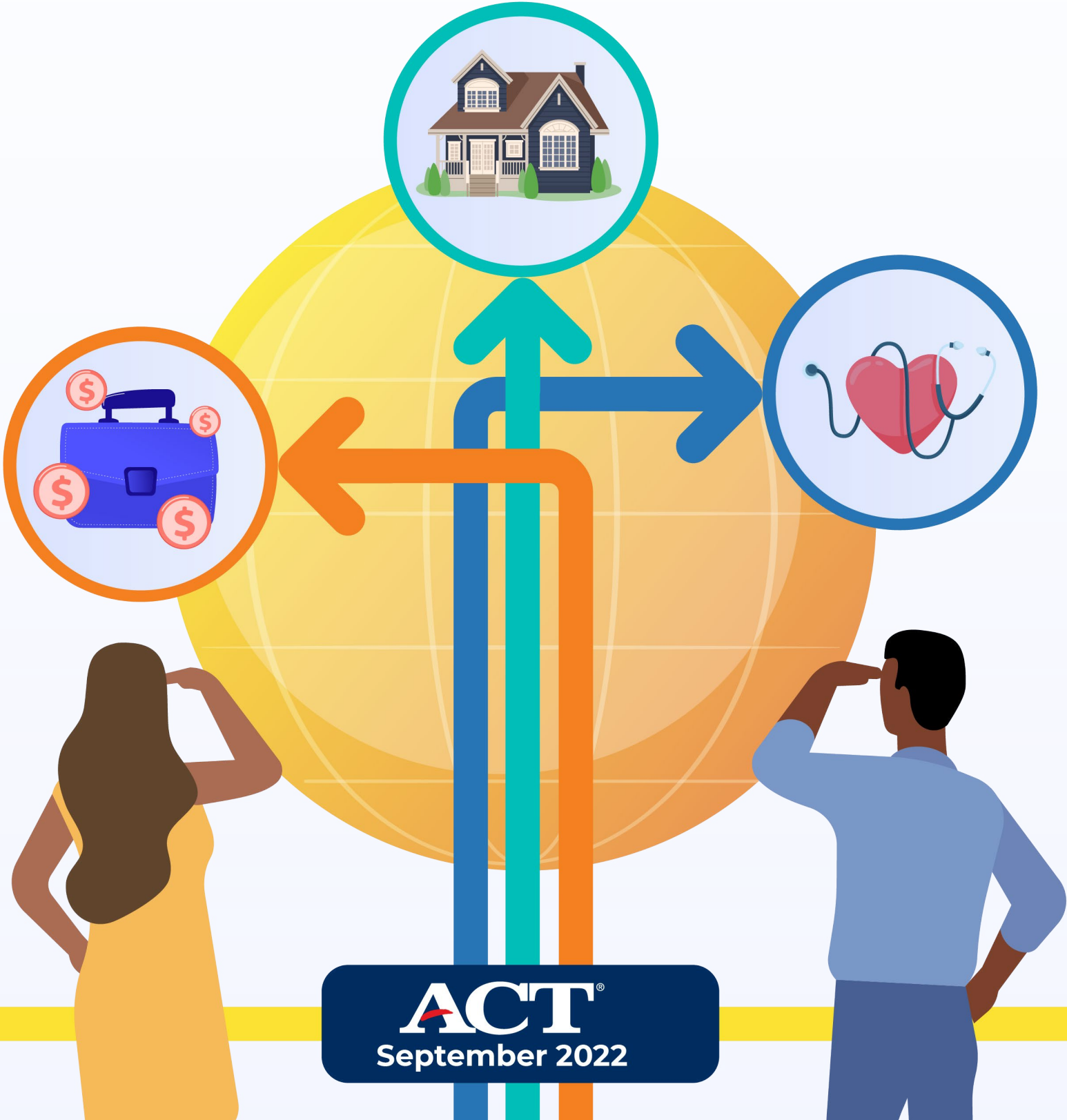


# High School Students' Perspectives on Their Futures

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## Summary

High school students' optimism pertaining to future life outcomes, such as having a career they enjoy, owning a home, and having a better life than their parents had, might have been influenced negatively by recent events, such as the COVID-19 pandemic, which has been particularly stressful for students. Using data from a sample of current high school students, this study examined students' perspectives on their futures while considering family income and race/ethnicity, two factors known to be related to adolescents' outlooks on success in life.

Key findings from the study include the following.

- ➔ Student optimism about the future is generally high – In general, high school students' estimates of the chances of experiencing 17 future life outcomes, such as having a well-paying career, having good friends they can count on, and being respected in their social network, were high.
- ➔ The pandemic had little effect on optimism for most students – Most students indicated that their estimates of the chances of experiencing the future life outcomes would have been about the same if they had made their estimates before the pandemic began.
- ➔ High levels of optimism exist among Black students from low-income families – Black students in the low-income category were more optimistic about their futures than were students of other races/ethnicities in that same income category.
- ➔ Black students are optimistic about the prospects of either having a better life than their parents had or of their children having a better life than they have had – Irrespective of family income category, Black students were quite optimistic about their chances of experiencing improvements in life success across generations, compared with students of other races/ethnicities. White students, in contrast, were the least optimistic about experiencing such improvements.
- ➔ As family income increases, some racial/ethnic differences in optimism decrease – Less variability in optimism across racial/ethnic groups was observed for students in the high family income category, compared with students in either the moderate- or low-income categories. This pattern occurred for 7 of the 17 future life outcomes.



## Introduction

Adolescents whose families are of higher socioeconomic status have been found to be more optimistic about their success in life than those whose families are of lower socioeconomic status. Moreover, relatively high levels of such optimism are associated with better well-being and attainment outcomes in adulthood (Johnson & Hitlin, 2017).

General differences in socioeconomic status can occur between different racial/ethnic groups (e.g., Hirsch & Winters, 2014; McIntosh, Moss, Nunn, & Shambaugh, 2020). Because of this, and because the extent of student optimism can be associated with socioeconomic status, it seems possible that racial/ethnic differences in student optimism might exist. This is indeed the case; for example, previous research using National Education Longitudinal Study data collected from 1988 to 1992 found that Black high school students were less optimistic than White students about the prospects of having a job they will enjoy and being able to own a home (Matthew, 2011). Racial/ethnic differences in optimism have been found for older adults as well as for students. For example, when controlling for age, higher levels of hope for the future have been observed among poor Black adults and Hispanic adults, compared with poor White adults. Gaps in optimism between Black adults and White adults have been found to be larger for those between 45 and 64 years of age (Graham & Pinto, 2019).

High school students' optimism pertaining to future life outcomes might be different today than it was even a few years ago and perhaps has been influenced negatively by recent events. For example, students have had to cope with the COVID-19 pandemic, which has been particularly stressful for them. An April 2021 survey by ACT, conducted about one year after the pandemic began, found that 86% of high school students had experienced moderate or high overall stress levels in the previous 30 days. Problems with family, the health of someone close, and discrimination were reported as key sources of students' distress (Schiel, 2021). In addition, high school students have witnessed unfortunate societal events resulting from the pandemic, such as increasing identity-based harassment (U.S. Department of Education, Office for Civil Rights, 2021). All these recent experiences might have some bearing on students' optimism for the future.

Using data from a sample of current high school students, this study examined students' perspectives on their futures while considering family income and race/ethnicity and the relationship between these factors. A random sample<sup>1</sup> of students was surveyed in February 2022 and asked about the chances of experiencing future outcomes, such as having an enjoyable career, being able to own a home, and being in good health.<sup>2</sup> Students were also asked if their chance estimates of experiencing these outcomes would have been different (more positive or less positive) if they had been asked about them two years ago, before the pandemic began.

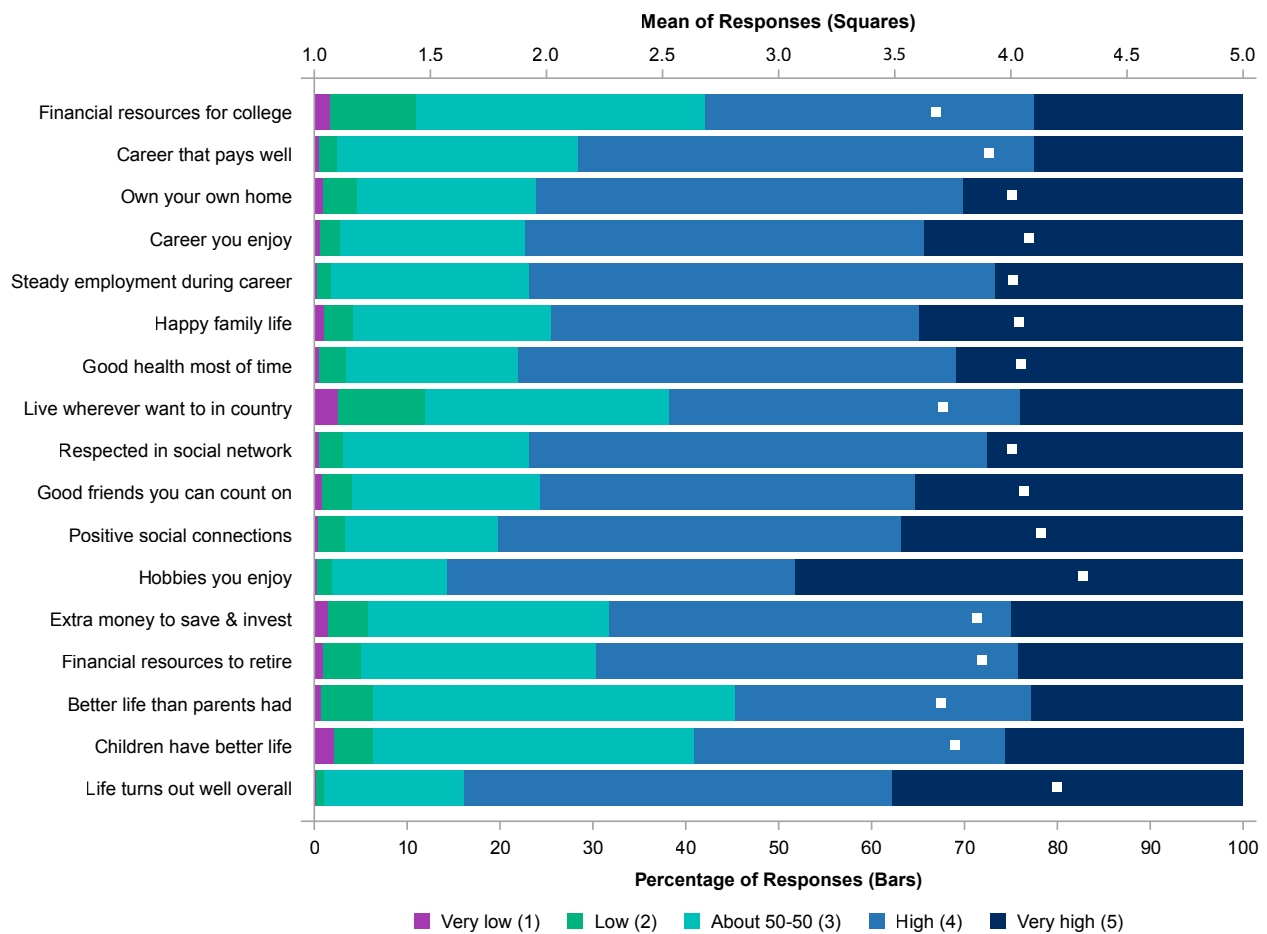


## Findings

### Student Optimism About the Future Is Generally High

High school students in this study were generally optimistic about the future. Means for the 17 future outcomes ranged from 3.68 (chances of having adequate financial resources to complete college) to 4.32 (chances of having enjoyable hobbies) on a five-point scale (see Figure 1).<sup>3</sup> The typical mean across all outcomes was 4.01, which aligned with the scale’s “high” chances category.<sup>4</sup>

**Figure 1. Student Estimates of the Chances of Future Outcomes**




Matthew (2011) examined high school seniors' data, collected from 1988 to 1992, for five of the future outcomes: having a career that pays well, owning your own home, having a career you enjoy, having a better life than your parents had, and your children having a better life than you have had. In that study, the scale's five chances categories were collapsed into two new categories, so that categories of very low, low, and about 50-50 were labelled "50 percent or lower" and assigned a value of 0, and categories of high and very high were labelled "better than 50 percent" and assigned a value of 1. Applying Matthew's method to the present study's data demonstrated that students in Matthew's study had slightly more optimistic perspectives on these five outcomes than did students in this study, with differences in means on the two-point scale ranging from 0.03 (own your own home and children will have a better life; effect sizes [ES] of 0.07 and 0.06, respectively) to 0.08 (career that pays well and career that you enjoy; effect sizes of 0.19 and 0.22, respectively).<sup>5</sup>

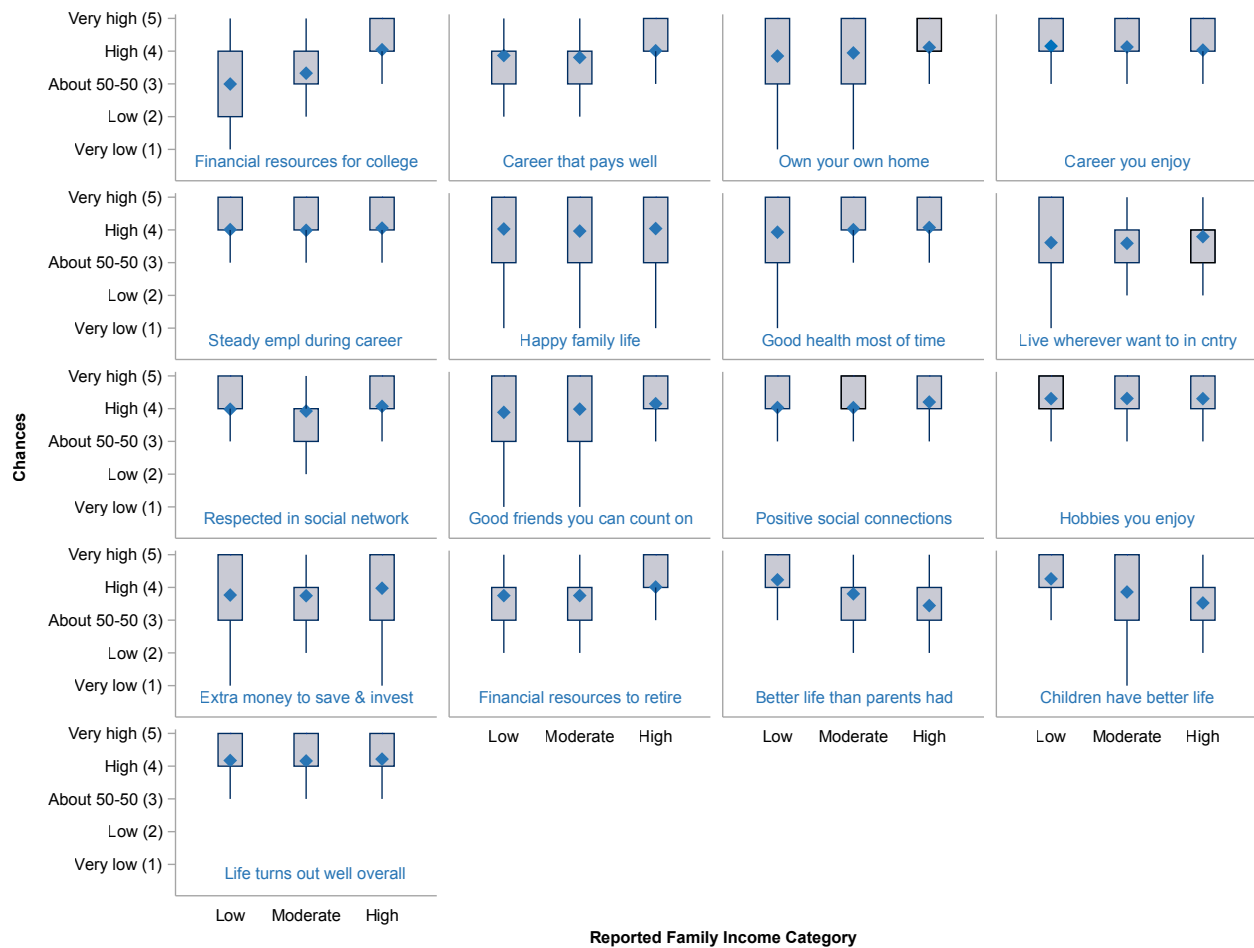
In another study (Mortimer, Zhang, Hussemann, & Wu, 2014), students ages 11 and older (median age of 16) from St. Paul, Minnesota, were surveyed in 2011 and asked about the outcomes of having a career that pays well, owning your own home, and having a career you enjoy. The perspectives of students in that study and the present study were very similar, with differences in means on the five-point scale ranging from 0.03 (owning your own home, having a career you enjoy) to 0.07 (having a career that pays well) and effect sizes ranging from 0.03 (owning your own home) to 0.09 (having a career that pays well).

## There Are Differences in Student Optimism Across Family Income Categories

Consistent with previous research (Johnson & Hitlin, 2017), student optimism was found to vary based on a measure of socioeconomic status, family income. For example, students' estimates of the chances that they would have adequate financial resources to complete college varied considerably across reported family income category.<sup>6</sup> Students with low reported family income indicated that their chances were about 50-50, on average (mean = 3.00). Students with high reported family income, in comparison, indicated that their average chances were high (mean = 4.05). The difference between these two means was statistically significant ( $t = -19.82$ ,  $p < .0001$ ,  $ES = -1.23$ ; see Figure 2 and Table A2).<sup>7</sup>



**Figure 2.** Student Estimates of the Chances of Future Outcomes, by Reported Family Income Category



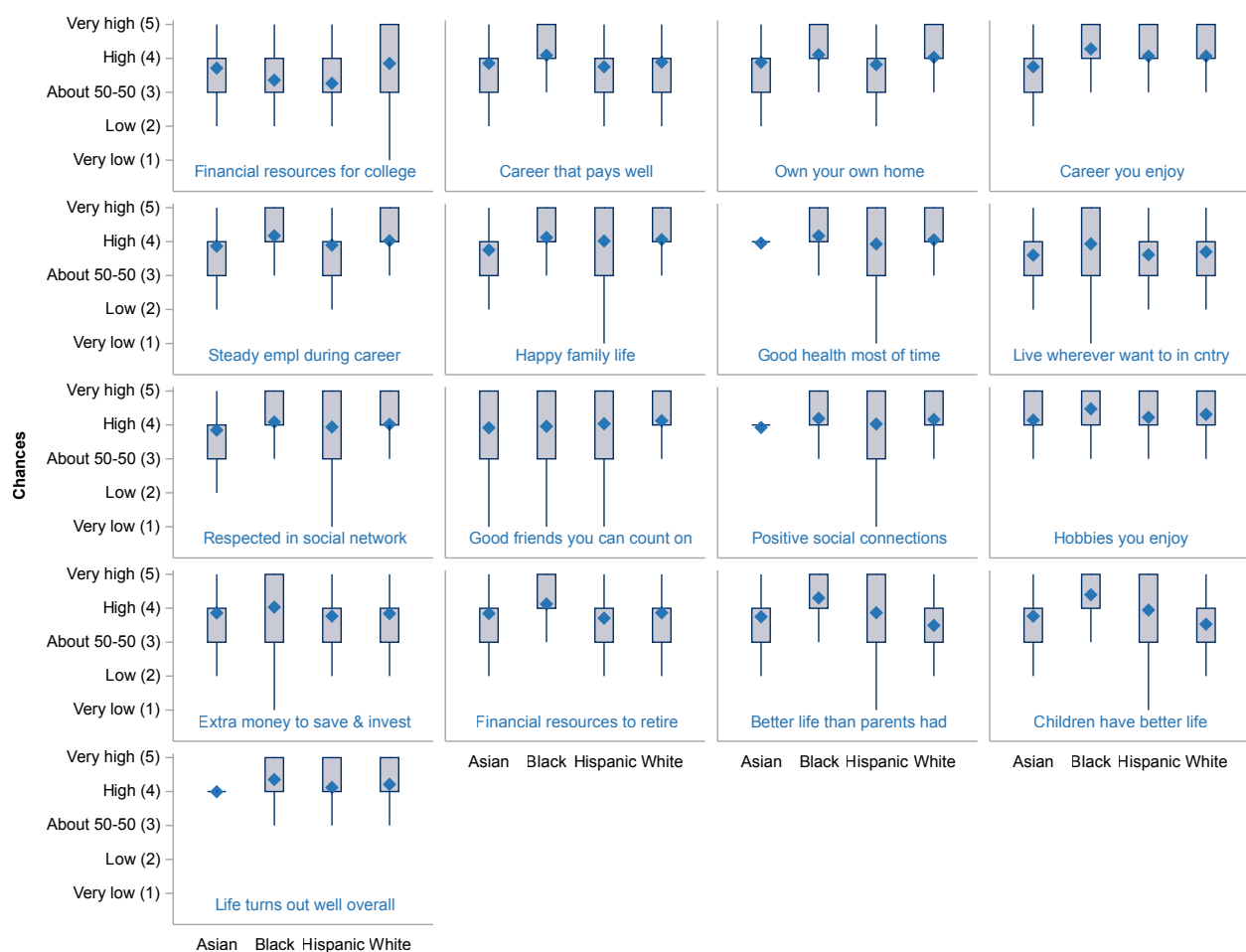
For several of the future outcomes, means for the high family income category were statistically significantly higher than both the low- and moderate-income category means. This pattern was found for the following outcomes: career that pays well, own your own home, live wherever you want to in the country, good friends you can count on, positive social connections, extra money to save and invest, and financial resources to retire comfortably.<sup>8</sup>

For two of the outcomes, having a better life than your parents had and your children having a better life than you have had, a very different pattern was observed: The low-income category means were statistically significantly higher than both the moderate- and high-income category means (better life than parents had | low vs. high:  $q = 15.12$ ,  $p < .0001$ ,  $ES = 0.98$ ; moderate vs. high:  $q = 8.53$ ,  $p < .0001$ ,  $ES = 0.41$ ; children will have a better life | low vs. high:  $q = 13.18$ ,  $p < .0001$ ,  $ES = 0.86$ ; moderate vs. high:  $q = 7.44$ ,  $p < .0001$ ,  $ES = 0.37$ ). These two outcomes are associated with relative success, in which one generation perceives its chances of success compared to the success of another generation. Consistent with the pattern seen here, adolescents from families with higher socioeconomic status have been found in previous research to be less optimistic about the chances for improved success across generations (Johnson & Hitlin, 2017).

## There Are Racial/Ethnic Differences in Student Optimism

Black students had higher estimated chances of experiencing 15 of the 17 future outcomes, on average, than did students in other racial/ethnic groups (Figure 3).<sup>9</sup> For seven of the future outcomes (career that pays well, career you enjoy, steady employment during career, live wherever you want to in the country, hobbies you enjoy, financial resources to retire comfortably, and life turns out well overall), Black students' mean estimates of the chances of experiencing these outcomes were statistically significantly higher than those of students of other races/ethnicities ( $p < .01$ ). Effect sizes for differences between Black students' means and those of other students on these seven outcomes ranged from 0.18 (steady employment during career, hobbies you enjoy, life turns out well overall; Black student mean compared with White student mean) to 0.86 (career you enjoy; Black student mean compared with Asian student mean), with a median of 0.40 (Table A3).

**Figure 3.** Student Estimates of the Chances of Future Outcomes, by Race/Ethnicity



For the two relative success outcomes (better life than parents had, children will have a better life), Black students' means were markedly higher than those of other racial/ethnic groups ( $p < .0001$ ), with effect sizes ranging from 0.60 for Black students versus Hispanic students to 1.00 for Black students versus Asian students (both occurring for the children-will-have-a-better-life outcome; Figure 3 and Table A3). These findings suggest that Black students are quite optimistic about improvements in life success across generations, compared with students of other races/ethnicities.

Interestingly, White students reported the lowest estimated chances, on average, of either having a better life than their parents had (White student mean = 3.49, other three racial/ethnic group means ranged from 3.75 to 4.31,  $p < .01$ , effect sizes ranged from 0.28 to 0.85) or of their children having a better life than they have had (White student mean = 3.53 vs. Black student mean of 4.40 and Hispanic student mean of 3.95,  $p < .0001$ , effect sizes of 0.85 and 0.41, respectively). For White students, optimism about the chances for improved intergenerational success clearly is lower than that of students of other races/ethnicities. As will be seen shortly, this finding generally holds across family income levels as well.

Asian students and White students were significantly more optimistic about their chances of having adequate financial resources to complete college than were Black students or Hispanic students (means of 3.71 and 3.85, respectively, vs. Black student mean of 3.36 and Hispanic student mean of 3.26;  $p < .001$ ; effect sizes ranged from 0.45 for White students vs. Black students to 0.66 for Asian students vs. Hispanic students). Asian students were noticeably less optimistic about enjoyable careers and happy family lives than were students of other races/ethnicities. Specifically, means for Asian students were significantly lower than those for Black students, Hispanic students, and White students on the career-you-enjoy outcome (3.75 vs. 4.28,  $p < .0001$ , ES = -0.86; 3.75 vs. 4.07,  $p < .001$ , ES = -0.53; 3.75 vs. 4.07,  $p < .0001$ , ES = -0.36, respectively) and significantly lower than those for Black students and White students on the happy-family-life outcome (3.76 vs. 4.12,  $p < .0001$ , ES = -0.54; 3.76 vs. 4.06,  $p < .001$ , ES = -0.32, respectively).

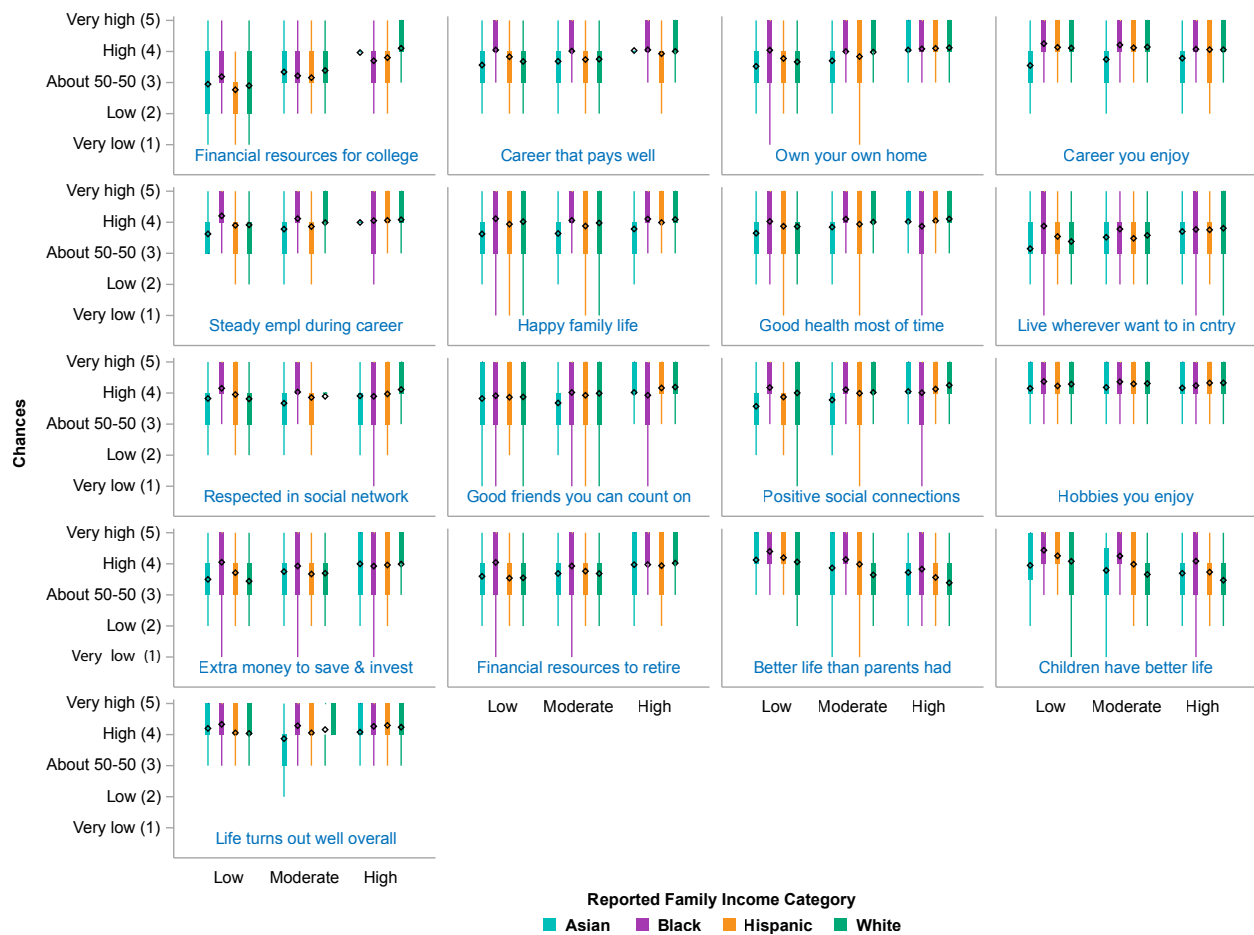




## As Family Income Increases, Some Racial/Ethnic Differences in Optimism Decrease

When race/ethnicity was considered in combination with family income category, less variability in optimism, across racial/ethnic groups, was observed for students in the high family income category, compared with students in either the moderate- or low-income categories (Figure 4).<sup>10</sup> For example, ranges for racial/ethnic group means on the career-that-pays-well outcome were 0.48, 0.33, and 0.12 for the low-, moderate-, and high-income categories, respectively. This pattern occurred for several other future outcomes, including owning your own home, having steady employment throughout your career, living wherever you want to in the country, having positive social connections, having extra money to save and invest, and having adequate financial resources to retire comfortably. These findings suggest that racial/ethnic disparities in students' optimism diminish as family income increases, at least for some measures of life success.

**Figure 4.** Student Estimates of the Chances of Future Outcomes, by Reported Family Income Category and Race/Ethnicity



## Racial/Ethnic Differences in Intergenerational Success Optimism Are Similar Across Family Income Categories

Irrespective of family income category, Black students reported the highest estimates, on average, of the chances of having a better life than their parents had or of their children having a better life than they have had. In comparison, White students reported the lowest estimates, on average, of experiencing these outcomes (Figure 4). Means for Black students on the better-life-than-parents outcome ranged from 3.83 to 4.40 across family income categories; means for White students were lower, ranging from 3.39 to 4.06. Six of the nine possible pairs of means were statistically significantly different ( $p$ -values ranged from  $< .0001$  to  $.0052$ ; effect sizes ranged from 0.27 to 1.29). Means for Black students on the children-have-better-life outcome ranged from 4.09 to 4.44 across family income categories, whereas means for White students were lower and ranged from 3.47 to 4.08. Once again, six of the nine pairs of means were significantly different ( $p$ -values ranged from  $< .0001$  to  $.0075$ ; effect sizes ranged from 0.01 to 1.11).

## Optimism of Black Students from Low-Income Families is Relatively High

For all future outcomes, Black students in the low-income category had higher average estimates of the chances of each outcome happening than did students of other races/ethnicities in that same income category (Figure 4). This finding might reflect a current, high level of optimism among Black students from low-income families, even though most of the differences between Black students' mean estimates of the chances of outcomes and those of students in other racial/ethnic groups were not statistically significant. Of the 51 possible pairs of means, only 15 were statistically significantly different ( $p$ -values ranged from  $< .0001$  to  $.0084$ ; effect sizes ranged from 0.27 to 0.78).

Similar findings for Black students from moderate-income families were observed. Their average estimates of experiencing all future outcomes, except for having adequate financial resources to complete college, were higher than those of students of other races/ethnicities within the moderate-income category. Only 8 of the 48 possible pairs of means were statistically significantly different ( $p$ -values ranged from  $< .0001$  to  $.0096$ ; effect sizes ranged from 0.47 to 0.63).



## Asian Students Are Relatively Pessimistic About Enjoyable Careers and Happy Family Lives, Irrespective of Family Income

Asian students across all family income categories reported noticeably lower estimated chances of having careers that they enjoy and happy family lives, on average, than did students of other races/ethnicities (Figure 4). The differences in racial/ethnic group means for the low- and moderate-income categories on the career-that-you-enjoy outcome were statistically significant ( $p$ -values ranged from  $< .0001$  to  $.0082$ ; effect sizes ranged from  $0.48$  to  $0.78$ ), whereas those for the high-income category were not. For the happy-family-life outcome, only the difference in means between Asian students and Black students in the moderate family income category was statistically significant (means of  $3.64$  and  $4.06$ , respectively;  $p < .01$ ,  $q = -4.04$ ,  $ES = -0.49$ ).

## Family Income Predicts Student Optimism to Some Extent, Irrespective of Race/Ethnicity

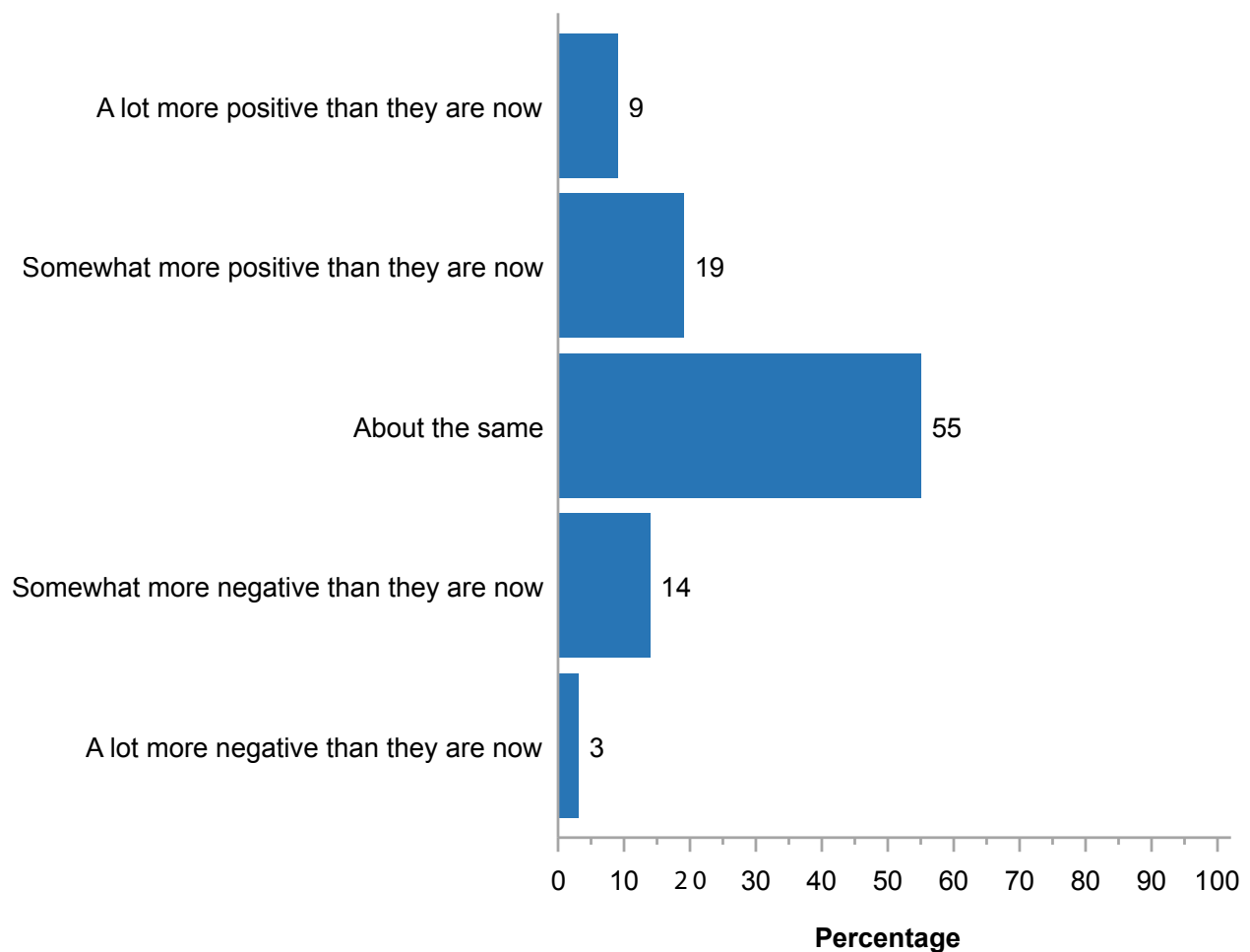
Multiple linear regression models were developed to predict students' estimated chances of experiencing each of the 17 future outcomes, using family income and race/ethnicity as predictors. The results indicated that family income is related to student optimism, irrespective of race/ethnicity. Family income was a statistically significant, although not particularly strong, predictor of students' estimated chances for 13 of the future outcomes (see Table A5). Only for the outcomes of having steady employment throughout your career, having a happy family life, having hobbies you enjoy, and life turning out well overall was family income *not* a statistically significant predictor.

Optimism pertaining to adolescents' success in life has been linked with their grades in school (Mortimer, Mont'Alvao, & Aronson, 2020). High school grades were reported by students in this study when they registered to take the ACT. Relationships between the future outcomes and grades were examined using multiple linear regression. Controlling for family income and race/ethnicity, only three of the future outcomes were found to have statistically significant relationships with student grade point average (having a career that pays well, owning your own home, and having steady employment throughout your career), suggesting that high school grades contributed relatively little to predicting optimism, over and above family income and race/ethnicity.

## The Pandemic Had Little Effect on Optimism for Most Students

When asked about their chance estimates of future outcomes being more positive or less positive if they had been made before the pandemic began, most students (55%) reported that their estimates would have been about the same (Figure 5). However, 19% of students reported that their estimates would have been somewhat more positive before the pandemic began, and 9% reported that their estimates would have been a lot more positive, suggesting that for nearly one-third of students, the pandemic might have had a negative influence on their outlooks. This interpretation appears to be accurate. Means for estimates of experiencing the future outcomes were compared for students who reported that their estimates would have been about the same and for those who reported that their estimates would have been somewhat or a lot more positive. For all but two of the outcomes, the former group had statistically significantly higher mean estimates than did the latter group, with effect sizes ranging in absolute value from 0.15 (children will have a better life) to 0.48 (life turns out well overall; see Table A6).

**Figure 5.** If Students Had Provided Estimates of the Chances of Future Outcomes Before the Pandemic Began, the Estimates Would Have Been...





## Discussion

In general, high school students' estimates of the chances of experiencing 17 future life outcomes, such as having a well-paying career, owning a home, and having good health, were high. This finding suggests that today's students have an optimistic perspective about the future, which is encouraging, given the potential effects on students' outlooks resulting from the recent pandemic and its negative societal impacts, such as increases in identity-based harassment and challenges to mental health and well-being (U.S. Department of Education, Office for Civil Rights, 2021).

*Student optimism about the future is generally high*

Five of the future outcomes (having a career that pays well, owning your own home, having a career you enjoy, having a better life than your parents had, and your children having a better life than you have had) were examined in one previous study (Matthew, 2011), and three of the outcomes (having a career that pays well, owning your own home, having a career you enjoy) were examined in another (Mortimer et al., 2014). Students in the present study were slightly less optimistic than those in the Matthew (2011) study, although the differences in optimism generally were not very meaningful in a practical sense. Optimism levels of students in the present study and optimism levels of students in the Mortimer et al. (2014) study were nearly identical.

In both previous studies, the word "job" was used instead of "career" for two of the future work-related outcomes (having a job that pays well and having a job you enjoy). It is possible that these wording differences account for some of the observed quantitative differences for these two outcomes, both of which in Matthew's (2011) study had the largest effect sizes of any of the five outcomes. It is also possible that recent events, including the pandemic, have suppressed student optimism slightly. It is worth considering, however, that most students (55%) in the present study indicated that their estimates of the chances of future outcomes would have been about the same if they had made their estimates before the pandemic began. This finding, in combination with students' high average estimated chances of experiencing the future outcomes, suggests that despite the challenges and stress of the pandemic, most students believed that they have positive things to look forward to.

*The pandemic had little effect on optimism for most students*

For some students in this study, the future seemed somewhat less promising. A notable proportion of students (28%) reported that their estimates of the chances of future outcomes would have been somewhat or a lot more positive if they had made their estimates before the pandemic began. For 15 of the outcomes, these students' estimates were significantly lower than those of students who reported that their estimates would have been about the same if made before the pandemic began. These formerly positive students might have had very different experiences and/or more challenges during the pandemic than did their peers, which in turn could have led to their noticeably different perspectives on the future.

Not surprisingly, and consistent with previous research (Johnson & Hitlin, 2017), students in the high reported family income category were generally more optimistic about the future than were their peers in lower-income categories. As expected, a different pattern was observed for the two intergenerational success outcomes (having a better life than your parents had, children having a better life than you have had): Higher levels of intergenerational success optimism were observed for students in the low-income category, relative to those in the moderate- and high-income categories. These findings mirror those of previous research, in which adolescents from families with higher socioeconomic status were found to be less optimistic about the chances for improved success across generations (Johnson & Hitlin, 2017).

*Students from high-income families tend to be more optimistic than their low family income peers*

Because family income is related to student optimism, it is worth considering how the composition of the February 2022 grade 10–12 ACT test-taking population, from which this study's data were collected, might have changed over time. If notably more students from high-income families tested this year than in previous years, then perhaps the students in this study would have had relatively high levels of optimism. A look at this population across the years 2017 through 2022 revealed that somewhat larger percentages of students with family incomes exceeding \$150,000 were present in 2021 and 2022 (15% and 23%, respectively) than in 2017–2020 (median of 14%). In addition, analyses by racial/ethnic and family income categories indicated that the percentages of White students from high-income families had changed the most over time, increasing from 19% in 2017 and 2018 to 28% in 2022. Without access to previous student cohorts' chance estimates of future outcomes, it cannot be determined if the level of student optimism in this study might be elevated because of changes in family income. Future research that examines fluctuations over time in students' family income levels and their relationship with optimism for additional student cohorts would provide further insight. In the meantime, the fact that student optimism in this study was slightly lower than or nearly identical to that in the Matthew (2011) and Mortimer (2014) studies provides a useful reference point.



Analyses by race/ethnicity revealed that, for seven of the future outcomes (career that pays well, career you enjoy, steady employment during career, live wherever you want to in the country, hobbies you enjoy, financial resources to retire comfortably, and life turns out well overall), Black students had significantly higher estimates, on average, of experiencing each outcome than did students of other races/ethnicities. In addition, Black students' estimates of the two intergenerational success outcomes were markedly higher than those of other racial/ethnic groups. This suggests that Black students are quite optimistic about improvements in life success across generations, compared with students of other races/ethnicities. White students, in contrast, reported the lowest estimated chances, on average, of either having a better life than their parents had or of their children having a better life than they have had.

*Black students are optimistic about the prospects of either having a better life than their parents had or of their children having a better life than they have had*

At first glance, these findings might seem to reflect socioeconomic differences: Adolescents from higher socioeconomic status backgrounds have been found to perceive lower chances of intergenerational success (Johnson & Hitlin, 2017). However, the Black student–White student gap for the intergenerational success outcomes was observed across all family income categories. Future research would benefit from asking students to explain why they gave relatively high or low estimates of experiencing these outcomes.

This study's data reflect a single timepoint, and generational cohorts were not part of its design. Other research has studied change occurring from one generation to the next in optimism pertaining to adolescents' success in life and found it to be linked to such things as the educational expectations parents have for their children, the quality of parent-child relationships, and adolescents' grades in school (Mortimer, Mont'Alvao, & Aronson, 2020). It was not possible in the present study to examine cross-generational changes in student optimism, but it was possible to examine relationships between student optimism and high school grades, which were reported by students when they registered to take the ACT test. Controlling for family income and race/ethnicity, only three of the future outcomes were found to have statistically significant relationships with student grade point average (having a career that pays well, owning your own home, and having steady employment throughout your career). Conducting future research in which richer data are collected at more than one timepoint would certainly be of interest and yield more information on such relationships.

When the data were examined by race/ethnicity and family income, a remarkable finding was observed among low-income students: Black students in the low-income category were more optimistic about their futures than were students of other races/ethnicities in that same income category. Their estimates of the chances of experiencing each of the 17 future life outcomes were higher, on average, than were those of Asian students, Hispanic students, or White students from low-income families. Even though not all the comparisons between Black students' estimated chances of future outcomes and those of students of different races/ethnicities were statistically significant, these findings suggest that Black students from low-income families have a relatively positive outlook concerning their futures. Similarities exist with previous research, in which Black adults with low incomes were found to be more optimistic than their White peers. Authors of that research note that their findings have several potential explanations, including the intensification of competition for low-skilled jobs and the narrowing of Black-White gaps in wages and education (Graham & Pinto, 2019). Perhaps Black students from low-income families are aware of changes such as narrowing wage and education gaps, and this is associated with their positive expectations for the future.

Although noteworthy racial/ethnic differences in student optimism were observed, it is heartening to find that such differences tended to be minimized within the high family income category. In previous research, similar decreases in racial/ethnic optimism gaps have been found to occur, irrespective of age, as income category increases (Graham & Pinto, 2019). The present study's findings do not demonstrate the existence of a causal relationship between family income and racial/ethnic differences in optimism. Nevertheless, they highlight the possibility that racial/ethnic differences in students' perceived chances of life outcomes are associated with the important, external factor of family income, over which students might have little control.

*As family income increases, some racial/ethnic differences in optimism decrease*

When considering the findings of this study, it is important to remember that its data were collected from a sample of high school students who registered for and likely took a national ACT test. Such students are typically college-bound. Students who have different plans, such as to enter the workforce immediately and forgo college, might have different outlooks on the possibility of life outcomes than do college-bound students.

One limitation of this study that is shared by much research based on online-survey data is the high rate of non-response. Approximately 6% of the sampled students responded to the survey, and it is possible that the non-respondents had a different perspective on the chances of experiencing future life outcomes than did the respondents.





## Appendix

**Table A1.** Weighted Pearson Correlation Coefficients Between the Future Outcomes Items

Outcome	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Financial resources for college																
2. Career that pays well	0.32															
3. Own your own home	0.35	0.64														
4. Career you enjoy	0.05	0.36	0.37													
5. Steady employment during career	0.16	0.49	0.48	0.46												
6. Happy family life	0.18	0.30	0.36	0.38	0.36											
7. Good health most of time	0.19	0.35	0.39	0.27	0.35	0.40										
8. Live wherever want to in country	0.22	0.38	0.44	0.34	0.37	0.34	0.43									
9. Respected in social network	0.19	0.37	0.35	0.32	0.41	0.35	0.40	0.47								
10. Good friends you can count on	0.18	0.19	0.21	0.29	0.23	0.38	0.28	0.29	0.43							
11. Positive social connections	0.22	0.29	0.33	0.38	0.31	0.45	0.39	0.33	0.48	0.53						
12. Hobbies you enjoy	0.11	0.19	0.21	0.36	0.23	0.35	0.29	0.25	0.31	0.35	0.44					
13. Extra money to save and invest	0.34	0.55	0.54	0.30	0.45	0.31	0.36	0.44	0.39	0.26	0.34	0.22				
14. Financial resources to retire	0.35	0.60	0.64	0.35	0.50	0.34	0.42	0.48	0.44	0.27	0.36	0.25	0.72			
15. Better life than parents had	-0.10	0.38	0.31	0.32	0.30	0.19	0.19	0.27	0.27	0.12	0.20	0.19	0.34	0.39		
16. Children have better life	-0.11	0.25	0.23	0.21	0.20	0.23	0.15	0.17	0.19	0.12	0.23	0.17	0.21	0.27	0.59	
17. Life turns out well overall	0.24	0.40	0.43	0.43	0.40	0.49	0.44	0.39	0.41	0.37	0.45	0.37	0.46	0.50	0.33	0.27

*Note:* All correlation coefficients are statistically significant ( $p < .0001$ ), except the one between having adequate financial resources for college and having a career you enjoy.



**Table A2.** Comparison Statistics for Student Estimates of the Chances of Future Outcomes, by Reported Family Income Category

Outcome	Family Income Category												
	F <sup>1</sup>	Low (1)		Moderate (2)		High (3)		Comparison Test Statistic <sup>3</sup>			Effect Size <sup>4</sup>		
		N <sup>2</sup>	Mean	N	Mean	N	Mean	1 vs. 2	1 vs. 3	2 vs. 3	1 vs. 2	1 vs. 3	2 vs. 3
Financial resources for college	260.65***	647	3.00	858	3.33	773	4.05	-5.80***	-19.82***	-16.81***	-0.43	-1.23	-0.85
Career that pays well	16.95***	648	3.87	860	3.81	772	4.01	1.21	-3.22*	-5.60***		-0.19	-0.27
Own your own home	18.18***	650	3.85	860	3.95	774	4.12	-1.86	-5.37***	-4.24***		-0.34	-0.21
Career you enjoy	4.97*	649	4.15	861	4.13	774	4.03	0.50	2.57	2.52			
Steady employment during career	1.85	650	4.01	859	3.99	774	4.06						
Happy family life	1.72	650	4.03	859	3.97	773	4.04						
Good health most of time	4.65*	621	3.93	823	4.01	723	4.07	-1.48	-2.94*	-1.68		-0.18	
Live wherever want to in country	10.18***	620	3.61	824	3.59	723	3.80	0.31	-2.99*	-4.13***		-0.20	-0.21
Respected in social network	7.83**	621	3.98	824	3.93	723	4.07	1.10	-1.94	-3.88**			-0.19
Good friends you can count on	16.68***	620	3.89	823	3.99	723	4.15	-1.80	-5.18***	-4.03**		-0.33	-0.20
Positive social connections	11.98***	620	4.04	823	4.03	719	4.20	0.06	-3.45*	-4.37***		-0.22	-0.22
Hobbies you enjoy	0.01	615	4.31	821	4.31	718	4.31						
Extra money to save and invest	16.48***	602	3.77	791	3.75	690	3.98	0.36	-3.84**	-5.25***		-0.25	-0.27
Financial resources to retire	25.20***	602	3.75	791	3.75	689	4.01	-0.02	-5.09***	-6.28***		-0.32	-0.32
Better life than parents had	122.42***	601	4.23	789	3.80	688	3.45	7.69***	15.12***	8.53***	0.62	0.98	0.41
Children have better life	126.04***	598	4.26	787	3.86	686	3.53	6.70***	13.18***	7.44***	0.53	0.86	0.37
Life turns out well overall	1.26	601	4.17	790	4.16	685	4.22						

**Notes:**

1. The statistical significance of the test statistic for each ANOVA model is denoted as \*p < .01, \*\*p < .001, or \*\*\*p < .0001.
2. N-counts in this table are unweighted. Means are weighted to reflect the sampling design.
3. Multiple comparisons are based on the Tukey-Kramer procedure. Statistical significance is denoted as \*p < .01, \*\*p < .001, or \*\*\*p < .0001.
4. Effect sizes are provided only for statistically significant comparisons.

**Table A3.** Comparison Statistics for Student Estimates of the Chances of Future Outcomes, by Race/Ethnicity

Outcome	F <sup>1</sup>	Asian (1)		Black (2)		Hispanic (3)		White (4)		Comparison Test Statistic <sup>3</sup>						Effect Size <sup>4</sup>							
		N <sup>2</sup>	Mean	N	Mean	N	Mean	N	Mean	1 vs. 2	1 vs. 3	1 vs. 4	2 vs. 3	2 vs. 4	3 vs. 4	1 vs. 2	1 vs. 3	1 vs. 4	2 vs. 3	2 vs. 4	3 vs. 4		
Financial resources for college	56.73***	501	3.71	539	3.36	533	3.26	915	3.85	3.92**	4.91***	-1.70	1.42	-9.40***	-10.76***	0.49	0.66					-0.45	-0.55
Career that pays well	13.34***	501	3.85	540	4.09	531	3.75	917	3.89	-3.22*	1.37	-0.56	6.17***	4.70***	-3.12*	-0.41			0.50	0.23		-0.16	
Own your own home	9.45***	502	3.89	543	4.11	532	3.82	917	4.03	-2.74	0.82	-1.99	4.77***	1.64	-4.33***			0.39				-0.22	
Career you enjoy	16.26***	502	3.75	541	4.28	533	4.07	917	4.07	-6.74***	-3.97**	-4.48***	3.62*	4.67***	0.01	-0.86	-0.53	-0.36	0.30	0.23			
Steady employment during career	11.27***	502	3.87	542	4.17	532	3.90	917	4.02	-4.31***	-0.44	-2.45	5.16***	3.64*	-2.90	-0.54			0.41	0.18			
Happy family life	6.71**	501	3.76	541	4.12	534	4.02	917	4.06	-4.36***	-3.07	-4.03**	1.67	1.27	-0.85	-0.54		-0.32					
Good health most of time	6.05**	470	3.96	510	4.17	508	3.93	880	4.05	-2.64	0.36	-1.31	4.04**	2.54	-2.56				0.34				
Live wherever want to in country	8.18***	470	3.60	509	3.94	509	3.62	880	3.70	-3.38*	-0.15	-1.09	4.34***	4.16**	-1.38	-0.49			0.38	0.21			
Respected in social network	4.22*	470	3.85	510	4.09	509	3.94	880	4.02	-3.08	-1.15	-2.44	2.56	1.53	-1.70								
Good friends you can count on	5.96**	470	3.92	510	3.96	509	4.04	878	4.13	-0.49	-1.39	-2.75	-1.24	-3.45*	-1.76							-0.17	
Positive social connections	6.10**	470	3.93	508	4.19	506	4.03	877	4.16	-3.28*	-1.25	-3.25*	2.69	0.63	-2.72	-0.41		-0.27					
Hobbies you enjoy	9.50***	469	4.14	508	4.47	504	4.22	874	4.31	-4.35***	-1.04	-2.47	4.41***	3.68*	-1.93	-0.62			0.40	0.18			
Extra money to save and invest	6.29**	450	3.86	484	4.03	489	3.77	851	3.84	-1.96	1.05	0.21	4.05**	3.72*	-1.44				0.33	0.19			
Financial resources to retire	15.48***	451	3.85	484	4.13	488	3.71	852	3.87	-3.31*	1.60	-0.28	6.60***	5.29***	-3.11	-0.45			0.56	0.27			
Better life than parents had	95.19***	449	3.75	483	4.31	489	3.87	850	3.49	-6.49***	-1.38	3.33*	6.82***	16.39***	7.27***	-0.98		0.28	0.62	0.85	0.38		
Children have better life	97.80***	451	3.77	478	4.40	488	3.95	847	3.53	-6.99***	-1.98	2.91	6.66***	16.55***	7.65***	-1.00			0.60	0.85	0.41		
Life turns out well overall	10.69***	451	3.99	482	4.36	488	4.12	849	4.21	-4.96***	-1.73	-3.32*	4.30***	3.43*	-2.03	-0.68		-0.28	0.39	0.18			

**Notes:**

1. The statistical significance of the test statistic for each ANOVA model is denoted as \**p* < .01, \*\**p* < .001, or \*\*\**p* < .0001.
2. N-counts in this table are unweighted. Means are weighted to reflect the sampling design.
3. Multiple comparisons are based on the Tukey-Kramer procedure. Statistical significance is denoted as \**p* < .01, \*\**p* < .001, or \*\*\**p* < .0001.
4. Effect sizes are provided only for statistically significant comparisons.

**Table A4.** N-Counts and Percentages, by Reported Family Income Category and Race/Ethnicity

Family income Category	Race/Ethnicity											
	Asian		Black		Hispanic		White		Other		Total	
	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct
Low	40	8%	190	35%	135	25%	240	26%	46	27%	651	24%
Moderate	114	23%	212	39%	190	36%	289	32%	56	33%	861	32%
High	215	43%	94	17%	147	27%	281	31%	37	22%	774	29%
Unknown	133	26%	47	9%	63	12%	107	12%	29	17%	379	14%
Total	502	100%	543	100%	535	100%	917	100%	168	100%	2,665	100%

**Table A5.** Weighted Regression Statistics for Modeling the Chances of Future Outcomes as a Function of Reported Family Income Category and Race/Ethnicity

Outcome	Family Income Category Statistics				
	Unstandardized Regression Coefficient	Std. Error	t	Multiple R	RMSE
Financial resources for college	0.151	0.008	18.32***	0.448	0.893
Career that pays well	0.038	0.007	5.32***	0.143	0.768
Own your own home	0.046	0.008	5.96***	0.151	0.837
Career you enjoy	-0.019	0.007	-2.63*	0.130	0.801
Steady employment during career	0.012	0.007	1.67	0.105	0.756
Happy family life	0.009	0.008	1.10	0.104	0.870
Good health most of time	0.025	0.008	3.29*	0.098	0.800
Live wherever want to in country	0.042	0.010	4.36***	0.125	1.010
Respected in social network	0.021	0.007	2.92*	0.101	0.770
Good friends you can count on	0.031	0.008	3.83***	0.126	0.842
Positive social connections	0.026	0.008	3.46**	0.123	0.804
Hobbies you enjoy	-0.006	0.007	-0.76	0.054	0.768
Extra money to save and invest	0.053	0.009	6.20***	0.161	0.884
Financial resources to retire	0.058	0.008	7.32***	0.187	0.838
Better life than parents had	-0.087	0.008	-10.32***	0.374	0.834
Children have better life	-0.073	0.009	-8.16***	0.342	0.892
Life turns out well overall	0.017	0.007	2.34	0.105	0.740

**Notes**

- The family income variable used in the regression analysis consisted of nine categories: Less than \$24,000; About \$24,000 to \$36,000; About \$36,000 to \$50,000; About \$50,000 to \$60,000; About \$60,000 to \$80,000; About \$80,000 to \$100,000; About \$100,000 to \$120,000; About \$120,000 to \$150,000; More than \$150,000.
- Statistical significance of the unstandardized regression coefficients for family income category is denoted as \* $p < .01$ , \*\* $p < .001$ , or \*\*\* $p < .0001$ .
- Dummy-coded variables reflecting students' race/ethnicity were included in each model for statistical control purposes, irrespective of whether or not the regression coefficient for each variable was statistically significant.
- The regression analyses incorporated features of the complex sampling design, including weights that adjusted for disproportional sampling within strata.
- The model for the hobbies-you-enjoy outcome was not statistically significant.

**Table A6.** Comparison Statistics for Student Estimates of the Chances of Future Outcomes, by Responses to the Question About Estimates Being More or Less Positive If Made Before the Pandemic Began

Outcome	Before the Pandemic, Estimates Would Have Been ...						Comparison Test Statistic <sup>3</sup>	Effect Size <sup>4</sup>
	F <sup>1</sup>	About the Same		Somewhat or a Lot More Positive				
		N <sup>2</sup>	Mean	N	Mean			
Financial resources for college	27.12***	1,249	3.81	683	3.50	6.72***	0.32	
Career that pays well	40.66***	1,251	4.02	683	3.69	8.95***	0.43	
Own your own home	49.26***	1,254	4.13	682	3.73	9.78***	0.47	
Career you enjoy	43.27***	1,254	4.16	683	3.83	8.40***	0.40	
Steady employment during career	33.67***	1,252	4.11	684	3.82	8.13***	0.38	
Happy family life	26.36***	1,254	4.15	681	3.84	7.24***	0.35	
Good health most of time	38.79***	1,253	4.17	685	3.83	8.78***	0.43	
Live wherever want to in country	22.29***	1,253	3.81	686	3.49	6.67***	0.32	
Respected in social network	9.89***	1,253	4.06	686	3.90	4.44***	0.20	
Good friends you can count on	20.57***	1,252	4.16	685	3.93	5.82***	0.27	
Positive social connections	14.22***	1,251	4.21	684	4.01	5.20***	0.25	
Hobbies you enjoy	2.75	1,250	4.34	679	4.25			
Extra money to save and invest	42.85***	1,249	3.98	685	3.59	9.24***	0.44	
Financial resources to retire	45.71***	1,251	4.00	685	3.62	9.50***	0.45	
Better life than parents had	21.00***	1,249	3.66	684	3.65	0.25		
Children have better life	20.08***	1,243	3.66	684	3.80	-3.18*	-0.15	
Life turns out well overall	51.67***	1,249	4.31	684	3.96	10.07***	0.48	

**Notes:**

1. The statistical significance of the test statistic for each ANOVA model is denoted as \* $p < .01$ , \*\* $p < .001$ , or \*\*\* $p < .0001$ . The combined response categories of “somewhat more negative” and “a lot more negative” were included in the independent variable in the ANOVA models, but the associated statistics are omitted from this table.
2. N-counts in this table are unweighted. Means are weighted to reflect the sampling design.
3. Multiple comparisons are based on the Tukey-Kramer procedure. Statistical significance is denoted as \* $p < .01$ , \*\* $p < .001$ , or \*\*\* $p < .0001$ .
4. Effect sizes are provided only for statistically significant comparisons.

## About the Author

### Jeff Schiel, PhD

Jeff Schiel, a lead research scientist on ACT's applied research team, specializes in the design and methodology of surveys and survey sampling. He has held several positions at ACT, one of which was director of survey research. Prior to that, he led survey-related work at the University of Colorado Boulder.

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## Notes

1. A stratified, random sample of 44,971 students nationwide who had recently registered for the February 2022 National ACT® test was used for this study. Asian students, Black students, and Hispanic students were oversampled across reported family income categories to ensure enough respondents for racial/ethnic group and family income category analyses. The sample contained mostly 11th-grade students (55%) but contained 10th- and 12th-grade students as well (7% and 38%, respectively). A total of 2,665 students responded and completed at least the first 6 of 17 future outcomes items (response rate of 5.9%).
2. Seventeen items describing future outcomes were included in the survey instrument and are listed below. Items followed by an asterisk were borrowed from the Perceived Life Chances Scale (Jessor, Donovan, & Costa, 1990). Some items were modified slightly, and the modifications are described parenthetically next to those items. Weighted (see Note 3) correlation coefficients between all pairs of items are provided in Table A1. The coefficients range from -0.11 (having adequate financial resources to complete college & your children will have a better life than you have had) to 0.72 (having extra money to save and invest & having adequate financial resources to retire comfortably).

Students were asked “Thinking about how you see your future, what are the chances that...” followed by one of the 17 items. The response options included “very high,” “high,” “about fifty-fifty,” “low,” and “very low.”

1. You will have adequate financial resources to complete college
2. You will have a career that pays well\* (changed “job” in the original item to “career”)
3. You will be able to own your own home\*
4. You will have a career that you enjoy\* (original item: “You will have a job that you enjoy doing”)
5. You will have steady employment throughout your career
6. You will have a happy family life\*
7. You will be in good health most of the time\*
8. You will be able to live wherever you want to in the country\*
9. You will be respected in your social network\* (changed “community” in original item to “social network”)

10. You will have good friends you can count on\*
  11. You will have positive social connections (through your work, religious organizations, clubs, etc.)
  12. You will have hobbies you enjoy
  13. You will have extra money, beyond what you need for basic expenses, to save and invest over time
  14. You will have adequate financial resources to retire comfortably
  15. Life will turn out better for you than it has for your parents/guardians\* (added “guardians”)
  16. Your children will have a better life than you have had\*
  17. Your life will turn out well overall
3. Where applicable, weighted statistics that reflect the sampling design have been computed.
  4. The “typical” mean was computed as the median of the 17 future outcome means.
  5. Generally accepted guidelines for interpreting effect sizes (ES) for differences between means are: An effect size (in absolute value) of 0.20 or less is small, 0.21–0.49 is small-to-medium, 0.50–0.79 is medium-to-large, and 0.80 or more is large.
  6. Data on family income are collected when students register to take the ACT test. Students are asked to provide an estimate of pre-tax, combined annual income for both parents/guardians. In this study, low family income is defined as income of less than \$36,000. Moderate family income is between \$36,000 and \$100,000, and high family income exceeds \$100,000.
  7. A box-and-whisker plot, which summarizes the distribution of survey responses, is shown in Figure 2 for each combination of future outcome and reported family income category. The bottom and top edges of a box denote the 25th and 75th percentiles of the distribution of responses. The blue diamond denotes the mean of the distribution. The upper whisker of each boxplot extends to the maximum value that is below the “upper fence” (not shown in the graphs), which is defined as the point that is 1.5 times the interquartile range (75th percentile minus 25th percentile) above the 75th percentile. Similarly, the lower whisker extends to the minimum value above the lower fence (1.5 times the interquartile range below the 25th percentile).

For all comparisons of means in this study, ANOVAs with pairwise comparisons based on the Tukey-Kramer procedure were used.

8. Test statistics,  $p$ -values, and effect sizes for these outcomes, for the high family income category vs. the low family income category and for the high family income category vs. the moderate family income category, are listed below.
  1. Career that pays well (high vs. low:  $q = 3.22$ ,  $p < .01$ ,  $ES = 0.19$ ; high vs. moderate:  $q = 5.60$ ,  $p < .0001$ ,  $ES = 0.27$ )



2. Own your own home (high vs. low:  $q = 5.37$ ,  $p < .0001$ ,  $ES = 0.34$ ; high vs. moderate:  $q = 4.24$ ,  $p < .0001$ ,  $ES = 0.21$ )
3. Live wherever you want to in the country (high vs. low:  $q = 2.99$ ,  $p < .01$ ,  $ES = 0.20$ ; high vs. moderate:  $q = 4.13$ ,  $p < .0001$ ,  $ES = 0.21$ )
4. Good friends you can count on (high vs. low:  $q = 5.18$ ,  $p < .0001$ ,  $ES = 0.33$ ; high vs. moderate:  $q = 4.03$ ,  $p < .001$ ,  $ES = 0.20$ )
5. Positive social connections (high vs. low:  $q = 3.45$ ,  $p < .01$ ,  $ES = 0.22$ ; high vs. moderate:  $q = 4.37$ ,  $p < .0001$ ,  $ES = 0.22$ )
6. Extra money to save and invest (high vs. low:  $q = 3.84$ ,  $p < .001$ ,  $ES = 0.25$ ; high vs. moderate:  $q = 5.25$ ,  $p < .0001$ ,  $ES = 0.27$ )
7. Financial resources to retire comfortably (high vs. low:  $q = 5.09$ ,  $p < .0001$ ,  $ES = 0.32$ ; high vs. moderate:  $q = 6.28$ ,  $p < .0001$ ,  $ES = 0.32$ )
9. Data were analyzed separately for students from four racial/ethnic groups: Asian, Black, Hispanic, and White. Too few students of other races/ethnicities responded to the survey to permit separate analyses for them.
10. N-counts by racial/ethnic group and reported family income category are provided in Table A4 and range from 40 (Asian students, low family income) to 289 (White students, moderate family income).





## About ACT

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