The Substitutability of Religiosity and Quality: School Attribute Information and Parental Choice of School Religiosity

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Abstract

In many countries, households choose between religious and secular schools, impacting preferences, beliefs and labor market outcomes. Given the importance of this choice, it is essential to explore the preference structure underlying it and to identify circumstances that can lead households to choose schools that do not align most strongly with their religious preferences. In this paper, we investigate how attributes such as average test scores, school violence levels, and student satisfaction affect school selection. We exploit a natural experiment of an information disclosure combined with a unique setting in which both religious and secular public schooling options were available to households, to estimate school choice trade-offs using a difference-in-differences analysis. We find that households are willing to sacrifice religiosity for better school attributes, especially among religious households, suggesting a lower threshold for trade-offs. Furthermore, we find that while both high and low SES households seem to value test score disparities, only lower SES households are willing to trade off religiosity preferences for improvements in school violence and student satisfaction ratings. Implementing an IV approach, we examine the effects of choosing an alternative schooling religiosity. We find suggestive evidence that a choice, induced by quality differences, may lead to long-run changes in religious preferences and shifts in academic pursuits towards fields with higher labor market returns. Finally, estimating parameters of households' utility function using a discrete choice model further supports our results.

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1 Introduction

The level of religiosity in a school can significantly influence the preferences and beliefs of its attendees, including religious beliefs, as well as political and personal preferences, and labor market outcomes (Bazzi et al., 2020; Arold et al., 2022; Becker et al., 2024). While there is growing focus in the literature on school choice policies(Abdulkadiroğlu et al., 2018; Lavy, 2010), and given the existence of such choices in many countries, school choice as it relates to choosing between secular and religious options has been understudied.[1] Given the significance of this choice, it is crucial to understand the factors influencing it and the trade-offs involved.

In this paper, we investigate an Israeli Supreme Court information disclosure mandate, in which the Ministry of Education was ordered to release academic and non-academic school-level information on an array of school attributes. We examine whether higher quality schooling alternatives can influence a household's choice of the school religiosity attended by its children. We observe a unique setting that combines a natural experiment with an institutional setup wherein households could, by law, choose between secular and religious public schooling options. This setting facilitates the estimation of the substitutability in household preferences between the religiosity of schooling and other attributes such as test scores, violence levels, student satisfaction ratings, and teacher fatigue.

We investigate whether households are willing to trade off school religiosity with other school attributes by examining their choices during the transition from primary to middle school. Specifically, we explore whether households are more likely to opt for an alternative religiosity option— one that does not match their primary school religiosity— when this alternative option offers superior attributes compared to the matching religiosity option. To estimate such shifts, we employ a Difference-in-Difference estimation approach. We categorize all years in which households made their middle school choice prior to the information disclosure as pre-treatment years, and all post-disclosure years as treated. Within this framework, we identify a group of 'treated' students who have access to alternative religiosity schools with superior attributes compared to their primary religiosity option. We then assess whether there is a differential increase in the probability of these students choosing to attend an alternative schooling religiosity in the post-treatment years.

We find that following the information disclosure, households had an increased probability of choosing an alternative religiosity middle school when that school outperformed their primary religiosity option on the disclosed attributes. Specifically, we observe a differential increase of 4 percentage points (p.p) in the probability of households opting for an alternative

[1] In addition to the Israeli setting studied here, the choice between religious and secular schools exists in many Muslim countries, including Indonesia, Pakistan, and Egypt (Bazzi et al., 2020; Andrabi et al., 2006), as well as in settings with private Christian schools such as the US (Cohen-Zada and Sander, 2008; Schneider, 2017).

religiosity middle school in choice sets where the alternative option had a higher test score average. Similarly, we find comparable outcomes for choice sets with better student satisfaction ratings, with a 3-percentage point increase, and lower violence levels, with a 1.8-percentage point increase, though the latter was not statistically significant.

Next, we identify important heterogeneities in the response related to household characteristics. We observe that most of the effect is driven by religious households, who choose an alternative religiosity middle school option compared to their preferred religiosity, to attend a school with better attributes. This difference could be attributed to the generally lower levels of shifts from secular households, which may imply a lower willingness to switch schools, even when better options are available. This result suggests we should interpret our results of response to information as mainly relating to shifts by religious households to more secular options. Furthermore, while we find a strong response from both high and low socio-economic status (SES) households for differences in test scores, there appears to be a stronger response by lower SES households for non-academic attributes such as student satisfaction and violence levels. This result is consistent with previous findings asserting that lower SES households tend to place greater value on these attributes compared to their higher SES counterparts. (Beuermann et al., 2023; Rachkovski, 2025).

In order to better estimate the preferences for different school attributes and how those change following the school information disclosure, we estimate a random utility discrete choice model using a conditional logit estimation. Our results indicate that following the information disclosure, the relative importance of having the preferred school religiosity compared to the various publicized school attributes decreases. This effect is primarily observed in choice sets with positive differences. The increase in relative importance that households place on the publicized school attributes in the post-disclosure period, particularly in choice sets with positive differences, aligns with the findings from the reduced form analysis.

In order to estimate the effects of choosing to attend an alternative school religiosity option due to preferences for improved quality in other attributes, we use an instrumental variable approach. Specifically, we instrument the change in school religiosity choice with the interaction between making the choice in the post-information disclosure period and having a choice set in which there is a positive difference in test scores between the alternative and same religiosity schooling options. Our analysis suggests that choosing an alternative religiosity middle school option due to considerations of school quality increases the likelihood of attending an alternative religiosity high school as well. This finding may indicate a potential impact on persistent religious preferences changes. Additionally, this choice appears to increase the likelihood of specialization in STEM and advanced math fields in high school, although the results are not statistically significant at conventional levels.

These findings support the idea that there are households willing to consider a school choice

that does not align with their religious preferences. Especially so, if they receive information indicating that the alternative religiosity option offers better quality on various attributes they value. Our results further highlight the potential long run effects of this choice and the existence of heterogeneities in the likelihood of response and in the attributes of interest, which depend on household religiosity and SES. As policy makers design school choice policies, our findings can be of value in deciding when an information intervention can be useful and which school attributes should be measured and publicized to households. Additionally, these insights can aid in predicting demographic shifts in religiosity levels or forming strategies to influence them.

The information disclosure provided households with data on various school characteristics for both secular and religious public school options. This unique setting allows us to isolate the effect of preferences between attributes perceived to be related to school quality and other considerations, such as higher costs (as seen in the US case where religious schools are private), availability (in many institutional settings worldwide either a secular or religious school may not be readily available in the choice set), or limited information about the various schooling options. Furthermore, our data on religiosity choices in primary school enables us to establish a baseline of religious preferences for each household.

In addition to the unique extensive simultaneous disclosure of information on a range of school attributes, our setting possesses several advantageous features to explore parental responses to school information. First, the exogenous intervention by the Supreme Court, which did not align with any plans by the Education Ministry or the schools, provides an ideal natural experiment. This allows us to test the effects of information disclosure without the influence of specific goals by the education body in charge or accompanying policy changes which might threaten the identification, as is potentially the case in other settings for which school information disclosure was examined. Second, the information was picked up and highlighted by major digital news outlets rather than actively disseminated to households. This feature, while still providing sufficient salience to reach households, offers a more natural method of information spread compared to the strong targeted interventions in most previous studies (Hastings and Weinstein, 2008; Neilson et al., 2019; Ainsworth et al., 2023). Furthermore, official public school-level information was not available prior to the information release, allowing us to examine the effects at the earliest stage of information disclosure.

The Israeli schooling system resembles the structure, curricular focus and government investment of most developed economies. It is almost solely public and does not permit screening students upon entry to primary or middle school, with very few exceptions. Capacity constraints are generally not binding in this context. For the few schools that receive more applicants than their capacity allows, a lottery system is implemented. These characteristics reduce the risks of selective attrition and enable an analysis of the decisions and shifts

in the choices made by the entire population of school-goers, encompassing the entire SES distribution. This setting offers a unique opportunity to accurately estimate the response to information by isolating the effect of the information on household demand from school strategic supply side considerations. Additionally, the availability of administrative information on parental schooling levels and student gender, combined with the fact that information disclosure was equally accessible across the SES distribution and religious preferences facilitates an investigation of heterogeneous responses by religiosity, SES and gender.

The findings of our paper contribute to several literature strands. Our paper relates to the literature examining the effects of school choice policies on household choice and student outcomes (Abdulkadiroğlu et al., 2018; Muralidharan and Sundararaman, 2015; Walberg, 2007; Campos and Kearns, 2022; Lavy, 2010, 2021; Musset, 2012; Neilson, 2019; Hoxby, 2003). As well as to the literature which examines the effects of providing school level information to households on household choices and outcomes (Hastings and Weinstein, 2008; Campos, 2023; Rachkovski, 2025; Neilson et al., 2019; Abdulkadiroğlu et al., 2020; Ainsworth et al., 2023; Mizala and Urquiola, 2013; Nunes et al., 2015).[2] We contribute to this literature by highlighting an important yet less-studied aspect of school choice: the choice of school religiosity level. We examine the considerations and trade-offs households make when making this choice, shedding light on an area that has received limited attention in the literature. Furthermore, our study underscores the vital role of providing varied and relevant information on school attributes in informing school choice, emphasizing the importance of information provision in shaping decision-making processes in a new and relevant setting.

Our findings are also relevant to the literature that emphasizes the multidimensionality of school quality and how different aspects of schools may impact households differently depending on their characteristics (Beuermann et al., 2023; Hastings et al., 2010; Jackson, 2018; Jackson et al., 2023; Lavy and Schlosser, 2011; Rachkovski, 2025). The current paper contributes to this literature by highlighting the importance of non-academic school attribute information in eliciting response from lower SES households in the context of school religiosity preferences.

Finally, our paper relates to the literature examining the effects of religious education and the competition between secular and religious schooling options (Bazzi et al., 2020; Andrabi et al., 2006; Arold et al., 2022; Altonji et al., 2005; Neal, 1997; Cohen-Zada, 2006; Cohen-Zada and Justman, 2022; Munevar, 2023). We contribute to this literature by examining the underlying preferences related to school religiosity and providing novel insights by identifying factors which can affect household's choice of school religiosity. Furthermore, we provide novel

[2]While not focused on isolating trade-offs with school religiosity, several recent studies have examined the role of information on non-test-score school attributes more broadly (Hussain, 2023; Facchetti et al., 2023; Crespin, 2024; Koning and Van der Wiel, 2013).

findings related to the effects of school religiosity, induced by school quality considerations, on persistent religious preferences, academic preferences, and potential implications to labor market returns.

The rest of the paper is organized in the following way. Section 2 provides the institutional background of our setting. Section 3 presents the data and variable construction. Section 4 introduces the model and discusses the estimation strategy. Section 5 presents the results for each of our main findings and includes related discussions. Section 6 concludes.

2 Institutional Background

2.1 The Israeli Education System

In Israel, the education system comprises several sectors, including Jewish secular, Jewish religious, Arab, and Ultra-Orthodox. Our analysis focuses on the first two sectors, where schools are primarily public and government-funded. While Jewish secular schools follow a similar curriculum to most OECD countries, the Jewish religious institutions have an additional focus on observing a religious way of life, which includes prayer, considering religious values in teacher hiring and evaluations and an extended curriculum for Bible and Jewish literature and history studies. In most municipalities there are three levels of schooling. Primary schools which children attend between 1st and 6th grade. Middle schools which children attend between grades 7 and 9 (and covers ages 12 to 15) and high schools which run from 10th to 12th grade. This three-tier model is similar to many countries including the US and parts of Europe.[3] Our primary focus in this paper is on middle schools, also known in other countries as intermediate school, junior high school, junior secondary school, or lower secondary school. The purpose of middle schools is to serve as a transition/preparatory period between the early education years of primary school and the more rigorous education years of the latter years.

In Israel, by law, in every schooling level, households are allowed to enroll their children in either the secular or religious public school options. If either option is not available in a certain municipality, the municipality must either help secure an appropriate option in a neighboring municipality or open a new suitable institution within the municipality (relevant when there is large enough demand). The municipality must ask the household whether they would like to register in a secular or religious institution and may not advise or attempt to influence the

[3] In other countries the prevalent system is the two-tier model where students attend primary school commonly for the first 6 years of their compulsory education and then transition to secondary school/high school for the rest.

decision. Entrance exams or interviews to select or screen students are prohibited. Besides the choice related to school religiosity and the resulting assigned school, in most municipalities, the assignment method from primary to middle school involves each primary school having an assigned middle school, which does not provide households with any school choice options within the secular or religious sectors.

The Education Ministry administers the Growth and Effectiveness Measures for Schools (GEMS - Meizav in Hebrew) testing to monitor effective teaching and school atmosphere for both primary and middle schools. The GEMS includes a series of tests and questionnaires administered by the Division of Evaluation and Measurement of the Ministry of Education. GEMS testing typically takes place towards the end of each school year, from mid-May to mid-June. It follows a representative 1-in-2 sample strategy, with every public elementary and middle school in Israel participating in GEMS once every two years.[4] The GEMS dataset includes test scores for students in the second and fifth grades (primary school) and eighth grade (middle school) in subjects like math, science, language, and English (the second-grade tests include only math and language). These test scores are standardized for comparability across different years. Virtually all students, with the exception of those in special education classes, are tested, resulting in a testing rate exceeding 90 percent. In addition to the standardized tests, the GEMS program administers anonymous student questionnaires, covering a wide range of aspects related to the school and its learning environment.

In high school, to graduate, students need to pass the matriculation exams (*Bagrut* in Hebrew). To be awarded a matriculation certificate, students are required to pass exams in seven mandatory subjects and two or more specialization (elective) subjects. When a student passes an exam, she is awarded credit units that increase with the exam's proficiency level. In particular, 21 credit units grant a student a certificate. This matriculation system is a high stakes environment as the certificate is a pre-requisite for studying at universities and most academic and teachers' colleges and test scores are used by universities and colleges as a selection device and can determine both the quality of the school and the major a student can be accepted to. Many countries administer a similar setup of end of high school exams like the *A-levels* in the UK, *Baccalauréat* in France and the *Matura* in many other European countries. In the US, this system is equivalent to a combination of receiving a high school diploma and passing the exit exams, which many states administer.

Finally, the Israeli setting we examine is comparable to most of the developed world both in terms of the standardized testing system, and in terms of the curriculum taught in schools. The average class size is approximately 26 students and the ratio of number of students to teacher is approximately 15, which aligns with the OECD average of 21 students and 15 students per teacher ratio, respectively (OECD, 2014). The average number of years of schooling

[4]Beginning in 2015, GEMS testing was conducted once every three years for each school.

is close to 13, similar to the US and UK figures (Johansson et al., 2013). Furthermore, the national expenditure on education relative to GDP is just above 7 percent, roughly in line with the OECD and the US averages (OECD, 2014).

2.2 The School Level Information Disclosure

In September of 2012, following a motion by the Movement for Freedom of Information, the Israeli Supreme Court ordered the Ministry of Education to make the GEMS information, including all test scores and survey information, public by school level for all past and future years.[5] Prior to the court ruling, the Ministry used the information for internal evaluations and only publicly released information aggregated at the municipality level, making any comparisons related to the choice set of middle schools based on this information impossible.

This court case and information release garnered extensive media coverage. In November 2012, '*Ynet*', one of Israel's most popular digital news outlets, collaborated with '*Madlan*', a well-known apartment-seeking website, to launch a project called '*The Israeli Education Map*'. This project mapped out all schools in Israel and allowed users to compare schools in the same region or city based on various features of the GEMS data. These features included test scores and three measures derived from student surveys, serving as proxies for student satisfaction, school violence levels, and teacher fatigue. Specifically, the first measure gauged the percentage of students who reported being happy in school, the second measured the percentage of students who reported being kicked or punched at school within the last month, and the third measured the percentage of teachers who reported feeling 'burned out'.[6] Figure 1 presents a translated illustration of how *'The Israeli Education Map'* presented the information for the schools in each municipality to households.[7] Additionally, information for each school, including all GEMS survey questions, was accessible on the Education Ministry's website, albeit in a less user-friendly format, requiring households to search for each school and examine official detailed reports. Figure 2 outlines the timeline related to the court ruling, information publication and relevant school registration and start dates.

[5] The Ministry opposed this release for various reasons, primarily concerning concerns of potentially 'unfair' league table comparisons based solely on test scores, as well as fears that schools might overly prioritize test scores, leading to inefficient allocation of teaching time and potential incentives for score manipulation behavior.

[6] Notably, the information related to teacher fatigue did not elicit any significant response from households in any of the specifications. Consequently, we will not discuss results related to it further in the paper, except as suggestive evidence that the entire effect of the information disclosure cannot be solely explained by the increased saliency of the publicized measures.

[7] Polling information in the US has found that 51 percent of parents report utilizing websites that rate and compare schools, suggesting the possibility of potentially high exposure to the '*The Israeli Education Map*' project (Tompson et al., 2013). Rachkovski (2025) presents further evidence on the utilization of this information.

3 Data and Variable Construction

Test scores and survey data from the GEMS are linked to student administrative records collected by the Ministry of Education. The administrative records include the student's school and class assignment and student demographics, which we use to construct all students' background characteristics. Using the linked datasets, we create a repeated cross section of students and their choice sets of secular and religious middle school options, along with those schools' attributes for the years 2010-2016. we limit the sample to primary schools in which at least one student chose a secular middle school and at least one student chose to attend a religious middle school in all pre disclosure cohorts in the range. Our final sample includes 81,276 students, constituting approximately 15 percent of all secular or religious Jewish students in the country transitioning from 6th to 7th grade at that time period. Descriptive statistics about our data are presented in Table 1. As can be seen comparing columns (1)-(3) with the rest of the table, the final sample represents households which are on average of lower SES and are more religious compared to the entire population of households with students. We define the student's religiosity level using the religiosity level of the primary school of each student. Thus if a student attended a religious (secular) primary school we will define that student as religious (secular).[8]

3.1 Defining the Choice Set

For each year between 2010 and 2016, we observe students who are transitioning from primary school to middle school (between 6th and 7th grade). For each student, the gap in school attributes between the secular and religious middle school options is defined as the difference in the attribute of the most common secular and the most common religious middle school attended by all the students attending the same primary school as the student in the pre information disclosure years. For the religious students (those who attended a religious primary school), we define the religious middle school option as the 'same' religiosity option and the secular middle school option as the 'alternative' religiosity option, and vice versa for secular students.[9] For each middle school, for all the years, we assign attributes from the last avail-

[8] Defining the student's religiosity level according to the primary school is an imperfect measure, but since the choice to attend the primary school was made in the years before the information disclosure, it is unlikely to bias the results examining the effects of school attribute information on the choice of school religiosity.

[9] We define the choice set in the following way: 1. For each primary school i for each year t, we observe for each transitioning student, to which middle school j they are going to attend. 2. Then for each Primary school i, we define the choice set J_{it} as the set of all the middle schools to which students from primary school i transitioned in year t. 3. Since we are looking at a public school system, tuition is similar across all middle school options and student screening is not allowed, we define the choice set for each student who attended primary school i as all the js belonging to J_{it}. Several additional considerations are pertinent to the definition of choice sets. First, we limit our analysis to students in primary schools where the size of J_{it} is at least 2, and that at least one of these schools was secular and at least one religious. We further limit the sample to

able pre-disclosure year to mitigate endogeneity concerns associated with the treatment. This approach more accurately replicates the information presented to households in the press, which did not receive annual updates. Specifically, for each middle school, we assign school average ratings for different attributes derived from the student survey (e.g., violence and satisfaction levels) and the average overall test scores from the latest year when the school underwent the GEMS assessment, with 2012 being the latest year available. Similar to the online information, we define violence and satisfaction ratings by the percentage of students who chose the 2 highest rating levels (4 or 5) on the violence and satisfaction questions. Results are robust to using a simple school average rating. We further categorize each choice set by calculating the difference between the religious and secular middle school options in each of the main attributes (overall test scores, satisfaction levels, and violence levels). Subsequently, for each attribute, we classify each choice set as either positive (non-positive) difference if the alternative religiosity middle school had a better (not better) rating compared to the same religiosity level middle school as the student's primary school. This categorization allows us to potentially proxy for incentives to respond to the information reveal by choosing the alternative religiosity level school. As can be seen from columns (5) and (6) of Table 1, the characteristics of students seem to be similar for choice sets with positive and non-positive classifications.

4 Modeling and Estimating School Choice

4.1 Household Utility from School Attributes

We first model household utility from middle school using a random utility model, akin to Hastings et al. (2010), in which households choose the middle school that maximises their utility. This utility is represented as a linearly separable function of the predicted effect for their child of the different school's attributes. That is,

$$U_{ij} = \lambda^{A}_{g(i)} A^{p}_{ij} + \lambda^{V}_{g(i)} V^{p}_{ij} + \lambda^{S}_{g(i)} S^{p}_{ij} + \beta^{R}_{g(i)} R_{ij} + \epsilon_{ij} \tag{1}$$

Where A^{p}_{ij}, V^{p}_{ij}, S^{p}_{ij} and R_{ij} represent the predicted effect of school j's test scores, violence levels and satisfaction ratings on child i and the school's religiosity level, respectively. While $\lambda^{A}_{g(i)}$, $\lambda^{V}_{g(i)}$,$\lambda^{S}_{g(i)}$, $\beta^{R}_{g(i)}$ are the weights households place on each of these effects, respectively. The weight households place on each of the attributes can also vary with observable student characteristics g such as SES, gender, religiosity level, etc., and may depend on the value they

primary schools which had a constant number of middle school options throughout the entire period of the sample (i.e., the size of J_{it} was constant for $\forall t \in [2010, 2016]$). This approach enables comparisons of similar choices over the years and reduces the potential bias due to policy changes in school choice zones.

place on the effect of the attribute on their child. Importantly, the weights can also depend on the information, or lack there of, that households posses relating to each attribute, which might cause them to place less expressed weight on that attribute. ϵ_{ij} represents all other idiosyncratic factors effecting the utility from the match.

For the measures of test scores, violence and student satisfaction, as we do not observe the predicted effect of the different attributes at each school directly, we assume that their effects on student i at school j are proportional to a latent measure of the attribute at each school. For each of these attributes, this latent measure is the sum of the school average ratings (A_j, V_j and S_j), and an idiosyncratic match between the school and the student for each of those attributes (γ_{ij}, δ_{ij} and ω_{ij}).

$$A^p_{ij} = \kappa^A_{g(i)} A_j + \gamma_{ij} \tag{2}$$

$$V^p_{ij} = \kappa^V_{g(i)} V_j + \delta_{ij} \tag{3}$$

$$S^p_{ij} = \kappa^S_{g(i)} S_j + \omega_{ij} \tag{4}$$

The parameter κ captures sensitivity of students to the effect of each of the school attributes, where κ may also vary with g. Students with higher κ are more effected from attending a school with a higher level of that attribute.

Given these assumptions, we can rewrite our utility function in terms of observable school attributes as:

$$U_{ij} = \beta^A_{g(i)} A_{ij} + \beta^V_{g(i)} V_{ij} + \beta^S_{g(i)} S_{ij} + \beta^R_{g(i)} R_{ij} + \zeta_{ij} \tag{5}$$

Where $\beta^A_{g(i)} = \lambda^A_{g(i)} \kappa^A_{g(i)}$, $\beta^V_{g(i)} = \lambda^V_{g(i)} \kappa^V_{g(i)}$, $\beta^S_{g(i)} = \lambda^S_{g(i)} \kappa^S_{g(i)}$ and $\zeta_{ij} = \lambda^A_{g(i)} \gamma_{ij} + \lambda^V_{g(i)} \delta_{ij} + \lambda^S_{g(i)} \omega_{ij} + \epsilon_{ij}$. Equation (5) determines household choice of middle school based on a combination of observable school characteristics and the idiosyncratic weights that the household places on these and other unobserved characteristics.

Next we examine the choice of middle school religiosity made by the households. Household i is more likely to choose a middle school j over f if $U_{ij} > U_{if}$. For the before disclosure period, without accurate information on the school attributes related to the GEMS data, it is likely that the weights placed in equation (5) on those variables is low, thus the choice would depend largely on the congruence of household religiosity (which is proxied by primary school

religiosity) and the religiosity level of the school. On the other hand, for the cohorts making the middle school choice post disclosure, their choice would also depend on the attributes related to the GEMS data and the weights they place on the importance of those attributes in the utility function relative to the importance of school religiosity. Thus, an important empirical question is whether, following the information disclosure, there are households which value these attributes enough to produce added shifts of school religiosity in cases where the alternative option is favorable on those measures. And if there are, which attributes are key in this phenomenon. In the next subsections we will present an estimation strategy to answer these questions.

4.2 Estimating Religiosity Substitutability

The main hypothesis is that providing information on school attributes can lead households to choose schools which do not most strongly align with their religious preferences, especially in cases where that information leads to beliefs that the alternative option might be of better quality in certain school attributes. We estimate the existence of such a shift in preferences using a difference in difference estimation. We define all years prior to the information disclosure as pre treatment years and all post disclosure as post treatment. We then look separately at students for which the alternative religiosity middle school option is better compared to the same religiosity option, in terms of the disclosed attributes, and define that group of students as the treated students. We then examine whether there is a differential increase in the probability of choosing to attend the alternative schooling religiosity option for the students in the treated group in the post treatment years. That is,

$$Changed_i = \beta_1 After_i + \beta_2 PositiveDiff_i + \beta_3 After_i X PositiveDiff_i + \theta_{j(i)} + \zeta_i, \qquad (6)$$

Where $Changed_i$ is a dummy variable equal to 1 if student i chose to attend the alternative religiosity middle school, $After_i$ is a dummy variable equal to 1 if the student made a middle school choice in the years following the information disclosure and $PositiveDiff_i$ represent a vector of dummy variables equal to 1 when the alternative religiosity middle school option had a higher rating than the same religiosity schooling options for test scores, violence levels and satisfaction ratings. $\theta_{j(i)}$ is a primary school fixed effect. We estimate equation (6) using a logit model. We assume ζ_i is i.i.d. and follows an extreme value type I distribution. Standard errors are calculated using a bootstrap clustered method at the primary school (choice set) level.

4.3 Estimating Parameters for Preferences of School Attributes

Next, in order to more accurately estimate the preferences for different school attributes and how those change following the school information disclosure, we combine a discrete choice model estimation with a difference in difference analysis. For each of the before and after periods of our sample and separately for students depending on whether the alternative religiosity school option was either better or not, we estimate the parameters of the random utility model presented in equation (5). We estimate the change in weights households place on each of the relevant attributes using the conditional logit model where the likelihood function is formed by maximizing the probability that student i chooses to attend middle school j over the other option in her choice set:

$$P_i(j_i) = \Pr(U_{ij} > U_{ik} \ \forall k \in J_i) = \frac{\exp(\beta^A A_j + \beta^V V_j + \beta^S S_j + \beta^R R_j)}{\sum_{k \in J_i} \exp(\beta^A A_k + \beta^V V_k + \beta^S S_k + \beta^R R_k)} \tag{7}$$

Where J_i is the choice set of middle school options for student i, which consists of the secular and religious schools. A_j,V_j and S_j are, standard normal attributes for middle school j from the most recent pre treatment GEMS survey, representing the school average GEMS test score in 8th grade, the percentage of students involved in a violent incident at the school and the percentage of students who report being happy in the school, respectively. R_j is the religiosity level of middle school j. We then aggregate the log of equation (7) across individuals for each cohort t to construct the complete likelihood and to estimate parameters of the utility specification via maximum likelihood for both the before and after periods. We assume ζ_{ij} is i.i.d. and follows an extreme value type I distribution. Standard errors are calculated using a bootstrap clustered method at the primary school (choice set) level.

5 Results

Before examining household responses to the information disclosure, we examine the distribution of the differences between the alternative and same religiosity options for the choice sets in the sample. We assess whether there is sufficient variation in the differences between the secular and religious school options within the choice sets, for each of the school attributes examined. Such variation is a necessary prerequisite for the information on the attributes to be relevant and important to households. In figures 3 and 4 we can observe that the distribution of differences is generally continuous and covers a large range of differences. These findings provide supportive evidence that there is sufficient variation and scope for households to sort according to the different attributes if they wish to and have the relevant information. The figures further show that choice sets are comparable between secular and religious and

high and low SES households, supporting the idea that any potential differences in response between the groups cannot be fully explained by the differences in choice sets.[10]

In Table 1, we further show that differences in response between the choice sets with positive and non-positive differences and between religious and secular households are not driven by the composition of the population as there appear to be no significant differences in the household characteristics between the groups.

5.1 Effects of School Level Attribute Information on Household School Religiosity Preferences

Table 2 shows that following the information disclosure, households had an increased probability of choosing an alternative religiosity middle school when that school was better on the publicized attributes. Column 1 presents the difference in difference results showing a differential increase of 4 percentage points (p.p) in the probability of an alternative religiosity middle school for choice sets for which the alternative options had better test score averages. We also find similar outcomes for choice sets with better outcomes for student satisfaction ratings and lower violence levels (3 and 1.8 p.p higher respectively, although not statistically significant for the last measure).[11] In Columns 2 and 3, we look separately at the changes from the before to after disclosure cohorts for the positive vs. non positive differences choice sets. We find that the effect is indeed coming from an increase in the probability of choosing the alternative option for choice sets where the alternative has better attributes, while there appears to be no significant change in choice sets where no such positive differences exist.[12]

Next, we identify important heterogeneities in the response related to household characteristics. In columns 2 and 3 of Table 3 we observe that most of the effect is coming from religious households (those who attended a religious primary school) who chose an alternative religiosity middle school in order to attend a school with better attributes. This difference could be attributed to the general lower levels of shifts from secular households, which can imply a lower willingness to switch, even in the case of better school attributes.[13] This result,

[10] A potential exception are the differences in satisfaction ratings, which show a disparity in choice sets between secular and religious households, such that a larger share of religious households face a choice set where the secular middle school option has higher satisfaction ratings. On the other hand, a larger share of secular households face a choice set where the religious alternative has a lower satisfaction ratings. Thus, one should take this into account when interpreting the results related to the response to satisfaction rating information.

[11] For interpretability, the results in the text are the average marginal effects while the results presented in the tables are changes in log likelihood derived from the logit model.

[12] In Figure 5 we show the gaps in probability of changing school religiosity between the positive and non-positive differences choice sets by year. Although results are noisier due to the smaller sample size, we can observe an increased difference in the probability for the years following the information disclosure (especially in choice sets for which test scores averages were higher for the alternative religiosity option).

[13] For the entire population, about 17 percent of religious students switch to secular middle schools on average, while only around 1 percent of secular students make the switch. For our final sample, these numbers are 27

and the general smaller number of shifts for secular households, suggests we should interpret our results of response to information as mainly relating to shifts by religious households to more secular options.

In columns 4 and 5 of Table 3 we break down the results by SES, defined by parental education (lower SES in the case where both parents had at most 12 years of education). We find that for test score differences, there appears to be a significant response for both high and low SES, with a stronger response from the high SES group, while for the other attributes, student satisfaction and violence levels, there appears to be a stronger response by the lower SES households. This result is consistent with previous findings asserting that lower SES households seem to value these attributes more, relative to their higher SES counterparts (Beuermann et al., 2023; Rachkovski, 2025). Finally, in columns 6 and 7 we examine whether there is a differential response by the gender of the student. We find that while the response to test score is slightly stronger for female students, and response to student satisfaction rating differences is similar across gender, households of female students seem to be unresponsive to the school violence attribute. This result is consistent with previous research on gender differences in sensitivity to school violence levels and information provision on its levels (Lavy et al., 2012; Jacob, 2002; Rachkovski, 2025).[14]

Next, we provide an interpretation for the magnitude of the effect size. The average cohort size for 6th graders in a primary school is 69.44. We observe an increase of almost 4 p.p in the probability of choosing an alternative religiosity middle school in the years following the information release in choice sets with positive test score differences. Thus, this would translate to an average shift of almost 3 students choosing a school with alternative religiosity (shifting from a religious to a secular school) and an increase of almost 15 percent relative to the baseline p.p of switches of religious households in our final sample. Next, we interpret the differences in the attributes, which is relevant mainly for the next subsection. A 1 SD increase in average test score ratings would translate to an increase of almost 20 percent relative to the average. A 1 SD increase in satisfaction and violence ratings corresponds to an approximate 8 and 3 percentage points increase in students who report being satisfied and free from violence in middle school, respectively. This would translate to an average of about 6 and 2 additional students in a middle school cohort who report being happy in school and that don't experience violence, respectively.

and 11 percent respectively. The smaller sample of secular households also suggests that the results for this group would be noisier.

[14] For a robustness test related to the assumptions required for the logit estimation and a more straightforward interpretation of the coefficients related to the effect on increased probability, we also estimated the main outcomes using the linear probability model, the results of this alternative specification are presented in Table 4 and are similar both in significance and in comparison to the marginal effects of the logit model specification.

5.2 Estimating Shifts in Parameters of the School Choice Utility Function

In Table 5 we present the changes in weights for the various attributes derived from the discrete choice utility model estimated using equation (5). In Columns 1-3 we can observe the changes in the weights that households place on the various attributes between cohorts making their choice before and after the information disclosure. We observe the weight changes both for the entire sample (column 1) and for the choice sets with positive (column 2) and non-positive (column 3) differences between the alternative and same religiosity middle schools options for the appropriate attribute. We observe a significant decrease in the weights placed on religiosity, an increase in weights placed on test scores and a lack of significant change for satisfaction ratings and school violence. These results show that the relative weights to having the preferred school religiosity compared to the various publicized school attributes decreases following the information disclosure. And that the effect is coming mainly from the positive difference choice sets. The general increase in relative weights households place on the publicized school attributes in the after period, and specifically in choice sets with positive differences, is consistent with the reduced form results presented in the previous subsection. These findings indicate that there are households who are open to considering school choices that diverge from their religious preferences, if they receive information that the alternative religiosity option is of better quality on various attributes which they care about. In the next section, we will discuss how these shifts in religiosity levels might affect longer run academic preferences and personal religiosity preferences.

5.3 Effects of Shifting School Religiosity on Longer Run Preferences

In order to estimate the effects of choosing to attend an alternative middle school religiosity option due to preferences for improved quality in other attributes, we incorporate into the analysis information on high-school enrollment choices and information on students' high school subject choices. Specifically we examine whether students chose to specialize in a STEM field and whether they took the maximum amount of units in Math.[15]

We first estimate a naive regression in which we examine the effect of changing school religiosity on the outcome variables:

$$Y_i = \beta_1 Changed_i + \beta_2 After_i + \beta_3 PositiveDiff_i + \theta_{j(i)} + \zeta_i, \tag{8}$$

[15]We use high school enrollment data to define a dummy variable which is equal to 1 in the case where the choice of high school is of religiosity level which is different from the primary school, meaning choosing an alternative religiosity high school. We define a STEM specialization as a dummy variable equaling 1 if the student chose to specialize in either Computer Science, Physics, Chemistry or Biology. We do not incorporate end of high school test score average or graduating rate as we do not have available information on these measures for the post disclosure time period.

Where $Changed_i$ is a dummy variable equal to 1 if student i chose to attend the alternative religiosity middle school, $After_i$ is a dummy variable equal to 1 if the student made a middle school choice in the years following the information disclosure and Y_i represents one of the outcome variables (whether a student chose of STEM or Math Specialization or making an alternative religiosity high-school choice). $\theta_{j(i)}$ is a primary school fixed effect. Standard errors are clustered at the primary school (choice set) level.

In panel A of Column 1 of Table 6 we observe that households which changed their preferred school religiosity between primary and middle school were almost 13 p.p more likely to also choose a high school with a different religiosity level than their primary school, compared to households who did not make a change. Furthermore, in panels B and C we show that these households were also less likely to choose to specialize in STEM and in advanced math. These results do not lend themselves to a causal interpretation of the effects of choosing to attend an alternative religiosity middle school driven by quality considerations, as potential selection and endogeneity issues can bias the estimates.

To overcome these issues, and following the results in the previous section, we will instrument the change choice with the interaction between making the choice in the post information disclosure period and having a choice set in which there is a positive difference in test scores between the alternative and same religiosity schooling options.

First Stage:

$$Changed_i = \beta_1 After_i + \beta_2 PositiveDiff_i + \beta_3 After_i X PositiveDiff_i + \theta_{j(i)} + \eta_i, \quad (9)$$

Second Stage:

$$Y_i = \beta_1 Changed_i^{predicted} + \beta_2 After_i + \beta_3 PositiveDiff_i + \theta_{j(i)} + \zeta_i, \quad (10)$$

Given the results of the previous section relating to the significant effects of the difference in difference results, we can assume that the relevance assumption of the instrument holds. Furthermore, it is reasonable to believe that the exclusion restriction is likely to hold for several reasons related to the institutional setup. The information revelation was an exogenous event which was not planned by the ministry of education, and there weren't simultaneous reforms by the ministry at the relevant time frame. Furthermore, the information revelation did not cover high schools, thus it seems reasonable to assume that it is likely that the sole way that being in a positive difference group in the after period as opposed to the control group would affect the outcome variables is through the choice of middle school, which is incentivized by the information disclosure.

In Panel A of Column 2 of Table 6 we observe that the IV results show that choosing an alternative religiosity middle school option due to school quality considerations does increase

the likelihood of attending an alternative religiosity high-school by almost 10 p.p, indicating that it might increase the likelihood of persistent religious preferences changes. In column 2 of panels B and C, we show that unlike the naive regressions in Column 1, choosing an alternative religiosity middle school option due to school quality considerations does not decrease the probability of specializing in STEM or advanced Math. On the contrary, it seems to increase the likelihood of specializing in those fields, although results are not significant at conventional levels.[16] These long-run results should nonetheless be interpreted with some caution. The first-stage F-statistic reported in Table 6 (8.2) is below the conventional rule-of-thumb threshold of 10, so part of the imprecision in the second-stage estimates could reflect a weak instrument rather than the absence of an effect. Furthermore, our design cannot fully separate the effect of switching to a school with genuinely better *realized* attributes from the effect of being incentivized to switch based on *perceived*, pre-disclosure attributes, nor does it net out a generic "better school" effect from an effect specific to the change in religiosity itself. We therefore view the estimates in this subsection as suggestive of the potential long-run consequences of quality-induced religiosity switching. Future work, given data availability, can attempt to more fully address these identification concerns in several ways, including, for example, benchmarking against switches within the same religiosity sector, using alternative instruments such as distance to the alternative school or the presence of an older sibling in the alternative option, or by comparing cases in which the realized quality (as opposed to perceived) is not better for the alternative option.

6 Conclusions

In many countries worldwide, households can choose between religious and secular schooling options. Although research has found that this choice can have important consequences both for individual preferences and beliefs and for labor market outcomes(Bazzi et al., 2020; Arold et al., 2022), little is known about the considerations of households when making the choice of school religiosity, or what conditions can lead to trade-offs with other school properties.

In this paper, we study how considerations related to attributes of schools such as test score average, violence levels and student satisfaction ratings can affect the decision to choose an alternative religiosity school option. We take advantage of a natural experiment of an information disclosure of school attributes and exploit a unique setting in which both religious and secular public schooling options were available to households. The results indicate that there are households which are willing to trade-off their schooling religiosity preferences

[16]The difference in the findings between the naive and IV results indicates that the general sample of households choosing to attend an alternative religiosity middle school might differ from households induced to make this decision due to school quality consideration. The latter group, captured by the IV estimation, might have different characteristics and give higher priorities for academic achievement.

to choose a school with better attributes. Results are particularly pronounced for religious households suggesting that a higher percentage of households in this group are willing to make the trade-off. We further find that there are key heterogeneities with regards to which attributes are considered valuable. While both high and low SES households seem to value test score disparities, only lower SES households are willing to trade off religiosity preferences for improvements related to school violence and student satisfaction ratings. Finally, implementing an IV approach, we find suggestive evidence that choice of an alternative schooling religiosity, induced by quality differences, may lead to long-run changes in religious preferences and changes in academic preferences to fields with higher labor market returns.

These findings related to heterogeneities in response and in attributes of value, are important considerations when designing school choice policies and planning which school attributes to measure and emphasize. Furthermore, policy makers should take this behavior into account both in policies related to predicting demographic shifts related to religious preferences and when attempting to influence such preferences. The magnitude of the effect of information and quality differences may vary depending on the specific country setting. For instance, other settings with other religious beliefs might have different thresholds related to trade-offs, have different institutional limitations related to school choice policies or be in a setting with larger disparities in quality or the general severity of violence or quality of teaching. Regardless of the specifics of the setting, the overarching conclusions regarding the possibility of a trade-off between quality and schooling religious characteristics, its potential long run effects and the importance of publicizing a diverse set of school attributes should be tractable for various contexts beyond the specific one examined here.

References

Abdulkadiroğlu, A., Pathak, P. A., Schellenberg, J., and Walters, C. R. (2020). Do parents value school effectiveness? *American Economic Review*, 110(5):1502–1539.

Abdulkadiroğlu, A., Pathak, P. A., and Walters, C. R. (2018). Free to choose: Can school choice reduce student achievement? *American Economic Journal: Applied Economics*, 10(1):175–206.

Ainsworth, R., Dehejia, R., Pop-Eleches, C., and Urquiola, M. (2023). Why do households leave school value added on the table? the roles of information and preferences. *American Economic Review*, 113(4):1049–1082.

Altonji, J. G., Elder, T. E., and Taber, C. R. (2005). Selection on observed and unobserved variables: Assessing the effectiveness of catholic schools. *Journal of political economy*, 113(1):151–184.

Andrabi, T., Das, J., Khwaja, A. I., and Zajonc, T. (2006). Religious school enrollment in pakistan: A look at the data. *Comparative Education Review*, 50(3):446–477.

Arold, B. W., Woessmann, L., and Zierow, L. (2022). Can schools change religious attitudes? evidence from german state reforms of compulsory religious education.

Bazzi, S., Hilmy, M., and Marx, B. (2020). Religion, education, and the state. Technical report, National Bureau of Economic Research.

Becker, S. O., Rubin, J., and Woessmann, L. (2024). Religion and growth. *Journal of Economic Literature*, 62(3):1094–1142.

Beuermann, D. W., Jackson, C. K., Navarro-Sola, L., and Pardo, F. (2023). What is a good school, and can parents tell? evidence on the multidimensionality of school output. *The Review of Economic Studies*, 90(1):65–101.

Campos, C. (2023). Social interactions and preferences for schools: Experimental evidence from los angeles. *Available at SSRN 4352040*.

Campos, C. and Kearns, C. (2022). The impact of neighborhood school choice: Evidence from los angeles' zones of choice. *Available at SSRN*, 3830628.

Cohen-Zada, D. (2006). Preserving religious identity through education: Economic analysis and evidence from the us. *Journal of Urban Economics*, 60(3):372–398.

Cohen-Zada, D. and Justman, M. (2022). Religious schooling. *Handbook of Labor, Human Resources and Population Economics*, pages 1–24.

Cohen-Zada, D. and Sander, W. (2008). Religion, religiosity and private school choice: Implications for estimating the effectiveness of private schools. *Journal of Urban Economics*, 64(1):85–100.

Crespin, R. (2024). The value of school social climate information: Evidence from chicago housing transactions. Technical report, Working Paper.

Facchetti, E., Neri, L., and Ovidi, M. (2023). Should you meet the parents? the impact of information on non-test score attributes on school choice.

Hastings, J. S., Kane, T., and Staiger, D. (2010). Heterogeneous preferences and the efficiency of public school choice. Technical report, NBER Working Papers 12145 and 11805.

Hastings, J. S. and Weinstein, J. M. (2008). Information, school choice, and academic achievement: Evidence from two experiments. *The Quarterly journal of economics*, 123(4):1373–1414.

Hoxby, C. M. (2003). School choice and school productivity. could school choice be a tide that lifts all boats? In *The economics of school choice*, pages 287–342. University of Chicago Press.

Hussain, I. (2023). Housing market and school choice response to school quality information shocks. *Journal of Urban Economics*, 138:103606.

Jackson, C. K. (2018). What do test scores miss? the importance of teacher effects on non–test score outcomes. *Journal of Political Economy*, 126(5):2072–2107.

Jackson, C. K., Kiguel, S., Porter, S. C., and Easton, J. Q. (2023). Who benefits from attending effective high schools? *Journal of Labor Economics*.

Jacob, B. A. (2002). Where the boys aren't: Non-cognitive skills, returns to school and the gender gap in higher education. *Economics of Education review*, 21(6):589–598.

Johansson, Å., Guillemette, Y., Murtin, F., Turner, D., Nicoletti, G., de la Maisonneuve, C., Bagnoli, P., Bousquet, G., and Spinelli, F. (2013). Long-term growth scenarios.

Koning, P. and Van der Wiel, K. (2013). Ranking the schools: How school-quality information affects school choice in the netherlands. *Journal of the European Economic Association*, 11(2):466–493.

Lavy, V. (2010). Effects of free choice among public schools. *The Review of Economic Studies*, 77(3):1164–1191.

Lavy, V. (2021). The long-term consequences of free school choice. *Journal of the European Economic Association*, 19(3):1734–1781.

Lavy, V. and Schlosser, A. (2011). Mechanisms and impacts of gender peer effects at school. *American Economic Journal: Applied Economics*, 3(2):1–33.

Lavy, V., Silva, O., and Weinhardt, F. (2012). The good, the bad, and the average: Evidence on ability peer effects in schools. *Journal of Labor Economics*, 30(2):367–414.

Mizala, A. and Urquiola, M. (2013). School markets: The impact of information approximating schools' effectiveness. *Journal of Development Economics*, 103:313–335.

Munevar, I. (2023). Catholic schools and student performance: Evidence from chile's school-admission lottery. Manuscript, not yet published.

Muralidharan, K. and Sundararaman, V. (2015). The aggregate effect of school choice: Evidence from a two-stage experiment in india. *The Quarterly Journal of Economics*, 130(3):1011–1066.

Musset, P. (2012). School choice and equity: Current policies in oecd countries and a literature review.

Neal, D. (1997). The effects of catholic secondary schooling on educational achievement. *Journal of Labor Economics*, 15(1, Part 1):98–123.

Neilson, C., Allende, C., Gallego, F., et al. (2019). Approximating the equilibrium effects of informed school choice. Technical report.

Neilson, C. A. (2019). The rise of centralized mechanisms in education markets around the world. Technical report, Technical Report August.

Nunes, L. C., Reis, A. B., and Seabra, C. (2015). The publication of school rankings: A step toward increased accountability? *Economics of Education Review*, 49:15–23.

OECD, O. (2014). *Education at a Glance 2014*. OECD Publishing.

Rachkovski, G. (2025). Beyond test scores: Does public information on school satisfaction and violence levels affect parental school choice? *Available at SSRN 5233765*.

Schneider, J. (2017). *Beyond test scores: A better way to measure school quality*. Harvard University Press.

Tompson, T. N., Benz, J. K., and Agiesta, J. (2013). *Parents' attitudes on the quality of education in the United States*. Associated Press-NORC Center for Public Affairs Research Chicago, IL.

Walberg, H. J. (2007). *School choice: The findings*. Cato Institute.

Tables and Figures

Table 1: Descriptive Statistics

	Population			Final Sample								
	All	Primary School Religiosity		Entire Sample	Positive Test Score Gap		Primary School Religiosity		Changed School Religiosity		Socio-Economic Status	
		Secular	Religious		0	1	Secular	Religious	1	0	Low	High
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Father's Years of Education	12.78	12.81	12.66	11.47	11.48	11.41	11.15	11.51	10.83	11.68	9.83	15.98
	(4.11)	(3.98)	(4.50)	(4.48)	(4.65)	(4.41)	(4.84)	(4.42)	(3.96)	(4.62)	(3.92)	(2.27)
Mother's Years of Education	13.37	13.50	12.98	12.02	12.00	12.00	12.14	12.00	11.57	12.17	10.84	15.27
	(3.51)	(3.32)	(4.06)	(4.06)	(4.26)	(3.98)	(3.98)	(4.08)	(3.40)	(4.25)	(3.80)	(2.79)
Number of Siblings	1.52	1.30	2.19	1.79	1.86	1.73	1.30	1.86	1.54	1.87	1.72	1.96
	(1.22)	(1.01)	(1.55)	(1.34)	(1.34)	(1.31)	(1.18)	(1.34)	(1.22)	(1.36)	(1.32)	(1.35)
Average Test Scores	61.91	63.17	57.90	56.55	57.98	55.84	54.69	56.85	58.60	55.84	54.81	61.39
	(9.53)	(8.57)	(11.19)	(10.64)	(10.74)	(10.57)	(8.30)	(10.94)	(7.65)	(11.41)	(10.28)	(10.13)
Average Violence Levels	0.15	0.14	0.17	0.16	0.16	0.16	0.16	0.16	0.15	0.16	0.16	0.17
	(0.10)	(0.07)	(0.14)	(0.11)	(0.12)	(0.10)	(0.05)	(0.11)	(0.04)	(0.12)	(0.10)	(0.13)
Average Student Satisfaction Levels	0.74	0.75	0.71	0.71	0.72	0.70	0.74	0.70	0.74	0.69	0.70	0.73
	(0.09)	(0.09)	(0.10)	(0.09)	(0.10)	(0.09)	(0.06)	(0.10)	(0.07)	(0.10)	(0.09)	(0.09)
Average Teacher Fatigue Levels	0.33	0.35	0.28	0.31	0.31	0.31	0.40	0.30	0.34	0.30	0.31	0.30
	(0.11)	(0.11)	(0.12)	(0.12)	(0.12)	(0.12)	(0.10)	(0.12)	(0.10)	(0.13)	(0.12)	(0.12)
High SES	0.40	0.40	0.40	0.27	0.28	0.26	0.29	0.26	0.15	0.31	-	-
	(0.49)	(0.49)	(0.49)	(0.44)	(0.45)	(0.44)	(0.45)	(0.44)	(0.36)	(0.46)	-	-
STEM Specialization	0.16	0.17	0.13	0.12	0.12	0.12	0.12	0.12	0.09	0.13	0.09	0.21
	(0.37)	(0.38)	(0.34)	(0.33)	(0.32)	(0.33)	(0.32)	(0.33)	(0.29)	(0.34)	(0.28)	(0.41)
Advanced Math Specialization	0.15	0.15	0.13	0.11	0.10	0.11	0.10	0.11	0.07	0.12	0.07	0.21
	(0.35)	(0.36)	(0.33)	(0.31)	(0.31)	(0.31)	(0.31)	(0.31)	(0.26)	(0.33)	(0.26)	(0.41)
Changed Religiosity Middle-School	0.05	0.01	0.17	0.25	0.28	0.24	0.12	0.27	-	-	0.29	0.14
	(0.21)	(0.10)	(0.37)	(0.44)	(0.45)	(0.43)	(0.33)	(0.45)	-	-	(0.46)	(0.35)
Share in Religious Primary Schools	0.24	-	-	0.87	0.68	0.94	-	-	0.94	0.84	0.87	0.85
	(0.43)	-	-	(0.34)	(0.47)	(0.25)	-	-	(0.24)	(0.37)	(0.34)	(0.35)
Number of Students	531,038	405,174	125,864	81,276	25,322	53,883	10,941	70,335	20,632	60,644	59,577	21,649

Notes: This table consists of the 2010–2016 cohorts of 6th grade students rising to middle school in Israel. Columns (1)-(3) contains sample means for all Jewish non Ultra-Orthodox students in the country. Columns (4)-(12) contains sample means for the final sample of analysis, students who come from primary schools, in the pre-disclosure years, in which at least one student chooses to go to a secular middle school and at least one student chooses to go to a religious middle school. Columns (2) and (7) contain the means for the sub sample of students who attended a secular primary school and columns (3) and (8) students who attended a religious primary school. Columns (5) and (6) contain the means for the sub sample of students in choice sets with non-positive or positive difference in test scores between the alternative and same religiosity schooling options, respectively. Columns (9) and (10) contain the means for the sub sample of students who chose to attend a middle school with a different (9) or same (10) religiosity level compared to their primary school. Columns (11) and (12) contain the means for the sub sample of students for whom both parents have at most 12 years of schooling (we classify them as low SES), and students for whom at least one of the parents has more than 12 years of education and students (we classify them as high SES).

Table 2: The Effect of School Attribute Information on Parental Probability of Changing School Religiosity

	All	Positive	Non Positive
	(1)	(2)	(3)
Test Scores Positive Gap*After	0.250***	0.245***	-0.031
	(0.070)	(0.040)	(0.057)
Satisfaction Positive Gap*After	0.162**	0.208***	0.012
	(0.080)	(0.037)	(0.067)
Violence Positive Gap*After	0.089	0.232***	0.097*
	(0.067)	(0.046)	(0.045)
Number of Students	79,205	53,883	25,322

Notes: This table presents the results of the difference-in-difference estimation, which examines whether there is a differential increase in the probability of choosing to attend the alternative schooling religiosity option. It investigates the differential response, following the disclosure of information, in choice sets with positive differences in school attributes in favor of the alternative religiosity option. These coefficients are log-odds ratios, estimated using a logit estimation detailed in Equation (6) of the main text. The pre-disclosure and post-disclosure years are stacked to `before' and `after' periods, respectively. Columns (2) and (3) display results for the simple differences, looking separately at the positive and non-positive difference choice sets for each attribute, respectively. For each subgroup, results show the change in probability between the before and after disclosure periods. The number of observations for the positive and non-positive subgroups columns refers to the test score attribute and varies depending on the attribute. Standard errors are computed using bootstrap and clustered at the choice set (primary school) level. * indicates significant level at 10. **indicates significant level at 5. ***indicates significant level at 1 or lower.

Table 3: Heterogeneous Effect of School Attribute Information on Parental Probability of Changing School Religiosity

	All	Religious Primary-> Secular Middle	Secular Primary-> Religious Middle	Low SES	High SES	Male	Female
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Test Scores Positive Gap*After	0.250***	0.244***	0.036	0.180**	0.473**	0.165*	0.331***
	(0.070)	(0.072)	(0.402)	(0.078)	(0.188)	(0.099)	(0.103)
Satisfaction Positive Gap*After	0.162**	0.226***	-0.155	0.241***	0.107	0.180	0.143
	(0.080)	(0.088)	(0.370)	(0.091)	(0.188)	(0.111)	(0.117)
Violence Positive Gap*After	0.089	0.087	0.010	0.130*	-0.165	0.145	0.016
	(0.067)	(0.069)	(0.340)	(0.073)	(0.181)	(0.093)	(0.098)
Number of Students	79,205	68,264	10,941	59,577	19,628	39,382	39,823

Notes: This table presents the results of the difference-in-difference estimation, which examines whether there is a differential increase in the probability of choosing to attend the alternative schooling religiosity option. It investigates the differential response, following the disclosure of information, in choice sets with positive differences in school attributes in favor of the alternative religiosity option. These coefficients are log-odds ratios, estimated using a logit estimation detailed in Equation (6) of the main text. The pre-disclosure and post-disclosure years are stacked to `before' and `after' periods, respectively. Column (2) displays results for the sub sample of students we define as religious, these are students who attended a religious primary school. For these students the alternative religiosity option is the secular middle school. Column (3) displays results for the sub sample of students we define as secular, which are students who attended a secular primary school. In Columns (4) and (5) we observe at the response of the sub sample of low and high SES, respectively. We classify students as low SES if both parents have at most 12 years of schooling, while high SES students are defined as those with at least one parent having more than 12 years of education. Standard errors are computed using bootstrap and clustered at the choice set (primary school) level. * indicates significant level at 10. **indicates significant level at 5. ***indicates significant level at 1 or lower.

Table 4: Linear Probability Estimation of The Effect of School Attribute Information on Parental Probability of Changing School Religiosity

	All	Positive	Non Positive	Religious Primary-> Secular Middle	Secular Primary-> Religious Middle	Low SES	High SES	Male	Female
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
A. General Effect									
Test Scores Positive Gap*After	0.040***	0.038***	-0.005	0.040***	0.034	0.032**	0.040**	0.027*	0.047***
	(0.014)	(0.010)	(0.011)	(0.015)	(0.021)	(0.015)	(0.019)	(0.016)	(0.016)
Satisfaction Positive Gap*After	0.030**	0.036***	0.001	0.038**	-0.012	0.043***	0.015	0.033**	0.026*
	(0.013)	(0.009)	(0.011)	(0.016)	(0.017)	(0.015)	(0.019)	(0.017)	(0.015)
Violence Positive Gap*After	0.018	0.038***	0.014	0.019	0.006	0.026*	-0.006	0.025	0.009
	(0.012)	(0.010)	(0.009)	(0.014)	(0.013)	(0.013)	(0.021)	(0.017)	(0.014)
Number of Students	79,205	53,883	25,322	68,264	10,941	59,577	19,628	39,382	39,823

Notes: This table presents a robustness to the logit estimation of the main results. It presents the results of the difference-in-difference estimation, which examines whether there is a differential increase in the probability of choosing to attend the alternative schooling religiosity option. It investigates the differential response, following the disclosure of information, in choice sets with positive differences in school attributes in favor of the alternative religiosity option. These coefficients are estimated using a linear probability model estimation of Equation (6) of the main text. The pre-disclosure and post-disclosure years are stacked to `before' and `after' periods, respectively. Columns (2) and (3) display results for the simple differences, looking separately at the positive and non-positive difference choice sets for each attribute, respectively. For each subgroup, results show the change in probability between the before and after disclosure periods. Column (4) displays results for the sub sample of students we define as religious, these are students who attended a religious primary school. For these students the alternative religiosity option is the secular middle school. Column (5) displays results for the sub sample of students we define as secular, which are students who attended a secular primary school. In Columns (6) and (7) we observe at the response of the sub sample of low and high SES, respectively. We classify students as low SES if both parents have at most 12 years of schooling, while high SES students are defined as those with at least one parent having more than 12 years of education. The number of observations for the positive and non-positive subgroups columns refers to the test score attribute and varies depending on the attribute. Standard errors are clustered at the choice set (primary school) level. * indicates significant level at 10. **indicates significant level at 5. ***indicates significant level at 1 or lower.

Table 5: The Effect of School Attribute Information on School Choice Utility Weights - Conditional Logit

	Entire Sample	Positive Differences	Non-Positive Differences
	Change in Weights Placed on Each Attribute (After-Before)		
	(1)	(2)	(3)
Religiosity	-0.071**	-0.102***	-0.041
	(0.031)	(0.039)	(0.053)
Test Scores	0.042***	0.046***	0.034
	(0.012)	(0.016)	(0.022)
Satisfaction	-0.018	-0.007	-0.068*
	(0.015)	(0.019)	(0.027)
Violence	0.015	0.022	0.006
	(0.012)	(0.014)	(0.020)
Number of Students	79,205	53,883	25,322

Notes: This table presents estimates that compare changes in the weights parents assign to different school attributes following the disclosure of information. The reported results represent, for the religiosity measure, the change in the coefficient associated with the increased probability of selecting a middle school with a religiosity level compatible to the religiosity of the student, For the other measures, the results represent the change in the coefficients associated with the increased probability of selecting a middle school with a one-standard-deviation higher rating in a specific school attribute. These coefficients are log-odds ratios, which have been estimated using the conditional logit model detailed in Equation (7) of the main text. The pre-disclosure and post-disclosure years are stacked to `before' and `after' periods, respectively. Columns (2) and (3) display results for the simple differences, looking separately at the positive and non-positive difference choice sets for each attribute, respectively. For each subgroup, results show the change in the weights between the before and after disclosure periods .The number of observations for the positive and non-positive subgroups columns refers to the test score attribute and varies depending on the attribute. Standard errors are computed using bootstrap and clustered at the choice set (primary school) level. * indicates significant level at 10. **indicates significant level at 5. ***indicates significant level at 1 or lower.

Table 6: Effects of Shifting School Religiosity on Longer Run Preferences - IV Approach

	Effect of Changing Middle School Religiosity on Outcomes	
	Naive Regression	Instrumental Variable: After*Positive Differences
	(1)	(2)
A. Choosing an Alternative Religiosity in High-School		
Change	0.127***	0.098*
	(0.041)	(0.053)
B. Specializing in STEM Fields in High-School		
Change	-0.048***	0.083
	(0.008)	(0.069)
C. Specializing in Advanced Math in High-School		
Change	-0.490***	0.029
	(0.006)	(0.055)
F-Statistic	-	8.2
Number of Students	79,205	79,205

Notes: This table presents estimates examining the effect of changing school religiosity on several outcome variable. In Panel A, we examine the effect of this change on the probability of making an alternative religiosity choice in high school as well (choosing a high school which religiosity level does not correspond with the religiosity of the primary school attended). In Panel B, we examine the effect on the probability of choosing to specialize in a STEM field in high-school. We define a STEM specialization as a dummy variable equaling 1 if the student chooses to specialize in either Computer Science, Physics, Chemistry or Biology. In Panel C, we examine the effect on the probability of taking the maximum number of credits in Math in high-school. Column (1) presents the results of the naive linear probability regression detailed in equation (8) in the main text. In this estimation, we regress the variable of `Change', a dummy variable equal to 1 if the student chose to attend the alternative religiosity middle school, on the outcome variables. We also control for whether the students was in the before or after disclosure period and whether the choice set was characterized by a positive or non-positive difference in test scores between the alternative and same religiosity schooling options. Additionally, a primary school fixed effect is incorporated into the estimation. The pre-disclosure and post-disclosure years are stacked to `before' and `after' periods, respectively. Column (2) Presents the results of the instrumental variable estimation detailed in equations (9) and (10) in the main text. In this estimation, we instrument the change choice with the interaction between making the choice in the post-information disclosure period and having a choice set in which there is a positive difference in test scores between the alternative and same religiosity schooling options. For both estimations methods, standard errors are clustered at the choice set (primary school) level. * indicates significant level at 10. **indicates significant level at 5. ***indicates significant level at 1 or lower.

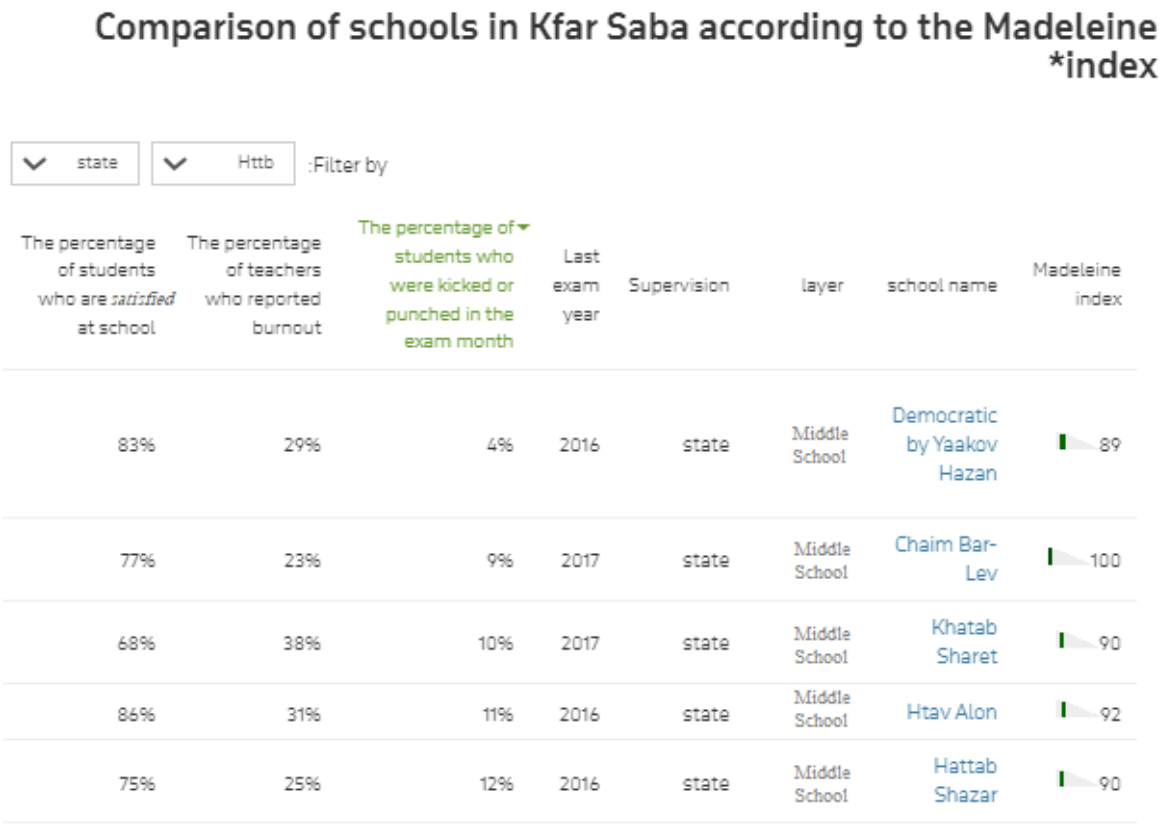


Figure 1: Translated Illustration of How *'The Israeli Education Map'* Project Presented Information for the Schools in each Municipality.

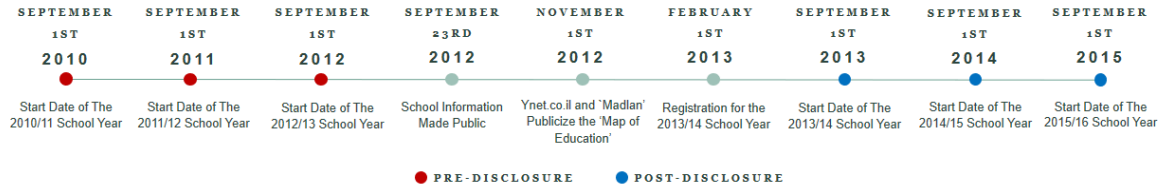


Figure 2: Timeline of the information release.

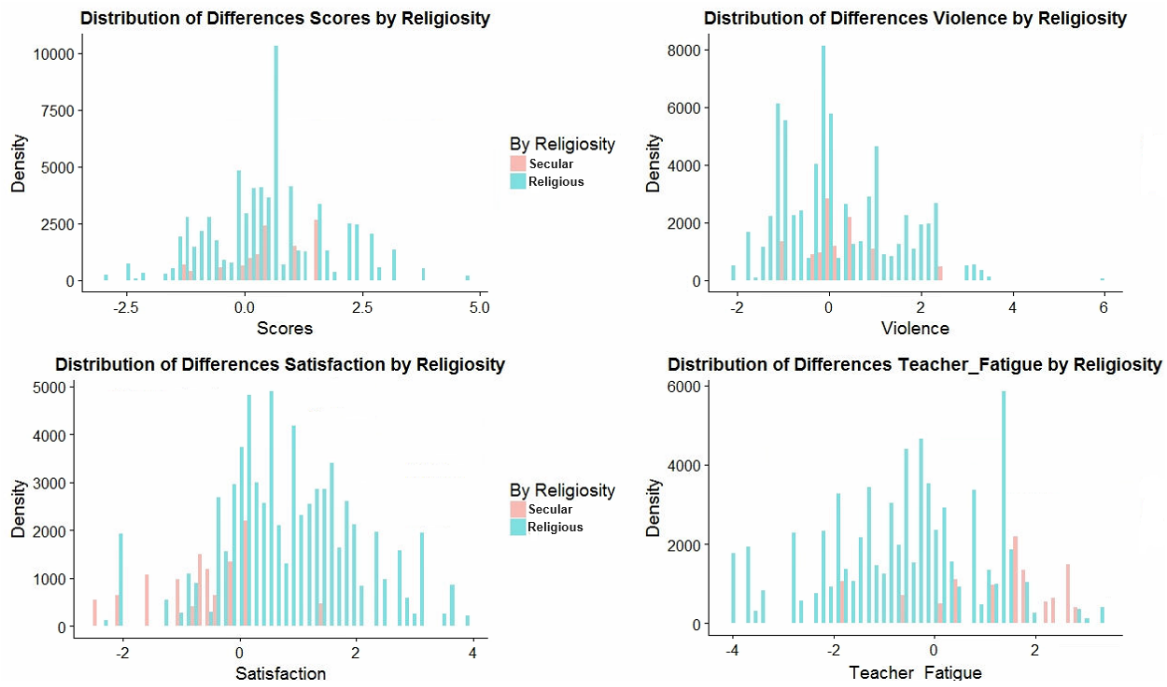


Figure 3: Distribution of School Choice Differences by Student Religiosity.

Note: This figure displays the distribution of choice set differences between the alternative and same religiosity middle school options for test scores, violence levels, school satisfaction levels and teacher fatigue. The density corresponds to the number of students in the choice sets.



Figure 4: Distribution of School Choice Differences by Socio-Economic Status.

Note: This figure displays the distribution of choice set differences between the alternative and same religiosity middle school options for test scores, violence levels, school satisfaction levels and teacher fatigue. The density corresponds to the number of students in the choice sets

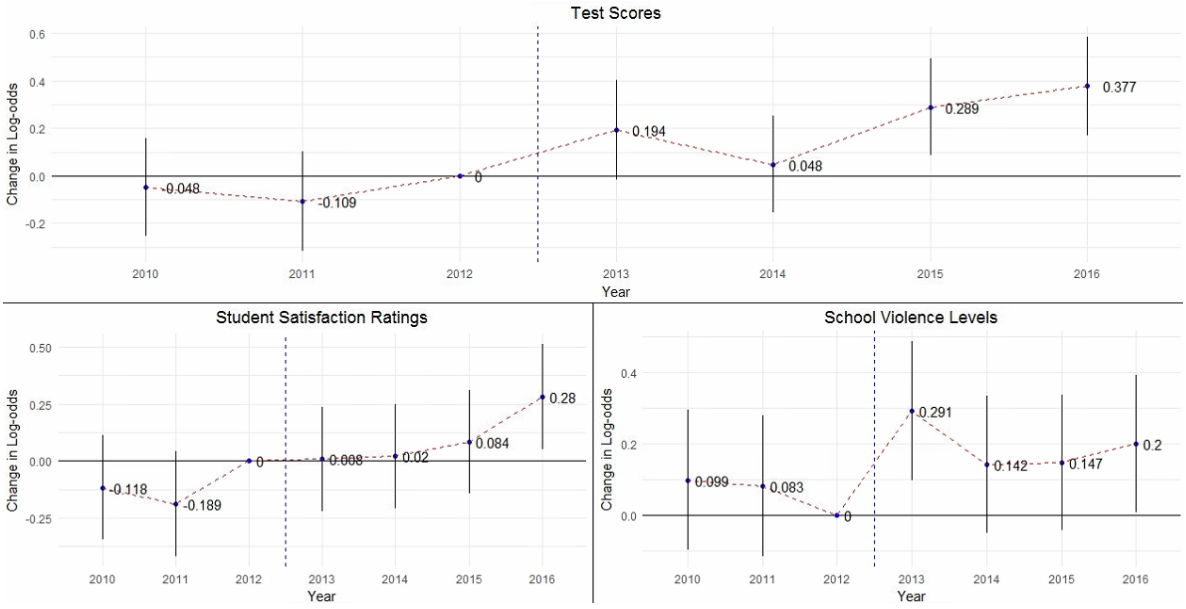


Figure 5: Event Study of the Difference in Household Probability of Changing School Religiosity Between Positive and Non-Positive Differences Choice Sets

Note: This figure reports estimates of the yearly differences between positive and non-positive differences choice sets in the probability of choosing a middle school which does not correspond to the household's religiosity level. Positive difference choice sets for each school attribute, are defined as choice sets for which the alternative religiosity middle school has a better rating in the particular attribute than the same religiosity middle school. Confidence intervals are the 95 percentile and are estimated using bootstrap and clustered at the choice set (primary school) level.