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Imperfect Information and School Choice in Ghana

In brief

- Ghana has a centralised application system for secondary school admission based on merit. However, students from less privileged backgrounds tend to apply to less selective schools than wealthier students. Access to information is potentially an important determinant of school choices and admission outcomes.

- This study attempts to identifies and anlayses how information influences school choice by students in Ghana. The authors test the hypotheses that students from lower backgrounds attend less selective secondary schools as a) they have less information regarding admission chances b) they subsequently apply to less selective secondary schools, and c) they place equally as much value on academic performance.

- Key research findings:
  - Students tend to overestimate their exam performance.
  - Less-privileged students are less able to accurately predict their exam performance.
  - Expectations about student performance predicts their SHS application behaviour.
  - Less-privileged students tend to apply to low performing secondary schools.
  - The CSSPS is not achieving efficient school placement.

- Hence, the authors suggest a number of policy recommendations:
  - All students should continue to take a mock BECE exam, and results should be provided to students before they select their secondary school choices.
  - Students should be provided with a list of schools and the previous year's cutoff scores for courses in each school when making their SHS and course choices.
  - Stakeholders should collaborate to address the fact that financial barriers remain.
  - A regular survey should be implemented to gain information about students' choices and to track their progress through the secondary school system.

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Motivation

Ghana, like many other countries across the world, has a centralised application system for admission to secondary school based on merit. Merit-based systems provide an opportunity for high-achieving students to attend the best schools in the country, irrespective of their families' economic background. Such systems may be especially important in reducing inequality in settings with large variation in household income and school quality. However, this appears not be happening in Ghana, since students from less privileged backgrounds still tend to apply to less selective schools than their wealthier counterparts. In Ghana, students who complete Junior High School (JHS) can rank up to six Senior High Schools (SHS) choices and are admitted based on their performance on the Basic Education Certificate Examination (BECE). Students must also select one programme of study in each school (such as General Arts, General Science, Visual Arts, Business, Vocational and Technical Studies) but can change the programme for their different school choices. The admission process is administered through the Computerised School Selection and Placement System (CSSPS), which was introduced in 2005.

Access to information is potentially an important determinant of the school choices and admission outcomes, especially since students are required to select a limited number of secondary schools in order of preference, before they sit the BECE. As such, students enter into the school selection process with incomplete information about their performance and their likelihood of gaining admission into any of their chosen schools. 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. This observation potentially reflects a source of inefficiency in the school selection and placement system if there are talented or motivated students from underprivileged backgrounds who are failing to obtain a high quality education.

Summary of the Research

This study identifies and analyses how information influences school choice by students in Ghana. It explores why less- privileged students do not apply more aggressively and, in particular, whether a lack of information is responsible for this disparity. To this end, the study tests the hypotheses 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
3. They place equally as much value on academic performance

A survey of 4,098 first year (SHS form 1) students from 100 randomly selected senior high schools in all ten regions of the country (based on each region's representation in the aggregate population of high school students in Ghana) is conducted for this study.

The survey asks students to provide information on the following factors:

1. Their expected exam scores when they were applying to secondary school
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 gaining admission).

Detailed information from survey data are then used to:

1. Examine how well students estimate their own performance by determining how expectations compare with realized exam performance (i.e. objectively quantifying students' levels of uncertainty) and how the levels of uncertainly vary (e.g. by student ability, gender, or family background).
2. Determine how much of the mismatch between student ability and the selectivity of chosen schools is due to preferences, poor decision-making, and unrealistic expectations. Thus, the research evaluates whether student choices and behaviour are consistent with expected exam performance and subjective probabilities of admission, whether confidence bounds correlate with the levels of over- or underestimation of admission prospects, and whether the levels of uncertainty affect admission outcomes.

"The survey asks students to provide information on... their expected exam scores when applying...their subjective probabilities of getting placed...[and] a list of their pure preferences"

The analysis allows conclusions to be drawn 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.

Audience

The key decision makers for this policy brief are Ghana Ministry of Education, Ghana Education Service, and the CSSPS Secretariat. The brief is also relevant to heads of Junior High Schools across the country who are interested in improving the placements of their BECE candidates in to high-performing Senior High Schools.

Policy Recommendations

1. The Ghana Education Service should continue to ensure that all students (particularly those in public schools) take a mock BECE exam, which should be marked (graded) and the results provided to students before they select their secondary school choices for the CSSPS.
2. In addition to providing a list of schools to students at the time of making their SHS and course choices, the CSSPS should give students information about the previous year's admission cutoff scores for the courses in each school.
3. Stakeholders should collaborate to address the fact that financial barriers remain a concern for students from low-income families.
4. A regular survey should be implemented alongside the school selection process 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. This could improve their ability to make choices that better align their academic potential and individual preferences with their secondary school opportunities. Ultimately, this could improve the effectiveness and efficiency of the CSSPS in placing students in schools that they end-up attending but, more importantly, high performing students will be able to attend high performing schools irrespective of economic status.

"About 80 per cent of the students expected a distinction although only 16 per cent actually got a distinction."

"Differences in expectations cannot account for differences in application behaviour between students from high and low income backgrounds."

Table 1: Key Messages and Summary of Research Findings	
Key Messages	**Summary**
Students tend to overestimate their exam performance	About 80 per cent of the students expected a distinction (i.e. aggregate 6-12) although only 16 per cent actually got a distinction. Yet, about 37 per cent of students were highly confident (at a 90 per cent level) about their expectations. Students with higher parental education are more likely to overestimate their performance. Contrary to the initial hypothesis, students from families with low (self-reported) income are more likely to be optimistic about their performance. Nonetheless, students from public junior high schools are relatively more conservative about their expectations.
Less-privileged students are less able to accurately predict their BECE performance	Only 10 per cent of students from low-income families and 38 per cent from publicly owned JHSs were able to accurately predict their BECE score compared to 62 per cent from private junior high schools. Larger deviations of expected from actual performance are more prevalent among students from public schools. Higher levels of father's education are associated with increased student confidence, while attending a public JHS is associated with lower student confidence.
Student expectations about their performance predicts their SHS application behaviour	High-performing students apply to schools with higher expected admission requirements. Students who expect to perform well also apply to schools with higher expected admission requirements. This is also supported by the fact that the majority of students consider academic performance to be the most importance factor in making their secondary school choices. Higher performing students and students with higher expected BECE scores are more likely to list academic performance as a factor influencing their choices. However, less-privileged students are more likely to list cost or distance as the most important factor.
Less-privileged students tend to apply to low performing secondary schools	Less-privileged students tend to apply to low performing secondary schools, even if they are high performing students and even when they expect to get a distinction. After controlling for student beliefs, students from less privileged family backgrounds still apply to less selective schools. This finding suggests that differences in expectations cannot account for differences in application behaviour between students from high and low income backgrounds.
The CSSPS is not achieving efficient school placement	Over 40 per cent of students were not currently attending the schools they were placed in for various reasons. 61 per cent of students were not satisfied with the schools they were placed in. 22 per cent of students were placed in a school they claim they did not choose, even though about 60 per cent were placed in their first, second, third or fourth choices. Low-income students are less likely to attend the school they were placed in.

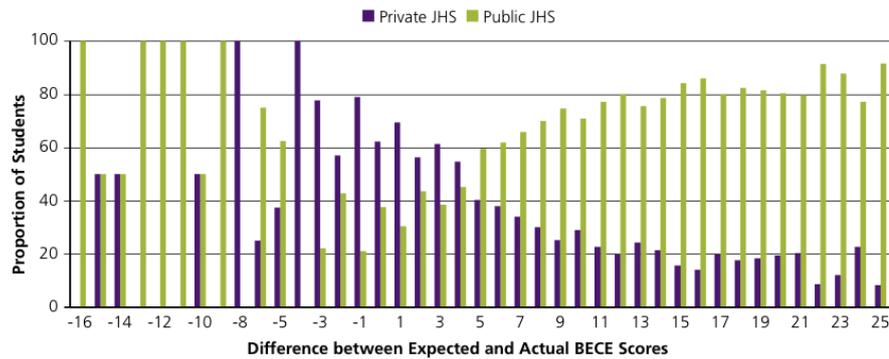*Exhibit 1: Students from public junior secondary schools are less able to accurately predict their BECE performance*

Figure 1: Distribution of Students' Expectation Errors by School Type

Exhibit 2: Academic Performance is considered the Most Important Factor when Selecting Secondary Schools

Figure 2: Most Important Factor Considered when Selecting Secondary Schools
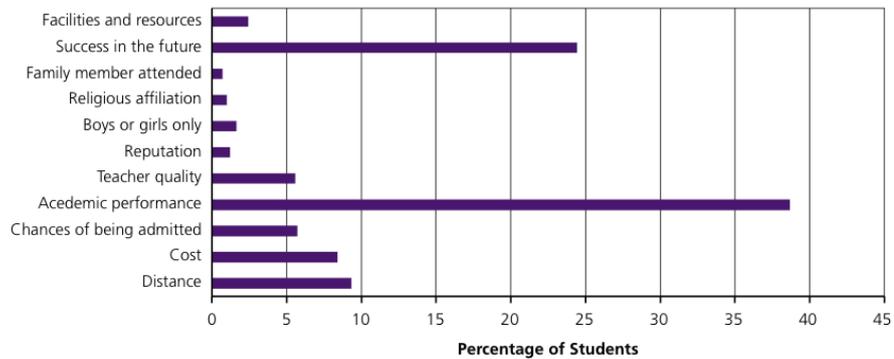
Figure 3: Close Half of Students are not Attending Schools they were Placed In

Did you attend the school you were placed in?	Overall	Public JHS	Private JHS
Yes	58.08	65.73	34.27
No, because I did not like it	17.22	65.79	34.21
No, because of medical reasons	1.88	72	28
No, because my family moved	5.94	75.53	24.47
No, because of another reason	16.87	75.48	24.52

Further Reading

Ajayi, K. F. (2012): "School Choice and Educational Mobility: Lessons from Secondary School Applications in Ghana" Working Paper

Hastings, J., and J. Weinstein (2008): "Information, School Choice, and Academic Achievement: Evidence from Two Experiments" Quarterly Journal of Economics, 123(4), 1373-1414

About the authors

Kehinde Ajayi is an Assistant Professor at Boston University, currently researching school choice, school quality, educational mobility.

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