# Student Attainment
## and the Milwaukee Parental Choice Program: Final Follow-up Analysis

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**The University of Arkansas** was founded in 1871 as the flagship institution of higher education for the state of Arkansas. Established as a land grant university, its mandate was threefold: to teach students, conduct research, and perform service and outreach.

The College of Education and Health Professions established the Department of Education Reform in 2005. The department's mission is to advance education and economic development by focusing on the improvement of academic achievement in elementary and secondary schools. It conducts research and demonstration projects in five primary areas of reform: teacher quality, leadership, policy, accountability, and school choice.

The School Choice Demonstration Project (SCDP), based within the Department of Education Reform, is an education research center devoted to the non-partisan study of the effects of school choice policy and is staffed by leading school choice researchers and scholars. Led by Dr. Patrick J. Wolf, Professor of Education Reform and Endowed 21st Century Chair in School Choice, SCDP's national team of researchers, institutional research partners and staff are devoted to the rigorous evaluation of school choice programs and other school improvement efforts across the country. The SCDP is committed to raising and advancing the public's understanding of the strengths and limitations of school choice policies and programs by conducting comprehensive research on what happens to students, families, schools and communities when more parents are allowed to choose their child's school.

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# Executive Summary

In this report we continue our examination of high school graduation and post-secondary enrollment in the Milwaukee Parental Choice Program (MPCP). We consider students enrolled in the MPCP in either 8th or 9th grade in 2006, and a comparison sample of students enrolled in the Milwaukee Public Schools. We find that, as of September 2011:

- Students enrolled in MPCP in 2006 in either 8th or 9th grade compared to students enrolled in MPS at the same time:
  - Were somewhat more likely to have graduated high school;
  - Were less likely to enroll in a two-year or technical post-secondary institution;
  - Were more likely to enroll in a four-year post-secondary institution;
  - Dropped out of high school for similar reasons, most notably a poor academic experience.
- MPCP students who were in 9th grade in 2006 were more likely to both graduate and persist with two years of enrollment in a four-year post-secondary institution.
- MPCP and MPS students who did enroll in a post-secondary institution were most likely to attend one of three colleges: University of Wisconsin-Milwaukee, the University of Wisconsin-Whitewater, and Alverno College.
- Among MPCP and MPS students who attended other post-secondary institutions:
  - MPCP students were more likely to enroll in a religious or otherwise private four-year institution;
  - MPCP students attended institutions with slightly higher average tuition levels;
  - MPCP students attended institutions with slightly lower SAT and ACT scores;
  - MPCP students attended institutions with statistically similar rates of applicant acceptance.

# 1.) Introduction

Policymakers and scholars alike have looked to studies of school choice programs for evidence that students do "better" or "worse" in alternatives to the traditional public sector. Nearly all of these studies have focused largely, if not entirely, on one particular outcome: the performance of students on standardized test scores. Many of these studies acknowledge the importance of other outcomes. Some other outcomes have been studied, such as the indirect effects of school choice on other socially desirable goals: racial integration and the narrowing of racial, ethnic, and gender gaps in achievement (e.g. Betts et al. 2006; Bifulco and Ladd 2006; Greene 2005; Neal 2006; Zimmer et al 2009). Other outcomes such as the effects of school choice on student and parent satisfaction and civic values have also been analyzed in various studies (e.g. Campbell 2008; Dee 2005; Howell et al. 2006; Schneider et al. 1997; Wolf et al. 2007; Wolf 2009).

As with other school choice programs, studies specifically of school voucher programs have primarily focused on student test scores. These include evaluations of privately funded programs (Howell et al. 2006), official analyses of public programs (Witte 2000; Wolf et al. 2009) as well as contemporary investigations such as the one directly tied to this report (Witte et al. 2008, 2009). Each of these studies has also reported, to varying degrees, on other outcomes, often finding large and positive voucher effects on parent satisfaction and views of school safety while also reporting small or marginal effects on test scores (e.g. Witte 2000; Howell et al. 2006; Wolf et al. 2009).

Increasingly, analysts of school choice programs, including vouchers, are studying other outcomes besides test scores not simply because they represent alternatives to studying effects on educational quality, but because they represent *fundamentally different measures of educational quality*. Perhaps the most important of these is educational attainment: reaching a predefined level of schooling such as a high school diploma, enrollment in post-secondary education, or earning a bachelor's degree and beyond. Several early studies examined the effect of attending a Catholic high school on student attainment (Coleman and Hoffer 1987; Neal 1997). These observational studies concluded that students graduated at much higher rates if they attended Catholic high schools, especially if they were urban minorities. Graduation and postsecondary enrollment is increasingly of interest in studies of other choice policies, most notably a multistate study of charter schools that found large attainment gains for students who moved from traditional public schools to charter schools (Zimmer et al. 2009).

Although these findings of increased educational attainment from Catholic and charter schools are encouraging, school voucher programs allow students to attend a variety of private schools, not all of which are Catholic. In the voucher literature, only two studies have examined the association between participating in a voucher program and graduating from high school. A recent experimental evaluation of Washington, D.C.'s federal voucher program concluded that using a voucher increased the likelihood of high school graduation by 21 percentage points (Wolf et al. 2010). A prior observational study of a limited set of MPCP high schools reported that they graduated their voucher students at a rate of about 12 percentage points higher than the system-wide graduation rate in MPS (Warren 2011).[1]

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[1]    The prior study was limited to seven of the 26 participating private high schools in MPCP. That study was unable to acquire administrative lists of graduates from MPCP schools or conduct parental surveys, so the data limitations were considerable. The author notes that he awaits our more comprehensive study. Our findings are in the same direction as his, but the differences we report are considerably lower.

Educational attainment is an important indicator of school quality because it may be a direct result of the development of academic and life skills related to a variety of valuable outcomes of interest to policymakers and employers. These include regular employment, aversion to criminal and other dysfunctional behavior, and the generation and growth of personal income and savings. Studies have shown that students who have at least a high school degree can expect higher average life expectancy (Meara, Richards and Cutler 2008) and that even one-year increases in education can reduce the probability of dying in the next ten years (Lleras-Muney 2005). College attainment is associated with higher levels of overall health (Wirt et al. 2004) and better health care (Muennig 2005; Rouse 2005). Not surprisingly, future wealth is also dependent on educational attainment (Rouse 2005; Caniero and Heckman 2003; Day and Newburger 2002) and this extends the benefits of higher attainment rates beyond the individual to broader social benefits such as increased tax revenue and economic development (Belfield and Levin 2007). Beyond pecuniary benefits, governments may see reductions in crime associated with increases in educational attainment (Belfield and Levin 2009; Levitt and Lochner 2001). Although such relationships between attainment and future success may not be surprising, graduation rates are still disturbingly low nationwide, especially for boys and particularly in the nation's largest school districts (Greene and Winters 2006).

**Outcomes Associated with Higher Educational Attainment**

| Outcome | Study |
|---|---|
| Higher life expectancy | Meara, Richards and Cutler (2008) |
| Lower probability of death in near future | Lleras-Muney (2005) |
| Overall health and health care | Wirt et al. (2004); Muennig (2005); Rouse (2005) |
| Tax revenue and economic development | Belfield and Levin (2007) |
| Lower crime rates | Belfield and Levin (2007); Levitt and Lochner (2001) |
| Lifetime earnings | Rouse (2005); Caniero and Heckman (2003); Day and Newburger (2002) |

That Milwaukee is a large, urban school district only adds to the importance of the question of whether school choice boosts the levels of student attainment.  If quality of life is directly related to educational attainment; if attainment is a direct result of certain schooling conditions to which a student is exposed; and if these schooling conditions may vary as a result of individual parent and student decisions, then the long-term social and economic consequences of school choice programs may be far greater than the impact of such policies on more transitory outcomes like individual test scores. In this report we provide suggestive evidence that attainment may indeed be related to the school choices families make, at least insofar as these choices pertain to a voucher-funded private or traditional public school. We first present basic tabulations and statistical models of high school graduation and consider reasons why students did not complete a high school degree. Next, we focus on post-secondary enrollment and persistence. We conclude by presenting several caveats to this work and discussing our results in the context of ongoing and future research on public-private differences in student outcomes.

# 2.) Data

The primary sample for this study includes 801 MPCP students and 801 MPS students who were in 9th grade during the 2006-07 academic year. The 801 MPCP students are the entire 9th grade cohort of students who we determined to be valid voucher-using students after examining the Wisconsin Department of Public Instruction audited list of voucher recipients based on the 3rd Friday count (September 15, 2006). The MPS students are, on the other hand, a sample of the population of 9th graders in MPS during the fall of 2006. They are not a random sample, but instead are a group of students who we carefully matched to the MPCP population of 9th graders on the basis of several important characteristics reviewed below. In addition to these 1,602 students, this report includes refreshed samples of 290 students in MPCP and 290 students in MPS who were in 8th grade in 2006-07 and who, if proceeding on normal progress, would have completed their 12th grade year of high school as of Summer 2011. Unlike the original 9th grade cohort, the 8th grade MPCP students are a sample, not the population of 8th graders using vouchers in 2006-07. They are the 8th graders originally from the grade-stratified representative samples drawn for the related longitudinal achievement study reported this year in Witte et al. (2012). As with the 9th graders, however, these 8th grade MPCP students were matched to MPS students per below.

### 2A.)    Sample Matching Algorithm: Minimizing Observed and Unobserved Student Differences  Associated with MPCP Enrollment

The match between MPCP and MPS students was critical for reasons outlined in Witte et al. (2008, 2009). Briefly, neither we nor other researchers evaluating school choice programs believe that students who select alternatives to the public sector do so for non-random reasons. If these non-random reasons are also related to the outcome of interest, then any differences attributed to the impact of the choice program could be biased. In the case of this study, we were particularly worried that students who chose to participate in the MPCP at baseline may be more likely to graduate high school and enroll in college naturally, regardless of the school they attend.  Such factors could be un-measureable and therefore threatened to bias the analysis.

There are a variety of statistical approaches that researchers take to address such problems. In our case, because we were required by state statute (Wisconsin 2005 Act 125) to track a representative panel of voucher students over time, we decided to construct a comparison sample of MPS students who from the outset of our study looked similar to the voucher students on the key characteristics we were able to ascertain from the participating voucher schools.   As such, the matching algorithm we employed is a multi-stage process that selected MPS students who were nearly identical to MPCP students with respect to these characteristics. We applied this algorithm by grade, not only to the 9th graders and the 8th grade refreshed sample for this report, but also for the Witte et al. (2012) studies as well.

In the first stage, we matched students on their home neighborhoods in Milwaukee. We did this in sequence for each MPCP student. Following the advice of demographers and city planners, we used census tracts to identify student neighborhoods.  Census tracts are drawn by the U.S. Census Bureau to follow neighborhood boundaries. In our sample, MPCP students come from 175 different census tracts. In this stage, for any given MPCP student in our sample, we restricted the list of potential MPS matches to students in the same grade and tract.

We prioritized a tract match because we believe that students' initial neighborhoods will serve as a control for a number of unobserved variables that may affect outcomes, including future educational attainment.[2]

In the second stage, we matched students in their census tracts who were within the same 5th percentile bandwidth of test scores. We matched students in our longitudinal panel in grades 3-8 using the Wisconsin Knowledge and Concept Exam (WKCE), which 9th graders in Wisconsin do not take. However, 9th grade MPS students do sit for the Benchmark exam, which we obtained from the MPS district to administer to 9th grade MPCP panelists in November 2006, when their counterparts in MPS were sitting for that test as well. The 8th grade refresh students in this report were matched based on the WKCE.

In the third stage of our match, if more than one MPS student was matched to the MPCP student based on census tract and test scores, or if there were missing values for either variable for an MPCP student, we matched by estimating propensity scores (Rosenbaum and Rubin 1983). The function of the propensity score is to identify MPS students with characteristics that are typical of MPCP students and therefore signal their "propensity" to be in the MPCP even though they are not. In this step, we estimated the propensity of MPCP participation as a function of the mean of math and reading test scores, gender, race and an indicator for students with English Language Learning status. The MPS student with the closest propensity score to the MPCP student was then selected. If missing predictors made it impossible to predict a propensity score for the MPCP student, the MPS student was selected at random from MPS students remaining in the running after matching on census tract and prior test. If the missing predictor was student test score, matches were made at random within tract.

To summarize, for each MPCP student, our matching algorithm:

1. reduced the available MPS matches to students in the same grade within the same neighborhood census tract, then

2. reduced the available matches further to MPS students in the same tract and the same 5-percent bandwidth of 2006 test score, and finally

3. chose the MPS student from the same census tract with the same 5-percent test bandwidth and the nearest propensity score estimated as a function of student demographics.

In earlier reports (Witte et al. 2008) we describe in detail the success of this match. Briefly, the matched panel of MPS students fell within a tenth of a standard deviation of the representative panel of MPCP students on math test scores, and within less than one-hundredth of a standard deviation on reading scores. No statistical differences in race, gender or English learning status were evident. The two groups are very similar to each other in important ways by design. Survey data taken after the first year of testing indicated that the two groups were highly similar in many additional family background characteristics that were not and could not be used for the match although MPCP parents indicated more frequent religious attendance.

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2    Evidence for neighborhood effects on social outcomes is presented across several social science disciplines. See, for example, Aaronson (1998) for evidence of neighborhood effects on educational outcomes even after family characteristics are taken into account; Ludwig, Ladd and Duncan (2001) and Leventhal and Brooks-Gunn (2004) for experimental evidence linking neighborhood improvements to improvements in student outcomes; and Sampson, Morenoff and Gannon-Rowley (2002) for a general discussion. See also Cullen, Jacob and Levitt (2005) for use of census tract information in research on school choice.

### 2B.)    Obtaining Graduation Status

After the initial 9th grade match in 2006, we tracked students into the following year when most students entered 10th grade and were therefore due to take a final WKCE test.  We discerned no major achievement differences between the MPCP and MPS respondents in our study (Witte et al. 2009). Similar results were apparent for the original 8th graders when we obtained their test scores in 2008. We did not track the baseline 9th grade students in 2008-09, when they would not have taken the WKCE, but did so again in 2009-2010, the year they were due to enter 12th grade and, at its end, complete high school. We tracked the original 8th graders across all five academic years, ending with 2010-2011—the senior high school year for students making normal progress.

We used two primary sources of information to determine student graduation status. The first was a set of different administrative files and the second was a set of surveys we administered to the parents of MPS and MPCP students to inquire about attainment status. The administrative files we used to determine graduation status came from two sources. The first was a graduation list and a supplemental end-of-year enrollment status file from MPS dated after the 2009-2010 and 2010-2011 school years. The second was a list of 2010 and 2011 graduates from each of the participating MPCP high schools. We examined both lists for all students in our study who were in either 8th or 9th grade in 2006. Specifically, we checked both the MPCP and MPS graduation lists for the original 1,091 MPCP panelists and checked both the MPS and MPCP graduation lists for the 1,091 MPS panelists. A student who began our study in the MPCP panel could have graduated from MPS, and vice-versa. The operation of the school choice program, specifically the scarcity of high schools in the program, makes the MPCP to MPS transfers particularly common (Cowen et al. 2010).

These sources, while valuable for confirming graduation status and current enrollment, did not provide us with all information needed for our analysis. In particular, we could not determine students who may have graduated from schools outside of either MPCP or MPS. For this information, we attempted to contact parents of all original 9th grade panelists via a telephone survey in the summer of 2010. We received responses from 61.3 percent (491/801) of the original MPCP panelists and 62.6 percent (501/801) of the original MPS panelists. These are very high response rates for populations of students in urban areas, particularly for families of students who entered the analysis via a procedure that took place four years earlier. Students did not vary by race among respondents and non-respondents. The respondents were slightly more likely to be female and had higher Benchmark scores in 2006 than non-respondents. In the analysis below, we use response weights to correct for any baseline differences. In the summer of 2011, we attempted to contact non-respondents to the 2010 survey, as well as all 580 members of the refresh sample (students who were in 8th grade in 2006). These follow-up rates were considerably lower (27 percent for each sector), although the addition of these follow-up data increases the response of the original 9th grade sample to nearly 75 percent.  See Table A1 in the Appendix for a comparison of administrative and survey sources for high school graduation. These comparisons indicate remarkable consistency between both sources for students for whom we have both sets of data. Thus we are confident proceeding with only one source when available.

# 3.) On-Time Graduation

### 3.A.) Differences by Initial Sector Status

Table 1 presents our estimated high school graduation rates using all sources of information. This table is based on the initial status of panelists during our 2006 baseline. These rates are calculated excluding unknowns from the denominator.[3] The MPS rates of 69 to 71 percent are well within the range reported in an official MPS analysis of student attainment released in 2009 based on earlier cohorts of students (Carl et al. 2009). The MPCP rate is higher than the MPS rate, at 74 to 76 percent. Of the non-graduates, some may still be enrolled in school—these would be students who take longer than the expected four years to graduate—or they may have dropped out.[4] Table 1 indicates that MPS students are more likely to graduate in five rather than four years, and that after these graduates are accounted for, the overall difference with MPCP is reduced.

**Table 1: 2009-11 High School Status**

|  | MPS in 2006 (%) | MPCP in 2006 (%) | MPCP Difference |
|---|---|---|---|
| On-Time Graduates<br> – 2006-07 9th Graders<br> – 2006-07 8th Graders | 69.0<br>71.6 | 76.0<br>73.7 | 7.1***<br>2.1 |
| Five Year Graduates (2006-07 9th Graders Only) | 9.5 | 5.4 | -4.1*** |
| Ever Graduated | 76.0 | 79.0 | 3.0 |

***p<0.01 Sources: Milwaukee Public Schools enrollment database as of fall 2011; Official 2010 and 2011 graduation lists of all private high schools participating in the Milwaukee Parental Choice Program; parent telephone survey regarding student status administered in the summer of 2010 and 2011. Estimates weighted for non-response and missing data.

Table 1 suggests that exposure to the MPCP marginally increases the likelihood that a student graduates, especially on time. We believe that our matching algorithm minimizes the impact of other systematic differences between students attending each sector, but we proceed with model-based estimates of the differences in Table 1 to confirm whether graduation probabilities differ after other factors such as race, gender, and academic ability are explicitly taken into account.

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3    If unknowns were to be included, the rates would obviously be lower, but this would be tantamount to assuming that all unknowns did not graduate. If a greater percentage of unknowns graduated than knowns, our reported rates are too low. If the reverse, our rates are too high. For comparative purposes between sectors, to be biased, one would have to assume that more unknowns graduated in one sector than the other. We have no evidence that is true.

4    They may also have completed a GED, although given the short period of time between the end of the school year (June) and our surveys (mid-summer), this is highly unlikely. Only 1 percent of respondents indicated that they had already received a GED.

We begin by conditioning the probability that a given student, $i$, graduated from high school in either 2010 or 2011 as follows:

Eq. (1)     $Y_i = \beta_0 + \beta_1 MPCP06_i + \beta_2 Race_i + \beta_3 Gender_i + \beta_4 2006\ Achievement + \beta_5 R + \varepsilon_i$

which we estimate as a linear probability model. In Equation 1, $\beta_1$ is the difference related to initial status in MPCP (in 2006) in the probability that a student graduated from high school, after accounting for the student's race and gender and an indicator for our 8th grade refresh sample.[5] Perhaps the most important component of (1) is our control for academic ability. Achievement in 2006 is measured as a student's math and reading scores (standardized by grade to have a mean of zero and a standard deviation of one).[6] Rather than simply include the student's score, we estimate:

Eq. (2)     $Y_{is,2006} = \gamma_0 + \phi_s + e_i$

where $\phi_s$ is the school-specific intercept common to each panelist within a given school, and the recovered residual, $\hat{\gamma}_i$, from the estimate of Equation 2,:

Eq. (3)    $\hat{\gamma}_i = \gamma_0 + e_i$

so that $\hat{\gamma}_i$ is an estimate of $\gamma_i$, which is the student's baseline achievement net of school-level sources, but with an unobserved portion, $e_i$, which we assume to be idiosyncratic deviations around each student's true $\gamma_i$. We do this because students enter the voucher program by applying for the scholarship through their chosen private school. Under the assumption that any sector-based differences in student outcomes (whether achievement or attainment) comes through and only through the particular school they attend, $\gamma_i$ provide each student's unique contribution to their own 2006 achievement after accounting for school fixed effects on achievement shared by all students within a given baseline school.

We include these $\hat{\gamma}_i$ for both reading and mathematics, represented by *2006 Achievement* in Equation 1. We intend these measures as a control function for unobservable student characteristics. This is useful because, despite our matching procedure in 2006, the MPCP difference in graduation may be explained by student differences that may be correlated with student ability as expressed by baseline student achievement in that sector. Our data, while valuable in many respects, do not contain the sort of rich administrative detail (at least on the MPCP side) that other studies based solely on administrative public-school records contain. As a result, $\hat{\gamma}_i$ may proxy for other covariates that we are not able to explicitly account for here. Table 2 provides the estimates of Equation 1 and these indicate that the difference associated with attending MPCP in 2006 with respect to the probability of graduation is statistically significant at a $p<0.10$, but not at the conventional $p<0.05$ level. The estimated difference of 0.04 is comparable to the difference in on-time graduation rates reported in Table 1.

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5    See Appendix for statistics on model covariates. We also account for refreshed sample status.

6    We use 9th grade student Benchmark scores and 8th grade student WKCE scores, each standardized by test type, grade and year. The dummy variable $R$ in Equation 1 accounts for additional refresh-based differences in the intercept.

## Table 2: Predicting High School Graduation After Four Years

| VARIABLES | Ever Graduated High School |
|---|---|
| **MPCP in 2006** | 0.04* |
| | (0.021) |
| **Black** | -0.01 |
| | (0.036) |
| **Hispanic** | -0.00 |
| | (0.038) |
| **Asian** | 0.15*** |
| | (0.038) |
| **Female** | 0.07*** |
| | (0.022) |
| $\gamma\_hat_{i,MATH}-$ | 0.05*** |
| | (0.016) |
| $\gamma\_hat_{i,READ}-$ | 0.05*** |
| | (0.014) |
| **Constant** | 0.76*** |
| | (0.036) |
| | |
| **N** | 1,475 |

NOTES: ***$p<0.01$; **$p<0.05$; *$p<0.10$, two-tailed. Coefficients are estimates from a linear probability model. Standard errors are clustered by 2006 census tract. Sources for sector and demographic are Milwaukee Public Schools official enrollment files, 2006-2009 and enrollment confirmations from private schools in the Milwaukee Parental Choice Program, 2006-2009. Source for Benchmark achievement are MPS test files (MPS) and project-administered examinations in 2006. Source for graduation rates are for project-administered parent telephone survey regarding student status administered in the summer of 2010, and MPS and MPCP administration files. Estimates weighted for non-response and missing data. Models adjust for baseline grade.

*3.B.) Why Did Students Not Graduate?*

We now consider explanations for students who did not graduate. As we have discussed, these students fall into two general categories: those who did not graduate because they were no longer enrolled in school and those who did not graduate because they were still enrolled. We place much less confidence in our ability to accurately estimate dropout rates than we do graduate or enrollment rates. Graduation with a high school diploma is a discrete event that can be verified. Dropping out of high school, on the other hand, is more of a process. Students on the path to dropping out start cutting classes, then skip entire days of school, attending only occasionally. Finally, they stop showing up altogether. Throughout the process of dropping out, students may remain officially registered at the school. Some students who disappear from administrative data may simply have enrolled elsewhere. Thus, instead of reporting complete dropout rates, we simply allow readers to infer who has "yet to graduate" from the reported graduate rates, and explore here some of the reasons that survey respondents gave for leaving school.

Parents of students in the 9th grade when the study began in 2006 were contacted in the summer of 2010. In the summer of 2011, the research team attempted to survey the parents of the original 9th grade sample who did not respond to the first survey as well as parents of students who were in the 8th grade in 2006. Combining responses from both surveys, we have responses from 110 parents of dropouts. Thirty-nine of the responses come from the survey in 2011, and 71 responses are from the 2010 survey. Approximately 83 percent (91 responses) of the respondents are parents of original 9th grade students, while 17 percent (19 responses) of the respondents are parents of original 8th grade students.

Table 3 reports the results of several questions to which parents of high school dropouts responded. These answers provide explanations for why their children left high school. Answer categories were not mutually exclusive, and parents could cite more than one.[7] As Table 3 indicates, the most common explanation for dropping out in both sectors of original panelists was that their child did not like school. Similar answers—that students disliked a new school, did not like their teachers, or were bored in school—were less common but still relatively prominent among the explanations. MPCP parents were more likely to list these as reasons than were MPS parents. For example, approximately 32 percent of MPCP parents said that their child dropped out of school because he/she was bored, while only 21 percent of MPS parents answered similarly. These are general, somewhat ambiguous answers because the reasons *why* a child did not like school (or was bored) could be myriad, ranging from an overall perception that school was a waste of time to problems with teachers or peers. A second potential reason for disliking school could be genuine difficulty understanding the coursework. An inability to keep up with school work was indeed a relatively frequent response for both sectors. In fact, for almost one-third of the respondents, the notion that obtaining a GED would be easier than graduating high school was a reason for dropping out.

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7    On average, the MPCP parents provided more reasons for why their child dropped out than did MPS parents. This leads to the percentage for many of the reasons to be higher for MPCP parents than for the MPS parents.

### Table 3: Reasons For Leaving High School Prior to Graduation

|  | MPS | MPCP |
|---|---|---|
| "My child didn't like school" | 34.92 | 38.30 |
| "My child thought it would be easier to get a GED" | 31.75 | 34.04 |
| "My child was bored in school" | 20.63 | 31.91 |
| "My child could not keep up with the schoolwork" | 19.05 | 27.66 |
| "My child needed to take care of or support his/her family" | 17.46 | 21.28 |
| "My child changed schools and didn't like the new school" | 12.70 | 21.28 |
| "My child didn't get along with his/her teachers" | 9.52 | 19.15 |
| "My child was suspended or expelled from school" | 14.29 | 17.02 |
| "My child didn't get along with other students" | 9.52 | 8.51 |
| "Child incarcerated" | 11.11 | 6.38 |
| "Child was too ill to attend school" or "Child has mental health issues" | 7.94 | 6.38 |
| "Child is/was pregnant" or "Child got married" or "Child had a baby" | 6.35 | 6.38 |
| **Number of Respondents** | 63 | 47 |
| **Number of Responses** | 106 | 95 |

NOTES: Figures based on the 110 survey respondents whose child left high school between 2006-07 and 2010-11. Sector designation pertains to original baseline sector. Categories are not mutually exclusive (respondents could give more than one answer). Source: parent telephone survey regarding student status administered in the summer of 2010 and the summer of 2011.

Behavioral problems also appear to be prevalent explanations for dropping out. Dropping out because the student was suspended or expelled was somewhat more common among MPCP children (17% vs. 14%), while MPS students were almost twice as likely to have dropped out because of incarceration (11% vs. 6%). It is difficult to directly compare the expulsion/suspension figures between the two sectors because expulsion/suspension is a formal process within MPS—one that may involve legal implications as well. On the MPCP side, while some students could be formally removed from their school, they may also be "counseled out" or "asked not to return" in lieu of such a formal measure. Previous reports (e.g., Cowen et al. 2010) have indicated that these explanations were among the reasons why students left their original MPCP schools (regardless of whether they actually dropped out of school entirely). Similar numbers of students dropped out because of pregnancy or marriage— about 6 percent in each sector. On the other hand, MPCP students were more likely to quit school in order to take care of their families (21%) than were MPS students (17%).

Overall, it appears that the most important reasons for dropping out of high school were relatively common in both sectors. In both sectors, dropping out was most clearly related to a general dislike of school, and/or problems that could be related to learning difficulties or even underlying ability. This explanation was particularly common on the MPCP side. These explanations should surprise neither policymakers nor educators. If there is anything unexpected in these results, it is the fact that the dominant reasons for dropping out are similar in both sectors.

# 4.) Post-Secondary Enrollment

### *4.A.) Estimated Differences by Initial Status*

The maximum level of attainment that an "on time" student in our data could achieve is enrollment in a post-secondary institution.  Although our initial report (Cowen et al. 2011) relied on survey data for college enrollment, we have since verified enrollment with the National Student Clearinghouse of College Enrollments for all 2,182 students in the current panel. The Clearinghouse is the source of enrollment data for students in our panel and we focus on post-secondary enrollment at any time during the 2010-2011 or the 2011-2012 academic year. We also consider whether the original 9th graders who enrolled in college on time (2010) persisted in college in 2011. Table 4 reports the results of two and four-year college enrollment by sector.

**Table 4: Two and Four-Year College Enrollment Rates 2009-10 and 2010-11**

|  | **MPS in 2006** | **MPCP in 2006** | **MPCP Difference** |
|---|---|---|---|
| Two Year | 14.0 | 12.1 | -1.9 |
| Four-Year | 21.5 | 25.8 | 4.2** |
| Persist in Four-Year  (baseline 9th grade only) | 17.9 | 21.0 | 3.1 |

Difference significant at **p<0.05. Source for post-secondary enrollment: National Clearinghouse Data retrieved September 2011; Enrollment rates are for Fall-Spring 2010 or Fall-Spring 2011.

All of the issues discussed above are germane to predicting postsecondary enrollment. Rather than restate them here, we refer to our general equation above, where the outcome of interest is now defined as enrolling in a given type of postsecondary institution, and in Equation 1, the same control variables predicting graduation are now used to predict postsecondary enrollment. Table 5 displays estimates of Equation 1 for the probability of enrolling in a technical/two-year school and a four-year institution as well as the probability of persisting into a second year of college when applicable. MPCP students are slightly less likely to attend a technical or two-year college. There is a positive MPCP difference for enrolling in a four-year college and, for baseline 9th graders, persisting into a second year of four-year enrollment: a student in MPCP at baseline was approximately 6 percentage points more likely to attend or persist in a four-year institution.

**Table 5: Predicting College Enrollment After Four Years**

| VARIABLES | Two-Year | Four-Year | Persist in Four-Year |
|---|---|---|---|
| MPCP in 2006 | -0.03* | 0.06*** | 0.06** |
|  | (0.015) | (0.018) | (0.022) |
| Black | 0.03 | -0.07* | -0.12** |
|  | (0.029) | (0.042) | (0.051) |
| Hispanic | -0.00 | -0.10** | -0.13** |
|  | (0.030) | (0.045) | (0.053) |
| Asian | 0.04 | 0.01 | 0.03 |
|  | (0.047) | (0.068) | (0.089) |
| Female | 0.01 | 0.12*** | 0.10*** |
|  | (0.017) | (0.017) | (0.022) |
| $\gamma\_hat_{i,MATH}$— | 0.02 | 0.03* | 0.03** |
|  | (0.012) | (0.014) | (0.017) |
| $\gamma\_hat_{i,READ}$— | 0.00 | 0.09*** | 0.08*** |
|  | (0.010) | (0.013) | (0.014) |
| Constant | 0.14*** | 0.26*** | 0.24*** |
|  | (0.029) | (0.040) | (0.048) |
| N | 1,830 | 1,830 | 1,263 |

NOTES: ***p<0.01; **p<0.05; *p<0.10, two-tailed. Coefficients are estimates from a linear probability model. Standard errors are clustered by 2006 census tract. Sources for sector and demographic are Milwaukee Public Schools official enrollment files, 2006-2009 and enrollment confirmations from private schools in the Milwaukee Parental Choice Program, 2006-2009. Source for Benchmark achievement are MPS test files (MPS) and project-administered examinations in 2006. Source for post-secondary enrollment is the National Student Clearinghouse, enrollment verified at any time during the 2010-2011 or 2011-2012 academic years. Persistence in four-year college is restricted to students who were part of the original 9th grade panel. Estimates weighted for non-response and missing data.   Models adjust for baseline grade.

### 4.B.) Differences in College Destination

Because the data we collected on post-secondary enrollment came from the National Student Clearinghouse, we were able to link the student records to data on individual schools using the U.S. Department of Education's Integrated Postsecondary Education Data System (IPEDS). It is possible that MPCP and MPS students are more likely to attend different types of colleges. *A priori*, we might expect that if MPCP students are attending "elite" private schools in the city of Milwaukee, they might be more likely to attend analogous schools once they went to college. There are two ways to consider this question. The first is by simply examining the prominent schools in the data. As Table 6 indicates, MPCP students attended 48 different four-year institutions and MPS students attended 51 different four-year institutions.  The five most prominent are remarkably similar between the two sectors: University of Wisconsin-Milwaukee, Alverno College, University of Wisconsin-Whitewater and Marquette University are four of the five most common in each sector. The only difference is that University of Wisconsin-Madison was slightly better represented among MPS students and Mount Mary College was slightly better represented among MPCP students.

**Table 6: Most Common Four-Year Institutions by Initial Sector (Baseline 9ᵗʰ Graders)**

| MPS in 2006 | MPCP in 2006 |
|---|---|
| University of Wisconsin-Milwaukee (26.5%) | University of Wisconsin-Milwaukee (25.8%) |
| Alverno College (8.0 %) | Alverno College (7.2 %) |
| University of Wisconsin-Whitewater (6.2 %) | University of Wisconsin-Whitewater (6.2 %) |
| University of Wisconsin-Madison (6.2%) | Mount Mary College (6.2%) |
| Marquette University (4.3%) | Marquette University (4.2%) |
| Total Different Institutions Attended: 51 | Total Different Institutions Attended: 48 |

Source for post-secondary enrollment is the National Student Clearinghouse, enrollment verified at any time during the 2010-2011 or 2011-2012 academic years

The second way to consider the question is by features of each institution. Table 7 provides summary statistics of all four-year schools attended by panelists, by sector control, religious affiliation, admission rate, entrance exam scores and tuition. These figures are a useful way to consider all four-year institutions attended by all panelists. The table indicates that MPCP and MPS students are unlikely to attend institutions outside of Wisconsin. MPCP students are more likely to attend religious institutions—especially Catholic colleges—and, correspondingly, less likely to attend secular schools. Average tuition at schools attended by MPCP panelists is slightly higher, while the average percent admitted is similar for both types of students. Tuition is slightly higher at schools attended by MPCP students while average ACT and SAT scores are somewhat higher at schools attended by MPS students.

**Table 7: Four-Year Institutional Characteristics by Initial Sector**

|  | MPS in 2006 | MPCP in 2006 | MPCP Difference |
|---|---|---|---|
| Out of State | 0.06 | 0.06 | 0.00 |
| Private | 0.28 | 0.35 | 0.08** |
| Catholic | 0.12 | 0.18 | 0.06** |
| Other Religious | 0.04 | 0.07 | 0.03** |
| Secular | 0.84 | 0.75 | -0.10*** |
| Average % Admitted | 74.48 | 74.19 | -0.29 |
| Average Tuition | 9,755 | 11,234 | 1,479** |
| Average 75th Percentile SAT Math | 621.36 | 600.52 | -20.84* |
| Average 75th Percentile SAT Reading | 595.88 | 580.90 | -14.98 |
| Average 75th Percentile ACT Math | 25.20 | 24.47 | -0.74** |
| Average 75th Percentile ACT English | 25.12 | 24.47 | -0.64** |

NOTES: ***$p<0.01$; **$p<0.05$; *$p<0.10$. Private, Catholic, Other Religious Categories are sample proportions of students in each sector attending schools of each type. Other cells are sample averages of each institutional characteristics. Source for post-secondary enrollment is the National Student Clearinghouse, enrollment verified at any time during the 2010-2011 or 2011-2012 academic years.

### *4.C.) Parental Characteristics*

As noted above, one of the motivations for our original matching algorithm was to minimize differences between MPCP and MPS students on characteristics that we could not observe. The matching scheme relied primarily on the neighborhood and 2006 test scores to proxy for unobserved attributes that may be related to both sector choice and to the outcome of interest in our study (either achievement or attainment). This was particularly important because our original data included only administrative characteristics such as student test scores, demographics and addresses, but did not include some of the other attributes that may have influenced our outcomes. In 2006 and, again in 2007, we surveyed as many parents of our panelists as possible—achieving a combined response rate of nearly 70 percent—to attempt to obtain some of these additional measures.

Perhaps the most important predictor of educational attainment is the education level of his or her parents. Indeed, as Table 8 indicates for our study, the college enrollment rates of MPCP and MPS students alike are much higher for those whose parents received a college degree. Although we believe that our matching algorithm adjusted for many of the differences between MPCP and MPS students that may help explain differences in college enrollment rates, our 2006 and 2007 surveys included information on parental education and we are able to test whether the MPCP-MPS differences reported in Table 5 remain after adjusting for this important parental characteristic among the sub-sample of survey respondents.

#### Table 8: Student Four-Year Enrollment by Parental Education Level

| Maximum Parent Education Level | % Enrolled in Four-Year College |
|---|---|
| Less Than High School Degree | 17.7 |
| High School Degree | 22.8 |
| Some College | 26.5 |
| College Degree | 38.2 |

Source for student post-secondary enrollment is the National Student Clearinghouse, enrollment verified at any time during the 2010-2011 or 2011-2012 academic years. Source for parental education is project-administered surveys in 2006 and 2007.

Table 9 reports estimates of the probability that students graduate, attend two-year, four-year and persist into a second year of college, adjusting for parental education. We also include indicators of family income and religious behavior. All results are weighted to adjust for survey non-response. As expected, whether a parent has a college degree is among the most important attainment predictors, even after accounting for other student characteristics; for example, the results indicate that the probability of attending a four-year institution increased by an average 0.20 (or twenty percentage points) for students whose parent attended college. All of the estimates of the MPCP-MPS difference remain positive and of approximately the same magnitude as those reported in Tables 2 and 5, although only the high school graduate and four-year enrollment differences remain statistically significant at a level approaching convention (p<0.10, two-tailed). That the coefficient estimates are similar to those in Tables 2 and 5 indicates that the reduction in significance is due at least partly to reducing the sample size to survey respondents, but it could also indicate that MPCP and MPS differences are more difficult to discern once these other attributes are taken into account. Nevertheless, the results in Table 9 generally confirm the positive MPCP difference in educational attainment, even after adjusting in particular for the attainment level of a student's parent.

**Table 9: Attainment Differences After Adjusting for Parental Characteristics (Baseline Respondents Only)**

| VARIABLES | Graduate from High School | Two-Year College | Four-Year College | Persist in Four-Year College |
|---|---|---|---|---|
| *Student Characteristics* | | | | |
| MPCP in 2006 | 0.05* | -0.01 | 0.04* | 0.04 |
|  | (0.027) | (0.017) | (0.023) | (0.029) |
| Black | -0.03 | 0.02 | -0.07 | -0.09* |
|  | (0.041) | (0.035) | (0.050) | (0.057) |
| Hispanic | 0.07 | 0.02 | -0.06 | -0.10 |
|  | (0.048) | (0.038) | (0.054) | (0.062) |
| Asian | 0.18*** | 0.02 | 0.08 | -0.00 |
|  | (0.055) | (0.080) | (0.100) | (0.132) |
| Female | 0.08*** | 0.01 | 0.14*** | 0.14*** |
|  | (0.027) | (0.019) | (0.025) | (0.029) |
| $\gamma\_hat_{i,MATH}$— | 0.03 | 0.01 | 0.02 | 0.03* |
|  | (0.019) | (0.015) | (0.018) | (0.019) |
| $\gamma\_hat_{i,READ}$— | 0.06*** | 0.00 | 0.09*** | 0.07*** |
|  | (0.015) | (0.013) | (0.018) | (0.019) |
| *Parent Characteristics* | | | | |
| Inc. >$50K | 0.09** | 0.06 | -0.01 | 0.02 |
|  | (0.044) | (0.042) | (0.040) | (0.047) |
| Inc. $35-$49K | 0.05 | 0.03 | 0.03 | 0.04 |
|  | (0.036) | (0.030) | (0.037) | (0.041) |
| Inc. $25-$34K | -0.02 | -0.01 | -0.01 | 0.01 |
|  | (0.033) | (0.027) | (0.035) | (0.040) |
| College Degree | 0.10* | 0.07* | 0.20*** | 0.14** |
|  | (0.051) | (0.038) | (0.048) | (0.054) |
| H.S. Degree | 0.04 | 0.04* | 0.08** | 0.03 |
|  | (0.039) | (0.023) | (0.032) | (0.041) |
| Some College | 0.09** | 0.07*** | 0.09*** | 0.03 |
|  | (0.037) | (0.025) | (0.032) | (0.040) |
| Attend Church | -0.03 | 0.01 | -0.00 | 0.03 |
|  | (0.027) | (0.020) | (0.027) | (0.032) |
| Constant | 0.69*** | 0.06 | 0.17*** | 0.15** |
|  | (0.053) | (0.042) | (0.052) | (0.063) |
| N | 1,014 | 1,202 | 1,202 | 844 |

NOTES: ***p<0.01; **p<0.05; *p<0.10, two-tailed. Coefficients are estimates from a linear probability model. Standard errors are clustered by 2006 census tract. Sources for sector and demographics are Milwaukee Public Schools official enrollment files, 2006-2009 and enrollment confirmations from private schools in the Milwaukee Parental Choice Program, 2006-2009. Source for Benchmark achievement are MPS test files (MPS) and project-administered examinations in 2006. Source for post-secondary enrollment is the National Student Clearinghouse, enrollment verified at any time during the 2010-2011 or 2011-2012 academic years. Persistence in four-year college is restricted to students who were part of the original 9th grade panel. Source for parental education, income, marital status and religious attendance is project-administered surveys in 2006 and 2007. Estimates weighted for non-response and missing data. Models adjusted for baseline grade.

# 5.) Summary, Discussion, and Caveats

The results here suggest that students who used a voucher to attend private school in 8th or 9th grade were more likely to graduate high school. They were also more likely to enroll in a four-year post-secondary institution after graduating and, when applicable, to persist in that four-year institution beyond the first year of enrollment. These differences remain after accounting for student race, gender and initial neighborhood location as well as a measure of each individual's 9th grade achievement that we isolated from school-based sources of variation. For students for whom we have additional information, the positive MPCP difference remains after adjusting for parental characteristics, most notably a parent's own level of educational attainment.

There are, however, several caveats to these findings. As we have described, there are far fewer high school students and schools in the MPCP than students and schools in the K-8 range. The 801 9th grade panelists we examined in 2006 were all the ninth graders in the MPCP that year. In total, the students in the MPCP numbered more than 17,000 that year. Less than a quarter of more than 110 MPCP schools served high school students in 2009-10. These small numbers could exacerbate the selection bias problems described above, if students who enter or who stay in the MPCP for high school are doing so specifically to increase their attainment chances, or if MPCP schools implicitly or explicitly select the better students. The latter possibility is frequently raised in academic research if the best private schools can "counsel out" or even expel students that public schools cannot, or if 8th graders in voucher programs must apply to highly selective college preparatory high schools. Although we cannot test these possibilities directly, we can consider a likely result of such forms of "cream-skimming" by examining students who were in 8th grade in 2006. We find no systematic evidence that those students who remain in the MPCP for 9th grade are dramatically different in terms of demographics, prior achievement or these other demographic measures from MPCP students who switch to the MPS for high school. See Table A4 in the appendix for details. At present, this suggests that if there is an unobservable selection effect driving the MPCP differences noted above, it does not appear to be related to a host of student characteristics we would expect to be relevant if MPCP schools were selectively enrolling the better students or displacing other students between 8th and 9th grade.

A second caveat is that the majority of students (approximately 75 percent) who were enrolled in 9th grade in MPCP were not enrolled there by the time they reached 12th grade. The results of this paper as a whole should therefore be interpreted as the effect of "exposure" to the MPCP rather than long-term persistence in that sector. As we are reporting elsewhere in an academic journal (Cowen, et al. forthcoming), there is evidence that the students who leave MPCP for public schools are among the lowest performing private school students. This would imply that even if our estimates of persistence in the voucher sector are internally valid—i.e., there is a selection-adjusted private school impact—they cannot be generalized to the population of students who ever seek and use a voucher.

The third caveat is that we have yet to consider what it means to be educated in the MPCP as opposed to MPS. A companion report to this one (Stewart et al. 2012) explores in detail the school contexts in which MPCP and MPS students are learning, including the possibility that certain school curricula, activities or practices are particularly associated with later student success in remaining engaged in the educational process. Consistent with our evaluation of MPCP effects on student achievement (test scores), we do not analyze differences in graduation or college enrollment that are associated with particular MPCP schools. Previous academic research on urban education has suggested that school quality is especially variable in such a context. Although we note

that there are school-based differences in college enrollment for students in our sample, we leave to qualitative work the sort of in-depth examination of these schools to explain them. In this paper we can simply say that, *on average*, there are modest MPCP-MPS attainment differences that appear to favor the MPCP.

The direction of these results are broadly consistent with research in other cities and other school choice programs (Wolf et al. 2010; Zimmer et al. 2009) as well as Warren's (2011) descriptive study of high school graduation rates in a subsample of MPCP high schools and MPS. This positive effect of school choice on educational attainment is apparent in places where students who chose an alternative to traditional public schooling do not necessarily appear to be performing significantly better on other measures such as standardized test scores (e.g., Wolf et al. 2010). Likewise, no report of our longitudinal evaluation of student achievement prior to 2012 (e.g., Witte et al. 2011) has found major differences in achievement test scores between MPCP students and similar MPS students. Thus if the results we present here are interpreted as evidence that MPCP students are performing slightly better on one metric—attaining a given level of education—they *do not* support a comprehensive conclusion that the MPCP necessarily provides a better learning environment than MPS. Although we believe that high school graduation and college enrollment are critically important, we suggest that only through focus on a variety of educational outcomes can the true picture of voucher impact in Milwaukee fully emerge.[8]

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8    The references to all studies related to this specific analysis are sprinkled throughout this paper. In particular, see Witte et al. (2008, 2009, 2011) , and all documents at http://www.uaedreform.org/SCDP/Milwaukee_Research.html.

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# APPENDIX:

### Table A-1: Graduation Survey and Administrative Files Comparison

|  | Administrative Record Says | Survey Says | MPS in 2006 (%) | MPCP in 2006 (%) |
|---|---|---|---|---|
| **2009-2010** | Graduate | Non-Graduate | 5 (1.0) | 6 (1.8) |
| **2009-2010** | Non-Graduate | Graduate | 14 (2.8) | 18 (5.3) |
| **2010-2011** | Graduate | Non-Graduate | 3 (1.7) | 3 (3.7) |
| **2010-2011** | Non-Graduate | Graduate | 16 (9.2) | 6 (7.4) |

Sources: student records containing both administrative and survey responses: 501 records for MPS students in 2009; 342 records for MPCP students in 2009; 174 records for MPS in 2010; 81 records for MPCP in 2010.

### Covariates and Survey Response Information

### Table A-2: Statistics on Model Covariates

|  | MPS in 2006 | MPCP in 2006 |
|---|---|---|
| **Black** | 0.70 | 0.70 |
| **Hispanic** | 0.18 | 0.19 |
| **Asian** | 0.04 | 0.03 |
| **White** | 0.07 | 0.07 |
| **Female** | 0.53 | 0.57* |
| **$\gamma\_hat_{i,MATH}$** | 0.00 | 0.00 |
| **$\gamma\_hat_{i,READ}$** | 0.00 | 0.00 |
| **N** | 1,091 | 1,091 |

**NOTES**:  **Indicates statistically different from MPS at $p<0.05$. Statistics are weighted for survey non-response for consistency with model estimation, although race and gender based on 801 MPS students and MPCP students; Sources for sector and demographic are Milwaukee Public Schools official enrollment files, 2006-2009 and enrollment confirmations from private schools in the Milwaukee Parental Choice Program, 2006-2009; Source for Benchmark achievement are MPS test files (MPS) and project-administered examinations in 2006. Test score differences based on complete test score N of 1,024 MPS students and 873 MPCP students.

**Table A-3:**
**Graduation Survey Response Difference**
**by Sector and Student Characteristics**

| | In Survey (2009 or 2010) |
|---|---|
| **MPCP in 2006** | -0.03 (0.09) |
| **Black** | -0.31 (0.18) |
| **Hispanic** | -0.33 (0.0) |
| **Asian** | 0.03 (0.29) |
| **White** | (ref category) |
| **Female** | 0.19 (0.09)* |
| **Refreshed Sample** | -1.73 (0.11)* |
| **Constant** | 0.83 (0.18)* |
| **N** | 2,182 |

*Significantly different from non-respondents at p<0.05

***p<0.01; **p<0.05; *p<0.10, two-tailed, based on standard errors reported in parentheses. Coefficients are linear probability estimates. Sources for sector and demographic are Milwaukee Public Schools official enrollment files, 2006-2009 and enrollment confirmations from private schools in the Milwaukee Parental Choice Program, 2006-2009; Source for WKCE exams are MPS test files (MPS) and project-administered examinations in 2006. Source for parental education, income, marital status and religious attendance is project-administered surveys in 2006 and 2007.

**Table A4:**
**Predicting 9th Grade Private School**
**Enrollment by 8th Grade MPCP Students**

| VARIABLES | Enrolled in MPCP in 9th Grade |
|---|---|
| Black | 0.07 |
| | (0.127) |
| Hispanic | 0.11 |
| | (0.148) |
| Asian | 0.79** |
| | (0.382) |
| Female | 0.13 |
| | (0.077) |
| $\gamma\_hat_{i,MATH}$— | -0.02 |
| | (0.080) |
| $\gamma\_hat_{i,READ}$— | 0.02 |
| | (0.076) |
| Inc. >$50K | -0.18 |
| | (0.191) |
| Inc. $35-$49K | 0.08 |
| | (0.107) |
| Inc. $25-$34K | 0.01 |
| | (0.092) |
| College Degree | 0.05 |
| | (0.130) |
| H.S. Degree | -0.19* |
| | (0.108) |
| Some College | 0.06 |
| | (0.108) |
| Attend Church | 0.09 |
| | (0.078) |
| Constant | 0.24 |
| | (0.158) |
| N | 182 |

# About the Authors

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