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Report cards: Parental preferences, information and school choice in Haiti ☆

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ABSTRACT

This paper studies school choice and information frictions in Haiti. Through a randomized control trial, we assess the impact of disclosing school-level test score information on learning outcomes, prices, and market shares. We find evidence that in markets where information was disclosed, students attending private schools increased test scores. The results also suggest private schools with higher baseline test scores increased their market share as well as their fees when the disclosure policy is implemented. While prices and test scores were not significantly correlated in the baseline survey, they exhibited a significant and positive correlation in treatment markets after information disclosure. These results underscore the potential of information provision to enhance market efficiency and improve children's welfare in context such as Haiti.

1. Introduction

This paper studies how parents in rural Haiti make school choice decisions and analyzes the aggregate impact of information disclosure of school test scores on equilibrium market outcomes. We use a randomized control trial to study the aggregate policy effects of a feasible disclosure policy in the context of the poorest country in the Western Hemisphere, where education markets are highly unregulated and private schools have a large market share (World Bank Group, 2019).

First we measure student learning outcomes by administering tests in schools across multiple education markets in Haiti. Second, we collect survey data to examine how parents in these markets gather and filter information to make enrollment decisions that match their preferences and perceptions. Our descriptive analysis reveals that families value school academic quality as well as other inputs related to infrastructure and safety. Very poor families go to great lengths paying relatively large fees and walking long distances to attend schools they believe are better. However, we document that parents are also notably uninformed about school characteristics in the Haitian setting, consistent with evidence from other developed and developing country settings.

Providing information about alternative schools to individual families can be a cost effective way to increase learning outcomes by encouraging families to choose more effective schools. Small scale RCTs have provided evidence that information provision can indeed shift families individual school choices towards more effective schools in both developing and developed country settings and lead to increased learning outcomes for these students.[1] However, while information provision can shift individual family choices, it can also have equilibrium effects through the supply side reaction to changes in demand, as well as other potential mechanisms.[2]

To capture the aggregate effect of information provision in the Haitian context, in this paper we implement a market-level randomized controlled trial (RCT), disclosing school-level test score results in a subset of communities and not others. We use the change in available information to evaluate whether this new information leads to different choices by families, schools, and overall market-level outcomes. The

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[1] See for example Hastings and Weinstein (2008) for the US and Allende et al. (2019) for Chile, Ainsworth et al. (2023). The Literature Review section describes several other studies that find similar results.

[2] See Andrabi et al. (2017), and Allende et al. (2019) for equilibrium effects of demand and supply adjustments in schooling markets.

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design closely follows Andrabi et al. (2017), where information about schools was disclosed in a random subset of small villages in Pakistan.

We find evidence of large and significant effects of providing information on school learning outcomes. Our evidence suggests that student learning outcomes increased in treated markets, but only at private schools. High scoring public and private schools at baseline saw an increase in their market share and private schools with higher test scores increased their prices. This is consistent with information leading to an increase in demand at high scoring schools.

Our paper offers several contributions by looking at the poorest country in the Western Hemisphere. We collect and analyze novel data on parental preferences for better schools in a place where data was previously nonexistent and where household resources are extremely limited. Additionally, we examine the relationship between prices, school quality, and corresponding market shares in a setting where information on school quality is insufficient or absent. Our randomized controlled trial allows us to track school demand and supply and consequently assess the dynamics of the Haitian educational market.

We contribute to a growing body of evidence showing that information about school characteristics can change individual school choice decisions, close socioeconomic gaps in access to quality schooling and increase learning outcomes for individual families.[3] However, there is little RCT evidence of the aggregate policy effects of information and disclosure policy, which is a feasible and cost effective policy that could be implemented in both developed and developing countries. To our knowledge (Andrabi et al., 2017) is the only other study providing RCT evidence on the aggregate level effects of information provision in developing country. Their setting is the context of small villages in Pakistan that are in many ways very similar to education markets studied in Haiti. That study found that the supply side reaction at the market-level was the important driver of increased learning outcomes. The results in this study are consistent with this evidence, pointing to the importance of the equilibrium reaction of the supply side as a key driver of improvement when information is disclosed. One notable difference is that in this study, high scoring schools increased their market share and prices showing increased demand and a direct link to demand side sorting in addition to supply side adjustment. In general, our results corroborate the importance of the supply side as well as the potential benefits of this type of policy implemented at scale.

2. Literature review

In developing country context, urban education markets are typically characterized by a significant participation of affordable-private schooling options regardless of whether subsidies like vouchers are provided or not (Elacqua et al., 2018; The Economist, 2015). For market competition to drive improvements in academic achievement at the market level, it follows that parents need to demand school academic quality and that second, they can ascertain a school's quality.

Most literature on school choice and information provision policies has been limited to developed countries. In a paper about North Carolina's public education system, Hastings and Weinstein (2008) investigated how receiving information about schools increases the fraction of parents who choose to enroll their children in high-performing schools. Attending these higher-scoring schools also improved student test scores. School choice then reinforces greater academic achievement, although the impact, they noted, was greatest when schools were relatively close to students' homes and when parents were both informed and seeking quality education for their children. Newer evidence extends these results to show the provision of information on value added also has effects on school choice. For example Campos (2023) shows evidence that information about test score value added can shift school choice decisions in the context of Los Angeles. Ainsworth et al. (2023) shows similar evidence for a middle income country context where school choices also respond to information about value added.

The literature from developing countries has found generally consistent results where families care about a variety of things including academic quality but in general are uninformed and usually face a very heterogeneous set of alternatives. For example, Ajayi et al. (2020) documents that families in Ghana lack critical information about their school choice options and that information provision did not significantly improve outcomes for students. Allende et al. (2019) provide information about test scores to families of public PreK students in Chile through a randomized controlled trial. That study found effects of information on school choice decisions where parents moved towards elementary schools with higher average test scores, higher value added, and higher prices. Importantly these students later had higher learning outcomes five years later, thus replicating the results found from the literature in developed countries where the effects of providing metrics on student performance and school quality, can lead to increased learning outcomes.

With increasing evidence that parents in developing countries broadly prefer better and higher performing schools but are generally uniformed, we would expect that policies providing information would have aggregate effects that could differ from the results found in small scale RCTs like Allende et al. (2019) and Hastings and Weinstein (2008). Tanzania's implementation of a 2013 accountability program where objective metrics were shared with parents (Cilliers et al., 2020). In this instance, the government launched a program that would publish country and district-specific school rankings, finding evidence that suggests that accountability improved learning outcomes for the worst performing schools and suggesting that pressures resulting from new information may drive school improvement. Using a natural experiment in Brazil, Camargo et al. (2014) provide evidence that information provision policies can shift behavior. That study looked at how divulging test score information on Brazil's national secondary educational exam impacted school performance and composition. They found that test scores improved in private schools, and they attribute that to be likely because of market pressures (Camargo et al., 2014). In the context of Chile, Mizala and Urquiola (2013) show evidence that school academic achievement awards given by the government in Chile did not seem to correlate with higher demand from families while Allende (2022) and Cuesta et al. (2020) show evidence that test score report cards indeed shifted demand.

In a seminal paper examining Pakistani primary schools, Andrabi et al. (2017) studied the aggregate effects of information provision being the first to answer the question of equilibrium effects of information provision. The study found that when providing schools and parents with information on student achievement, test scores for low-performing schools improved and private school fees fell at expensive schools. Lacking the opportunity to randomize at scale (Allende et al., 2019) use a model to extrapolate from a successful small scale RCT to quantify the effects of implementing at scale and find congestion effects and increasing prices can dampen the effects of the at scale policy but in all simulations finds positive equilibrium policy effects on learning outcomes and lower SES gaps.

Our paper adds to this literature by examining the aggregate effects of test score information disclosure on rural Haitian communities. To the best of our knowledge, this RCT is the first of its kind to be attempted and successfully completed in the Americas and unique in providing information on school choice in Haiti.

3. Haiti and its educational context

Haiti's position as the poorest country in the Western hemisphere, understood in terms of gross domestic product (GDP) per capita, is reflected in its educational sector. Roadblocks to learning are prevalent

[3] See for example Campos (2023) and Hastings and Weinstein (2008).

and have persisted across decades. The past years have been equally, if not more, troubling with government changes and external shocks hampering educational investments and reifying systemic and structural inequalities.

The education system operates within a setting of absolute and relative poverty. According to the World Bank, the 2019 average GDP per capita for the country was approximately USD 754.6 dollars (World Bank Group, 2019). While this is a marked increase from the 1990s and early 2000s, this amount sits significantly below the regional average of approximately USD 8847.4 dollars for Latin America and the Caribbean (World Bank Group, 2019). Countries with comparable GDPs per capita are Burkina Faso, Chad, and the Gambia. The closest Latin American neighbor is Nicaragua whose GDP per capita is nearly three times greater. In other comprehensive metrics of development, Haiti fares no better.

Expected years of schooling remain low. The country's Human Development Index was 0.510, ranking it 170th globally and last in the Western hemisphere (United Nations Development Programme, 2019). Over the past three decades, Haiti's HDI has risen by less than a tenth. That growth is slightly greater when looking at the country's Education Index. The United Nations Development Programme reported that Haiti has gone from 0.189 in 1980 and 0.285 in 1990 to 0.445 (United Nations Development Programme, 2019). In absolute terms, however, that number translates to an expected 9.5 years of schooling, as opposed to an expected 5.1 years in 1980 and 7.0 years in 1990.

To address the slow increase in access, private schools have emerged as an alternative. These schools are operated largely by non-government employees and rely primarily on non-government funding to maintain their operations. Whereas a majority of countries in Latin America and the Caribbean see a higher proportion of public schools to private schools, often with double the number of public schools, Haiti is an anomaly. Alongside a few other developing countries, Haiti's school system is largely private (Elacqua et al., 2018).

Undoubtedly Haiti is an extreme and, in many ways, exceptional case, with high growth in the number of private schools (over 14,000) and limited supply of public schools (fewer than 3000) especially in rural areas. As shown in Fig. 6, since the 1960s, when the private sector took over as the leading provider of education, the number of private schools skyrocketed (Elacqua et al., 2018). This is acutely felt in rural areas where public schools are outmatched by private schools.

Over three of every four children attend private schools (USAID, 2018). This trend has been attributed to the government's inability to meet demand, both due to insufficient supply of classroom slots and perceived shortcomings in quality of instruction provided (The World Bank, 2017). Since the mid-twentieth century, most schools have been and continue to be private (Elacqua et al., 2018).[4] While public schools can accommodate for more children, they also lack necessary infrastructure and availability. Unsurprisingly, 90 percent of Haitian school buildings are not public, and the private sector now accounts for four out of every five primary schools (The World Bank, 2017).

This disparity is exacerbated by how little the school market is regulated, with private schools receiving subsidies from the government and donations from private benefactors, national and international non-profits, multilateral banks (the World Bank and the Inter-American Development Bank) and other entities that cover many costs.[5] The origins and amounts of school funding are often decentralized and inconsistent, and the school market as a whole operates in a policy context that is distinct from many others in Latin America. For instance, Chile similarly relies on private schools, but has a voucher system and supply-side subsidies that correspond with greater government oversight and regulation.

While private school growth predates external shocks, inequities have only worsened with the 2010 earthquake, which killed over 1000 teachers and staff from the Ministry of Education and Professional Training (The World Bank, 2017). In some areas, most schools faced either closure or destruction, with affected regions, namely in the West and Southeast, losing approximately 85 percent of schools (The World Bank, 2017). Coupled with the catastrophic earthquake, systemic and longstanding issues in the Haitian education market only became deeper and more widespread.[6]

In spite and in part due to pervasive poverty and inequality, many Haitian families have opted to send their children to schools neither run nor funded by the government. The situation worsens as one looks towards rural areas, which are predominantly poor and under-resourced yet contain the largest share of the population and corresponding primary schools. Although many parents cannot afford to send their children to school, it is simultaneously true that many private schools also lack the necessary space to enroll additional children given overwhelming parental demand. In other words, there are not enough schools, whether public or private.

Despite being the least developed country in the Western hemisphere, Haiti is a setting where school choice is the modus operandi. Parents have significant choice over where to send their children to school, even in disadvantaged and remote settings. The educational market is rife with these seeming contradictions, yet there remains an extraordinary and expected dearth of data on how it works. However, this paper seeks to fill some gaps in the literature, centering Haiti as a setting for inquiry given the conditions of poverty and scarce information under which parents must make important decisions.

4. A market level information intervention

This paper relies on a randomized controlled trial (RCT) designed specifically for Haiti and the country's education market and a baseline and endline survey are implemented to observe and assess the relationship between information on educational performance and school enrollment.

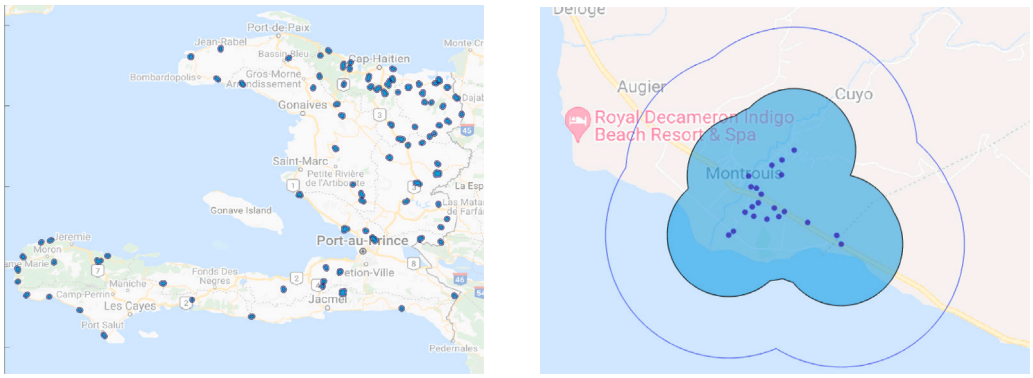
To ensure appropriate specifications for the RCT, we began by geographically dividing a map of rural Haiti into clusters of schools based on the definition of local educational markets. These education market clusters would be closed and unique school markets that would serve as a primary level of analysis.[7] To avoid spillover effects, there

[4] This is despite an estimated 15 percent of the Haitian government's annual budget in 2015 being spent on education (USAID, 2018). According to research conducted by the United States Agency for International Development (USAID), over 435 million dollars (USD) were spent annually on education and training through Haiti's Ministry of National Education and Professional Training, or le Ministere de Education Nationale et de la Formation Professionnelle or MENFP (USAID, 2018); however, the same USAID research notes that education spending has been obscured by accounting ambiguities, changes in sector-wide nomenclature (e.g., the term primary school versus fundamental education), and the presence of external loans and donations to fill deficits.

[5] To fill gaps, many international governmental and non-governmental donors have entered the market. One estimate suggests that over 200 national and international non-governmental organizations, including churches and foundations, have helped establish schools and funded the construction of facilities for teaching (USAID, 2018).

[6] Following the 2010 earthquake, the Haitian government adopted an operational plan that drew from previous attempts, including the National Plan for Education and Training, or le Plan National d'education et de Formation or PNEF, and the National Strategy for Education Action for All, or la Stratégie Nationale d'Action-Education Pour Tous or SNA-EPT; these attempts covered 1997 to 2007 and 2007 to 2015, respectively. By 2013, it became clear that the plan would find little more success than its predecessors. This is despite the adoption of the Universal, Free, and Obligation Education Program, or le Programme de Scolarisation Universelle Gratuite et Obligatoire or PSUGO, a campaign intended to guarantee education for all children and improve attendance. Among other reasons, organizational mismanagement, ineffective tax collection, and lackluster monitoring and follow-up all weakened the efficacy of the program.

[7] See Neilson (2014) for further discussion on defining and calculating urban education markets.



(a) Clusters in rural areas (b) Example cluster

Fig. 1. Informational intervention. Note: These figures show the geographical distribution of clusters in the rural areas of the country (left) and schools within a cluster (right).

Table 1
Baseline summary statistics.

	Mean	Median	SD	Obs.	Min.	Max.
Panel A. Cluster level						
Area (km^2, within 1 km buffer)	5.6	5.1	1.9	84	2.9	12.5
Avg. total fees	6800	3695	9919	84	796	54,860
Avg. total fees (no outliers)	5702	3613	8226	84	705	51,113
Avg. total fees (USD)	111.3	60.5	162.3	84	13.0	898
Avg. total fees (no outliers, USD)	93.3	59.1	134.6	84	11.5	836.5
Avg. test score 5th grade (std)	0.023	−0.039	0.52	84	−1.10	1.52
Number of schools	10.9	8	6.44	84	5	28
Number of students with tests	164.0	121	119.2	84	37	620
Panel B. School level						
Public schools						
Treatment	0.52	1	0.50	145	0	1
Total fees	4635.9	550	14,350.9	129	25	136,825
Total fees (no outliers)	3876.1	525	13,900.2	119	25	136,825
Total fees (USD)	75.9	9.00	234.9	129	0.41	2239
Total fees (no outliers, USD)	63.4	8.59	227.5	119	0.41	2239
Avg. test score 5th grade (std)	−0.16	−0.32	0.73	144	−1.53	1.99
Market size (N schools)	14.3	12	7.67	129	5	28
School market share (%)	14.8	12.9	10.4	128	0.90	54.5
Teacher experience (years)	9.57	9.57	3.62	120	1.50	20
Walls (%)	53.1	100	50.1	128	0	100
Water access (%)	76.0	100	42.9	129	0	100
Electricity (%)	25.6	0	43.8	129	0	100
Admission test (%)	46.1	0	50.0	128	0	100
Parent interview (%)	90.6	100	29.3	128	0	100
Private schools						
Treatment	0.49	0	0.50	618	0	1
Total fees	8446.9	3100	25,987.1	589	1	409,150
Total fees (no outliers)	7311.9	3200	19,093.8	551	1	337,600
Total fees (USD)	138.2	50.7	425.3	589	0.016	6696
Total fees (no outliers, USD)	119.7	52.4	312.5	551	0.016	5525
Avg. test score 5th grade (std)	0.045	−0.14	0.89	611	−2.07	2.81
Market size (N schools)	14.8	13	7.67	593	5	28
School market share (%)	11.1	8.04	9.86	584	0	70.3
Teacher experience (years)	8.30	7.86	3.82	548	1.50	20.5
Walls (%)	60.9	100	48.8	585	0	100
Water access (%)	81.7	100	38.7	590	0	100
Electricity (%)	28.7	0	45.3	585	0	100
Admission test (%)	47.0	0	50.0	585	0	100
Parent interview (%)	88.4	100	32.1	585	0	100

Note: This table shows baseline summary statistics for the variables used in the different analyses throughout the paper. Panel A shows statistics at the cluster level, and Panel B shows statistics at the school level, differentiating by public or private schools.

were several conditions that an area had to meet to be categorized as a cluster and subsequently fulfill the eligibility criteria for inclusion in the RCT. Each market had to have at least one primary school. All schools had to be within a one-kilometer radius, with all being further than two kilometers from the nearest adjacent cluster. Fig. 1 shows the local markets across Haiti in the left panel and the right panel provides an example of a cluster or a market.

This mapping exercise produced 84 education market clusters, of which 42 were randomly assigned to the treatment group and 42 were assigned to the control group. There were 763 schools in total included at the time the intervention was performed, with 378 schools assigned to the treatment group and 385 schools assigned to the control group. Within each cluster, there was an average of approximately 11 schools while the median number of schools was 8. The cluster with the most

Fig. 2. Information provided in the report card. Note: This figure shows a conceptual rendition of the report card information provided to parents in the treatment group markets. This report card included a map and a list of schools and their ranking expressed as stars. An exact replica is presented in the Appendix.

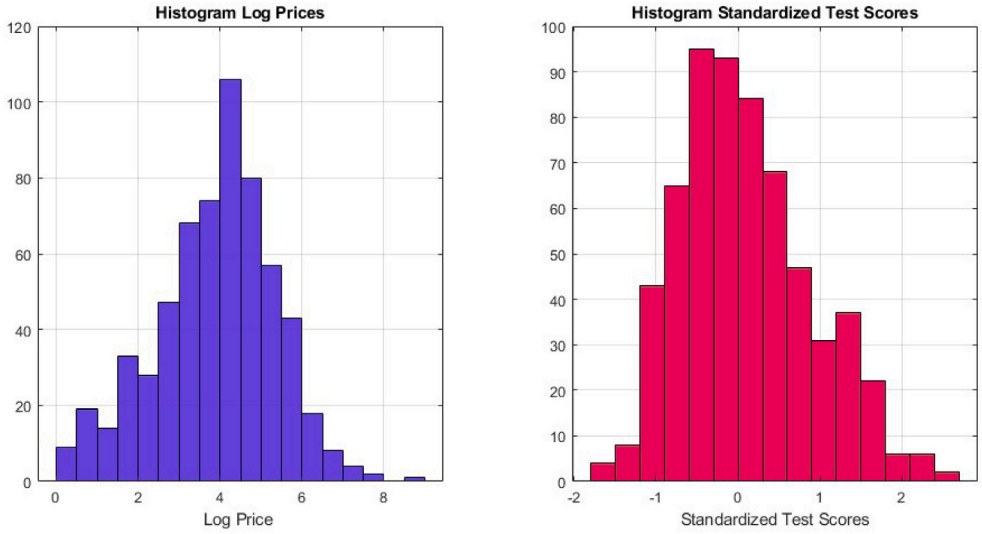


Fig. 3. Distribution of test scores and prices. Note: This figure shows a histogram of log school fees (left panel) and median school test scores (right panel). Data comes from the baseline school survey and tests.

schools had 28 in total, while the cluster with the smallest number of schools had 5. The mean cluster size was slightly under kilometers squared while the median cluster size was slightly over 6 km squared, with the largest cluster being over 12.5 km squared and the smallest being under 3 km squared.

4.1. Baseline data

Prior to the intervention, we conducted a baseline assessment that began in 2017 and ended in early 2018. This assessment contained three distinct components: a standardized national examination designed for students in their fourth-year of instruction, a survey for parents of students in the sampled schools, and a survey of principals and directors of the sampled schools.[8] This examination evaluates three subjects considered relevant to the education of students in Haiti: Mathematics, French, and Creole. The performance for a school was consequently considered the average student performance on the assessment, with equal consideration for each student and subject. As logistical circumstances warranted, while the examination was intended and constructed for fourth-year students, it was conducted for our purposes with fifth-year students instead; the same iteration of the examination was used for the endline assessment to mirror the baseline procedure and ensure comparability across the results obtained.

The data collected from the baseline assessment includes the test scores of 13,779 fifth-grade students from across 755 schools. However, it should be noted that information from 8 of the original 763 sampled schools could not be recovered.[9]

[8] We received approval to use the standardized national examination created by the Haitian Ministry of National Education and Professional Training (MENFP). It was created in consultation with the International Association for the Evaluation of Educational Achievement (IEA) and with assistance from the Haitian Institute of Development in Scientific Education (IHFOSED) with funding from the Inter-American Development Bank.

[9] See fieldwork memo for more details.

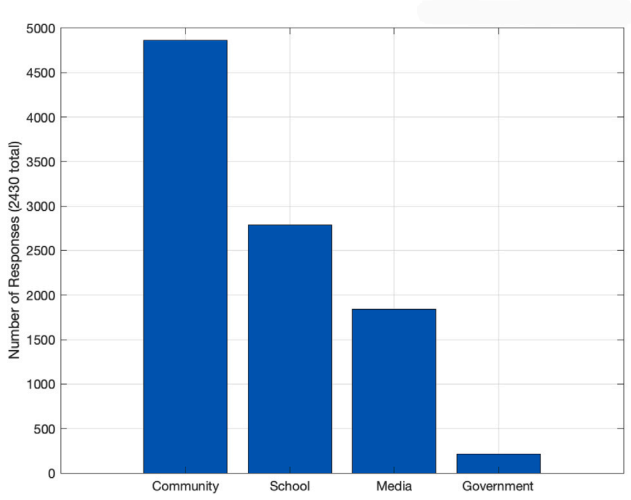


Fig. 4. Parent information sources about schools. Note: This figure shows the distribution of responses to the question "In general, parents/legal guardians obtain information about schools through various means. What sources did you use to inform yourself about the schools?".

Concurrent to the national examination, surveys were conducted with parents as well as directors or other figureheads from sampled schools. The data collected from the baseline surveys was for 722 schools. For each school in the survey sample, we spoke with at least one director or equivalent administrator as well as at least three parents. Questions asked pertained to thoughts and communication around school performance, the quality of instruction and facilities, and factors that may be weighed in enrollment decision-making. The parental survey contained questions about how parents collected information regarding school quality prior to search and enrollment. The director survey contained questions about school-specific characteristics such as address and religious or communal affiliation of the institution. From the directors' responses, we collected information on, among other things, fees parents should anticipate and school infrastructure (e.g., electricity, water access, libraries).

Several variables needed correction due to measurement and documentation errors. Most vitally, we constructed a measurement of total fees charged by the school by summing the following information, as provided by the school directors: general fees and fees for admission and enrollment; tuition; expenses for uniforms, sportswear, and extracurricular or miscellaneous activities; and costs incurred for food and student transportation. The resulting sum was multiplied by the appropriate frequency with which these costs were incurred or expected for each school. Fewer than a dozen schools either had their information corrected or omitted altogether for these reasons. For both private and public schools, the distributions of total fees, standardized test scores, and other characteristics from the baseline can be found in Section 5 under Table 1.

4.2. The information intervention

Following the end of the baseline surveys, the RCT was launched. The treatment was given in the assigned clusters. It came in the form of three nudges: more objective and traditional metrics of school performance, workshops with parents of first-year students, and conversations with school directors or other administrators. The metrics on school performance were presented in the form of score cards, which were tested in small pilot settings prior to ensure they were comprehensible for parents with low levels of literacy. These score cards named and ranked schools within a given cluster along with a map of the cluster delineating where corresponding schools were located. Based on the average student test performance in the baseline assessment, a school received between one and five stars. Three stars represented the mean, and each star above or below represented one standard deviation. The price of a school was presented alongside the school's name, ranking, and test performance. Fig. 2 shows an example scorecard.

For the group receiving the treatment, we held scripted workshops in Creole for each school's parents to present information. We focused on parents with children in their first year as these parents had recently enrolled, considered, and/or were in the process of learning about and testing schools. If the school had more than 15 parents in a school's class year, we selected 15 to 20 parents at random. If there were fewer than 15 parents in a class year for a given school, we invited all parents. Although the school principal or administrator introduced and closed the workshop, most of the workshop was held without the presence of school officials to guarantee that parents could speak freely about the schools their children attend or would prospectively attend as well as their perceptions of the quality of the instruction and facilities provided. While a workshop was occurring, the principal or administrator was interviewed regarding the management, operations, and pedagogy of the school.[10]

The workshops with parents proceeded in relatively similar fashions across clusters. They began with a general group discussion on what determines and characterizes good students. Following this discussion, the score cards were presented. Following the presentation of scorecards, we presented rates of teacher absenteeism in the school, explaining the link between test scores and teacher presence. Moreover, scores were also publicly displayed on the main roads within the 42 treated clusters for a more widespread dissemination.

Parents were then encouraged to use the information on both test scores and teacher absenteeism in future conversations, including with school directors and administrators. Specifically, parents were prompted to select three representatives amongst themselves to organize a meeting with the school director and contact all parents to inform them of the location and time of the gathering. These meetings had the intention of empowering parents in their conversations with directors as they seek to improve the quality of instruction provided and, in turn, student outcomes. The combination of new information and the collective nature of this effort would provide parents with greater bargaining power and voice in approaching directors than if they were to speak as individuals without support or a frame of reference.

In most instances, the interviews with school directors or administrators were carried out using scripts that were then tailored to each school and cluster as well as the scorecards and record on teacher absenteeism. Depending on the version used, the script would describe the relative performance, relative price, or both compared to the average schools within the cluster. A script was employed for all school director or administrator interviews in the treated clusters. The information on performance or price provided to directors or administrators was consistent with the information provided to parents.

4.3. Endline data

In February 2019, approximately a year after the completion of the baseline surveys and the rollout of the intervention, an endline assessment was conducted. Like with the baseline assessment, the endline assessment sought to capture educational outcomes for sampled students as well as parents and school directors' perceptions regarding school quality. To mirror earlier procedure, the endline assessment equivalently consisted of the national assessment for fifth-year students as well as surveys for parents and school directors.

[10] 90 percent of principal interviews were conducted with either the school director or the pedagogical director. Large schools tend to have both. The remaining 10 percent of interviews were conducted with a school founder, owner, or teacher.

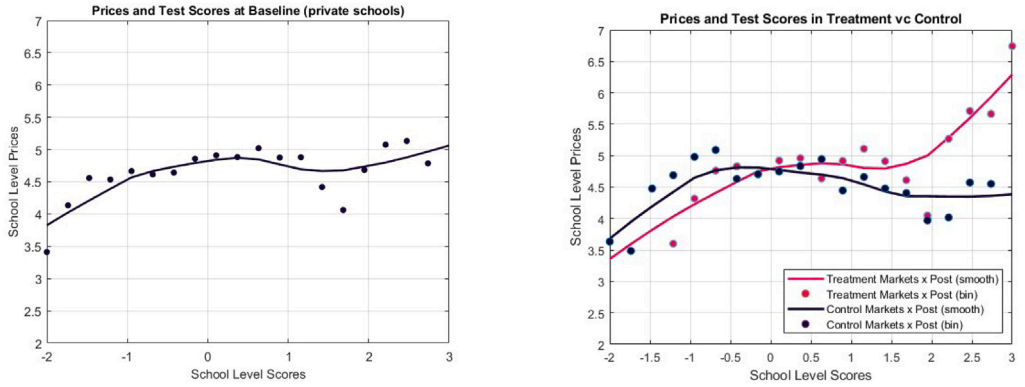


Fig. 5. Disclosure and the correlation between test scores and prices. Note: The figures show a scatterplot calculated using the median price reported at each school on the *y*-axis and the median school test score on the *x*-axis. The continuous lines are local moving averages. This analysis is at the school level.

The endline dataset for test scores contained 12,916 fifth-year students. Of the original 755 sampled schools at the baseline period, we could only recover and analyze results from 587 schools, with the addition of 7 schools for which we only have endline data for a total of 594 schools. Due to varied considerations, namely school closure or attrition, 168 schools were thus omitted from the endline assessment. There are no significant differences, however, in the variables of interest.[11]

The concurrent surveys for school directors were the same as those for the baseline. We asked questions pertinent to the schools' daily management and facilities, financial operations, pedagogies, and affiliations. The answers provided to these questions could then be compared to the responses from the initial rounds of the baseline assessment. Analogous to the attrition documented in the dataset of test scores, there was a conspicuous dip in the number of schools contained in this dataset. While the attrition itself was expected due to school closures, non-communication from certain schools, and the broader volatility of the educational market, which schools in question would not be included in the endline assessment could not be predicted with the same assurance. To that end, of the original 722 schools sampled, only 516 schools remained and contributed endline information to the school director datasets.[12] Balance tables in the Appendix, both for the test scores and the surveys to principals show that there are no significant differences between the schools that stayed in the study and those who did not, and we also provide evidence that there is no significant impact of treatment on attrition.

Upon merging the baseline and endline assessments' data (data used in the subsequent sections), we were also able to correct for outliers, specially on self reported data of fees. This entailed identifying schools where the percentage difference between the total fees calculated from the baseline and endline assessments' data was below the 5th percentile or over the 95th percentile. A summary of the endline data for clusters, schools and test scores can be found in Table 2.

It is important to note that we do not have parents' surveys after the intervention. We only have information from parents at the baseline period.

5. Survey descriptive statistics of schools and families

5.1. Descriptive statistics of schools in Haiti

The baseline assessments provided important information from which descriptive observations can be drawn. These were divided between public and private schools, recognizing that approximately half of each group of schools would eventually receive the information provision.

Intuitively, public schools appear cheaper than their private alternatives. For public schools, we calculated an average annual total fee of 75.9 dollars (USD) as opposed to 138.2 dollars (USD) for private schools. Without the aforementioned outliers, the mean total fees for both drop, but the mean total fees for private schools remains almost double the amount paid for public schools (see Fig. 3).

Private schools individually have a smaller share of their market. Private schools captured on average 11.1 percent of their respective clusters' markets, while public schools captured on average 14.8 percent. There are many more private schools than public schools so that in the aggregate the private share in is 75%.

In terms of infrastructure, the survey data indicate that private schools fare better. Whereas 60.9 percent of private schools have walls for security, approximately only half of public schools do, too. Similar pictures emerge with basic utilities. Slightly over three-quarters of public schools have access to water and a fourth have electricity. Conversely, in the private schools sampled, over fourth–fifths have access to water and over a quarter have electricity.

To enroll their children, 90.6 percent of parents in public schools and 88.4 percent in private schools had to go through an interview with a school director or administrator. While 46.1 percent of children eventually enrolled in public schools had to take an entrance exam, 47.0 percent of children who would later attend private schools had to complete an entrance examination. We did not evaluate the difficulty or length of these exams.

Tables A.3 and A.4 in the Appendix show pre-treatment balance tables, at the school level and at the student level to weigh school descriptive statistics based on enrollment. Schools in the treatment group had a slightly higher level of average fees, at a 90 percent significance level, and weighted by enrollment, they have higher percentage of schools that use parent interviews for admissions. Controlling for other variables of interest, there is no significant difference at the baseline between control and treatment groups.

For the endline, we were able to collect similar pieces of information as in the baseline. The average annual total fees for public schools and private schools were 132.0 dollars (USD) and 159.1 dollars (USD), respectively. Excluding outliers, those amounts change to 65.6 dollars (USD) and 153.3 dollars (USD). These numbers show an important decrease for the public sector, and a slight decrease for the private sector. Moreover, the infrastructure of public schools did not appear to improve greatly over the years. Both the percentages of public schools with walls and with water access stayed similar, with only 56.8 percent having walls and 77.8 percent having access to water. The percentage of public schools with electricity also remained similar with 29.8 percent. For private schools, the improvements made to facilities were clearer. There was a notable rise in the percentage of schools

[11] See Tables A.1 and A.2 in the Appendix.
[12] See fieldwork memo for more information.

Table 2
Endline summary statistics.

	Mean	Median	SD	Obs	Min	Max
Panel A. Cluster level						
Area (km^2, within 1 km buffer)	5.6	5.1	1.9	84	2.9	12.5
Avg. total fees	8267.7	5150	11,375.5	79	100	91,788.5
Avg. total fees (no outliers)	6798.7	5168.8	5785.3	78	275	30,804.2
Avg. total fees (USD)	143.5	84.4	187.4	79	1.64	1502.3
Avg. total fees (no outliers, USD)	119.6	84.6	97.3	78	9.00	504.2
Avg. test score 5th grade (std)	−0.024	−0.075	0.53	84	−1.30	1.59
Number of schools	10.9	8	6.44	84	5	28
Number of students with tests	153.8	103.5	154.9	84	15	938
Panel B. School level						
Public schools						
Treatment	0.52	1	0.50	145	0	1
Total fees	6623.1	350	35,696.0	95	0	345,680
Total fees (no outliers)	3204.9	350	6481.4	85	0	41,900
Total fees (USD)	132.0	11.3	643.0	78	0.82	5657.6
Total fees (no outliers, USD)	65.6	11.3	115.0	68	0.82	685.8
Avg. test score 5th grade (std)	−0.20	−0.29	0.75	110	−1.71	1.88
Market size (N schools)	14.4	13	7.79	95	5	28
School market share (%)	18.4	14.4	13.8	93	1.48	70.3
Teacher experience (years)	10.4	9.70	4.13	72	1.50	22.8
Walls (%)	56.8	100	49.8	95	0	100
Water access (%)	77.8	100	41.9	72	0	100
Electricity (%)	29.8	0	46.0	94	0	100
Admission test (%)	50.5	100	50.3	95	0	100
Parent interview (%)	87.4	100	33.4	95	0	100
Private schools						
Treatment	0.49	0	0.50	618	0	1
Total fees	9349.3	5625	14,765.4	421	0	176,800
Total fees (no outliers)	8974.3	5800	12,172.6	383	0	156,125
Total fees (USD)	159.1	98.2	244.4	405	0.41	2893.6
Total fees (no outliers, USD)	153.3	100.7	201.1	367	0.41	2555.2
Avg. test score 5th grade (std)	0.013	−0.076	0.84	484	−1.93	2.54
Market size (N schools)	14.7	13	7.67	421	5	28
School market share (%)	15.0	9.58	15.1	412	0.94	100
Teacher experience (years)	8.62	7.50	4.11	321	1.50	25
Walls (%)	70.4	100	45.7	419	0	100
Water access (%)	85.8	100	35.0	345	0	100
Electricity (%)	34.8	0	47.7	420	0	100
Admission test (%)	62.8	100	48.4	417	0	100
Parent interview (%)	87.8	100	32.8	418	0	100

Note: This table shows endline summary statistics for the variables used in the different analyses throughout the paper. Panel A shows statistics at the cluster level, and Panel B shows statistics at the school level, differentiating by public or private schools.

Table 3
Parents descriptives.

Educational level	N	%	Private schools		Public schools	
			N	%	N	%
None	298	18.52	240	18.32	58	19.40
Incomplete primary	466	28.96	371	28.32	95	31.77
Complete primary	228	14.17	189	14.43	39	13.04
Incomplete secondary	434	26.97	367	28.02	67	22.41
Complete secondary	87	5.41	66	5.04	21	7.02
Incomplete professional Training	9	0.56	9	0.69	0	0
Complete professional Training	16	0.99	14	1.07	2	0.67
Incomplete university	28	1.74	25	1.91	3	1.00
Complete university	43	2.67	29	2.21	14	4.68
Monthly income	Gourdes	USD	Gourdes	USD	Gourdes	USD
Mean	5120	83.81	5207	85.22	4728	77.39
Min	0	0	0	0	0	0
P10	50	0.82	10	0.16	250	4.09
P25	1000	16.37	1000	16.37	1000	16.37
Median	2500	40.92	2500	40.92	2000	32.73
P75	5000	81.83	5000	81.83	5000	81.83
P90	10,000	163.67	10,500	171.84	10,000	163.67
Max	100,000	1636.66	100,000	1636.66	100,000	1636.66
Age (average)	38.80		38.81		39.75	
Female guardianship (%)	74.28		74.42		73.63	

Note: This table shows summary statistics of the characterization of parents surveyed.

Table 4
Ranking of characteristics of schools' quality.

Characteristic	Mentions (% from each group)		Total
	Private S.	Public S.	mentions
Good teachers	92%	91%	2090
Good students	38%	35%	855
Regularity of classes	32%	31%	719
Infrastructure	28%	30%	639
Safety	23%	20%	508
Full school day	20%	24%	475
What your child learns at school	19%	22%	455
Teachers' attendance	17%	19%	400
Religious formation	9%	6%	187
Number of students per class	8%	7%	177
Socioeconomic level of families	5%	3%	99
English or French classes	2%	3%	51
Total number of students	2%	2%	36
Private school	1%	1%	29
N total	1840	440	

Note: This table shows the characteristics that parents ranked as features considered important for a high-quality school.

Table 5
Fee-test score relationship at baseline (Private Schools).

	Fees (USD)		Log(Fees) (Gourdes)	
	(1)	(2)	(3)	(4)
Avg. test score 5th grade (SD)	45.843 (32.023)	70.148 (52.748)	0.094 (0.087)	0.177* (0.091)
Wall (%)		0.314 (0.238)		0.003* (0.002)
Water access (%)		0.312 (0.443)		0.000 (0.002)
Electricity (%)		−0.137 (0.329)		0.002 (0.002)
Library (%)		0.054 (0.291)		0.003 (0.002)
Constant	118.038*** (14.852)	77.168** (35.483)	8.036*** (0.093)	7.744*** (0.155)
Market FE		✓		✓
R2	0.017	0.246	0.004	0.352
Observations	545	530	545	530

Note: Standard errors are clustered at the market/cluster level (in parentheses). These results are obtained using averages of schools variables by market. The variables *Wall*, *Water access*, *Electricity*, and *Library* are dummy variables equal to 1 if the school has that infrastructure (walls around the school, access to water, electricity, and a library). Significance levels * $p < .1$, ** $p < .05$, *** $p < .01$.

with walls, moving from 60.9 percent to 70.4 percent. Access to water jumped almost four percentage points while electricity access increased by nearly six percentage points.

To enroll their children in school, approximately between 87 percent and 88 percent of parents had to undergo interviews with school officials, both in public and private schools. Over half of all children had to complete an admissions test for enrollment, with 50.5 percent of children in public schools and 62.8 percent in private schools sitting for an entrance examination. This was a marked increase for public and private schools compared to the baseline.

5.2. Parental background, preferences and information sources

Table 3 shows, parents across sampled schools possessed low levels of education, with nearly 50 percent having no or incomplete primary education. Only 56 percent of these parents live above the extreme poverty line (USD 1.25 per day). Importantly, we also registered the characteristics of both households that sent children to private schools and to public schools. It is relevant to distinguish between private and public schools as our analysis will consider price as an observable proxy

Table 6
Impacts on students' test scores.

Treatment	0.15 (0.12)	−0.06 (0.15)	0.20 (0.13)
Private		0.03 (0.10)	
Treat × Private		0.28* (0.17)	
Public			−0.03 (0.11)
Treat × Public			−0.27 (0.17)
Private × High Q. in market			−0.02 (0.17)
Treat × Private × High Q. in market			0.12 (0.22)
Sch. Mean Baseline	0.47*** (0.06)	0.48*** (0.06)	0.47*** (0.07)
Public schools		−0.06 (0.15)	−0.06 (0.15)
Private schools		0.22* (0.13)	
Low quality private schools			0.20 (0.13)
High quality private schools			0.32 (0.25)
Baseline mean	−0.02	−0.02	−0.02
R-squared	0.12	0.12	0.12
N	12799	12799	12799

Table 7
Impacts on market share.

Treatment markets	−0.44 (1.11)	−3.20 (2.31)	−0.62 (1.35)
Private school		−1.58 (2.16)	
Treatment × Private school		3.44 (2.49)	
Public school			0.66 (2.16)
Treatment × Public school			−2.57 (2.56)
Private × High quality in market			−5.19** (2.18)
Treat × Private × High quality in market			4.85* (2.48)
Baseline market share	1.01*** (0.09)	1.01*** (0.09)	1.01*** (0.09)
Public schools		−3.20 (2.31)	−3.19 (2.31)
Private schools		0.24 (1.20)	
Low quality private			−0.62 (1.35)
High quality private			4.24** (2.12)
Baseline mean	11.80	11.80	11.80
R-squared	0.49	0.49	0.50
N	499	499	499

for information on school quality. Differences across demographic, socioeconomic, and educational lines were apparent. The average age of sampled parents who sent their children to public schools was 39.75 years old, which was slightly higher than the average of 38.81 in private schools. Conversely, the average percentage of female guardianship was slightly higher for sampled parents who sent their children to private schools at 74.4 percent as opposed to 73.6 percent in public

Table 8
Impacts on private school fees.

Treatment	38.69	28.91	27.23
	(46.60)	(46.35)	(45.11)
Treat × High quality		84.38*	
		(49.65)	
Treat × High quality in market			125.20**
			(53.54)
Baseline fees	0.13*	0.13*	0.13**
	(0.07)	(0.06)	(0.06)
Low quality		28.91	27.23
		(46.35)	(45.11)
High quality		113.29*	152.43**
		(67.43)	(73.94)
Baseline mean	112.17	112.17	112.17
R-squared	0.03	0.04	0.05
N	360	360	360

Table 9
Gradient fees — Test scores.

	Log(Fees) Pre	Log(Fees) Post	Log(Fees)
Test score	0.052	0.157**	0.038
	(0.068)	(0.068)	(0.068)
Treat × Score × Post			0.230**
			(0.105)
Observations	7552	8151	15703

schools. We also observed that parents with children enrolled in private schools have relatively higher earnings as well as slightly higher education levels compared to parents in public schools.

When deciding where to send their children to schools, parents usually consider a host of factors, from the backgrounds and qualifications of teachers and staff to the presence of basic infrastructure and utilities. There is a general assumption that parents would prefer to send their children to the best schools possible within the options available to them. However, there are important first-order questions that need to be addressed. Specifically, when determining what constitutes the best school, we must delineate which factors parents are relying on to make these evaluations, and what sources of information, beyond school location, they are using to both determine the options available to them and further evaluate the quality of potential schools.

The baseline assessment conducted in 2017 and 2018 allowed for the construction of a parental preference dataset from which noteworthy descriptive observations can be made. It is clear that parents have preferences and expectations around where to enroll their children. While these preferences are acted upon with varying degrees of commitment, there are trends in how these preferences are formed at the onset and what they look for as indicators of school quality.

In this context, we can use the survey data collected from parents to aggregate and understand these preferences. Namely, we can examine what characteristics or track records they look for when evaluating schools, which sources of information they deploy and prioritize in their evaluations, and whether these preferences differ a priori by eventual private and public school enrollment. These will in turn enable us to investigate how these preferences can align with, and potentially, be shaped by more objective information on school quality and performance.

As Table 4 displays, when parents were asked to rank what they considered important features of a high-quality school, over 90 percent ranked having good teachers, which is a reasonable proxy for the quality of academic instruction. While having good teachers may not directly correspond with students learning or performing well on standardized examinations, teaching is understandably integral to a school's operations. The most popular answers aside from good teachers were having good students, consistent and frequent classes, and having decent infrastructure. There are no significant differences in parents' rankings based on their child's enrollment, with some minimal relative variation on the margins. For example, we can note that parents with children in public schools appear to place slightly greater emphasis on school infrastructure and having a full school day, while parents with children in private schools place slightly greater emphasis on having good peers, safety, and religious formation.

Across the board, the information parents used to inform their preferences was dictated by their surroundings. As Fig. 4 shows, many parents suggested that they relied on their community to gather insights around schools' quality. While listening to the school was helpful, parents trusted their networks to understand what a school could offer their children, particularly in comparison to its peers. This included relying on religious groups, neighbors, and other civic associations they are affiliated with. Fewer parents used government or media sources to assess the quality of a school, which was unsurprising in the Haitian context.

5.3. Test scores, schooling inputs and total fees

Besides descriptively observing that parents prefer higher quality schools within their given budget and informational constraints, our research noted the wide range of information sources parents draw on as well as the characteristics they desire and elevate as important.

To that end, using data from the baseline assessments, we test the initial relationship between the test scores for private schools and the total fees parents pay. To quantify school performance, we took the standardized test score of fifth-year students and averaged them at the school level. We also ran the regression with fixed effects by market to account for intra-market variation and shocks. We also incorporated dummy variables on whether the school in question has walls, a library, access to running water, or electricity.

Table 5 captures our output. A one unit increase in average standardized test scores in a private school coincided with a 45.843 increase in the average total fees charged (in USD), as calculated during the baseline assessment. When considering the cluster fixed effects and incorporating controls for non-instructional quality, the coefficient on average test score jumped to 70.148. No significant effect is found in these specifications. When evaluating the same regressions over the logarithm of fees (in Haitian gourdes), we see a significant and positive effect of test scores on fees charged. A one unit increase in the average standardized test scores in a private school coincided with a 17.7 percent increase in fees charged at a 90 percent confidence level. For public schools, as shown in Table A.6 in the Appendix, there is no significant effect for any specification.

These results show that, although the coefficients on average test scores are positive, there is minimal evidence of a relationship between fees paid and test scores for fifth-graders in these rural Haitian markets. This suggests that the markets had noisy signals of price regarding school quality.

In light of asymmetries and absolute scarcity of information, the value each school brings to the market has yet to be properly understood. To that end, while the baseline data suggest that parents do value school quality, they lack the information to make informed decisions, which manifests in the absence of a correlation between what parents pay and the actual quality of the school.

6. Empirical framework

Reducing informational asymmetries and scarcity has the potential to alter the picture described in the previous section. When presented with more and new information, it is conceivable that families can better act on their preferences in what they eventually choose and demand. In the Haitian educational context, for parents assigned to the treatment group that would receive report cards and participate in workshops that communicate school performance, the ability to

Table A.1
Attrition balance table: Surveys.

Variable	(1)		(2)		T-test
	Non-Attrited		Attrited		Difference
	N/[Clusters]	Mean/SE	N/[Clusters]	Mean/SE	(1)–(2)
Treatment	516 [79]	0.490 (0.068)	206 [58]	0.505 (0.082)	−0.015
Avg. total fees (no outliers, USD)	465 [78]	99.130 (13.292)	205 [58]	133.620 (31.510)	−34.490
Avg. test score (std)	508 [79]	0.013 (0.058)	206 [58]	0.019 (0.059)	−0.006
Treatment × Test score 1st quartile	516 [79]	0.112 (0.020)	206 [58]	0.092 (0.021)	0.020
Market size (N schools)	516 [79]	14.665 (1.129)	206 [58]	14.869 (1.327)	−0.204
Public	516 [79]	0.184 (0.020)	206 [58]	0.165 (0.026)	0.019
School's market share (%)	510 [79]	11.937 (0.870)	202 [58]	11.445 (1.006)	0.492
Wall (%)	508 [79]	59.055 (3.607)	205 [58]	60.488 (4.886)	−1.433
Teacher experience (years)	481 [79]	8.516 (0.215)	187 [58]	8.553 (0.335)	−0.037
Parent interview (%)	511 [79]	89.237 (1.632)	202 [58]	87.624 (2.163)	1.613
Admission test (%)	509 [79]	45.776 (2.954)	204 [58]	49.510 (4.509)	−3.734

Note: The value displayed for t-tests are the differences in the means across the groups. Standard errors clustered at the market/cluster level. Significance levels * $p < .1$, ** $p < .05$, *** $p < .01$.

Table A.2
Attrition and treatment.

	Attrition (1)
Treatment	0.012 (0.034)
Constant	0.279*** (0.024)
R2	0.000
Observations	722

Note: Standard errors clustered at the market/cluster level. Significance levels * $p < .1$, ** $p < .05$, *** $p < .01$.

adjudicate the quality of a school may be consequently more consistent with their stated preferences for higher quality education and improved student outcomes. This happens as they can draw from and rely upon what is understood to be more objective and relevant indicators of school quality. Their evaluations are likely better as a result.

Subsequently, these evaluations equip parents to better assess whether and how these prices coincide with the quality of the service they are paying for. Parents can then take action, including speaking with school administrators as we nudged parents to do, call for measurable improvements in school quality, and potentially enrolling their children in different schools. In the treated group, schools will likely respond to these soft and hard pressures with possible actions such as readjusting their total fees, investing further in instructional quality, expanding the number of enrolled students, or closing altogether. Greater quantity and quality of information may equip parents to act more effectively on their preferences, and prices may begin to possess and retain meaning. These markets can become more efficient, outcomes for students, and schools may improve. These include student test scores, total fees paid, and market share.

To determine whether this happened after the disclosure policy, we compare the outcomes of interest across markets that were intervened and those that were not. We also leverage the baseline to compare each group to itself and to the other group over time. The randomized control trial specification follows:

$$Y_{ist} = \alpha + \psi\ \text{Treat}_{ist} + \theta\ \text{Private}_{st} + \phi(\text{Treat}_{ist} \times\ \text{Private}_{ist}) + \omega_s + \epsilon_{ist} \quad (1)$$

Given that the expected effects will vary depending on whether schools were high scoring initially or not, we repeat the analysis for all schools and then subset only for those that were high scoring at baseline. We evaluate these results with student-level data to weigh all the regressions for schools and market size, based on enrollment.

The variable Y_{ist} corresponds to the three outcomes (fees, test scores, and market share) for student i from the school s at the time t. $Treat_{ist}$ is a dummy variable that is equal to 1 when the student comes from a school of the treatment group, $Post_{ijt}$ is a dummy variable that is equal to 1 when the student is observed at the endline (post-treatment), $Private_{ist}$ is a dummy variable that is equal to 1 when the student comes from a private school, ω_s is a school-level control for the average baseline characteristics, and ϵ_{ist} is a normally distributed error term. Standard errors are clustered at the market-level. This estimation only considers schools in what we called the "test sample" or "survey sample" depending on the outcome for schools with data collected in the principal surveys during the baseline and endline assessments.

7. Market level results from the RCT

7.1. Information disclosure effects on test scores

The analysis presented in Table 6 shows the estimated effect of treatment on test scores. The three specifications present heterogeneous effects for private schools and for high baseline test score schools. The results show that private schools in treated markets improved test scores by 0.22 standard deviations while public schools seem to not have been affected in any significant way. When focusing on higher or lower test scores schools in the baseline we do not find any evidence of heterogeneous effects.

Table A.3
Baseline balance table, school level.

Variable	(1)		(2)		T-test
	Control		Treatment		Difference
	N/[Clusters]	Mean/SE	N/[Clusters]	Mean/SE	(1)–(2)
Avg. total fees (USD, no outliers)	339 [42]	86.059 (12.322)	331 [42]	133.879 (23.457)	−47.820*
Avg. test score 5th grade (std)	357 [42]	0.020 (0.081)	357 [42]	0.009 (0.053)	0.011
Public	365 [42]	0.167 (0.026)	357 [42]	0.190 (0.025)	−0.023
School's market share (%)	361 [42]	11.634 (1.136)	351 [42]	11.966 (1.136)	−0.331
Wall (%)	361 [42]	57.341 (4.356)	352 [42]	61.648 (5.357)	−4.307
Teacher experience (years)	332 [42]	8.281 (0.240)	336 [42]	8.769 (0.270)	−0.488
Parent interview (%)	361 [42]	87.812 (1.804)	352 [42]	89.773 (2.262)	−1.961
Admission test (%)	358 [42]	46.089 (3.311)	355 [42]	47.606 (4.476)	−1.516

Note: The value displayed for t-tests are the differences in the means across the groups. Standard errors clustered at the market/cluster level. Significance levels * $p < .1$, ** $p < .05$, *** $p < .01$.

Table A.4
Baseline balance table, schools at student level.

Variable	(1)		(2)		T-test
	Control		Treatment		Difference
	N/[Clusters]	Mean/SE	N/[Clusters]	Mean/SE	(1)–(2)
Avg. total fees (USD, no outliers)	5965 [42]	86.166 (12.549)	6276 [42]	132.020 (23.544)	−45.854*
Avg. test score 5th grade (std)	6402 [42]	0.028 (0.083)	6756 [42]	−0.014 (0.052)	0.042
Public	6410 [42]	0.204 (0.028)	6756 [42]	0.218 (0.028)	−0.014
School's market share (%)	6410 [42]	0.007 (0.001)	6756 [42]	0.006 (0.001)	0.000
Wall (%)	6373 [42]	62.294 (3.842)	6655 [42]	67.468 (5.043)	−5.174
Teacher experience (years)	5921 [42]	8.706 (0.284)	6334 [42]	9.206 (0.287)	−0.500
Parent interview (%)	6375 [42]	87.765 (2.066)	6682 [42]	91.395 (1.856)	−3.630
Admission test (%)	6280 [42]	48.599 (3.487)	6713 [42]	49.114 (4.952)	−0.515

Note: The value displayed for t-tests are the differences in the means across the groups. Standard errors clustered at the market/cluster level. Significance levels * $p < .1$, ** $p < .05$, *** $p < .01$.

7.2. Information disclosure effects on market shares

In this analysis we see that market shares change significantly in markets with the disclosure intervention. The evidence shows that private schools that were high scoring in the baseline period saw their market share increase by approximately 4%–5%. The Appendix presents a complementary panel regression on enrollment that shows similar results where private schools with high baseline scores increase enrollment by 58 students on average (see Table 7).

7.3. Information disclosure effects on school fees

We look at the effects of disclosure on school fees at private schools. We find evidence that treated markets see increasing prices for private schools with high test scores at baseline. The evidence that high scoring schools may have systematically increased their prices is consistent with the result that high scoring schools increase market share in treated markets and a can be an indicator that demand increased at the higher scoring schools (see Table 8).

7.4. Correlation between prices, test scores, and information

In this section we take the approach of studying whether prices and quality are correlated and if this relationship increases with information disclosure as would be expected. The Table 9 shows the correlation between prices and quality and the accompanying figure presents a visual description of the same relationship before and after the intervention. We find that at baseline, the correlation between prices and test scores overall is weakly positive but not statistically significant in our sample. After the intervention we are able to detect a significant correlation in treatment markets, driven by the sample of private schools. The figure below shows that high scoring schools seemed to have raised prices while lower performing schools decreased their prices. These heterogeneous results are consistent with point estimates from the RCT analysis but are not found to be significant in most specifications (see Fig. 5).

Table A.5
Attrition balance table: Tests.

Variable	(1) Non-Attrited		(2) Attrited		T-test Difference
	N/[Clusters]	Mean/SE	N/[Clusters]	Mean/SE	(1)–(2)
Treatment	587 [84]	0.503 (0.067)	168 [68]	0.494 (0.075)	0.009
Avg. total fees (no outliers, USD)	543 [84]	116.553 (15.680)	120 [59]	82.161 (14.659)	34.392*
Avg. test score (std)	587 [84]	0.016 (0.051)	168 [68]	−0.024 (0.076)	0.040
Treatment × Test score 1st quartile	587 [84]	0.111 (0.021)	168 [68]	0.083 (0.024)	0.027
Market size (N schools)	587 [84]	14.867 (1.117)	127 [61]	14.205 (1.401)	0.662
Public	587 [84]	0.206 (0.017)	168 [68]	0.179 (0.036)	0.028
School's market share (%)	577 [84]	12.021 (0.852)	127 [61]	10.958 (1.027)	1.064
Wall (%)	583 [84]	61.921 (3.454)	123 [61]	47.967 (5.465)	13.954***
Teacher experience (years)	541 [82]	8.784 (0.199)	120 [60]	7.392 (0.312)	1.393***
Parent interview (%)	578 [84]	88.927 (1.558)	127 [61]	87.402 (3.373)	1.526
Admission test (%)	578 [84]	47.405 (2.896)	127 [61]	46.457 (4.945)	0.948

Note: The value displayed for t-tests are the differences in the means across the groups. Standard errors clustered at the market/cluster level. Significance levels * $p < .1$, ** $p < .05$, *** $p < .01$.

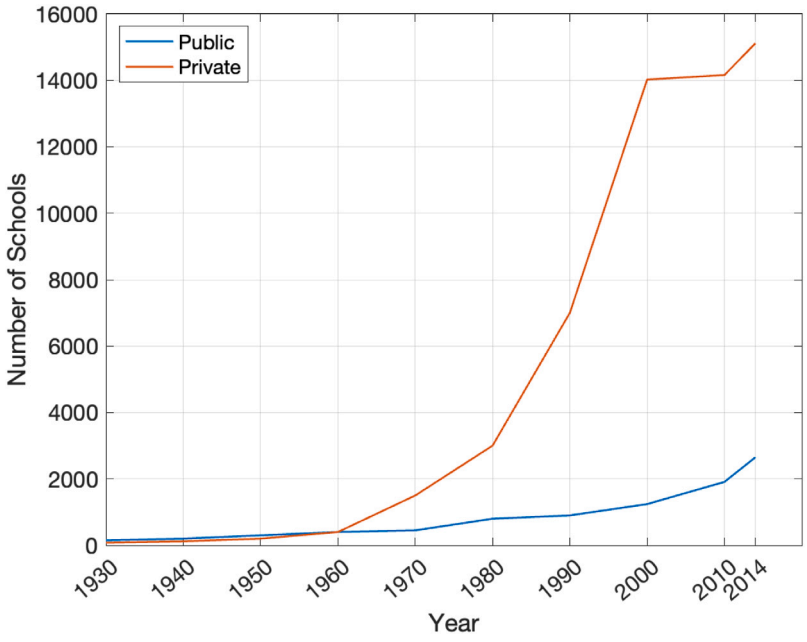


Fig. 6. Number of public and private primary schools in Haiti by year. Note: This figure shows the number of public and private primary schools in Haiti by year (Elacqua et al., 2018), captured from IDB and World Bank estimates using 2002–2003, 2010–2011, and 2013–2014 School Censuses.

8. Conclusion

This paper contributes to a general understanding regarding the role of information in education markets in a developing country context characterized by a large private schooling market share. We produced novel datasets in a country with limited infrastructure for data collection, running both baseline and endline assessments involving thousands of students, parents, and school principals. These were coupled with a market level randomized controlled trial. We use our survey data to describe education markets in Haiti, families school choice preferences and we document the overall lack of information regarding schooling options. The market level information disclosure RCT shows evidence that policies that provide objective metrics on school performance can lead to improvements in student achievement in a cost effective way.

Survey data shows Haitian parents prefer schools with better schooling inputs such as higher quality teachers and infrastructure. Parents in Haiti are willing to pay significant fees to send their children to the schools with higher test scores but have limited information about

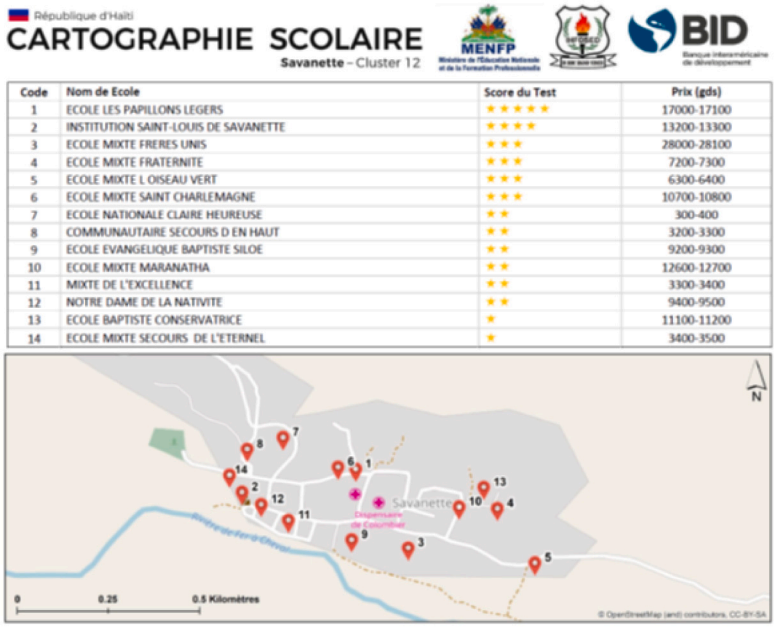


Fig. 7. Example of a specific score card. Note: This figure shows an example of the score card presented to sampled first-year parents who were assigned to the treatment group.

Table A.6
Fee-test score relationship at baseline (Public Schools).

	Fees (USD)		Log(Fees) Gourdes	
	(1)	(2)	(3)	(4)
Avg. test score 5th grade (SD)	−15.014 (14.759)	−26.674 (26.589)	0.292 (0.200)	0.053 (0.297)
Wall (%)		−1.698 (2.199)		−0.002 (0.010)
Water access (%)		1.026 (0.910)		0.007 (0.008)
Electricity (%)		1.690 (1.488)		0.011 (0.011)
Library (%)		−0.593 (0.887)		0.004 (0.006)
Constant	61.417*** (19.713)	41.744 (47.650)	6.525*** (0.183)	5.786*** (0.531)
Market FE		✓		✓
R2	0.002	0.378	0.015	0.570
Observations	118	115	118	115

Note: Standard errors are clustered at the market/cluster level (in parentheses). These results are obtained using averages of schools variables by market. The variables *Wall*, *Water access*, *Electricity*, and *Library* are dummy variables equal to 1 if the school has that infrastructure (walls around the school, access to water, electricity, and a library). Significance levels * $p < .1$, ** $p < .05$, *** $p < .01$.

Table A.7
Impacts on school enrollment (Panel Analysis).

	All	High quality	
Treatment	13 (32)	−76 (54)	−91 (172)
Post	52 (34)	−24 (29)	−61 (125)
Treat × Post	−45 (35)	57* (33)	71 (128)
Treat × Post × Private			−12 (132)
Private			−136 (163)
Post × Private			39 (127)
Treat × Private			25 (169)
Public schools			71 (128)
Private schools			58* (33)
Baseline mean	300	251	251
R-squared	0.01	0.02	0.05
N	1032	170	170

their schooling options. In the aggregate we find a limited relationship between prices and school test scores in our baseline survey.

Through a randomized control trial, we show evidence that disclosing school-level test score information led to increased learning outcomes for students attending private schools of 0.22 standard deviations. The evidence suggests that schools with lower and higher initial test scores both see test score gains in markets where information is provided.

Results also show that private schools with higher baseline test scores experienced an increase in market share by 4 points and enrollment by 58 students. Evidence suggests private schools in the higher performing group of schools at baseline also increased fees. These results are consistent with information disclosure leading to increased demand at high scoring schools which then lead to higher market shares and higher prices. Interestingly, while prices and test scores were uncorrelated at baseline, the evidence suggests a shift towards a positive correlation in treatment markets post-disclosure. These results underscore the potential of providing information to enhance market efficiency and improve children's welfare within the Haitian education context.

It is important to mention that this market level RCT has a small sample of villages and the study faced multiple difficulties collecting and measuring data during the fieldwork process in Haiti. The results are estimated with large standard errors and additional heterogeneity analysis was not able to provide further insights. However, the individual results are consistent with each other and with the hypothesis that education markets in Haiti lack information. Taken together, the combination of results support the hypothesis that education markets in context like Haiti can work better with more information on school characteristics.

Given the low cost of creating and disseminating information, this evidence suggests that reducing information gaps can generate greater equity and efficiency of education systems, particularly in low-income settings with a large private sector. Future research should investigate what mechanisms and what ways of implementing information dissemination as a policy are most effective as well as the longer run effects on market equilibrium outcomes.

CRediT authorship contribution statement

Michael Borger: Writing, Visualization, Project administration, Investigation. **Gregory Elacqua:** Conceptualization, Methodology, Validation, Writing, Supervision, Project administration, Funding acquisition, Investigation. **Isabel Jacas:** Software, Data Curation, Visualization, Formal analysis. **Christopher Neilson:** Conceptualization, Methodology, Validation, Data Curation, Writing, Supervision, Formal analysis. **Anne Sofie Westh Olsen:** Conceptualization, Writing, Supervision, Project administration, Funding acquisition, Investigation.

Data availability

Data will be made available on request.

Appendix A

See Figs. 6 and 7 and Tables A.1–A.7.

Appendix B. Supplementary data

Supplementary material related to this article can be found online at https://doi.org/10.1016/j.econedurev.2024.102560.

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