

Working paper

Imperfect Information and School Choice in Ghana

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March 2013

IGC

International
Growth Centre



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February 28, 2013

Abstract

This study examines the link between information and schooling choices. Ghana is one of several countries that use standardized exams to determine admission to secondary school. However, students must apply to schools before they know their exam results or schools' admission requirements; they are thus required to make critical decisions based on imperfect information. Using data from a survey of 4,098 secondary school students in Ghana, we examine how students' expectations about exam performance relate to application decisions. Several studies have found that low-income students are less likely to apply to selective schools. By eliciting student beliefs about their exam performance along with their school preferences, we explore whether students from low-income backgrounds are less informed about their admission chances, and whether differences in information explain differences in schooling choices. We then discuss the policy implications of these findings.

*We thank Ghana Education Service for providing data and background information. The survey was implemented in collaboration with the Regional Institute for Population Studies at the University of Ghana, Legon. We are grateful for their assistance and especially thank Fidelia Dake and Kamil Fuseini for excellent fieldwork and data entry supervision. This paper is an output of research supported by funding from the International Growth Centre, we gratefully acknowledge this financial support.

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1 Introduction

This study examines how information influences schooling choices. Ghana is one of many countries across the world that use exam performance to assign students to secondary schools. Merit-based systems provide an opportunity for high-achieving students to attend the best schools in the country, irrespective of their family background. Such systems may be especially important in reducing inequality in settings with large variation in household income and school quality. However, there is substantial evidence from Ghana and other settings that students from less privileged backgrounds tend to apply to less selective schools than their wealthier counterparts (Ajayi (2012), Hoxby and Avery (2012), among others). This observation potentially reflects a source of inefficiency in the school system if there are talented or motivated students from underprivileged backgrounds who are failing to obtain a high quality education. In this paper, we address the question of why less-advantaged students do not apply more aggressively and, in particular, whether a lack of information is responsible for this disparity.

Several studies have examined the effect of information on schooling choices (including Hastings and Weinstein (2008) and Jensen (2010)). Information is potentially important in Ghana's context because students must apply to secondary schools before knowing their exam performance and they can only select a restricted number of schools. There is limited information available to students about their own academic performance and the requirements for admission to various schools, which can vary based on the general BECE performance of students each year. Additionally, the level of information available likely varies across students of different backgrounds. The result is that high-achieving students from underprivileged backgrounds may miss out on the opportunity to attend high-performing schools because of a lack of information, rather than because of their preferences.

The main objectives of this study are to:

1. Determine what factors influence student and parental demand for schools;
2. Characterize differences across different population groups; and
3. Propose means to improve Ghana's secondary school admissions system, in order to:
 - (a) Increase the amount and quality of information available on school characteristics
 - (b) Improve admission prospects for qualified students from less-privileged backgrounds
 - (c) Reduce overall inequality in access to secondary schools.

Ghana's Computerized School Selection and Placement System (CSSPS) has undergone several reforms since it was first adopted in 2005. This suggests that policy makers recognize the scope for improvement and are interested in making positive changes.

This study also contributes to the debate on the virtues of using subjective (survey) data compared with data on observed choices. In recent studies, economists have tended to favor the use of choice data, arguing that researchers can more accurately infer individuals' preferences from their actual behavior than from their stated beliefs. However, scholars such as Manski (2004) and Avery and Kane (2004) have advocated for increased use of subjective data, particularly in forecasting expected earnings and expected returns to schooling. They contend that researchers are forced to rely on questionable assumptions about decision-making processes in order to make inferences based on observed choices alone.

This study applies a subjective data approach to estimation of demand for schooling. We design a survey that explicitly elicits students' expectations of future exam performance, preferences for school characteristics, and subjective probabilities of gaining admission to various senior high schools. The goal is to determine how students use existing information to form expectations about school admission outcomes and how these expectations in turn influence their choices of which schools to apply to. Subjective data in this context can ultimately provide an innovative means to combine stated beliefs with an analysis of revealed preferences, allowing for a direct comparison of the relative strengths and weaknesses of each approach.

2 Institutional Background

Compulsory education in Ghana consists of six years of primary school and three years of junior high school (JHS). At the end of junior high school, students compete for admission to senior high school (SHS). Application to senior high school is centralized through a computerized school selection and placement system (CSSPS) which was introduced in 2005. The system allocates JHS students to SHS based on students' ranking of their preferred program choices and their performance on a standardized exam. In practice:

1. Students submit a ranked list of six choices, stating a secondary school and a program track within that school for each choice.¹
2. Students take the Basic Education Certificate Exam (BECE) which is a nationally administered exam.

¹Available programs include: General Arts, General Science, Agriculture, Business, Home Economics, Visual Arts and Technical Studies.

3. Students who qualify for admission to SHS enter the pool of applicants to secondary school.² (Less than half of all candidates perform well enough on the BECE to qualify for admission to SHS.)
4. Schools declare their capacity for the current year and qualified students are assigned in merit order based on their aggregate BECE scores (comprising of scores in the four core subjects and best other two subjects), as follows:
 - (a) In Round 1: Each student applies to the first choice in her ordered list of choices. Each school tentatively assigns its seats to applicants in order of their aggregate BECE scores, and rejects any remaining applicants once all of its seats are tentatively assigned.
 - (b) In each subsequent round: Each student who was rejected in a previous round applies to the next choice on her list. Each school compares the set of students it has tentatively accepted with the set of new applicants. It tentatively assigns its seats to these students one at a time, again in order of students' aggregate BECE scores, and rejects remaining applicants once all of its seats are tentatively assigned.
 - (c) The process terminates when no spaces remain. Each student is then assigned to his or her final tentative assignment.

The CSSPS emphasizes the importance of selection on merit as well as the prospect of displacement in its explanations of the application process. (See Ajayi (2012) for a more detailed description of the *deferred acceptance algorithm* which the CSSPS uses for student assignment.)

A notable aspect of the Ghanaian school choice system is that students have to submit their applications before taking the entrance exam.³ Therefore, students have incomplete information about their admission chances even though admission is based on exam performance. Moreover, cutoffs are endogenously determined by the quality of applications to a given school each year since schools only define the number of available spaces, but not the explicit exam score required for admission. Thus, the application process is characterized by a substantial amount of uncertainty.

²The requirements for admission to SHS are that students receive a passing grade in the four core subjects (Mathematics, English, Integrated Science and Social Studies) as well as in any two additional subjects. All students who qualify are guaranteed admission to a school.

³Timing of the application process is largely determined by logistical concerns – students are dispersed for the end of year vacation by the time their BECE scores are released in August, so it is easier to register their secondary school application choices earlier in the year when they are still enrolled in school.

Coupled with this uncertainty with the constraint that students can only submit a limited number of choices. The choice limitation is partly a legacy of the manual application system which preceded the CSSPS. Students were allowed to list up to three choices under the manual system and when the CSSPS was introduced in 2005, this increased to four choices in 2007 and to six choices in 2008.

The CSSPS secretariat announced an additional reform in 2009 which imposed further restrictions on the choices of students. Public secondary schools were assigned into four categories based on their “available facilities” and students can only list a set number of choices from each category: one Category A school, two Category B schools, and no more than five Category C or D schools. Students can still list up to six program choices, but can no longer pick more than one program from any given school.

The most recent reform came in 2011, when the CSSPS introduced a 30 percent Catchment Area Allocation (CAA) placement following a special directive by President John Atta Mills. Under the CAA, 70 percent of spaces are allocated using the usual system and a remaining 30 percent of spaces are reserved for students within a 10-mile radius (catchment area) of each school. Students can request to be allocated through the CAA if they are in the catchment area of a school and have a strong preference for attending it. They are still assigned in order of their BECE scores.

3 Data

The main source of data for our analysis is a survey we conducted of secondary school students in all ten of Ghana’s administrative regions. Our sample of secondary schools was drawn using a population-weighted sampling frame clustered by administrative region – one hundred schools were randomly selected from the list of senior high schools in the country, based on each region’s representation in the general population of high school students.⁴ One first year (SHS 1) class was then selected from the set of first year classes in each school if the school had more than one first year class. We invited all students in the selected class to participate in the study and requested their informed consent before participation. All students who agreed to participate were included in the study. Schools that declined to participate in the study were replaced by schools that were also randomly drawn from the same region.⁵ The final sample consists of 4,098 students from 100 schools.

⁴The regional distribution is as follows: Ashanti (20 schools), Brong Ahafo (10), Central (10), Eastern (15), Greater Accra (13), Northern (6), Upper East (4), Upper West (4), Volta (10) and Western (8).

⁵Altogether, 77 of the initially selected schools participated, the remaining 23 schools were drawn as replacements. Non-participation rates were particularly high for schools in the Greater Accra region because the data collection took place in the last week of term when schools were taking exams or had closed early,

Students were requested to complete a 30-minute self-administered survey about their family background, selection of schools, expectations about exam performance and expected probabilities of gaining admission into senior high schools. Survey completion took place in students' schools in the absence of teachers or school personnel, under the supervision of a group of trained supervisors who provided background information, requested participants' consent, and were available to address students' concerns in the course of the survey exercise.

Data collection began in the Greater Accra region in July 2012 and then resumed in the remaining nine regions of the country in September 2012. A key factor to note is that students were asked about their beliefs after they had already applied to schools, received their BECE scores, and enrolled in secondary school (i.e., students applied to schools in February 2011, began secondary school in September 2011 and were interviewed in July and September 2012). This means that there may be some recall bias, as students may not accurately report their true beliefs at the time they were applying to secondary schools. Additionally, the sample is drawn from students who were admitted to secondary school and attended the first year. This sample therefore is not representative of the full population of students who applied to secondary school but instead covers the subset of students who qualified for admission and had the inclination and resources to attend (less than 50 percent of BECE candidates qualify for admission to secondary school on average).

CSSPS administrative data on student choices, exam scores and admission outcomes allow us to observe admission outcomes ex-post. We complement the CSSPS administrative data with survey data by asking students to provide information on the following factors:

1. Their expected exam scores within an upper and lower bound;
2. Their subjective probabilities of getting placed in each of their chosen schools;
3. A list of their pure preferences (i.e. their ranking of schools in the absence of considerations about their likelihood of getting in).

An analysis of these data essentially reveals the extent to which students are able to correctly estimate their exam performance, and their admission chances (i.e. by examining how many schools each student listed with cutoffs lower than their own exam score). BECE scores are assigned on a scale of 1 (highest) to 7 (lowest) for each subject, summing up to a total of 42 for six subjects. We convert BECE scores into a score out of 30 with higher scores indicating better performance for easier interpretation (i.e., a 6 out of 30 in the actual BECE scale is 30/30 in our scale, and 30 or above in the normal scale is 0/30 on our scale).

only 6 of the initial 13 schools in Greater Accra participated. Table A.1 presents summary statistics on schools in the initial sample and eventual survey sample. We conduct various sensitivity analyses using only the initially selected schools as a robustness check on our main results.

Table 1 presents summary statistics. We use three measures of students’ family background. First, we asked students to self-report their relative family income: “How would you describe your family’s income compared to other families in Ghana?” The three available responses were “low income”, “middle income” and “high income”. Second, we asked students about their parents’ highest completed level of education. Third, we asked whether students had attended a public or private junior high school. Our three measures of family background appear to be consistent with each other. The majority of students reported themselves to be middle income. However, 10.3 percent reported themselves to be of high income and 29.1 percent self-identified as being of low income. As expected, low-income students are less likely to have a parent who completed secondary school – 23 percent of their fathers and 12 percent of their mothers did, compared to 57 percent of fathers and 46 percent of mothers of students with high self-reported family income. Additionally, 83 percent of low-income students attended a public junior high school, compared to 62 percent of middle-income and 64 percent of high-income students.

We also collected information on the extent of school support provided to students during their application process, in order to assess the type of guidance they received. In particular, we asked whether schools had provided students with a list of all available secondary schools in the country and whether students took a practice exam before taking the actual BECE. 66 percent of students received a list of available schools and 81 percent of students took a mock exam, although only 43 percent of students knew their grade on the mock exam as well as their rank within their class.

4 Empirical Analysis

We use this detailed information from survey data to improve our understanding of application decisions in the following ways:

1. Students’ reports of expected exam scores (and subjective probabilities of admission) allow us to examine how well students estimate their own ability. We objectively quantify their levels of uncertainty by determining how expectations compare with realized exam performance. We also construct a intuitive measure of uncertainty by examining the size of student-reported bounds around expected exam performance. Finally, we observe how levels of uncertainty vary (e.g. by student ability, gender, or family background).
2. We also determine how much of the mismatch between student ability and the selectivity of chosen schools is due to preferences, poor decision-making, and unrealistic ex-

pectations. In particular, survey data allow us to observe whether student choices and behavior are consistent with expected exam performance and subjective probabilities of admission, whether bounds correlate with the levels of over- or underestimation of admission prospects, and whether the levels of uncertainty affect admission outcomes.

3. Students' reports of pure preferences allow us to estimate student utility derived from each school. We can then use this estimated utility as a benchmark for the utility derived from actual choices when constraints are binding – we examine whether students appear to actively apply to less-appealing schools in order to increase their admission prospects.

These responses allow us to develop a rich understanding of the school choice environment and to identify barriers for students from low-income backgrounds.

Our main hypotheses are that students from lower income backgrounds attend less selective secondary schools for the following reasons:

1. They have less information about their admission chances
2. They subsequently apply to less selective secondary schools

These hypotheses form the backbone of our empirical analysis. An additional hypothesis we propose is that students from lower income backgrounds place equally as much value on schools' academic performance.

To examine our hypotheses, we begin by using linear regression analysis to evaluate the factors predicting:

1. Students' expected exam performance and beliefs about their admission chances;
2. Students' application behavior; and
3. Students' preferences for school characteristics.

We then evaluate how these three factors relate to students' aspirations and admission outcomes. This analysis therefore allows us to draw conclusions about the determinants of school choice and the relative importance of access to information as one of the predictors of application choices and admission outcomes.

We begin by estimating the determinants of *expected* BECE scores ($Belief_{ijs}$) for student i , who attended junior high school j and is currently enrolled in senior high school s :

$$Belief_{ijs} = \alpha BECE_i + \gamma Info_{ij} + \mathbf{X}'_{ij} \boldsymbol{\delta} + \nu_s + \epsilon_{ijs} \quad (1)$$

where $BECE_i$ denotes student i 's *actual* BECE score, $Info_{ij}$ measures student information (proxied by a measure of whether students received a list of schools in the country and whether they had taken a mock BECE exam), and \mathbf{X}_{ij} , is a vector of student background characteristics which includes their self-reported family income, parental education, and an indicator for attending a public junior high school. ν_s is a vector of school fixed effects.

We then explore factors correlated with a variety of additional outcomes. For each outcome of interest, we estimate a series of regressions of the following form:

$$Y_{ijs} = \alpha BECE_i + \beta Belief_i + \gamma Info_{ij} + \mathbf{X}'_{ij} \boldsymbol{\delta} + \nu_s + \epsilon_{ijs} \quad (2)$$

where Y_{ijs} is the outcome of student i , who attended junior high school j and is currently enrolled in senior high school s . α captures the relationship between students' BECE scores and their outcomes. β captures the relationship between students' expected BECE scores and their outcomes. γ captures the role of student information (proxied by a measure of whether students received a list of schools in the country and whether they had taken a mock BECE exam). $\boldsymbol{\delta}$ indicates the role of student background characteristics, and ν_s again indicates a vector of school fixed effects. We use heteroskedasticity robust standard errors and cluster at the senior high school level to allow for correlation in the unobserved characteristics of students in a given school.

5 Results

Overall, students tend to overestimate their exam performance. As Figure 1 illustrates, most students expected to receive a better BECE score than they actually received. Nonetheless, there is a positive correlation between students' expected BECE performance and their actual scores (Figure 2). Given that the survey was conducted after students had received their BECE results, we cannot ignore the possibility that students are rationalizing their received results to some degree. However, only 207 students (5.05 percent of the sample) listed their expected score as being identical to their actual score, so there is suggestive evidence of students' uncertainty. Moreover, we can still evaluate the extent to which biases in subjective expectations systematically vary across students of different backgrounds.

5.1 Do Student Expectations Vary by Student Background?

Table 2 indicates the factors predicting students' expected BECE scores. Overall:

1. Students who took a practice exam before the final BECE exam tended to overestimate

their performance.

2. Students who self-identified as having low family income were more likely to overestimate their performance.
3. Students with higher levels of fathers' education were more likely to overestimate their performance. Interestingly, the coefficient on mothers' education goes in the opposite direction.
4. Students from public junior high schools and male students were relatively more conservative about their expectations.

These findings provide mixed support for our initial hypothesis that students with lower socio-economic status (SES) were more likely to underestimate their academic performance. The result that students with lower self-reported family income are more likely to be optimistic about their performance contradicts this hypothesis. However, coefficients on the second set of family background measures are consistent with the theory – higher levels of father's education are associated with increased student confidence, and attending a public junior high school is associated with lower student confidence.

5.2 Do Student Expectations Predict Application Behavior?

Table 3 reports on factors correlated with the selectivity of schools that students apply to. Students were asked to list their six choices submitted to the CSSPS, and then to estimate "What score do you think you would need in order to gain admission to this choice?" for each of their listed choices. As with student scores, we converted these expected scores into a score out of 30, with higher scores indicating a more selective school. We use the median score expected for admission at the set of chosen schools as a measure of the selectivity of each student's application portfolio. We find that:

1. Higher performing students apply to schools with higher expected admission requirements.
2. Students who expect to perform well also apply to schools with higher expected admission requirements.
3. Low-income students and students from public junior high schools apply to secondary schools with lower expected admission requirements.

These findings are consistent with observations from administrative data and support the notion that student expectations influence admission behavior. However, a notable result

is that even after controlling for student beliefs, students from less privileged family backgrounds still apply to less selective schools. This latter finding suggests that differences in expectations cannot account for differences in application behavior between students from high and low income backgrounds.

5.3 Do Student Expectations Explain Admission Outcomes?

Table 4 highlights the initial concern that motivated this study: students who come from less privileged backgrounds (as measured by self-reported family income, parents' education levels, and attendance of a public junior high school) are significantly less likely to attend selective secondary schools (illustrated in Figure 4). A key finding from our study is that this stark difference in school attendance persists even after conditioning on students' actual and expected BECE scores. This suggests that uncertainty about admission chances cannot explain differences in school attendance for students from lower income backgrounds.

5.4 Do Student Preferences Vary by Student Background?

As a final exercise, we consider whether students have different preferences for school characteristics as an alternative explanation for why students from less privileged backgrounds do not apply to and attend more selective schools. On average, 61 percent of students listed schools' academic performance as one of the factors they took into consideration when selecting their list of secondary schools. Table 6 reports on factors correlated with the likelihood that students list academic performance as one of the factors they considered when they were choosing what secondary schools to apply to. We find that:

1. Higher performing students and students with higher expected BECE scores are more likely to list academic performance as a factor influencing their choices.
2. Low-income students are less likely to list academic performance as a factor influencing their choices, but this difference is not statistically significant in most of our regression specifications. They are significantly less likely to list academic performance as *the most important* factor influencing their choices (Table 7).
3. High-income students are significantly less likely to list schools' academic performance as a factor.
4. Students who took a mock exam are more likely to list academic performance as a factor.

In contrast, students with high expected BECE scores and students with a mother who completed secondary school are less likely to list cost or distance as the most important factor that influenced their application decisions (Table 8). In addition, students with low or high self-reported SES are more likely to list cost or distance as the most important factor (relative to middle income students, see Figure 6). Male students are also more likely to list cost or distance as their most important concern. Altogether, this analysis indicates that cost and distance are clearly important factors of concern for students from low SES backgrounds.

6 Conclusions and Discussion

Altogether, this project sheds new light on findings from existing studies. Using specialized data from a survey of secondary school students in Ghana, we probe the prospect that information plays a major role in perpetuating differences in access to schooling. Ultimately, we find little evidence that students from less privileged backgrounds systematically underestimate their academic performance. Instead it appears that these students actively choose to apply to less selective schools, perhaps due to financial concerns. One major caveat to consider in this analysis is that we are focusing on students who qualified for admission to secondary school and attended for the first year. As such, we are not capturing the choices of and information available to students who do not go on to attend secondary school.

The main policy implications of this study are:

1. Ghana Education Service should ensure that all students receive better information about their academic performance before they select their secondary school choices on the CSSPS.
2. In addition to providing a list of schools to students at the time of making their SHS and course choices, students should be given information about the previous years admission cut-off scores for the courses in each school.
3. Increased efforts should be made to address financial constraints for students from lower income backgrounds.
4. Regular surveys should be implemented to gain additional information about students' choices and to track their progress through the secondary school system.

These recommendations combined, will allow students to assess their chances of being admitted to the array of secondary schools more accurately. Ultimately, this could improve the

effectiveness and efficiency of the CSSPS in placing students in schools that they end-up attending. Moreover, this could encourage high-achieving students to attend high-performing schools, irrespective of their families' economic status.

This study has highlighted some important issues in the school choice setting and there are several areas that present some scope for further analysis, including:

1. Incorporating information on the characteristics of students' JHSs and their lists of SHS choices
2. Estimating student preferences for school characteristics based on their reported choices
3. Incorporating administrative data from the CSSPS secretariat on students' choices, exam scores, and placement outcomes (to validate survey responses)

Additionally, it would be ideal to target students at the end of junior high school for future survey work in order to gain more accurate information about their decision-making process at this point in time.

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Table 1: Summary Statistics

| | All | High Income | Middle Income | Low Income |
|---|----------|----------------|------------------|---------------|
| <i>Student Characteristics</i> | | | | |
| Male | 0.543 | 0.531 | 0.506 | 0.621 |
| Age | 17.783 | 17.590 | 17.469 | 18.498 |
| High income (self-reported) | 0.103 | 1.000 | 0.000 | 0.000 |
| Low income (self-reported) | 0.291 | 0.000 | 0.000 | 1.000 |
| Attended public JHS | 0.684 | 0.644 | 0.621 | 0.828 |
| Father completed secondary | 0.416 | 0.568 | 0.486 | 0.229 |
| Mother completed secondary | 0.275 | 0.455 | 0.322 | 0.120 |
| Sum of Father/Mother completed secondary | 0.691 | 1.024 | 0.809 | 0.349 |
| Sibling attended SHS | 0.660 | 0.745 | 0.693 | 0.570 |
| <i>Expectations</i> | | | | |
| Actual BECE score | 15.874 | 17.197 | 16.718 | 13.624 |
| Expected BECE score | 25.900 | 26.029 | 26.115 | 25.437 |
| Expected–Actual BECE score | 10.069 | 8.892 | 9.424 | 11.873 |
| Expected BECE score if all went well | 26.699 | 26.889 | 26.917 | 26.183 |
| Expected BECE score if all went badly | 17.261 | 18.799 | 17.596 | 15.964 |
| Best–Worst Expected BECE score | 9.749 | 8.744 | 9.571 | 10.493 |
| Expected BECE relative to all Ghana students ¹ | 1.273 | 1.207 | 1.281 | 1.283 |
| Expected BECE cutoff for listed choices | 22.214 | 22.594 | 22.680 | 21.123 |
| <i>Information & Choices</i> | | | | |
| Took graded mock exam before BECE | 0.810 | 0.785 | 0.841 | 0.758 |
| Knew mock exam score and rank | 0.430 | 0.432 | 0.464 | 0.364 |
| JHS provided list of all sec. schools | 0.661 | 0.691 | 0.665 | 0.639 |
| Chose secondary schools without any help | 0.242 | 0.229 | 0.213 | 0.305 |
| SHS Academic performance influenced school choice | 0.605 | 0.568 | 0.637 | 0.560 |
| SHS Academic performance most important factor | 0.383 | 0.366 | 0.422 | 0.318 |
| Future success most important factor | 0.242 | 0.231 | 0.238 | 0.254 |
| Cost or distance most important factor | 0.176 | 0.184 | 0.146 | 0.232 |
| Ranked choices in order of expected selectivity | 0.565 | 0.601 | 0.568 | 0.540 |
| <i>Characteristics of SHS Currently Attended</i> | | | | |
| Attending school where student was placed | 0.571 | 0.592 | 0.592 | 0.526 |
| Median score of admitted students (2009) ² | 307.658 | 313.158 | 313.313 | 293.141 |
| Public school | 0.847 | 0.816 | 0.856 | 0.845 |
| Historically prestigious school ³ | 0.089 | 0.121 | 0.109 | 0.031 |
| <i>Aspirations</i> | | | | |
| Highest education level desired is university | 0.705 | 0.686 | 0.737 | 0.654 |
| Ideal job is government employed | 0.735 | 0.672 | 0.718 | 0.805 |
| Ideal job is self-employed | 0.098 | 0.125 | 0.100 | 0.081 |
| Expected earning if start work now (GHc/year) | 1701.279 | 2859.122 | 1381.495 | 1313.780 |
| Expected earning if complete SHS (GHc/year) | 2188.572 | 3641.764 | 1931.665 | 2167.218 |
| Expected return to SHS (GHc/year) | 531.512 | 556.496 | 523.884 | 919.063 |
| <i>N</i> | 4098 | 424 | 2425 | 1192 |

Notes: ¹Expected BECE Performance: 1=Better than most, 2=Average, 3=Worse than most; ²Raw BECE scores (out of 600). ³One of the 34 schools that were established before Ghana gained independence in 1957.

Table 2: Predictors of Students' Expected BECE Scores

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---------------------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| Actual BECE score | 0.247 (0.017)*** | 0.242 (0.017)*** | 0.249 (0.017)*** | 0.243 (0.018)*** | 0.241 (0.018)*** | 0.241 (0.018)*** |
| Knew mock exam score and rank | | 0.433 (0.130)*** | | | 0.416 (0.133)*** | 0.417 (0.133)*** |
| JHS provided list of all sec. schools | | 0.044 (0.137) | | | 0.054 (0.139) | 0.053 (0.139) |
| High income (self-reported) | | | -0.195 (0.219) | | -0.180 (0.223) | -0.184 (0.224) |
| Low income (self-reported) | | | 0.272 (0.152)* | | 0.354 (0.156)** | 0.362 (0.156)** |
| Attended public JHS | | | | -0.231 (0.134)* | -0.221 (0.134) | -0.220 (0.133) |
| Father completed secondary | | | | 0.270 (0.131)** | 0.287 (0.133)** | 0.285 (0.133)** |
| Mother completed secondary | | | | -0.244 (0.121)** | -0.211 (0.128) | -0.215 (0.129)* |
| Male | | | | | -0.288 (0.139)** | -0.286 (0.139)** |
| Sibling attended SHS | | | | | | 0.098 (0.126) |
| R^2 | 0.254 | 0.256 | 0.255 | 0.256 | 0.260 | 0.260 |
| N | 4008 | 4008 | 4008 | 4008 | 4008 | 4008 |
| Mean Outcome | 25.945 | 25.945 | 25.945 | 25.945 | 25.945 | 25.945 |

Notes: Table displays results from an OLS regression with students' expected BECE scores as the dependent variable. Regressions contain school fixed effects. *p<0.1, **p<0.05, ***p<0.01.

Table 3: Predictors of Expected Selectivity of Chosen Schools

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
|---------------------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| Actual BECE score | 0.155 (0.016)*** | | 0.098 (0.015)*** | 0.099 (0.015)*** | 0.096 (0.015)*** | 0.095 (0.015)*** | 0.098 (0.015)*** | 0.153 (0.016)*** | |
| Expected BECE score | | 0.267 (0.026)*** | 0.236 (0.026)*** | 0.237 (0.026)*** | 0.236 (0.026)*** | 0.235 (0.026)*** | 0.235 (0.026)*** | | 0.264 (0.026)*** |
| Knew mock exam score and rank | | | | -0.219 (0.145) | | | -0.236 (0.144) | -0.159 (0.145) | -0.162 (0.145) |
| JHS provided list of all sec. schools | | | | 0.093 (0.171) | | | 0.075 (0.172) | 0.096 (0.175) | 0.063 (0.169) |
| High income (self-reported) | | | | | -0.148 (0.258) | | -0.125 (0.259) | -0.168 (0.264) | -0.039 (0.259) |
| Low income (self-reported) | | | | | -0.322 (0.177)* | | -0.306 (0.181)* | -0.247 (0.191) | -0.331 (0.182)* |
| Attended public JHS | | | | | | -0.235 (0.163) | -0.204 (0.160) | -0.244 (0.161) | -0.358 (0.157)** |
| Father completed secondary | | | | | | 0.052 (0.169) | 0.018 (0.167) | 0.085 (0.170) | 0.058 (0.162) |
| Mother completed secondary | | | | | | -0.104 (0.179) | -0.106 (0.182) | -0.171 (0.188) | -0.025 (0.179) |
| Male | | | | | | | -0.395 (0.201)* | -0.472 (0.207)** | -0.377 (0.201)* |
| Sibling attended SHS | | | | | | | -0.245 (0.162) | -0.216 (0.165) | -0.201 (0.163) |
| R^2 | 0.233 | 0.257 | 0.266 | 0.266 | 0.266 | 0.266 | 0.269 | 0.237 | 0.261 |
| N | 3610 | 3654 | 3601 | 3601 | 3601 | 3601 | 3601 | 3610 | 3654 |
| Mean Outcome | 22.229 | 22.217 | 22.230 | 22.230 | 22.230 | 22.230 | 22.230 | 22.229 | 22.217 |

Notes: Table displays results from an OLS regression with the average expected admission score at a student's chosen schools as the dependent variable. Regressions contain school fixed effects. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 4: Selectivity of Secondary School Currently Attended

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
|---------------------------------------|---------------------|---------------------|---------------------|---------------------|----------------------|-----------------------|----------------------|----------------------|-----------------------|
| Actual BECE score | 4.304 (0.098)*** | | 4.243 (0.106)*** | 4.161 (0.106)*** | 4.140 (0.106)*** | 3.875 (0.110)*** | 3.784 (0.110)*** | 3.832 (0.104)*** | |
| Expected BECE score | | 3.269 (0.159)*** | 0.234 (0.129)* | 0.202 (0.129) | 0.258 (0.128)** | 0.208 (0.126)* | 0.199 (0.125) | | 2.348 (0.139)*** |
| Knew mock exam score and rank | | | | 5.224 (1.132)*** | | | 4.272 (1.119)*** | 4.268 (1.118)*** | 10.477 (1.306)*** |
| JHS provided list of all sec. schools | | | | -0.173 (1.132) | | | -0.502 (1.131) | -0.557 (1.128) | -0.095 (1.322) |
| High income (self-reported) | | | | | -2.615 (1.973) | | -2.635 (1.954) | -2.835 (1.954) | -1.637 (2.290) |
| Low income (self-reported) | | | | | -7.604 (1.136)*** | | -5.286 (1.163)*** | -5.345 (1.160)*** | -9.807 (1.286)*** |
| Attended public JHS | | | | | | -10.608 (1.359)*** | -9.653 (1.361)*** | -9.755 (1.357)*** | -23.421 (1.570)*** |
| Father completed secondary | | | | | | 1.103 (1.204) | 0.084 (1.219) | 0.144 (1.219) | 3.001 (1.432)** |
| Mother completed secondary | | | | | | 4.348 (1.458)*** | 3.764 (1.465)** | 3.765 (1.464)** | 11.191 (1.724)*** |
| Male | | | | | | | -0.960 (1.088) | -0.987 (1.086) | 1.137 (1.256) |
| Sibling attended SHS | | | | | | | 1.552 (1.136) | 1.592 (1.135) | 2.550 (1.310)* |
| R^2 | 0.425 | 0.097 | 0.425 | 0.429 | 0.431 | 0.439 | 0.444 | 0.444 | 0.232 |
| N | 3918 | 3971 | 3905 | 3905 | 3905 | 3905 | 3905 | 3918 | 3971 |
| Mean Outcome | 307.723 | 307.629 | 307.733 | 307.733 | 307.733 | 307.733 | 307.733 | 307.723 | 307.629 |

Notes: Table displays results from an OLS regression with the median BECE score of students admitted to a given secondary school in 2009 as the outcome of interest. Regressions do not contain school fixed effects. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 5: Compliance with Secondary School Placement by CSSPS

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
|---------------------------------------|-------------------|------------------|-------------------|-------------------|----------------------|-------------------|----------------------|----------------------|----------------------|
| Actual BECE score | 0.004 (0.002)* | | 0.004 (0.002)* | 0.004 (0.002)* | 0.003 (0.002) | 0.003 (0.002)* | 0.003 (0.002) | 0.003 (0.002)* | |
| Expected BECE score | | 0.001 (0.002) | -0.001 (0.002) | -0.001 (0.002) | -0.000 (0.002) | -0.001 (0.002) | -0.000 (0.002) | | 0.001 (0.002) |
| Knew mock exam score and rank | | | | 0.010 (0.015) | | | 0.009 (0.015) | 0.010 (0.015) | 0.011 (0.015) |
| JHS provided list of all sec. schools | | | | -0.009 (0.014) | | | -0.012 (0.014) | -0.012 (0.014) | -0.009 (0.015) |
| High income (self-reported) | | | | | 0.031 (0.025) | | 0.035 (0.025) | 0.036 (0.025) | 0.036 (0.025) |
| Low income (self-reported) | | | | | -0.053 (0.018)*** | | -0.058 (0.018)*** | -0.056 (0.018)*** | -0.060 (0.019)*** |
| Attended public JHS | | | | | | -0.022 (0.018) | -0.018 (0.018) | -0.016 (0.018) | -0.020 (0.018) |
| Father completed secondary | | | | | | -0.004 (0.016) | -0.012 (0.016) | -0.011 (0.016) | -0.012 (0.015) |
| Mother completed secondary | | | | | | -0.001 (0.016) | -0.008 (0.016) | -0.008 (0.016) | -0.004 (0.016) |
| Male | | | | | | | 0.012 (0.017) | 0.010 (0.016) | 0.011 (0.017) |
| Sibling attended SHS | | | | | | | -0.019 (0.014) | -0.020 (0.013) | -0.020 (0.014) |
| R^2 | 0.274 | 0.270 | 0.274 | 0.274 | 0.277 | 0.274 | 0.278 | 0.277 | 0.275 |
| N | 4021 | 4076 | 4008 | 4008 | 4008 | 4008 | 4008 | 4021 | 4076 |
| Mean Outcome | 0.571 | 0.571 | 0.572 | 0.572 | 0.572 | 0.572 | 0.572 | 0.571 | 0.571 |

Notes: Table displays results from an OLS regression where the outcome of interest is an indicator for whether students are currently attending the school they were placed in by the CSSPS. Regressions contain school fixed effects. *p<0.1, **p<0.05, ***p<0.01.

Table 6: Academic Performance as a School Choice Factor

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
|---------------------------------------|---------------------|---------------------|--------------------|---------------------|---------------------|--------------------|---------------------|---------------------|---------------------|
| Actual BECE score | 0.005 (0.001)*** | | 0.004 (0.002)** | 0.003 (0.002)** | 0.004 (0.002)** | 0.003 (0.002)** | 0.003 (0.002)* | 0.004 (0.002)*** | |
| Expected BECE score | | 0.007 (0.002)*** | 0.006 (0.002)** | 0.005 (0.002)** | 0.006 (0.002)** | 0.006 (0.002)** | 0.005 (0.002)** | | 0.006 (0.002)*** |
| Knew mock exam score and rank | | | | 0.079 (0.017)*** | | | 0.077 (0.017)*** | 0.078 (0.017)*** | 0.081 (0.017)*** |
| JHS provided list of all sec. schools | | | | 0.013 (0.019) | | | 0.013 (0.019) | 0.013 (0.019) | 0.011 (0.019) |
| High income (self-reported) | | | | | -0.055 (0.027)** | | -0.059 (0.027)** | -0.059 (0.027)** | -0.050 (0.027)* |
| Low income (self-reported) | | | | | -0.031 (0.017)* | | -0.018 (0.018) | -0.017 (0.018) | -0.022 (0.018) |
| Attended public JHS | | | | | | -0.011 (0.019) | -0.003 (0.018) | -0.004 (0.018) | -0.007 (0.018) |
| Father completed secondary | | | | | | 0.024 (0.018) | 0.018 (0.018) | 0.019 (0.018) | 0.014 (0.017) |
| Mother completed secondary | | | | | | 0.023 (0.020) | 0.023 (0.020) | 0.022 (0.020) | 0.029 (0.019) |
| Male | | | | | | | -0.051 (0.020)** | -0.050 (0.020)** | -0.051 (0.020)** |
| Sibling attended SHS | | | | | | | 0.005 (0.015) | 0.006 (0.015) | 0.005 (0.015) |
| R^2 | 0.114 | 0.113 | 0.116 | 0.122 | 0.117 | 0.117 | 0.126 | 0.125 | 0.124 |
| N | 4021 | 4076 | 4008 | 4008 | 4008 | 4008 | 4008 | 4021 | 4076 |
| Mean Outcome | 0.608 | 0.606 | 0.608 | 0.608 | 0.608 | 0.608 | 0.608 | 0.608 | 0.606 |

Notes: Table displays results from an OLS regression where the outcome of interest is an indicator for whether students listed academic performance as one of the factors influencing their school choice decisions. Regressions contain school fixed effects. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 7: Academic Performance as the Most Important Factor

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
|---------------------------------------|---------------------|---------------------|---------------------|---------------------|----------------------|---------------------|----------------------|----------------------|----------------------|
| Actual BECE score | 0.004 (0.002)*** | | 0.002 (0.002) | 0.002 (0.002) | 0.002 (0.002) | 0.002 (0.002) | 0.002 (0.002) | 0.003 (0.002)** | |
| Expected BECE score | | 0.008 (0.002)*** | 0.007 (0.002)*** | 0.006 (0.002)*** | 0.007 (0.002)*** | 0.007 (0.002)*** | 0.006 (0.002)*** | | 0.007 (0.002)*** |
| Knew mock exam score and rank | | | | 0.062 (0.018)*** | | | 0.059 (0.017)*** | 0.061 (0.017)*** | 0.061 (0.017)*** |
| JHS provided list of all sec. schools | | | | 0.007 (0.017) | | | 0.006 (0.017) | 0.006 (0.017) | 0.006 (0.017) |
| High income (self-reported) | | | | | -0.053 (0.027)* | | -0.055 (0.027)** | -0.055 (0.027)** | -0.054 (0.027)** |
| Low income (self-reported) | | | | | -0.070 (0.018)*** | | -0.062 (0.018)*** | -0.059 (0.017)*** | -0.062 (0.018)*** |
| Attended public JHS | | | | | | 0.006 (0.019) | 0.016 (0.019) | 0.014 (0.019) | 0.012 (0.018) |
| Father completed secondary | | | | | | 0.031 (0.019) | 0.020 (0.019) | 0.021 (0.020) | 0.017 (0.019) |
| Mother completed secondary | | | | | | 0.016 (0.021) | 0.013 (0.021) | 0.012 (0.021) | 0.021 (0.020) |
| Male | | | | | | | -0.047 (0.020)** | -0.048 (0.020)** | -0.046 (0.020)** |
| Sibling attended SHS | | | | | | | -0.010 (0.018) | -0.009 (0.017) | -0.010 (0.018) |
| R^2 | 0.067 | 0.069 | 0.070 | 0.073 | 0.074 | 0.071 | 0.080 | 0.078 | 0.079 |
| N | 4021 | 4076 | 4008 | 4008 | 4008 | 4008 | 4008 | 4021 | 4076 |
| Mean Outcome | 0.384 | 0.383 | 0.383 | 0.383 | 0.383 | 0.383 | 0.383 | 0.384 | 0.383 |

Notes: Table displays results from an OLS regression where the outcome of interest is an indicator for whether students listed academic performance as the most important factor influencing their school choice decisions. Regressions contain school fixed effects. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 8: Cost or Distance as the Most Important Factors

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
|---------------------------------------|-------------------|----------------------|---------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| Actual BECE score | -0.000 (0.001) | | 0.001 (0.001) | 0.001 (0.001) | 0.001 (0.001) | 0.002 (0.001) | 0.002 (0.001) | 0.001 (0.001) | |
| Expected BECE score | | -0.005 (0.002)*** | -0.005 (0.002)** | -0.004 (0.002)** | -0.005 (0.002)*** | -0.005 (0.002)** | -0.004 (0.002)** | | -0.004 (0.002)** |
| Knew mock exam score and rank | | | | -0.043 (0.014)*** | | | -0.039 (0.014)*** | -0.041 (0.014)*** | -0.039 (0.014)*** |
| JHS provided list of all sec. schools | | | | -0.018 (0.015) | | | -0.016 (0.015) | -0.016 (0.015) | -0.015 (0.015) |
| High income (self-reported) | | | | | 0.038 (0.023) | | 0.045 (0.022)** | 0.046 (0.022)** | 0.042 (0.022)* |
| Low income (self-reported) | | | | | 0.064 (0.014)*** | | 0.051 (0.014)*** | 0.049 (0.014)*** | 0.051 (0.014)*** |
| Attended public JHS | | | | | | 0.009 (0.014) | 0.001 (0.014) | 0.002 (0.014) | 0.000 (0.013) |
| Father completed secondary | | | | | | -0.026 (0.013)* | -0.017 (0.013) | -0.018 (0.013) | -0.013 (0.013) |
| Mother completed secondary | | | | | | -0.047 (0.013)*** | -0.044 (0.013)*** | -0.043 (0.013)*** | -0.043 (0.013)*** |
| Male | | | | | | | 0.030 (0.014)** | 0.032 (0.014)** | 0.032 (0.014)** |
| Sibling attended SHS | | | | | | | -0.009 (0.015) | -0.010 (0.014) | -0.006 (0.014) |
| R^2 | 0.073 | 0.074 | 0.075 | 0.078 | 0.080 | 0.080 | 0.088 | 0.086 | 0.086 |
| N | 4021 | 4076 | 4008 | 4008 | 4008 | 4008 | 4008 | 4021 | 4076 |
| Mean Outcome | 0.176 | 0.176 | 0.176 | 0.176 | 0.176 | 0.176 | 0.176 | 0.176 | 0.176 |

Notes: Table displays results from an OLS regression where the outcome of interest is an indicator for whether students listed cost or distance as the most important factor influencing their school choice decisions. Regressions contain school fixed effects. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

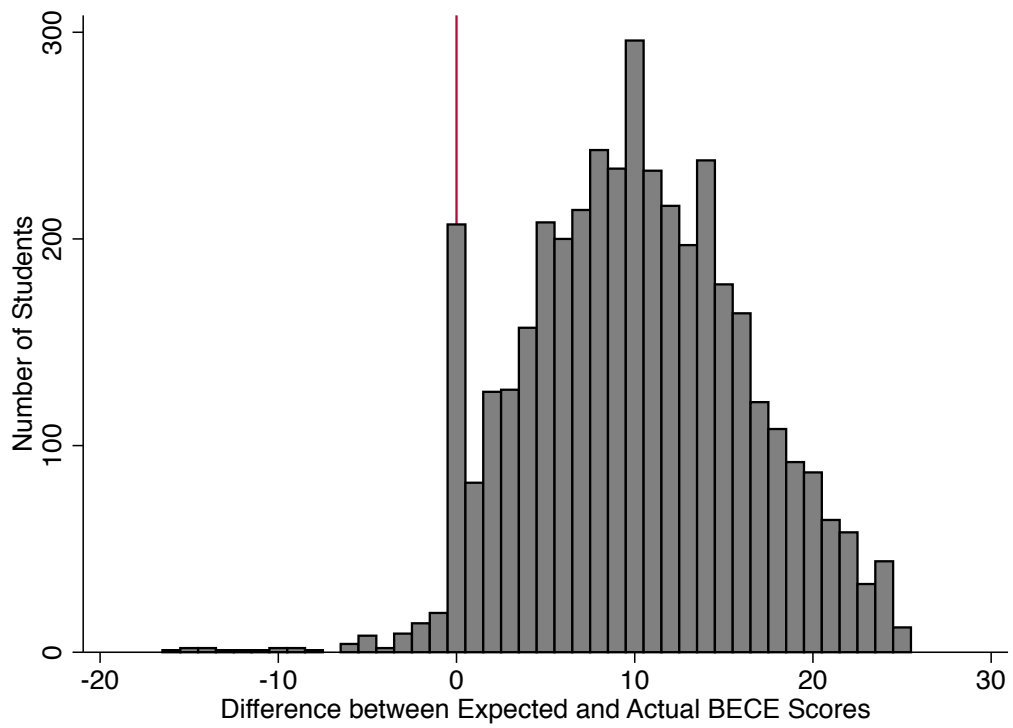


Figure 1: Distribution of Students' Expectation Errors

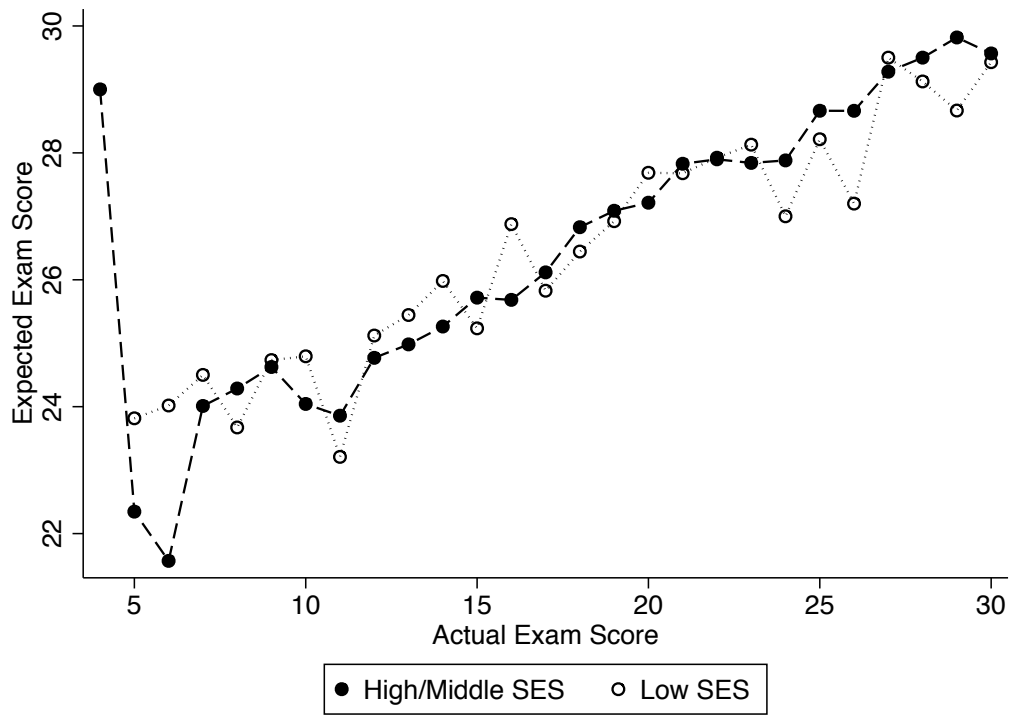


Figure 2: Expected and Actual BECE Performance

Notes: Student BECE scores are measured out of 30. Higher scores indicate better performance.

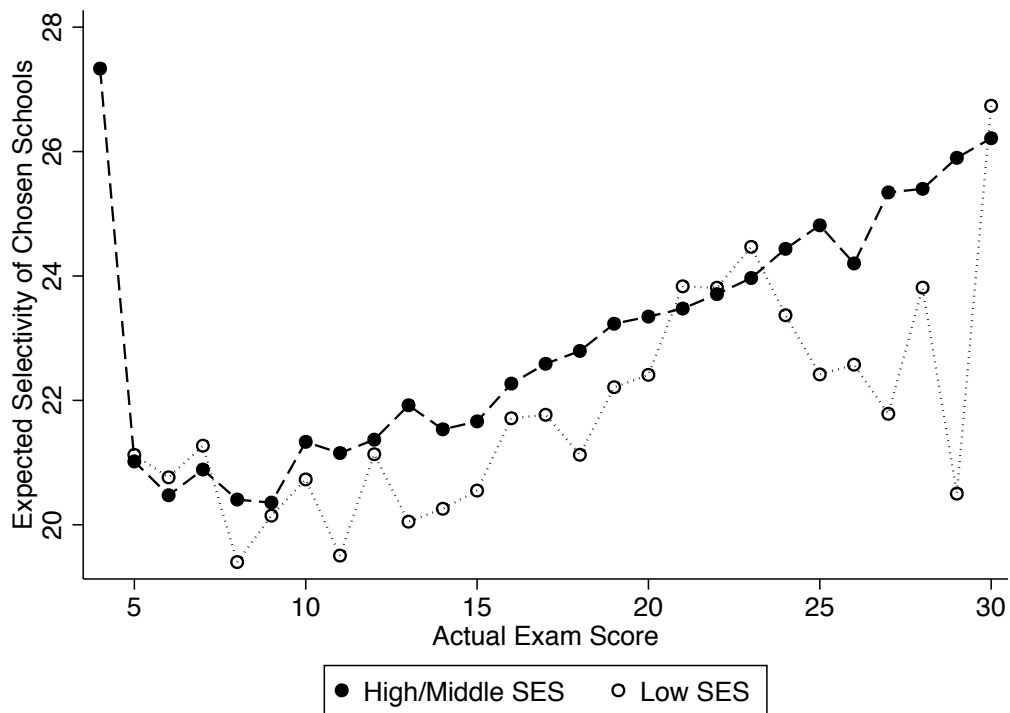


Figure 3: Expected Selectivity of Chosen Schools

Notes: Students were asked to list their six choices submitted to the CSSPS, and then to estimate “What score do you think you would need in order to gain admission to this choice?” for each of their listed choices. We take the median score expected for admission to their chosen schools as a measure of the expected selectivity. Higher scores indicate more selective schools.

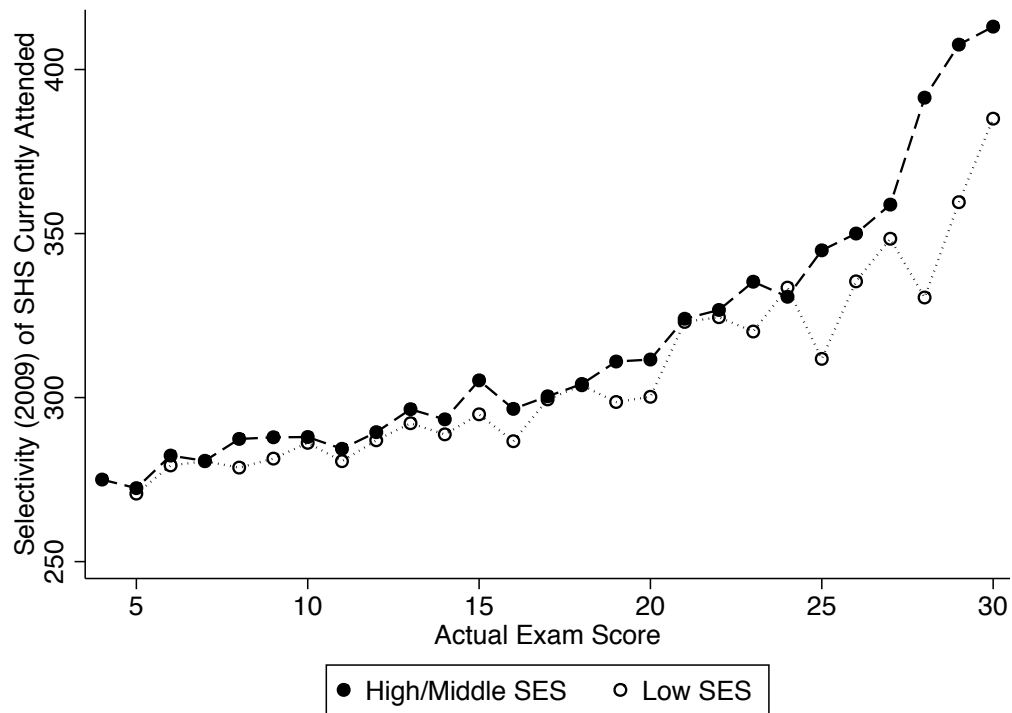


Figure 4: Selectivity of SHS Currently Attended

Notes: We measure the selectivity level of the secondary school currently attended by a student using the median raw BECE scores of students admitted to that school in 2009. Raw BECE scores are measured out of 600.

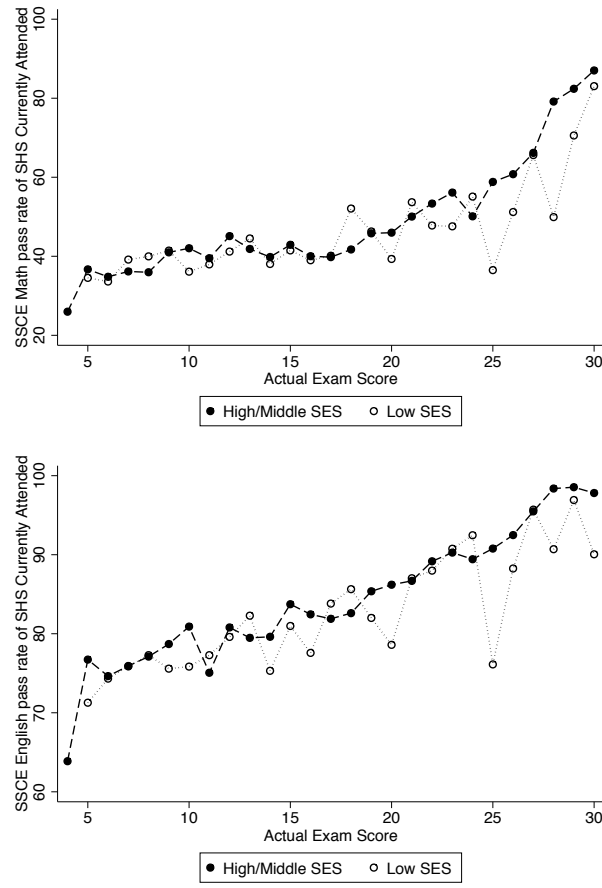


Figure 5: SSCE Performance of SHS Currently Attended

Notes: We measure the SSCE performance of the secondary school currently attended using the 2008 Maths and English pass rates (percentages of students scoring A to E in a given subject).

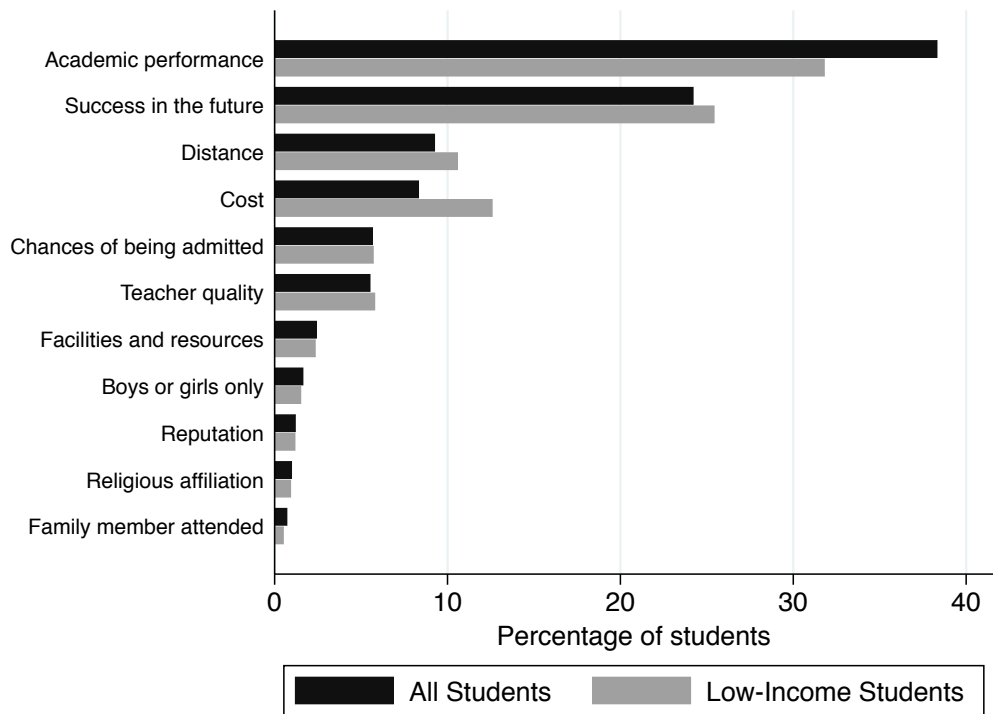


Figure 6: Most Important Factor Considered when Selecting Secondary Schools

A Appendix

This appendix contains additional analysis. Table A.1 presents summary statistics on schools in the initial sample and eventual survey sample. Overall, we find no significant differences between schools in the various samples, except schools in the initial sample were significantly less likely to have boarding facilities and schools in the survey sample offer 0.3 more programs on average. In column (7), we compare the characteristics of the 23 schools that declined to participate to the characteristics of the 23 replacement schools that we included in the final survey. The replacement schools are more likely to be historically prestigious (4 out of the 23 are, compared to none in the sample of schools that declined), they also had higher average exams scores of admitted students in 2009 and offer an average of one additional academic program. To examine the sensitivity of estimates to the inclusion of replacement schools, Table A.2 presents the key results for the full sample of schools as in the main analysis in the paper, and for the 77 schools that were drawn in the initial sample (i.e., excluding replacement schools). The results are largely unchanged.

Table A.3 considers alternative measures of information students received. The main analysis in the body of the paper uses an indicator of whether students took a mock exam and knew their score and class ranks. The table below compares results using this measure to results using an indicator for whether students took a mock exam and received either kind of feedback. The results are similar across the different specifications, except with regards to the selectivity of current SHS attended – taking a graded mock exam is not significantly correlated with school selectivity, but getting a rank and a score is positively correlated. Overall, 81 percent of students took a mock exam and received some form of feedback (either their grade on the exam or their rank within their class). However, only 43 percent of students knew their grade on the mock exam as well as their class rank.

Table A.4 examines whether the type of assistance students received when selecting their choices is correlated with the selectivity of schools they select. We find no evidence of this. The first column reports results from the baseline specification (column 7 of Table 3). All of the variables reported in Table 3 are still included in this regression. Column 2 adds an indicator for whether students selected their secondary school choices on their own. The coefficient is not significant. Column 4 instead adds an indicator for whether students selected their choices using help from their family, teachers, friends or other sources. Column 6 adds indicators for sources students report as being the *most* helpful in their school choice decisions. None of the coefficients on any of the sources of assistance in Columns 4-7 are significant. This analysis suggests that being helped with the school selection process (and the identity of individuals who help) does not appear to be correlated with students' selection

decisions.

Table A.1: Summary Statistics for Surveyed Schools

| <i>School Characteristics</i> | Sample Means | | | Differences versus non-sample schools | | Differences between |
|---|--------------|-----------------------|----------------------|---------------------------------------|----------------------|----------------------------------|
| | All (1) | Initial Sample (2) | Survey Sample (3) | Initial Sample (4) | Survey Sample (5) | Refusers and Replacements (6) |
| Public | 0.806 | 0.800 | 0.850 | -0.007 (0.043) | 0.052 (0.043) | 0.217* (0.115) |
| Mixed sex | 0.905 | 0.930 | 0.920 | 0.029 (0.032) | 0.017 (0.032) | -0.043 (0.094) |
| Males only | 0.037 | 0.030 | 0.040 | -0.009 (0.021) | 0.003 (0.021) | 0.043 (0.043) |
| Females only | 0.057 | 0.040 | 0.040 | -0.021 (0.025) | -0.021 (0.025) | 0.000 (0.085) |
| Technical or vocational institute | 0.121 | 0.120 | 0.110 | -0.001 (0.036) | -0.013 (0.036) | -0.043 (0.108) |
| Boarding facilities ^a | 0.538 | 0.444 | 0.475 | -0.111** (0.054) | -0.075 (0.055) | 0.130 (0.149) |
| Number of programs | 4.306 | 4.190 | 4.600 | -0.137 (0.180) | 0.348* (0.180) | 1.783*** (0.390) |
| Number of vacancies | 366.225 | 370.590 | 389.190 | 5.167 (18.496) | 27.186 (18.466) | 80.870 (54.548) |
| Historically prestigious ^b | 0.056 | 0.042 | 0.082 | -0.017 (0.026) | 0.031 (0.026) | 0.182** (0.088) |
| Category A school ^b | 0.103 | 0.074 | 0.082 | -0.034 (0.034) | -0.024 (0.034) | 0.032 (0.118) |
| Median score of admitted students (2009) ^b | 304.752 | 300.765 | 307.225 | -4.740 (4.761) | 2.946 (4.743) | 28.482** (13.714) |
| SSCE English pass rate (2008) ^c | 81.805 | 81.670 | 83.425 | -0.160 (2.397) | 1.948 (2.338) | 7.759 (5.042) |
| SSCE Math pass rate (2008) ^c | 50.898 | 48.219 | 46.823 | -3.183 (3.311) | -4.898 (3.227) | -8.739 (9.785) |
| <i>N</i> | 644 | 100 | 100 | 644 | 644 | 46 |

Notes: Columns (1) to (3) display mean statistics for (1) all 644 schools in the sample frame, (2) the initial sample of 100 schools, (3) the eventual sample of 100 surveyed schools. Data on some variables are only available for subset of schools: ^a $N = 632$, ^b $N = 604$, ^c $N = 512$. Column (4) presents results from a t-test of characteristics of schools in the initial sample and remaining schools. Column (5) presents results from a t-test of characteristics of schools in the surveyed sample and remaining schools. Column (6) presents results from a t-test of characteristics of the 23 schools that declined to participate compared to those of their 23 replacements. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table A.2: Robustness Checks: Excluding Schools from Replacement Sample

| | Expected BECE Scores (1) | (2) | Expected BECE Scores (3) | Expected Selectivity (4) | Selectivity of SHS (5) | Selectivity of SHS (6) |
|---------------------------------------|-----------------------------|---------------------|-----------------------------|-----------------------------|---------------------------|---------------------------|
| Actual BECE score | 0.241 (0.018)*** | 0.230 (0.020)*** | 0.098 (0.015)*** | 0.087 (0.017)*** | 3.784 (0.110)*** | 3.378 (0.124)*** |
| Expected BECE score | | | 0.235 (0.026)*** | 0.258 (0.029)*** | 0.199 (0.125) | 0.300 (0.128)** |
| Knew mock exam score and rank | 0.417 (0.133)*** | 0.406 (0.156)** | -0.236 (0.144) | -0.125 (0.158) | 4.272 (1.119)*** | 3.854 (1.209)*** |
| JHS provided list of all sec. schools | 0.053 (0.139) | 0.084 (0.161) | 0.075 (0.172) | 0.007 (0.188) | -0.502 (1.131) | -0.012 (1.230) |
| High income (self-reported) | -0.184 (0.224) | 0.131 (0.250) | -0.125 (0.259) | -0.174 (0.277) | -2.635 (1.954) | -1.042 (2.138) |
| Low income (self-reported) | 0.362 (0.156)** | 0.318 (0.184)* | -0.306 (0.181)* | -0.325 (0.192)* | -5.286 (1.163)*** | -4.326 (1.240)*** |
| Attended public JHS | -0.220 (0.133) | -0.236 (0.148) | -0.204 (0.160) | -0.187 (0.170) | -9.653 (1.361)*** | -8.475 (1.502)*** |
| Father completed secondary | 0.285 (0.133)** | 0.256 (0.152)* | 0.018 (0.167) | 0.014 (0.177) | 0.084 (1.219) | -1.673 (1.307) |
| Mother completed secondary | -0.215 (0.129)* | -0.217 (0.157) | -0.106 (0.182) | -0.202 (0.202) | 3.764 (1.465)** | 2.740 (1.597)* |
| Male | -0.286 (0.139)** | -0.341 (0.160)** | -0.395 (0.201)* | -0.303 (0.222) | -0.960 (1.088) | 2.264 (1.178)* |
| Sibling attended SHS | 0.098 (0.126) | 0.064 (0.146) | -0.245 (0.162) | -0.258 (0.177) | 1.552 (1.136) | 2.127 (1.227)* |
| Exclude Replacement Schools | No | Yes | No | Yes | No | Yes |
| R^2 | 0.260 | 0.240 | 0.269 | 0.265 | 0.444 | 0.396 |
| N | 4008 | 3136 | 3601 | 2842 | 3905 | 3064 |
| Mean Outcome | 25.945 | 25.778 | 22.230 | 22.080 | 307.733 | 301.760 |

Notes: Regressions in Columns (1) to (4) contain school fixed effects. *p<0.1, **p<0.05, ***p<0.01.

Table A.3: Robustness Checks: Alternative Information from Mock Exam

| | Expected BECE Scores (1) | (2) | Expected Selectivity (3) | (4) | Selectivity of SHS (5) | (6) |
|---------------------------------------|-----------------------------|---------------------|-----------------------------|---------------------|---------------------------|----------------------|
| Actual BECE score | 0.241 (0.018)*** | 0.242 (0.017)*** | 0.098 (0.015)*** | 0.096 (0.015)*** | 3.784 (0.110)*** | 3.818 (0.110)*** |
| Expected BECE score | | | 0.235 (0.026)*** | 0.233 (0.027)*** | 0.199 (0.125) | 0.211 (0.125)* |
| Knew mock exam score and rank | 0.417 (0.133)*** | | -0.236 (0.144) | | 4.272 (1.119)*** | |
| Took graded mock exam before BECE | | 0.536 (0.201)*** | | 0.127 (0.202) | | 3.343 (1.319)** |
| JHS provided list of all sec. schools | 0.053 (0.139) | 0.051 (0.138) | 0.075 (0.172) | 0.060 (0.171) | -0.502 (1.131) | -0.477 (1.134) |
| High income (self-reported) | -0.184 (0.224) | -0.175 (0.222) | -0.125 (0.259) | -0.114 (0.257) | -2.635 (1.954) | -2.633 (1.957) |
| Low income (self-reported) | 0.362 (0.156)** | 0.382 (0.159)** | -0.306 (0.181)* | -0.294 (0.182) | -5.286 (1.163)*** | -5.216 (1.165)*** |
| Attended public JHS | -0.220 (0.133) | -0.224 (0.135) | -0.204 (0.160) | -0.188 (0.160) | -9.653 (1.361)*** | -9.813 (1.363)*** |
| Father completed secondary | 0.285 (0.133)** | 0.294 (0.132)** | 0.018 (0.167) | 0.002 (0.167) | 0.084 (1.219) | 0.260 (1.221) |
| Mother completed secondary | -0.215 (0.129)* | -0.208 (0.128) | -0.106 (0.182) | -0.109 (0.183) | 3.764 (1.465)** | 3.898 (1.466)*** |
| Male | -0.286 (0.139)** | -0.292 (0.138)** | -0.395 (0.201)* | -0.399 (0.202)* | -0.960 (1.088) | -0.988 (1.089) |
| Sibling attended SHS | 0.098 (0.126) | 0.094 (0.127) | -0.245 (0.162) | -0.240 (0.164) | 1.552 (1.136) | 1.487 (1.137) |
| R^2 | 0.260 | 0.260 | 0.269 | 0.269 | 0.444 | 0.443 |
| N | 4008 | 4008 | 3601 | 3601 | 3905 | 3905 |
| Mean Outcome | 25.945 | 25.945 | 22.230 | 22.230 | 307.733 | 307.733 |

Notes: Regressions in Columns (1) to (4) contain school fixed effects. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table A.4: Predictors of Expected Selectivity of Chosen Schools

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
|--|---------------------|---------------------|-------------------|---------------------|-------------------|---------------------|-------------------|
| Actual BECE score | 0.098 (0.015)*** | 0.098 (0.015)*** | | 0.099 (0.015)*** | | 0.098 (0.015)*** | |
| Expected BECE score | 0.235 (0.026)*** | 0.235 (0.026)*** | | 0.235 (0.027)*** | | 0.235 (0.026)*** | |
| Low income (self-reported) | -0.306 (0.181)* | -0.314 (0.181)* | | -0.305 (0.181)* | | -0.305 (0.181)* | |
| Chose secondary schools without any help | | 0.149 (0.163) | -0.009 (0.177) | | | | |
| Chose with parents | | | | 0.018 (0.155) | 0.193 (0.163) | -0.040 (0.205) | 0.026 (0.219) |
| Chose with sibling | | | | -0.073 (0.204) | 0.045 (0.210) | -0.004 (0.270) | -0.019 (0.303) |
| Chose with other family member | | | | 0.253 (0.340) | 0.216 (0.375) | -0.291 (0.549) | -0.252 (0.626) |
| Chose with friends | | | | 0.279 (0.359) | 0.168 (0.376) | 0.117 (0.875) | -0.160 (0.840) |
| Chose with head teacher | | | | 0.126 (0.157) | 0.221 (0.170) | -0.115 (0.291) | -0.088 (0.304) |
| Chose with some other teacher | | | | -0.195 (0.180) | -0.155 (0.190) | -0.112 (0.304) | -0.130 (0.313) |
| Chose with someone else | | | | -0.790 (0.584) | -0.460 (0.617) | -0.437 (0.672) | -0.501 (0.731) |
| R^2 | 0.269 | 0.270 | 0.210 | 0.270 | 0.211 | 0.270 | 0.210 |
| N | 3601 | 3601 | 3667 | 3601 | 3667 | 3601 | 3667 |
| Mean Outcome | 22.230 | 22.230 | 22.214 | 22.230 | 22.214 | 22.230 | 22.214 |

Notes: Table displays results from an OLS regression with the average expected admission score at a student's chosen schools as the dependent variable. Regressions contain school fixed effects. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

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