges, college graduation, and successful career entry. The program started in 2002 as a scholarship program and has expanded to provide holistic wraparound support for students as they get into, attend, and graduate from top colleges.

The two major foci of programming are academic preparation and career development. In terms of academic preparation, students attend two six-week academically intensive summer sessions before their senior year in high school and first-year in college, where they take courses in Math and Writing taught by university professors that prepare them for rigorous college coursework. In terms of career

development, students receive early exposure to careers that provide economic mobility for students in high school and industry-specific coaching throughout their time in college. Together, early exposure and coaching support their development of knowledge and skills and attainment of relevant high-impact career experience in college. The program also provides direct access to coaches' networks, as well as mentors and volunteers from corporate partners that fund the program, meaning that the students have access to industry professionals through various connections.

Thrive Scholars defines career success as: 1) landing a meaningful first destination within six months of graduation (defined as having full-time employment, enrollment in graduate school, or a purposeful gap year that leads to full-time employment or graduate school enrollment), 2) attaining a first salary that is comparable to their peers from other top colleges, and 3) having a sense of control over their life trajectory as they are leaving college.

This study is a preliminary one to better understand the impacts of these two foci of programming on these three career success outcomes. Given that Thrive Scholars' career programming is still early in its development—the cohort studied would not have received career development programming throughout their entire time in college as future cohorts will—examining these impacts *now* supports internal programmatic decision-making while also providing valuable insights on career development for other nonprofits, university career centers, and companies interested in recruiting future leaders.

Methods

To explore the success of Thrive in supporting students to attain career success, we used regression analysis to answer the following question: *What aspects of Thrive Scholars' programming predicts career success for students in the program?*

Data Sources

Data come from two surveys at graduation and six-months post-graduation as well as other data supplied by students throughout their college career. Data were collected from 79 members of the Thrive Scholars College Class of 2022 (N=89; response rate=89%).

The surveys focus on collecting information on first-destination outcomes, including employment details (i.e., role, organization, location, salary), graduate school enrollment (i.e., school, program, expected graduation year), professional network size, and sense of control. The survey was developed internally by Thrive Scholars staff using best practices from the field. Variable statistics are available in Table 1 and descriptive statistics are available in Table 2.

Table 1. Background, Predictor, and Dependent Variable Statistics.

Background Variables	Frequency	Percent	mean	sd	min	max
Race/Ethnicity (n=89)						
Asian	15	16.9%				
Black/African American	18	20.2%				
Hispanic/Latino	52	58.4%				
Multiracial	1	1.1%				
White	3	3.4%				
Gender (n=89)						
Man	34	38.2%				
Nonbinary	2	2.3%				
Woman	53	59.6%				
Family Background Income (n=89)			$32,128	20915.8	$0	$112,151
High School GPA (n=86)			3.78	0.21	2.81	4
Predictor Variables						
College GPA (n=88)			3.42	0.42	2.18	4.4
STEM Major (n=75)						
No	46	48.3%				
Yes	43	51.7%				
Professional Network (n=75)						
Three or More Connections	47	62.7%				
Fewer than Three Connections	28	37.3%				
Dependent Variables						
Meaningful First Destination* (n=79)						
No	19	24.1%				
Yes	60	75.9%				
Sense of Control (n=75)						
1 – Not Confident	3	4.0%				
2 – Somewhat Confident	11	14.7%				
3 – Moderately Confident	24	32.0%				
4 – Very Confident	26	34.7%				
5 – Extremely Confident	11	14.7%				
Starting Salary** (n=42)			$71,140	32,538.28	21,600	200,000

*Meaningful First Destination includes full-time employment, graduate school enrollment, or a purposeful gap year to attain full-time employment or graduate school enrollment.
**Starting salary for full-time employees.

Dependent Variables

Career Success. We defined three career success variables, aligned to Thrive Scholars outcomes: self-reported attainment of a meaningful first destination within six months of graduation (i.e., full-time employment, graduate school enrollment, or a purposeful gap year to attain full-time employment or graduate school enrollment; N=79; 76% attained); self-reported starting salary (full-time employees, N=42; mean=$71,140); self-reported sense of control (i.e., students reported confidence from 1 "not at all confident" to 5 "extremely confident" to the following modified sense of control scale: "Given the first job or opportunity you are entering now, how confident are you that you are on a path for success so that in the next decade, you will be in control of your own life" (N=75; mean=3.4; 50% very or extremely confident).

Background Variables

Race/Ethnicity. Students self-identified their race/ethnicity, which were dummy coded as the following: Hispanic/Latino if they identified as Hispanic/Latino alone or along with other racial and ethnic identities (58%), Black if they identify as Black alone or along with other racial/ethnic categories except Latino (20%), Asian if they identify as Asian alone or along with other racial/ethnic categories except Latino or Black (17%), or white (3%).

Gender. Students self-reported their gender identity, they were 60% women, 38% men, and 2% nonbinary.

We did not include first-generation college status or household income due to the Thrive Scholars selection process. A total of 87% of students were first-generation (data not shown) and the mean household income at the time of their high school graduation was $32,128; 75% of students came from families with incomes below $45,000 and almost 95% below $65,000.

Additionally, Thrive Scholars selects high-achieving students; the mean high school GPA was 3.78, which is higher than average for US students, particularly those from low-income backgrounds (ACT, 2014).

Academic Predictor Variables

College GPA at graduation. Students reported their College GPA at graduation (and provided their transcripts to be audited internally by staff); GPA was reported on a 0.0-4.0 scale, and the mean GPA for the cohort was 3.42.

STEM major at graduation. Students self-reported their major at graduation (and provided their transcripts to be audited internally by staff); 52% of students graduated with a major in STEM.

Career Development Predictor Variables

Professional network size at graduation. Students self-reported their number of professional connections at graduation from "1" to "6 or more" by responding to the following question: "Consider people in your network who can support your professional growth (for example, who would meet with you for lunch to discuss your career goals, or would write a letter of recommendation for you, etc.). Can you think of people in this category? If so, how many come to mind?" In total, 63% reported three or more people, 37% reported fewer than three.

Table 2. Independent and Predictor Variables by Background Variables.

	Meaningful First Destination*	College GPA	STEM Major	Starting Salary**	Sense of Control
	Frequency (%)	Mean (Observations; SD)	Frequency (%)	Mean (Observations; SD)	Mean (Observations; SD)
Race/Ethnicity					
Asian	9 (60%)	3.67 (N=15; 0.28)	11 (69%)	$84,875 (N=8; 48,669)	2.81 (N=16; 1.22)
Black/African American	10 (71%)	3.32 (N=18; 0.51)	8 (44%)	$73,157 (N=7; 41,851)	3.57 (N=14; 1.02)
Hispanic/Latino	38 (81%)	3.37 (N=52; 0.39)	26 (50%)	$67,449 (N=24; 22,464)	3.57 (N=42; 0.94)
White	3 (100%)	3.74 (N=3; 0.07)	1 (33%)	$78,000 (N=2; 18,385)	3.67 (N=3; 0.58)
Gender					
Man	21 (75%)	3.36 (N=34; 0.44)	24 (71%)	$82,400 (N=15; 39,856)	3.36 (N=28; 1.19)
Nonbinary	0 (0%)	3.42 (N=2; 0.51)	1 (50%)	—	3.5 (N=2; 0.71)
Woman	39 (80%)	3.46 (N=53; 0.41)	21 (40%)	$66,534 (N=26; 25,535)	3.44 (N=45; 0.97)

*Meaningful First Destination includes full-time employment, graduate school enrollment, or a purposeful gap year to attain full-time employment or graduate school enrollment.

**Starting salary for full-time employees.

Descriptive Statistics

In terms of gender, 80% of women and 75% of men landed a meaningful first destination; for full-time employees, women had a mean starting salary of $66,533, which was about $12,000 lower than the average starting salary for men ($82,400); and women have slightly higher ratings for sense of control (mean of 3.44 compared to 3.36). Women had an average college GPA of 3.46 and men of 3.36, but this was not significantly different.

In terms of race/ethnicity, 60% of Asian, 71% of Black, 81% of Latino, and 100% of white students landed a meaningful first destination; Asian students had the highest mean salary ($84,875), then white ($78,000) Black ($73,157) and Latino ($67,449) students. In terms of mean sense of control, scores differed slightly (Asian=2.8, Black=3.6, and Latino=3.6). College GPA also differed slightly (Asian=3.7, Black=3.3, Latino=3.4, white=3.7).

In terms of STEM (data not shown), 78% of STEM and 74% of non-STEM majors landed a meaningful first destination; full-time employed STEM majors had mean starting salary of $82,277 whereas non-STEM majors had a mean starting salary of $58,889 and this was significantly different; STEM and non-STEM majors had similar rates of sense of control (mean of 3.45 and 3.42 for STEM and non-STEM graduates). Notably, 70% of men majored in STEM whereas 40% of women majored in STEM, and this was also significantly different. In addition, of those that intended to major in STEM, 68% of men persisted through to graduation to receive a STEM degree whereas only 32% of women did the

same (this was also a statistically significant difference). All racial/ethnic groups had roughly equal percentages of students majoring in STEM, with the exception of Asian students, of whom 70% majored in STEM. STEM majors had an average college GPA of 3.45 and non-STEM majors had an average of 3.36; this was not significantly different. None of these variables were correlated.

Regression Results

We ran three regression analyses, one for each dependent variable using all five independent variables (OLS regression for meaningful first destination, a binary variable, and sense of control, an ordinal variable; linear regression for starting salary, a continuous variable; Table 3). Two major findings became clear: First, accounting for all other variables, having a STEM degree was a significant predictor of starting salary (p=.01); having a STEM degree added a mean of $20,827 to the salary of a graduate, holding all other variables constant. Second, accounting for all other variables, having a professional network of at least three connections was a predictor that is trending in significance for landing a meaningful postgraduate first destination (p=.059). Students who have three or more connections were an average of 20% more likely to have attained a meaningful first destination, holding all other variables constant.

Table 3. Regression Results.

| | | Dependent Variable | |
Independent Variables	Post Grad Plans	Starting Salary	Sense of Control
Race/Ethnicity	0.022	428.89	-0.169
	(0.075)	(7597.82)	(0.177)
Gender	-0.055	-4,103.02	0.111
	(0.099)	(10414.77)	(0.241)
Reported GPA	0.097	16,163.77	-0.318
	(0.158)	(15371.78)	(0.373)
Current Major STEM	0.066	20,827.23*	0.158
	(0.106)	(10045.90)	(0.254)
Professional Networks	0.201	-8,057.27	0.295
	(0.105)	(9757.01)	(0.268)
Constant	0.262	11,991.89	4.362
	(0.532)	(51682.6)	(1.265)
Observations	73	42	74
R2	0.074	0.193	0.063

Standard errors in parentheses

*p<0.05

Significance

These findings guide Thrive Scholars programming in several ways that are also important for the broader work of education, nonprofit, and corporate leaders hoping to support students to attain economic mobility or diversify top talent in the US.

Support Students to Succeed Academically in STEM, Especially Women

First, these results underscore one of the main goals of the program: supporting students to succeed academically in STEM by providing rigorous academic support before college as well as support throughout college, which boosts economic outcomes for college graduates. Given the disparities in STEM equity (Morgan et al., 2022; Toven-Lindsey et al., 2015), supporting students to access and succeed in STEM is critical as it relates to salary outcomes for graduates (Zhang, Liu, & Hu, 2024). In addition to academic support, we are also exploring how to better provide opportunities for Scholars to build STEM-specific technical skills (e.g., coding and lab skills) in addition to the academic programming they receive in the summers prior to college. These technical skills will ideally support both their academic achievement and their success on the job market. We think it is incumbent upon K12 institutions, universities, and nonprofits to mitigate or eliminate the barriers that marginalized students face in gaining access to and success in STEM well before and during college.

In addition, we found that women were attaining meaningful first destinations at similar rates as men but were significantly less likely to major in STEM and persist through to a STEM degree, which was a significant predictor of starting salary. Because of this, we are exploring additional ways in which we can support women to enter into high-salary roles in part by providing support to enter into and succeed in STEM majors and careers. This trend mirrors a particularly persistent national gender gap in the field that starts early and persists long-term (Palacios et al., 2022), and we encourage other programs and K12 institutions to continue to boost equity in STEM for women. This is especially important for women of color and from economically disadvantaged backgrounds who stand to uplift families and communities.

Support Students to Build a Professional Network before Graduation

Second, the results highlight the importance of building a professional network in order to land a meaningful first destination, something we know from research on social capital (Parks-Yancy, 2005; 2012; Petersen et al., 2000; Reeves & Deng, 2022). Despite this knowledge, professional connections have been difficult for college students to attain. As Thrive Scholars' career development work is relatively new, leaders are championing programming that supports students to build industry-specific connections in several ways over the coming years. First, coaches are working with students to understand what a professional connection is and identify or develop these key relationships that will support their career development. Our staff are also building out intentional events that connect Scholars to industry leaders and mentors through corporate-sponsored events like panels, workshops, company information sessions, and coffee chats. Finally, the team is building a curriculum that supports Scholars to map their community and professional connections that can support their growth and identify increases in their community and professional network over time. With these new programmatic elements, we expect future cohorts to develop and name even more connections that will boost their career success.

For colleges and employers seeking to diversify industry leadership, we underscore the importance of building unique nonprofit- or college-employer connections to build out a long-term pipeline of talent. There are many other students like ours, but may not yet know how to connect directly with professionals who can help open doors for them to become part of the talent pool. By building relationships with organizations like Thrive Scholars, company leaders and volunteers can connect to students directly and build more diverse talent pipelines by providing these students with key connections, information, and access—including early career exposure to their fields and/or purposeful professional development that prepares them with the skills they need to navigate into and succeed in their field of choice.

Finally, the results of this study are important because of what we did not find. For instance, college GPA was not a significant predictor of any career success outcome—however, students' mean college GPA was 3.42, which is relatively high compared to the US student population (NCES, 2023), so limited variation may have affected its predictive value. Additionally, there were no significant predictors in the regression analysis for sense of control, which is something Thrive Scholars has been exploring as a major goal for programming as it may influence students' economic and social well-being post-college as they navigate upward mobility and a new social and economic class (Killingsworth, 2021). We will continue to measure sense of control and its potential impact on career success.

There are two major limitations to this study. First, there was limited data available for Thrive Scholars' career development at this time, but this will change in the coming years. Second, this is not a comparison study, so we cannot compare this particular subset of college students to other groups —especially privileged and white students, or marginalized students broadly. However, this study provides data on a particularly unique and not often studied group (Hoxby & Avery, 2012). Given this, our final call is to researchers to continue to understand the experiences, needs, and successes within subpopulations of college students, specifically high-achieving, low-income, first-generation college students of color.

In conclusion, this analysis is an early benchmark understanding of the potential effect of student choices and career programming on successful career entry that leads to long-term upward economic mobility. While the results currently fall in line with previous literature—indicating the need for further emphasis on supporting students in academic success, particularly STEM persistence, and developing social capital during college—we are eager to see how these outcomes may change as our program continues to support students in these ways. Student success in these areas is not only beneficial for individual post-graduate financial success and economic mobility but also broader societal goals to diversify industry leadership in the US.

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