Attractiveness and Adolescent Student Performance

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Abstract:

Previous studies (Cawley 2004; Sabia 2007) have examined the relationship between obesity and wages and academic performance. These studies have shown that obesity has a negative effect on wages and academic performance. We extend this work by examining the relationship between attractiveness and academic performance, to determine whether the obesity effect is simply a component of a more general attractiveness effect. Our results indicate that "unattractiveness" and obesity are separate effects that have a similar (negative) effect on academic performance. The notable exception is the least attractive subjects in the data set, who tend to outperform their more attractive classmates. We offer possible explanations for these findings.

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I. Introduction

Relatively attractive people enjoy a number of advantages in life. Studies have shown that they fare better in the job market, get paid more, more easily interact with others, and are able to find more attractive mates. Another issue that has garnered a lot of research attention is academic performance. Numerous variables have been shown to affect students' performance. Does a student's attractiveness have any bearing on the likelihood of academic success?

In this paper we utilize data from the National Longitudinal Study of Adolescent Health (Add Health) to test whether there is a relationship between student attractiveness and academic performance. We find statistically significant evidence that white female students in the "very unattractive" category have significantly higher GPAs than other white female students. However, for white female students in other attractiveness categories, being more attractive is associated with higher GPAs. There are no significant impacts of attractiveness on student performance for white males or for non-white students. We discuss possible explanations for this finding, and place the results in the context of the existing literature.

The paper is organized as follows. Section II is a review of the literature. The data set is described in Section III. We describe the model and present the results in Section IV. Section V is a discussion of the results and the conclusion.

II. Literature Review

There is a wealth of literature in economics, sociology, psychology, and communications, which examines the effects of attractiveness on assorted variables. Such issues have even been discussed recently in the popular press (Frank 2007). Different studies have used different data sets and methodologies, and the literature is far too extensive to review in detail here; we provide only a brief summary of findings that are representative of the literature.

There have been numerous studies that have examined the role of attractiveness on earnings gaps. For example, Biddle and Hamermesh (1998) found that better-looking attorneys earned more than others after five years in practice, and that beauty was a causal factor in earnings differences. They also found that attorneys in the private sector are better looking, on average, than those in the public sector. Their study focused on graduates from one law school. Cawley (2004) uses data from the National Longitudinal Survey of Youth to examine the impact of obesity on wages. He finds that weight lowers wages for white females; 65 additional pounds is associated with a 9% reduction in wages. Wage differences for other demographic groups appear to be the result of unobserved variables.

Hamermesh and Biddle (1994) utilize data from interviewers' ratings of respondents' physical appearance for two surveys (of Canadians and Americans). They find that the penalty for "plainness" is about 5-10% of wages and that the premium paid to the good-looking is of a slightly smaller magnitude. The effect of appearance may be slightly larger for men. Hamermesh, Meng, and Zhang (2001) examine the effect of women's expenditures on beauty-enhancing goods and services in China. Most spending

on these goods appears to be consumption spending. However, there is a small return to such spending on workers' wages. Phann, Biddle, Hamermesh, and Bosman (n.d.) find that Dutch advertising firms with better-looking executives tend to have higher revenues. They conclude that the returns to executives' attractiveness are shared by the executives and the firms that employ them. Overall, these studies provide fairly strong evidence that there is a wage premium paid to the relatively attractive.

Other papers have examined how attractiveness affects various personal relationships. Margolin and White (1987) discuss the role of attractiveness in how spouses respond to each other. They find that the husband's happiness with the relationship is affected more by the attractiveness effects of aging than the wife's happiness. They also discuss how this affects the partners' contributions to the marriage. Mulford, Orbell, Shatto, and Stockard (1998) analyze the importance of physical attractiveness in everyday exchanges, as tested in prisoner's dilemma games. They find that people are more likely to cooperate with individuals they view as being relatively attractive. Men who see themselves as more attractive cooperate more often, while women who see themselves as more attractive cooperate less often than other women. These studies are consistent with the labor market earnings findings; more attractive people are found to do relatively better in other sorts of exchange situations.

Attractiveness has been found to relate to a variety of other issues. In a study of elections for economists' professional offices, Hamermesh (2006) found that attractiveness even pays in that situation. Hamermesh and Parker (2005) examine university teaching ratings, and find that more attractive teachers receive higher instructional ratings. They find that the effect is larger for male than for female

instructors. Several studies have focused on attractiveness and online dating (e.g., Hitsch, Hortaçsu, and Ariely 2005), with the unsurprising finding that attractiveness is rewarded. Kanazawa and Kovar (2004) examine evidence that suggests that more attractive individuals tend to be, in fact, more intelligent.

Of particular importance to the current study are the papers by Sabia (2007) and Mocan and Tekin (2006). Sabia (2007) builds on Cawley's (2004) work, and uses data from the Add Health to analyze the effect of body mass index (BMI) and body weight on academic performance, a proxy for human capital accumulation. To measure BMI and weight, Sabia uses self-reported data. Academic performance is measured using a modified 4-point scale, and GPAs are self-reported. His sample is segmented by sex and race (white and non-white). His analysis uses OLS, instrumental variables (IV), and fixed effects (FE) models.

Sabia finds that, for white females only, higher body weight or BMI leads to lower grade point averages. Although the effect may not sound large (60 pounds leads to a 8-10% decline in GPA), it is statistically significant, and Sabia argues it may have a serious impact on the affected individuals. For example, admission to college may depend critically on GPA, so that even a small decline could have a serious effect on the likelihood of college admission (Sabia 2007, p. 895). Sabia discusses a number of possible explanations for the obesity-human capital accumulation relationship.

Mocan and Tekin (2006) also use Add Health data. Their paper examines the relationships between attractiveness and wages and the propensity to engage in criminal activity. They find that beauty in high school and current beauty affect the propensity to engage in criminal activity. Their findings support Sabia's (2007), and indicate that

attractiveness has an impact on human capital formation. This effect partially explains the decision to engage in criminal behavior. More attractive individuals are found to have relatively high rates of human capital formation – through attention received from teachers and interactions with other students – and therefore are less likely to engage in criminal activity. This is because the payoff to criminal activities for more attractive individuals is likely to be lower than the alternative legal working options.

Taken together, the Sabia (2007) and Mocan and Tekin (2006) papers provide an important foundation for this study. While Sabia studies the determinants of academic performance, he focuses on obesity and weight as explanatory variables. While Mocan and Tekin use attractiveness as an explanatory variable, they focus on explaining criminal behavior. Our study contains elements of both of these. We focus on the role of attractiveness in explaining academic performance, and note that perhaps the obesity/ weight effect found by Sabia is actually confounded with an attractiveness effect. As far as we are aware, the relationship between attractiveness and academic performance has not been analyzed using Add Health data.

III. Data

The National Longitudinal Study of Adolescent Health (Add Health) is a survey of a nationally representative sample of adolescents in grades seven through twelve, from 134 schools.[1] Add Health contains an in-school survey administered to 90,118 students for the 1994-95 school year, three waves of in-home surveys administered in 1994-95, 1996, and 2001-02, two school administrator questionnaires, and a parents' survey. The wave 1 in-home survey includes responses from 20,745 students and approximately

[1] See Harris, Florey, Tabor, Bearman, Jones, and Udry (2003) for an description of the Add Health design.

18,000 parents. The wave 2 in-home survey contains information on 14,738 adolescents. The wave 3 in-home survey contains information on 15,197 individuals. The in-school and wave 1 and 2 in-home surveys cover health related behavior and life experiences, while the wave 3 in-home survey is targeted at evaluating academic, career, and personal outcomes for these individuals.

The Add Health survey data are one of the most comprehensive sources of information on students available, and have been widely used in economic research. The study includes self-reported data on a number of variables, including academic performance, weight, relationships with parents, previous drug use, sexual activity, and relationships with peers. In addition, at the end of each interview, the interviewer filled out a short survey of his/her opinions of the respondents. To gauge the level of beauty of the respondents, the interviewers were asked: "How physically attractive is the respondent?" Possible responses include: (1) very unattractive, (2) unattractive, (3) about average, (4) attractive, and (5) very attractive.

Sabia (2007) examined the effect of obesity, as measured by BMI and weight, on a modified 4-point GPA.[2] Aside from weight variables, he includes a variety of other demographic variables from the Add Health survey. We initially posit the same model, and attempt to replicate Sabia's results. We then introduce attractiveness rating variables into the model. Our goal is to determine the extent to which the obesity effect found by Sabia may be considered to be a component of a more general attractiveness effect on academic performance.

In this study we use data from wave 1 of the Add Health. The interviewer responses to the question listed above are the source of our attractiveness data on

[2] Sabia (2007, p. 878) lumps D and F grades together, giving these grades a value of 0.5 points.

students. These are the same data used in the studies by Sabia (2007) and Mocan and Tekin (2006). We view these data as being more objective than self-reported attractiveness ratings provided by students. This is confirmed, as most of the interviewers' ratings are consistent through the different waves of the Add Health data (Mocan and Tekin 2006, pp 9-10).

In Table 1 we present the summary statistics for the variables included in the models.

[TABLE 1 HERE]

IV. Models and results

To begin the empirical analysis, we attempt to replicate Sabia's results. He runs OLS, instrumental variable (IV), and fixed-effects (FE) models on students' GPAs. He includes a variety of demographic variables. We are able to replicate Sabia's results with very few anomalies.[3]

Next, we add the attractiveness variables. These are a series of dichotomous variables, based on the possible attractiveness rankings from the interviewer survey. As discussed earlier, the response options are: very attractive, attractive, about average, unattractive, and very unattractive. "Very unattractive" is our omitted ranking. We run OLS and IV models, but not a FE model. The reason we do not run the FE model is that there is very little variation in the attractiveness rating across waves of the Add Health. Table 2 shows the results from the model including Sabia's BMI variable and our

[3] Slight differences in magnitude and significance occur in each of the four samples. These are probably the result of not being able to exactly replicate his sample.

attractiveness dummies. Table 3 shows the results for the model using Sabia's weight (in pounds) variable and the attractiveness variables.

[TABLE 2 HERE]

[TABLE 3 HERE]

When we add the series of attractiveness dummies, we find that the dummies are negative and significant for white females only. This is similar to Sabia's findings that the weight effects are strongest for white females. Keep in mind that the "very unattractive" rating is the omitted dummy. The signs on all included attractiveness dummies are negative, which means that white female students with the attribute "very unattractive" tend to have *higher* GPAs, ceteris paribus, than white female students who were rated as relatively attractive. However, aside from the "very unattractive" white female students, having a lower attractiveness rating corresponds to lower academic performance. The relationship between lower attractiveness (other than very unattractive individuals) and lower academic performance generally holds for white and nonwhite males as well, but the effect is not statistically significant at the 10% level. Importantly, Sabia's weight and BMI variables generally continue to be negative and significant after including the attractiveness variables. However, the magnitudes of the weight and BMI coefficients decrease slightly and weight is no longer statistically significant for nonwhite males or white females in the OLS model.

V. Discussion and conclusion

This study makes two important contributions. First, we find that a student's attractiveness has a significant impact on their academic performance. Specifically, we

find that less attractive white females generally have lower academic performance, as measured by GPA. These findings are consistent with Cawley's (2004), that obesity has a negative impact on wages, with Sabia's (2007), that higher weight tends to correspond with lower academic performance, and with other literature that suggests that less attractive individuals fare worse in all sorts of market and non-market interaction.

Importantly, the "unattractiveness effect" we find for white females is above and beyond the weight effect found by Sabia (2007). The unattractive and weight variables together explain more than the weight variable alone. This suggests that the weight effect found by Sabia is not simply a component of a more general attractiveness effect. This finding has important implications for future research on the effects of attractiveness and obesity, as the two appear to be largely separate effects.

Second, we find that being rated as "very unattractive" is an exception to the result described above. Very unattractive students have better academic performance, ceteris paribus, than other students who are rated as more attractive.

What might explain the relationship between attractiveness and academic performance? Sabia (2007, p. 872) offers a number of possible explanations for the effect of obesity. For example, obesity could cause a decline in academic performance if teachers discriminate against overweight students, or if obesity has adverse effects that impede effective studying. Or, perhaps students with the least self-discipline spend less time studying and exercising.

We believe that Sabia's explanations are reasonable, and that similar effects may be in play for the relationship between attractiveness and academic performance. But why would very unattractive individuals be an exception? Frank's discussion (2007)

points to one possible explanation. In discussing the "beauty-brains" relationship, he notes that being more attractive may create valuable opportunities that do not require onerous investments in education and training.

Kanazawa and Kovar (2004) present evidence that more attractive people are, in fact, more intelligent. This is consistent with our general findings, those by Cawley (2004) and Sabia (2007), and other research reviewed above – that more attractive people fare better in academics and in the job market. Perhaps individuals who are remarkably unattractive understand that their looks will not be helpful to them in school or on the job market, or perhaps they outright expect to be discriminated against by teachers and potential employers. Therefore, they have an incentive to work much harder than other students normally do. This is one possible explanation for the "very unattractive" rating having a positive impact on academic performance, but it is not the only one.

One possible extension to the analysis in this paper is to study the extent to which students' wardrobe is related to perceived attractiveness and, indirectly, academic performance. If, for example, school uniforms diminish the variation in attractiveness across students, then perhaps the influence of attractiveness and weight on academic performance would be diminished in favor of effort or other more academically relevant variables. [4]

Future research should examine *why* students' attractiveness and weight have a relationship to academic performance. As noted by Sabia (2007), a solid understanding of these issues could potentially have important policy implications for student performance and human capital accumulation. If students can avoid becoming overweight, or pay

[4] The school uniform issue has been hotly debated in the literature. For an overview, see Lumsden (2001).

some attention to their appearance, evidence suggests that academic performance may improve. This could lead to higher wages when students later seek employment.

References

Biddle, J., and Hamermesh, D. 1998. Beauty, productivity, and discrimination: Lawyers' looks and lucre. *Journal of Labor Economics* 16(1): 172-201.

Cawley, J. 2004. The impact of obesity on wages. *Journal of Human Resources* 39(2): 451-474.

Frank, R. 2007. Despite the dumb jokes, stereotypes may reflect some smart choices. *New York Times* (7 June).

Hamermesh, D. 2006. Changing looks and changing "discrimination": The beauty of economists. *Economics Letters* 93: 405-412.

Hamermesh, D., and Biddle, J. 1994. Beauty and the labor market. *American Economic Review* 84(5): 1174-1194.

Hamermesh, D., Meng, X., and Zhang, J. 2001. Dress for success – Does primping pay? University of Texas manuscript.

Hamermesh, D., and Parker, A. 2005. Beauty in the classroom: Instructors' pulchritude and putative pedagogical productivity. *Economics of Education Review* 24: 369-376.

Harris K., Florey F., Tabor J., Bearman P., Jones J., and Udry J. 2003. The National Longitudinal Study of Adolescent Health: Research Design. Available online at: http://www.cpc.unc.edu/projects/addhealth/design.

Hitsch, G, Hortaçsu A., and Ariely, D. 2005. What makes you click: An empirical analysis of online dating. University of Chicago working paper.

Kanazawa, S., and Kovar, J. 2004. Why beautiful people are more intelligent. *Intelligence* 32: 227-243.

Lumsden, L. 2001. Uniforms and dress-code policies. *Eric Digest* 148. Eugene, OR: ERIC Clearinghouse on Educational Management.

Margolin, L., and White, L. 1987. The continuing role of physical attractiveness in marriage. *Journal of Marriage and the Family* 49: 21-27.

Mocan, N., and Tekin, E. 2006. Ugly criminals. Bonn, Germany: Institute for the Study of Labor (IZA), discussion paper no. 2048. Available at http://ssrn.com/abstract=894062.

Mulford, M., Orbell, J., Shatto, C., and Stockard, J. 1998. Physical attractiveness, opportunity, and success in everyday exchange. *American Journal of Sociology* 103(6): 1565-1592.

Pfann, G., Biddle, J., Hamermesh, D., and Bosman, C. N.d. Business success and businesses' beauty capital. University of Texas manuscript.

Sabia, J. 2007. The effect of body weight on adolescent academic performance. *Southern Economic Journal* 73(4): 871-900.

Table 1: Weighted Means and Standard Deviations of Variables[a]

Variable	Definition	White Females	Nonwhite Females	White Males	Nonwhite Males
MEGPA	Math and English GPA	2.871	2.625	2.653	2.429
		(0.038)	(0.046)	(0.038)	(0.045)
Unattractive[b]	Adolescent rated Unattractive by Interviewer	0.024	0.053	0.054	0.043
		(0.005)	(0.010)	(0.008)	(0.009)
Average Attractiveness	Adolescent rated Average Attractiveness by Interviewer	0.341	0.420	0.516	0.503
		(0.015)	(0.030)	(0.019)	(0.025)
Attractive	Adolescent rated Attractive by Interviewer	0.404	0.325	0.317	0.308
		(0.019)	(0.021)	(0.016)	(0.017)
Very Attractive	Adolescent rated Very Attractive by Interviewer	0.219	0.184	0.106	0.140
		(0.017)	(0.017)	(0.010)	(0.021)
BMI	Body Mass Index	21.766	23.028	22.293	22.779
	(weight in kilograms/height in meters squared)	(0.163)	(0.211)	(0.151)	(0.245)
Weight	Weight in Pounds	128.946	133.765	151.247	150.721
		(1.070)	(1.612)	(1.632)	(2.199)
Height	Height in Inches	64.488	63.842	68.824	68.073
		(0.104)	(0.174)	(0.221)	(0.273)
Morbidly Obese	Adolescent rated Morbidly Obese[c]	0.004	0.006	0.002	0.009
		(0.002)	(0.003)	(0.001)	(0.005)
Obese	Adolescent rated Obese[c]	0.037	0.085	0.059	0.072
		(0.008)	(0.012)	(0.009)	(0.012)
Overweight	Adolescent rated Overweight[c]	0.125	0.156	0.146	0.146
		(0.011)	(0.016)	(0.011)	(0.015)
Normal	Adolescent rated Normal Weight[c]	0.678	0.658	0.655	0.662
		(0.017)	(0.019)	(0.015)	(0.021)
Underweight	Adolescent rated Underweight[c]	0.157	0.095	0.138	0.110
		(0.013)	(0.010)	(0.012)	(0.015)
ObeseMom	Parent reports biological mother has obesity problem	0.216	0.173	0.202	0.171
		(0.013)	(0.019)	(0.013)	(0.018)
ObeseDad	Parent reports biological father has obesity problem	0.125	0.072	0.114	0.088
		(0.011)	(0.011)	(0.010)	(0.014)
Sport	Adolescent plays school sport	0.714	0.572	0.848	0.842
		(0.015)	(0.027)	(0.011)	(0.020)

Table 1 Continued: Weighted Means and Standard Deviations of Variables

Variable	Definition	White Females	Nonwhite Females	White Males	Nonwhite Males
Exercise	Adolescent exercises regularly	0.864	0.885	0.816	0.866
		(0.011)	(0.013)	(0.013)	(0.015)
Meat	Meat consumption for breakfast	0.036	0.171	0.070	0.236
		(0.006)	(0.024)	(0.009)	(0.024)
Aspire	Adolescent aspires to attend college	0.875	0.869	0.835	0.837
		(0.014)	(0.015)	(0.015)	(0.014)
AHPVT	Add Health Picture - Vocabulary Test Score	105.288	94.603	105.950	95.901
		(0.556)	(1.014)	(0.481)	(0.974)
Public	Adolescent attends public school	0.933	0.944	0.913	0.935
		(0.023)	(0.024)	(0.034)	(0.030)
Rural	Adolescent's school in rural area	0.190	0.098	0.192	0.097
		(0.065)	(0.048)	(0.058)	(0.042)
Suburban	Adolescent's school in suburban area	0.632	0.506	0.627	0.472
		(0.065)	(0.072)	(0.060)	(0.066)
South	Adolescent lives in southern region of United States	0.298	0.480	0.341	0.458
		(0.030)	(0.051)	(0.030)	(0.045)
West	Adolescent lives in western region of United States	0.136	0.219	0.114	0.227
		(0.021)	(0.041)	(0.017)	(0.039)
Midwest[d]	Adolescent lives in midwestern region of United States	0.428	0.198	0.392	0.214
		(0.045)	(0.047)	(0.036)	(0.036)
Pardiscol	Strong parental disapproval if adolescent does not attend college	0.382	0.555	0.376	0.558
		(0.019)	(0.025)	(0.019)	(0.024)
Parteach	Parent a member of PTA	0.362	0.310	0.393	0.267
		(0.025)	(0.022)	(0.024)	(0.028)
Neighborhood	Parent moved to neighborhood because of school system	0.553	0.404	0.566	0.429
		(0.028)	(0.031)	(0.021)	(0.032)
Brilliant	Parent believes adolescent being brilliant is top priority	0.638	0.774	0.630	0.750
		(0.017)	(0.017)	(0.018)	(0.023)
Parproject	Parent recently aided adolescent with school project	0.199	0.194	0.207	0.182
		(0.014)	(0.024)	(0.014)	(0.022)
Partalk	Parent recently spoke with adolescent about grades	0.466	0.493	0.478	0.515
		(0.028)	(0.029)	(0.021)	(0.028)
SingleParent	Single-parent household	0.197	0.412	0.197	0.399
		(0.014)	(0.029)	(0.014)	(0.027)

Table 1 Continued: Weighted Means and Standard Deviations of Variables

Variable	Definition	White Females	Nonwhite Females	White Males	Nonwhite Males
ColGrad	Parent graduated from college	0.252	0.172	0.262	0.190
		(0.020)	(0.021)	(0.020)	(0.022)
Parwork	Parent is employed outside the home	0.773	0.703	0.779	0.745
		(0.016)	(0.028)	(0.015)	(0.024)
Curfew	Parent has strict weekend curfew for adolescent	0.752	0.760	0.663	0.602
		(0.015)	(0.018)	(0.018)	(0.025)
Dinnerwk	Number of days per week adolescent has dinner with family	5.081	4.400	5.256	4.283
		(0.076)	(0.121)	(0.077)	(0.117)
Religion	Measure of family attendance at religious services	2.275	1.989	2.346	2.204
	0=no attendance, 1=weekly, 2=monthy, 3=yearly	(0.056)	(0.073)	(0.057)	(0.069)
NoMonitor	Parent does not monitor friends of adolescent	0.014	0.093	0.020	0.102
		(0.003)	(0.015)	(0.005)	(0.017)
Romantic	Adolescent in romantic or romantic-like relationship	0.624	0.502	0.522	0.552
		(0.017)	(0.024)	(0.017)	(0.028)
Intercourse	Adolescent engaged in sexual intercourse	0.292	0.380	0.296	0.466
		(0.019)	(0.028)	(0.020)	(0.029)
Oldersib	Older sibling in household	0.392	0.406	0.400	0.424
		(0.027)	(0.027)	(0.022)	(0.024)
HHINC	Household income	52.147	32.312	51.864	33.383
		(2.344)	(2.015)	(2.321)	(1.990)
Drink	Adolescent consumed alcohol during previous month	0.609	0.503	0.582	0.526
		(0.019)	(0.023)	(0.018)	(0.023)
Age15 [e]	Adolescent age = 15	0.278	0.262	0.267	0.288
		(0.016)	(0.024)	(0.013)	(0.021)
Age16	Adolescent age = 16	0.254	0.270	0.258	0.232
		(0.020)	(0.025)	(0.018)	(0.023)
Age17	Adolescent age = 17	0.167	0.226	0.168	0.222
		(0.014)	(0.024)	(0.015)	(0.028)
Observations		1,585	1,160	1,659	1,075

[a] Sample restricted to students enrolled in English/Language Arts and Math courses and had nonmissing observations for all right-hand side variables in the OLS regression analysis.
[b] Omitted category is very unattractive.
[c] Based on BMI categories defined by Center for Disease Control.
[d] Omitted category is northeast region of the country.
[e] Omitted category is age 14.

Table 2: The Effect of BMI on Academic Achievement

	White Females		Nonwhite Females		White Males		Nonwhite Males	
	OLS	IV	OLS	IV	OLS	IV	OLS	IV
From Sabia Article:								
BMI	-0.018***	0.096***	-0.015**	-0.015	0.003	-0.029	-0.020***	-0.078***
	(0.007)	(0.030)	(0.007)	(0.021)	(0.006)	(0.018)	(0.006)	(0.030)
Observations	1,472	1,472	1,059	1,059	1,561	1,561	1,055	1,055
Attempt at Replicating Sabia's Results:								
BMI	-0.018**	-0.073***	-0.007	0.017	0.009	-0.025	-0.013*	-0.033
	(0.007)	(0.021)	(0.007)	(0.031)	(0.008)	(0.022)	(0.007)	(0.027)
Observations	1,585	1,585	1,160	1,160	1,659	1,659	1,075	1,075
Results After including Measure of Attractiveness[a]								
BMI	-0.013*	-0.069***	-0.008	0.012	0.010	-0.021	-0.010	-0.029
	(0.008)	(0.023)	(0.007)	(0.032)	(0.008)	(0.022)	(0.007)	(0.026)
Unattractive	-0.885***	-0.741***	0.046	-0.047	0.108	0.112	-0.550	-0.417
	(0.219)	(0.251)	(0.208)	(0.245)	(0.574)	(0.559)	(0.475)	(0.507)
Average Attractive	-0.682***	-0.717***	0.008	-0.031	0.113	0.097	-0.413	-0.326
	(0.175)	(0.192)	(0.195)	(0.186)	(0.542)	(0.528)	(0.406)	(0.414)
Attractive	-0.492***	-0.624***	0.080	0.067	0.275	0.247	-0.223	-0.150
	(0.175)	(0.199)	(0.192)	(0.183)	(0.530)	(0.517)	(0.402)	(0.401)
Very Attractive	-0.556***	-0.699***	-0.063	-0.048	0.323	0.302	-0.389	-0.313
	(0.199)	(0.221)	(0.209)	(0.205)	(0.546)	(0.534)	(0.411)	(0.417)
Observations	1,585	1,585	1,160	1,160	1,659	1,659	1,075	1,075

[a]Omitted category is Very Unattractive.

As in the Sabia article, all models are weighted.

Standard errors in parentheses.

*Significant at the 10% level.

**Significant at the 5% level.

***Significant at the 1% level.

Table 3: The Effect of Weight in Pounds on Academic Achievement

	White Females		Nonwhite Females		White Males		Nonwhite Males	
	OLS	IV	OLS	IV	OLS	IV	OLS	IV
From Sabia Article:								
Weight in Pounds	-0.003***	-0.016***	-0.003**	-0.002	0.002	-0.004	-0.003***	-0.011
(Controlling for Height)	(0.001)	-(0.005)	(0.001)	(0.003)	(0.008)	-(0.003)	(0.001)	(0.004)
Observations	1,472	1,472	1,059	1,059	1,561	1,561	1,055	1,055
Attempt at Replicating Sabia's Results:								
Weight in Pounds	-0.003**	-0.013***	-0.001	0.002	0.001	-0.004	-0.002*	-0.004
(Controlling for Height)	(0.001)	(0.004)	(0.001)	(0.005)	(0.001)	(0.003)	(0.001)	(0.004)
Observations	1,585	1,585	1,160	1,160	1,659	1,659	1,075	1,075
Results After including Measure of Attractiveness[a]								
Weight in Pounds	-0.002	-0.012***	-0.001	0.002	0.001	-0.003	-0.001	-0.004
(Controlling for Height)	(0.001)	(0.004)	(0.001)	(0.005)	(0.001)	(0.003)	(0.001)	(0.004)
Unattractive	-0.890***	-0.752***	0.052	-0.023	0.116	0.108	-0.523	-0.417
	(0.217)	(0.265)	(0.208)	(0.241)	(0.575)	(0.562)	(0.486)	(0.507)
Average Attractive	-0.694***	-0.757***	0.015	-0.017	0.120	0.095	-0.402	-0.328
	(0.175)	(0.209)	(0.194)	(0.187)	(0.544)	(0.532)	(0.417)	(0.419)
Attractive	-0.505***	-0.666***	0.089	0.079	0.283	0.244	-0.211	-0.149
	(0.177)	(0.216)	(0.191)	(0.183)	(0.532)	(0.521)	(0.413)	(0.407)
Very Attractive	-0.569***	-0.742***	-0.052	-0.038	0.331	0.299	-0.373	-0.310
	(0.202)	(0.240)	(0.208)	(0.205)	(0.548)	(0.538)	(0.424)	(0.424)
Observations	1,585	1,585	1,160	1,160	1,659	1,659	1,075	1,075

[a]Omitted category is Very Unattractive.

As in the Sabia article, all models are weighted.

Standard errors in parentheses.

*Significant at the 10% level.

**Significant at the 5% level.

***Significant at the 1% level.