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Do school preferences differ between mothers and fathers? International evidence from PISA

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ABSTRACT

A sizeable literature – spanning education, sociology and economics – has investigated the issue of parental school preferences and school choice. A notable gap in the existing evidence base is an exploration of how such preferences differ between mothers and fathers. We present new cross-national findings on this matter, drawing on survey data collected from more than 300,000 parents across 25 countries. Our findings suggest that mothers rate the school environment – whether the school is safe and has a pleasant atmosphere – to be more important than fathers. Differences are also observed with respect to the school's reputation and whether it has a high level of achievement. Clearer evidence of such differences emerges for industrialised Western nations than for countries that are not members of the OECD. In most countries, mothers' and fathers' preferences do not vary substantially between sons and daughters.

KEYWORDS

PISA; school choice; school preferences; gender differences

1. Introduction

One of the most important things to any parent is ensuring their child receives the best education possible. Thus, in many countries, competition for places at the best schools is fierce (Delprato & Chudgar, 2018; Woessmann, 2007). Previous research has highlighted the lengths to which some parents will go to secure a place at a particular school. This includes moving house (Burgess et al., 2019; Edwards & Cowen, 2022; Hansen, 2014), paying for private tutoring (Hajar, 2020; Heyneman, 2011), signing up to a particular religious faith (Butler & Hamnett, 2007), gaming entry criteria (Agarwal & Somaini, 2018; Pathak & Sönmez, 2008), and appealing admission decisions (Abdulkadiroğlu et al., 2005; Carter et al., 2020). School choice is hence an issue of great importance to both parents and children alike.

A substantial body of research has subsequently emerged into the issue of school choice. One line of enquiry has been to investigate parents' 'revealed preferences' –

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focusing on the characteristics of the schools they send their child to (or of their preferred school). For instance, in England, Burgess et al. (2019) found parents used strategic behaviour to secure a place at their preferred school. Lincove et al. (2018) study school selections made by parents in New Orleans, noting how many select a mix of private and public schools and are '*willing to accept lower school performance scores for private schools than otherwise equivalent public options*'. Also using data on parental school selections, Harris and Larsen (2017) argue that '*families prefer schools with higher school value-added, more extracurricular activities, and low indirect costs*'. In Turkey, Akyol and Krishna (2017) find that school choice is related to '*a school's location, its selectivity as measured by its cut-off score, value added and past performance in university entrance exams*'. However, when investigating parental rank-order preferences in New York City, Abdulkadiroğlu et al. (2020) argue that '*parents prefer schools that enrol high-achieving peers*', with parental preferences unrelated to school effectiveness once this factor has been controlled.

In contrast, other studies within the school choice literature have used a 'stated preference' approach. Such studies typically ask parents questions about the factors that are/were important to them when selecting a school for their child. For example, Schneider et al. (1998) found that, from a list of school attributes, teacher quality was the most important factor, followed by high test scores and class size. Kleitz et al. (2000) noted a similar pattern in Texas – educational quality, class size and safety were the most valued features of a school, and that this did not differ substantially by either race or socio-economic background. Recent evidence from Arkansas showed that, when parents were asked which school characteristics they care most about, teacher quality, academic performance and parental involvement were the highest ranked (Saatcioglu & Snethen, 2022). Using a combination of survey and administrative data from England, Burgess et al. (2015) show that most families have strong preferences for strong academic performance, though they also value convenience (proximity of the school to home) and the socio-economic composition of its intake.

The aforementioned literature illustrates the widespread interest in school choice. Yet gaps in the evidence remain. Perhaps the most striking is that few previous studies have compared the school preferences of mothers and fathers. Indeed, most work within the 'stated preference' literature has focused on the perspectives of mothers. The only previous study we are aware of found no differences in the school preferences of mothers and fathers (Mariel et al., 2018), though based upon small survey data from around 100 families in one region of Spain (Bilbao). Otherwise, little is currently known about gender differences in parental school preferences, including potential variation across countries and cultural settings.

This paper thus explores this issue, drawing upon the theoretical model of parental involvement in child rearing outlined in Lamb et al. (1985) and developed by Pleck (2010). Lamb et al. (1985) initially divided parental involvement with their children into three components (engagement, accessibility and responsibility), with Pleck (2010) separating the later – parental responsibility – into two sub-domains (indirect care and process responsibility).

Indirect care has been referred to '*activities undertaken for the child, but not involving interaction with the child*' and has otherwise been described as child-related work (Pleck, 2010, p. 65). For the most part, empirical studies in this area have focused on mothers' and fathers' role in organising childcare for their offspring,

but usually amongst younger age groups. Our view is that school choice is also a form of indirect care, in that finding out about schools, their relative pros and cons, and working out which will best meet their child's needs is a time-consuming activity. If one parent takes on more of this child-related work, then they may form different views about the importance of different features of a school, potentially because they are better informed. Moreover, if parents who engage in more direct care are also more involved in their children's day-to-day life in other ways (e.g. assuming greater responsibility for school pick-up/drop-offs) then this may also correlate with the preferences they hold for schools (e.g. a stronger preference for schools that are closer to home).

Process responsibility has on the other hand been referred to parents '*taking initiative and monitoring what is needed*' (Pleck, 2010, p. 66) and then ensuring that these needs are met. It has been reported that '*fathers' levels of process responsibility are substantially lower than mothers*' (Pleck, 2010, p. 74), though research is this area remains limited. If true, then this could also lead to mothers and fathers holding different views about their child's need, and thus the characteristics of the school where they will be best served. For instance, because they take on more processing responsibility, mothers may be better placed to understand the importance of a school having a safe and pleasant atmosphere than fathers, who may view other areas (e.g. subject offering) as more important. Thus, as with indirect care, gender differences in parental processing responsibilities may lead to a gender difference in parental school preferences.

Drawing upon these ideas, this paper attempts to address two research questions. First, we consider whether mothers and fathers do indeed hold different school preferences for their offspring across 11 dimensions, and how this differs across countries. Second, we consider how this varies according to the gender of their child – whether mothers and fathers have different school preferences for their sons as compared to their daughters.

- *Research question 1. On what dimensions do mothers and fathers hold different school preferences for their children?*
- *Research question 2. Do mothers and fathers express different preferences about schools for sons and daughters? Do parents hold particular school preferences for children of the same gender?*

By answering these questions using the Programme for International Student Assessment (PISA) data, we provide the first cross-national evidence on how the school preferences of mothers and fathers compare.

2. Data

The data are drawn from the Organisation for Economic Co-operation and Development (OECD) Programme for International Student Assessment (PISA). Four waves of data are used (2009, 2012, 2015, 2018) with the analysis pooling information from across these waves together. This has been done to maximise the sample size. Trends over time have not been investigated due to (a) the limited number of responses from fathers within most countries in a single wave and (b) little clear reason to anticipate substantial changes

in the factors influencing mothers' and fathers' school decisions over a relatively short time horizon.

As part of PISA, each country collects a nationally representative sample with schools selected with probability proportional to size and students randomly selected from within. Response rates are reasonably high (international averages around 90%), although this varies by country. To account for the complex PISA sample design and non-response, the survey organisers provide a set of student and Balance-Repeated-Replication (BRR) weights. We convert these into so-called 'senate' weights – ensuring each country contributes equally to the analysis (Jerrim et al., 2017) – and apply these whenever possible to account for the hierarchical structure of the data.

While students in all countries complete a background questionnaire, several jurisdictions also administer a parental questionnaire. Response rates to the parental survey varies, with the average across countries and cycles standing at around 80% (see Online Appendix A). We discuss this issue of missing data in further detail below and within our robustness tests (Online Appendix B). Descriptive information about school competition and school choice policies in each country included in our analysis can be found in Table 1.

Table 1. Descriptive information regarding school competition and choice across selected countries.

	% attend a private school	% where at least one other school in local area	average % income spend on schooling	Initial school assignment based on geography	Right to enrol in any public school	School choice restricted by area	Need to apply to schools other than the one assigned	Free choice of other schools if places available
Belgium	-	93	1.0	N	Y	N	N	Y
Brazil	11	75	-	Y	Y	Y	Y	Y
Chile	10	82	-	N	Y	N	N	N
Croatia	1	79	6.3	Y	N	Y	Y	Y
Denmark	6	89	-	Y	Y	N	Y	Y
Dominican Republic	11	58	12.6	-	-	-	-	-
France	8	66	1.6	Y	N	N	Y	Y
Georgia	10	88	6.0	-	-	-	-	-
Germany	1	83	0.7	Y	N	N	Y	Y
Hong Kong	0	100	-	Y	Y	N	Y	Y
Hungary	1	83	-	Y	Y	N	Y	Y
Ireland	-	87	-	Y	Y	N	Y	Y
Italy	2	60	-	Y	Y	N	Y	Y
Lithuania	1	80	-	Y	N	N	N	N
Luxembourg	3	75	1.4	Y	Y	N	Y	Y
Macao-China	9	100	6.7	N	Y	N	N	Y
Malta	14	62	-	-	-	-	-	-
Mexico	8	90	-	Y	Y	N	Y	Y
New Zealand	6	92	-	N	Y	N	Y	Y
Panama	11	78	-	-	-	-	-	-
Portugal	5	79	7.2	Y	Y	N	Y	Y
Qatar	41	73	-	Y	N	N	Y	Y
Scotland	-	-	2.4	-	-	-	-	-
South Korea	4	84	9.5	Y	N	N	N	N
Spain	5	85	2.6	Y	Y	N	Y	Y

Notes: Average % income spend on schooling based upon authors calculations using PISA 2015 and 2018 database and includes spending on tutoring/cram schools. Source: Data on percentage attending private school from OECD (2020: Table V.B1.7.1). All other data drawn from OECD (2019: Table 2.1, Figure 2.2). Where information is not available, this is indicated by a -.

As part of the parent questionnaire, respondents were asked:
'*Who will complete this questionnaire?* (Please select all that apply)
- *Mother or other female guardian*
- *Father or other male guardian*
- *Other*'

Online Appendix A provides a country-by-country breakdown of responses. We restrict our analytic sample to the 'mother only' and 'father only' groups to ensure we know whose views are being captured. Online Appendix A also illustrates the percentage of the total sample included in our analysis. In total, there are 12 countries where more than 75% of the full sample is retained, and hence where our results are less likely to be impacted by issues associated with missing parental questionnaire data (Lithuania, Georgia, Hungary, South Korea, Ireland, Hong Kong, Portugal, Chile, Dominican Republic, Macao, Croatia, Mexico). In contrast, more than half of the full sample is dropped from the analysis in Denmark, Germany, Portugal and Scotland due to missing data, hence more caution is needed. Note also that, as we are unable to distinguish between biological and step mothers/fathers, our focus is the school preferences of children's mother/father figure.

The responding parent was also asked (OECD, 2016, p. 10):
'*How important are the following reasons for choosing a school for your child*?
(1) *The school is at a short distance to home*
(2) *The school has a good reputation*
(3) *The school offers particular courses or school subjects*
(4) *The school adheres to a particular religious philosophy*
(5) *The school has a particular pedagogical-didactical approach*
(6) *Other family members attended the school*
(7) *Expenses are low*
(8) *The school has financial aid available, such as a school loan, scholarship, or grant*
(9) *The school has an active and pleasant school climate*
(10) *The academic achievements of students in the school are high*
(11) *There is a safe school environment*'

With responses provided using a four-point scale (from '*not important*' to '*very important*'). These form the key outcome measures used in our analysis. Specifically, we dichotomise each question, with mothers' and fathers' responses then compared.

3. Methodology

Given the dearth of evidence in this area, we begin by considering what the ideal data would look like. The optimal situation would be where a large, nationally representative dataset has collected information from both mothers and fathers, including questions asking about their school preferences. Unfortunately, while there are some studies that attempt to collect data from both parents (e.g. Growing Up in Ireland, the Longitudinal Study of Australian Children, the Millennium Cohort Study in the UK) these do not ask questions about school preferences to both mothers and fathers. Such an ideal data source does not exist.

A second-best alternative would be for a single parental questionnaire to be collected, but with the child's mother or father randomly selected to respond. Although such a design would preclude the possibility of exploring within-family differences, it would still be possible to establish whether mothers and fathers differ in their school preferences on average. Yet we do not know of any study that has attempted to do this.

This then leads us to the data we use in this paper. Rather than mothers and fathers being randomly selected, they have chosen who will respond themselves. Although one can still compare differences on average across mothers and fathers, 'selection bias' may now be a concern. The key question is then how strong is this selection bias likely to be, and does this confound comparisons made across maternal and paternal responses? In other words, are there strong, systematic differences between students and families where the mother responded to the parental questionnaire rather than the father?

Table 2 presents evidence on this issue. Specifically, it compares the characteristics of students, parents and schools where the mother responded (left) versus where the father responded (right). Only characteristics where there are sizeable differences – and which are also correlated with parental school preferences – may confound the results.

For most variables, the distribution across the two columns is reasonably similar. For instance, there is little difference in the language mothers and fathers speak with their child, parental age and whether the child skips lessons/school regularly. Likewise, differences across the columns for the continuous variables – reported in terms of standardised differences – are mostly small (less than 0.05 standard deviations in absolute magnitude).

There are however a handful of notable exceptions. Fathers who responded to the parental questionnaire tended to hold higher status occupations (effect size difference of 0.18). Similarly, fathers were somewhat more likely to be the respondent for sons than for daughters. Fathers were also more likely to respond when their education levels were higher and the education level of the child's mother was lower. Likewise, fathers were also slightly more likely to be the respondent when their child attends a private school. However, the clearest differences are with respect to family structure and how regularly each parent helps their child with homework (an indicator of parental engagement with their child's education). Specifically, when the father completed the questionnaire, 94% lived at home with the child, compared to only 82% when the mother completed the questionnaire. Similarly, when the father completed the parental questionnaire, 43% reported that they (the father) never helped with homework, compared to 53% when the mother completed the questionnaire.

Thus, overall, observable differences between instances where mothers and fathers responded to the parental questionnaire are relatively limited. There are however a handful of characteristics where the two groups differ. Depending on the extent that these characteristics are also associated with parental school preferences, such differences could potentially confound our results.

3.1. Analytic approach

Our analysis begins by presenting raw, unconditional differences in school preferences across mothers and fathers. Estimates will first be presented for the pooled international sample, with selected results then produced for each country.

Table 2. The characteristics of those where the mother and father responded to the parental questionnaire.

(a) Categorical variables

		Mother	Father	Difference
Mother language	Same as test language	30%	30%	0%
	Mostly heritage language	31%	29%	1%
	Heritage and test language evenly	8%	8%	0%
	Mostly test language	31%	33%	-2%
Father language	Same as test language	32%	29%	3%
	Mostly heritage language	31%	31%	-1%
	Heritage and test language evenly	7%	8%	-1%
	Mostly test language	30%	31%	-1%
Pupil gender	Female	52%	46%	6%
	Male	48%	54%	-6%
Father education	ISCED 0 or 1	12%	9%	2%
	ISCED 2	17%	15%	2%
	ISCED 3B or 3C	11%	10%	1%
	ISCED 3A or 4	27%	26%	1%
	ISCED 5B	10%	11%	-1%
	ISCED 5A or 6	23%	29%	-5%
Mother education	ISCED 0 or 1	9%	15%	-5%
	ISCED 2	16%	19%	-3%
	ISCED 3B or 3C	9%	8%	1%
	ISCED 3A or 4	29%	27%	2%
	ISCED 5B	11%	10%	1%
	ISCED 5A or 6	25%	21%	4%
Father lives at home	Yes	82%	94%	-12%
	No	18%	6%	12%
Mother lives at home	Yes	97%	89%	8%
	No	3%	11%	-8%
Repeated a grade	No	83%	81%	2%
	Yes	17%	19%	-2%
School type	Public school	68%	62%	6%
	Private school	32%	38%	-6%
School selectivity	No entry criteria	21%	18%	2%
	At least one entry criteria	24%	23%	1%
	At least two entry criteria	56%	59%	-3%
Ever skipped whole day of school	No	82%	84%	-2%
	Yes	18%	16%	2%
Mother age	35 and younger	3%	2%	1%
	36-40 years old	13%	10%	2%
	41-45 years old	30%	29%	1%
	46-50 years old	31%	33%	-2%
	51 and older	23%	26%	-3%
Father age	35 and younger	7%	6%	1%
	36-40 years old	22%	22%	1%
	41-45 years old	37%	36%	2%
	46-50 years old	24%	27%	-3%
	51 and older	9%	10%	-1%
Mother helps with homework	Never	40%	52%	-12%
	A few times a year	16%	15%	1%
	Once a month	14%	12%	1%
	Several times a month	15%	12%	4%
	Several times a week	15%	9%	5%
Father helps with homework	Never	53%	43%	11%
	A few times a year	16%	17%	-1%
	Once a month	12%	15%	-3%
	Several times a month	11%	14%	-3%
	Several times a week	8%	12%	-4%

(*Continued*)

Table 2. (Continued).

(b) Continuous variables

	Mean mum respondent	Mean dad respondent	Difference	Standardised difference
Father occupational status index	42	45	3	0.18
School size	897	948	52	0.08
Maths scores	480.2	484.7	4.5	0.04
School extra-curricular activities scale	2	2	0	0.04
Staff shortages scale	-0.14	-0.10	0.04	0.04
Socio-economic status scale	-0.35	-0.31	0.03	0.03
Science scores	483	485	2	0.02
School climate scale	0.1	0.1	0.02	0.02
Teacher-pupil relations scale	0.02	0.03	0.01	0.01
Pupil: teacher ratio	15	15	0	0.01
Home educational resources scale	-0.15	-0.14	0.00	0.00
Quality of school infrastructure scale	-0.17	-0.17	0.00	0.00
Reading scores	482	481	-1	-0.01
Disciplinary climate scale	0.11	0.09	-0.02	-0.02
Sense of belonging at school scale	-0.04	-0.08	-0.04	-0.05
Mother occupational status index	42.75	41.63	-1.12	-0.05

Notes: Results based upon data pooled across all countries, with senate weights applied. The red (green) shading indicates a higher (lower) percentage in the category for mothers than fathers. The Difference column refers to difference between mothers' and fathers' reports (these may not be exactly equal due to rounding).
Source: Authors' own calculations.

We then estimate a set of logistic regression models. These models include controls that (a) are available for most countries and PISA waves; (b) differ non-trivially between occasions where the mother/father responded to the parental questionnaire (as illustrated in Table 2) or (c) are other key measures (such as parental education or child's academic achievement) that it is important to ensure are finely balanced across the two groups. Formally:

$$P_{ij} = \alpha + \beta.DAD_{ij} + \gamma.SON_{ij} + \delta.OCC_{ij} + \rho.ED_{ij} + \tau.ACH_{ij} + \sigma.SCH_{j} \quad (1)$$

where:

P_{ij} = A binary measure of parental school preference.

DAD_{ij} = Parental respondent gender (1 = father; 0 = mother).

SON_{ij} = Pupil gender (1 = male; 0 = female).

OCC_{ij} = Mothers' and fathers' occupational status. Based on information reported by students and thus available for both parents. Coded using the 'International Socio-Economic Index of occupational status' (ISEI) scale.

ED_{ij} = Mothers' and fathers' education level. Based on information reported by the responding student (and thus available for both parents).

ACH_{ij} = PISA reading, science and mathematics scores.

SCH_{j} = School size and whether it is a public or a private school.

ε_{ij} = Random error term.

i = Student i.

j = School j.

The β parameter captures the difference between mothers' and fathers' school preferences in terms of an odds ratio. We begin by estimating this model using the pooled international sample – with each country carrying equal weight – and then for each

individual country. Estimates are presented for specifications with and without controls to establish the extent this impacts the results.

Unfortunately, some of the characteristics where the difference between mother/father respondents were greatest were only collected in certain PISA waves. For instance, information about whether the child's mother and father are resident at home was only collected in 2009 and 2012, while information about parental assistance with homework was only collected in 2018. We hence also present alternative estimates using data from only selected PISA cycles to investigate whether adding these factors as additional controls has any impact on our substantive results (see Online Appendix C).

Finally, to address Research Question 2, we add an interaction term to the model:

$$P_{ij} = \alpha + \beta.DAD_{ij} + \gamma.SON_{ij} + \theta.DAD_{ij} * SON_{ij} + \delta.OCC_{ij} + \rho.ED_{ij} + \tau.ACH_{ij} + \sigma.SCH_{j} \quad (2)$$

We estimate this model using the pooled sample across all countries when investigating responses to individual school preference questions (using logistic regression). From this model, we compare the odds that parents are likely to deem the factor to be important across the following four groups:

- Mothers stating their school preferences for their daughter (reference group).
- Mothers stating their school preferences for their sons.
- Fathers stating their school preferences for their daughters.
- Fathers stating their school preferences for their sons.

3.2. Robustness tests

Above we discussed the issue of missing parental questionnaire data, and cases where mothers and fathers jointly completed the questionnaire. Online Appendix B thus presents alternative estimates where the relevant missing information has been imputed for these groups. In Online Appendix C we investigate robustness to altering our regression model specifications. Most notably, we illustrate the impact of adding controls for whether the mother/father lives at home with the child and the frequency mothers/fathers help with homework (as this information is only available in a limited number of PISA waves).

4. Results

4.1. Research question 1. On what dimensions do mothers and fathers hold different school preferences for their children?

Table 3 presents descriptive statistics illustrating the distribution of mothers and fathers' responses to each school preference question, based on the pooled international sample.

There are clear points of difference between mothers and fathers in some areas, but not others. Perhaps the prominent examples are whether the school has (a) a safe environment and (b) a pleasant climate. Mothers were more likely to select the top 'very important' category than fathers for school safety (67% versus 60%). Another notable area where mothers and fathers differ is regarding the academic standing and offerings of schools. Again, the difference is most striking at the top of the scale. For

Table 3. The distribution of maternal and paternal parental school preferences.

		Mothers	Fathers	Difference
Expenses	Not important	29%	31%	-2%
	Somewhat important	26%	26%	-1%
	Important	27%	26%	1%
	Very important	18%	16%	2%
Financial aid	Not important	39%	43%	-3%
	Somewhat important	20%	20%	0%
	Important	24%	22%	2%
	Very important	17%	15%	2%
Distance	Not important	16%	17%	-1%
	Somewhat important	27%	28%	0%
	Important	33%	33%	0%
	Very important	23%	22%	2%
Family members at school	Not important	52%	50%	1%
	Somewhat important	16%	18%	-1%
	Important	19%	20%	-1%
	Very important	13%	12%	1%
Safe	Not important	1%	2%	-1%
	Somewhat important	5%	6%	-1%
	Important	27%	32%	-5%
	Very important	67%	60%	6%
Pleasant climate	Not important	2%	3%	-1%
	Somewhat important	9%	11%	-2%
	Important	40%	44%	-4%
	Very important	49%	42%	7%
Good reputation	Not important	2%	2%	-1%
	Somewhat important	8%	9%	-1%
	Important	38%	40%	-2%
	Very important	52%	49%	4%
High achievement levels	Not important	3%	4%	-1%
	Somewhat important	12%	14%	-1%
	Important	43%	44%	-2%
	Very important	42%	38%	4%
Offers specific courses	Not important	6%	7%	-2%
	Somewhat important	16%	18%	-2%
	Important	46%	47%	-1%
	Very important	33%	28%	5%
Particular teaching approach	Not important	34%	31%	3%
	Somewhat important	24%	25%	-1%
	Important	28%	30%	-2%
	Very important	14%	14%	0%
Has a particular religious philosophy	Somewhat important	20%	20%	1%
	Important	20%	20%	0%
	Very important	10%	11%	-1%
	Not important	40%	40%	1%

Notes: Results based upon data pooled across all countries, with senate weights applied. The red (green) shading indicates a higher (lower) percentage in the category for mothers than fathers. The Difference column refers to difference between mothers and fathers (these may not be exactly equal due to rounding).
Source: Authors' own calculations.

instance, mothers are more likely than fathers to indicate the school having a good reputation is 'very important' (52% versus 49%). Differences of a similar magnitude can be observed for high achievement levels (42% versus 38%) and whether the school offers specific courses (33% versus 28%). The same is not true, however, for the specific teaching approaches used. Nevertheless, Table 3 provides the first suggestion that the

academic credentials and offerings of a school are valued more highly by mothers than fathers.

There is no evidence that the financial aspects of schooling decisions are more important to fathers than mothers. Indeed, if anything, the opposite holds true. Whereas 45% of mothers reported that the issue of expense was important or very important to their schooling decision, only 42% of fathers reported the same. Likewise, mothers were approximately four percentage points more likely than fathers to stress the importance of financial aid being available. It is hence not only the school environment and academic standing of a school that is more important to mothers than fathers, but also issues of cost.

In contrast, there is little evidence that mothers and fathers differ in their preferences about the convenience a school offers. The distribution of responses about the importance of the school being close to home, and that other family members attend the school, is very similar across maternal and paternal respondents. Likewise, the final row indicates that there is no difference between mothers and fathers regarding whether the school adheres to a particular religious philosophy.

Table 4 now formalises these results by presenting estimates from our logistic regression models (as set out in Section 3) based on the sample pooling data across all countries.

These estimates largely confirm the descriptive results presented in Table 3. The area where mothers and fathers differ most is whether the school has a safe and pleasant climate; the estimated odds ratio is 0.77 and statistically significant at the 5% level. Clear, sizeable and statistically significant differences are also observed for whether the school offers particular courses/subjects (odds ratio = 0.82), whether it has a good reputation (0.86), high levels of achievement (0.85) and whether financial aid is available (0.83). On the other hand, only small and/or statistically insignificant differences can be observed regarding the pedagogical approach used (odds ratio = 1.02), whether other family members attend the school (0.99) and proximity to the family home (0.95). For the most part, the unconditional and conditional estimates are very similar.

Table 4. Differences between mothers' and fathers' school preferences. Estimated odds ratios.

Topic	Question	Unconditional	Conditional
Finances	Expenses are low	0.90*	0.91*
	Financial aid available	0.85*	0.83*
Convenience	Distance	0.94*	0.95*
	Siblings	1.01	0.99
Environment	Safe school environment	0.76*	0.77*
	Pleasant school climate	0.76*	0.77*
Academic offering/credentials	Good reputation	0.86*	0.86*
	High academic achievements	0.85*	0.85*
	Offers particular courses/subjects	0.80*	0.82*
	Pedagogical approach	1.08	1.02
Religion	Religion	1.07*	1.00

Notes: The following variables are coded as 1 if 'very important' and 0 otherwise: Safe school environment, Pleasant school climate, Good reputation, High academic achievements, Offers particular courses/subjects. The following are coded as 1 if 'important' or 'very important': Expenses are low, Financial aid available, Siblings, Distance, Pedagogical approach. Odds ratios less than one indicate that fathers are less likely to say the issue is important when selecting a school than mothers. Estimates based on data pooled across all countries and cycles. Senate weights applied to give each country equal weight. Unconditional where model does not include any controls. The Conditional column includes controls for student gender, mother/father education and occupational status, and PISA reading, science and mathematics scores.

* indicates odds ratio significantly different from 1.0 at the 5% level.

Source: Authors' own calculations.

To conclude, we turn to cross-country variation in these results. For brevity, we focus our discussion on specific school preferences of interest; analogous findings for all the school preference questions asked are presented in Online Appendix D. Moreover, given the similarity of the conditional and unconditional estimates presented thus far – and for clarity of presentation – we focus here on the unconditional results (conditional estimates based on our logistic regression model – estimated separately for each country – are presented in Online Appendix E).

Panel (a) of Figure 1 starts by comparing the percentage of mothers and fathers who state expense is an important or very important issue in their choice of school. For reference, Table 1 provides some descriptive background about differences in the prevalence of (usually costly) private schooling across countries, and an estimate of the percentage of household income spent on schooling. Online Appendix A provides a mapping between the three letter country codes used and country names. Despite Table 1 illustrating non-trivial variation across countries in private schooling and estimated schooling spend, most data points in Figure 1 sit very close to the dashed 45-degree line, where the percentage of mothers and fathers in agreement is equal. The main exceptions are Lithuania (LTU) – where mothers were more likely to deem expense to be an important issue than fathers (60% versus 48%) – and Qatar (QAT) where the opposite holds true (39% of mothers state expense to be important compared to 44% of fathers).

The next panel turns to distance the school is from home. Very similar results emerge. Almost all the countries sit very close to the dashed 45-degree line. The only potential exception is South Korea (KOR), where mothers are more likely to report the convenience of the school's location to be important than fathers (72% versus 64%). Nevertheless, panel (b) of Figure 1 suggests that our finding – that mothers and fathers place equal importance on the convenience of the school's location – holds across a wide array of countries and cultural settings.

A rather different pattern emerges however in panels (c) (safety of the school environment) and (d) (reputation of the school). For both, almost all countries sit above the dashed 45-degree line – mothers deem these issues to be more important than fathers. The only exceptions in panel (c) (safe environment) are Mexico, Qatar, Brazil and the Dominican Republic. At the other extreme, Denmark (DNK) and Spain (ESP) stand out as two OECD countries where mothers have stronger views about the importance of school safety and its reputation than fathers.

4.2. Research question 2. Do mothers and fathers express different preferences about schools for sons and daughters? Do parents hold particular school preferences for children of the same gender?

Table 5 presents a summary of the results from the logistic regression model specified in Equation (2). Values less than one indicate the factor was considered less important amongst the group in question (e.g. fathers reporting their preferences for their son's school) than in the reference group (mothers responding about their daughter's school).

Three interesting findings emerge. First, there are several aspects which parents (both mothers and fathers) rate as more important when choosing their sons' school than their daughters'. The most prominent example is whether other family members attend the school, where the odds are around 10% higher when parents were asked about their sons.

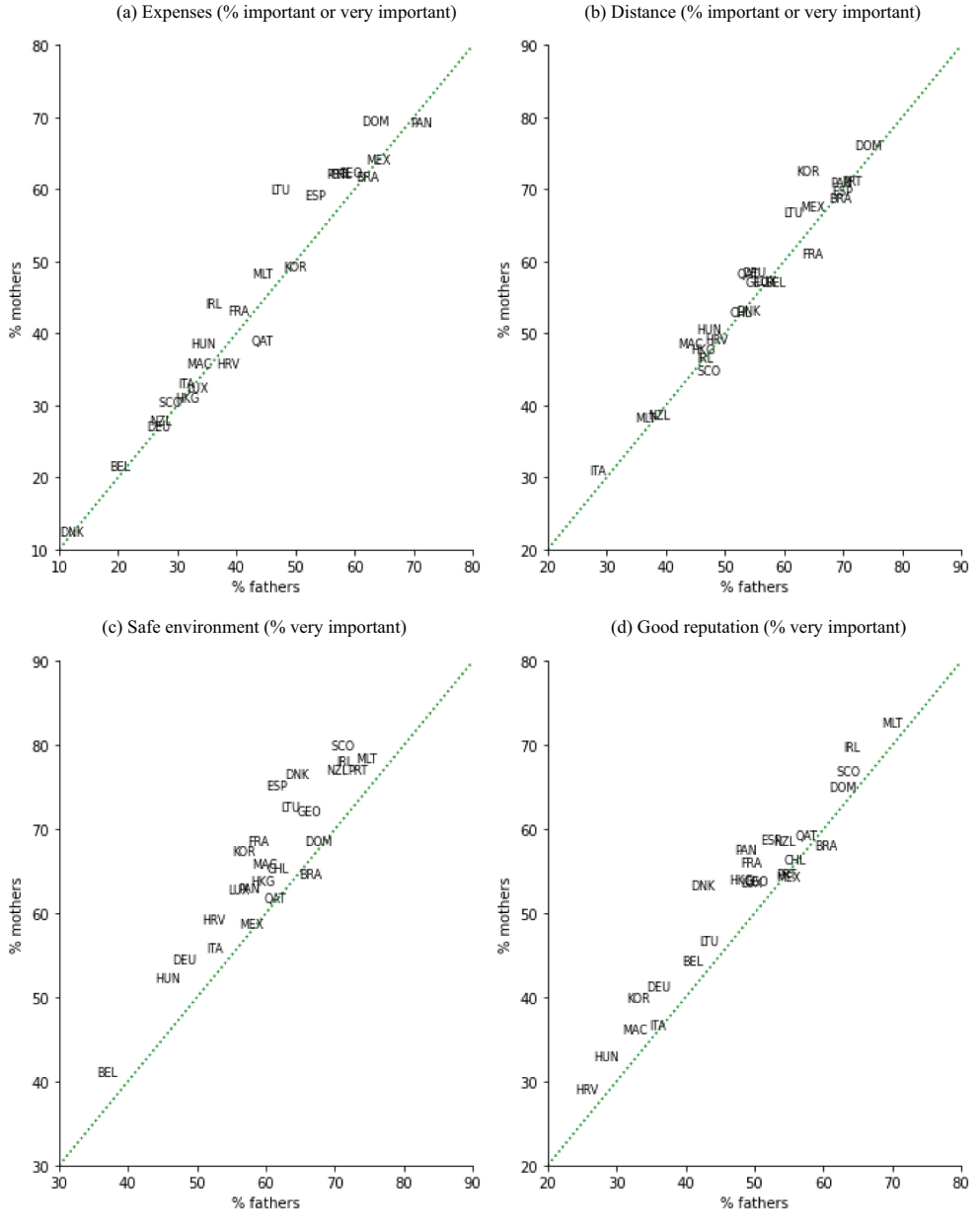

Figure 1. Cross-country comparison of maternal versus paternal school preferences.
See Online Appendix A for country codes. Dashed line where the percentage for mothers and fathers is equal. Source: Authors' own calculations.

For instance, the estimated odds ratio is 0.97 for fathers responding about their daughter's school compared to 1.07 when fathers were responding about their son's school. A similar finding emerges for school expenses and whether it offers particular courses/subjects. The only issue where the opposite holds true is safety; both mothers and fathers are slightly more likely to deem this to be very important for their daughter's school than

Table 5. Differences in mothers' and fathers' school preferences for their sons and daughters. Results by question.

	Odds relative to mother response about daughters school			
	Mother-daughter	Mother-son	Father-daughter	Father-son
Expenses are low	1.00	1.06	0.88	0.95
Financial aid available	1.00	1.04	0.80	0.88
Distance	1.00	1.00	0.95	0.93
Other family at school	1.00	1.11	0.97	1.07
Safe school environment	1.00	0.95	0.78	0.71
Pleasant school climate*	1.00	1.05	0.78	0.77
Good reputation	1.00	1.04	0.86	0.86
High academic achievements	1.00	0.99	0.83	0.85
Offers particular courses/subjects	1.00	1.08	0.80	0.87
Pedagogical approach*	1.00	1.06	0.94	1.08
Religious philosophy*	1.00	0.95	0.95	0.98
Mean	**1.00**	**1.04**	**0.86**	**0.90**
Median	**1.00**	**1.04**	**0.85**	**0.87**

Notes: Figures refer to odds ratios. Values greater than one indicates a greater likelihood that the issue is rated as important (or very important) relative to when mothers are reporting their school preferences for their daughters (the reference group). * indicates countries where the interaction term from this model is statistically significant.
Source: Authors' own calculations.

their son's. For instance, the estimated odds ratio for fathers rating this as very important is about 7% lower when the question is asked about their male offspring (0.78 versus 0.71). There are hence some areas where parental school preferences differ depending on the gender of the child, though the magnitude of such differences is relatively small.

Second, reiterating the findings for research question 2, the estimated odds ratios for fathers are mostly lower than those for mothers (regardless of the child's gender). This is illustrated by the proliferation of orange/red shaded cells in the two columns for fathers on the right, most notably for the safety of the school, the pleasantness of its environment and its academic credentials.

Finally, there are just three issues where the interaction between parent and offspring gender is statistically significant at the five per cent level. The first is the pleasantness of the school environment. Whereas fathers rate this issue as equally important for sons and daughters (odds ratio almost identical at 0.78 versus 0.77), mothers are slightly more likely to stress the importance of this for boys than girls (odds of 1.00 versus 1.05). The second is with respect to teaching approaches. Both mothers and fathers rate this as more important for boys than girls. Fathers are however stronger in this view than mothers.[1] Finally, there is a small difference in terms of religious philosophy; mothers rate this as slightly less important for sons than daughters (odds of 1.00 versus 0.95), while for fathers the association is in the other direction (odds of 0.95 versus 0.98). Table 5 hence suggests that mothers and fathers may hold slightly different preferences for their sons' and daughters' schools, though in terms of magnitude any such differences are clearly rather small.

While we have also explored the interaction between parent and offspring gender within individual countries, the vast majority of the estimates fail to reach statistical significance at conventional thresholds. This is partly due to limited statistical power within individual countries to explore such interaction effects. For instance, the parent-

child gender interaction narrowly reaches statistical significance at the 5% level in just one country for pedagogical approach (South Korea), two countries for school climate (South Korea and Croatia) and three for religion (Italy, Belgium and Denmark). This nevertheless reinforces the conclusion that, in general, evidence of a parent-child gender interaction regarding school preferences is rather limited.

5. Conclusions

Where to send one's child to school is an important decision that parents all over the world face. It can have a major impact on their offspring's lives, with some parents going to great lengths to get their child into their preferred school. This has led to a substantial academic literature on this issue. It is therefore somewhat surprising that gender differences in parental school preferences have been something of a neglected topic. There are, after all, well-documented differences between mothers and fathers in terms of parenting styles (Pinquart, 2016; Yaffe, 2020), interaction with children (Phares et al., 2009; Riina & Feinberg, 2012), and their aspirations and expectations for their future (Boonk et al., 2018; Dockery et al., 2022). Yet, currently, very little is known about how mothers' and fathers' school preferences compare.

This paper has sought to resolve this issue. Drawing upon four rounds of PISA data collected between 2009 and 2018, we have presented new evidence on mothers' and fathers' school preferences across 25 countries. Mothers are found, in general, to rate more of the 11 factors considered to be important or very important than fathers. The difference is starkest in relation to the safety and pleasantness of the school climate. On the other hand, little difference between mothers and fathers is observed with respect to the convenience of the school location and whether other family members (such as siblings) are also enrolled. The strength of these associations also varies across countries, being stronger in industrialised Western nations and weaker in middle-income countries and those that are not members of the OECD.

There are of course limitations to our study and important issues where further research is needed. First, as only one parent has been surveyed per family, our focus has been upon differences in the preferences of mothers and fathers on average. Future data collections should seek to gather information on school preferences from both the child's mother and father, which would open a whole array of additional analytic opportunities. Second, mothers and fathers have chosen which parent will respond to the PISA parental questionnaire. Although we have found little evidence that this is likely to confound our results, our findings are still subject to a 'selection-on-observables' assumption. Third, our findings apply to the preferences of mothers and fathers for their children's secondary school. The patterns we observe may be different for primary schools. Fourth, we have been unable to distinguish the role of parents in more complex family structures – for instance the difference between biological and step-parents, or in single-sex couples. Finally, we have been unable to explore how differences in mothers' and fathers' school preferences are linked to eventual schooling decisions made. Future work should thus seek to establish whether mothers or fathers are more influential in deciding the school that young people go on to attend.

Our findings nevertheless point towards important ways in which the school choice and parental involvement literatures may be further integrated in the future. Although we

have been unable to formally explore the mechanisms driving the gender differences we observe, our results are nevertheless consistent with previous research from the parental involvement literature suggesting that mothers tend to take on more indirect care (of which we argue that school choice is a component) and processing responsibility for their children than fathers (Pleck, 2010). This is likely to lead to mothers and fathers holding different information about the school options available. It will also potentially lead to differences between mothers' and fathers' views of what their children's needs are, and in turn the characteristics of the type of school in which they will be best served. Despite being unable to test these links directly, this provides a potential explanation for why mothers tend to value schools with good reputations, higher levels of achievement and safer, more pleasant environments more than fathers. Given the dearth of previous studies in this area, future work should seek to test such associations more formally, providing important new evidence regarding the intra-family dynamics surrounding school choice.

Note

1. The difference in the odds ratio for mothers between sons and daughters is 1.06–1.00 = 0.06, compared to 1.08–0.94 = 0.14 for fathers.

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References

Abdulkadiroğlu, A., Pathak, P. A., & Roth, A. E. (2005). The New York City high school match. *American Economic Review*, *95*(2), 364–367. https://doi.org/10.1257/000282805774670167

Abdulkadiroğlu, A., Pathak, P. A., Schellenberg, J., & Walters, C. R. (2020). Do parents value school effectiveness? *American Economic Review*, *110*(5), 1502–1539. https://doi.org/10.1257/aer.20172040

Agarwal, N., & Somaini, P. (2018). Demand analysis using strategic reports: An application to a school choice mechanism. *Econometrica*, *86*(2), 391–444. https://doi.org/10.3982/ECTA13615

Akyol, P., & Krishna, K. (2017). Preferences, selection, and value added: A structural approach. *European Economic Review*, *91*, 89–117. https://doi.org/10.1016/j.euroecorev.2016.09.009

Boonk, L., Gijselaers, H. J. M., Ritzen, H., & Brand-Gruwel, S. (2018). A review of the relationship between parental involvement indicators and academic achievement. *Educational Research Review*, *24*, 10–30. https://doi.org/10.1016/j.edurev.2018.02.001

Burgess, S., Greaves, E., & Vignoles, A. (2019). School choice in England: Evidence from national administrative data. *Oxford Review of Education*, *45*(5), 690–710. https://doi.org/10.1080/03054985.2019.1604332

Burgess, S., Greaves, E., Vignoles, A., & Wilson, D. (2015). What parents want: School preferences and school choice. *The Economic Journal*, *125*(587), 1262–1289. https://doi.org/10.1111/ecoj.12153

Butler, T., & Hamnett, C. (2007). The geography of education: Introduction. *Urban Studies*, *44*(7), 1161–1174. https://doi.org/10.1080/00420980701329174

Carter, G., Pathak, P. A., & Terrier, C. (2020). Matching practices for primary and secondary schools-England. *Matching in Practice Country Profile*, *30*. https://www.matching-in-practice.eu/wp-content/uploads/2021/04/MiP_-Profile_No.30.pdf

Delprato, M., & Chudgar, A. (2018). Factors associated with private-public school performance: Analysis of TALIS-PISA link data. *International Journal of Educational Development*, *61*, 155–172. https://doi.org/10.1016/j.ijedudev.2018.01.002

Dockery, A. M., Koshy, P., & Li, I. W. (2022). Parental expectations of children's higher education participation in Australia. *British Educational Research Journal*, *48*(4), 617–639. https://doi.org/10.1002/berj.3786

Edwards, D. S., & Cowen, J. (2022). *The roles of residential mobility and distance in participation in public school choice. Policy brief*. National Center for Research on Education Access and Choice.

Hajar, A. (2020). The association between private tutoring and access to grammar schools: voices of year 6 pupils and teachers in south-east England. *British Educational Research Journal*, *46*(3), 459–479. https://doi.org/10.1002/berj.3587

Hansen, K. (2014). Moving house for education in the pre-school years. *British Educational Research Journal*, *40*(3), 483–500. https://doi.org/10.1002/berj.3092

Harris, D. N., & Larsen, M. F. (2017). *Demand, information, and the market for schooling: Evidence on revealed preferences from post-Katrina New Orleans*. Education Research Alliance for New Orleans.

Heyneman, S. P. (2011). Private tutoring and social cohesion. *Peabody Journal of Education*, *86*(2), 183–188. https://doi.org/10.1080/0161956X.2011.561662

Jerrim, J., Lopez-Agudo, L. A., Marcenaro-Gutierrez, O. D., & Shure, N. (2017). What happens when econometrics and psychometrics collide? An example using PISA data. *Economics of Education Review*, *61*, 51–58.

Kleitz, B., Weiher, G. R., Tedin, K., & Matland, R. (2000). Choice, charter schools, and household preferences. *Social Science Quarterly*, *81*(3), 846–854. https://www.jstor.org/stable/42864008

Lamb, M. E., Pleck, J. H., Charnov, E. L., & Levine, J. A. (1985). Paternal behavior in humans. *American Zoologist*, *25*(3), 883–894. https://doi.org/10.1093/icb/25.3.883

Lincove, J. A., Cowen, J. M., & Imbrogno, J. P. (2018). What's in your portfolio? How parents rank traditional public, private, and charter schools in post-Katrina New Orleans' citywide system of school choice. *Education Finance and Policy*, *13*(2), 194–226. https://doi.org/10.1162/edfp_a_00222

Mariel, P., Scarpa, R., & Vega-Bayo, A. (2018). Joint parental school choice: Exploring the influence of individual preferences of husbands and wives. *Regional Science and Urban Economics*, *68*, 23–35. https://doi.org/10.1016/j.regsciurbeco.2017.10.017

OECD. (2016). *Parent questionnaire for PISA 2015*. https://www.oecd.org/pisa/data/CY6_QST_MS_PaQ_Final.pdf

OECD. (2019). *Balancing school choice and equity: An international perspective based on PISA*. PISA, OECD Publishing. https://doi.org/10.1787/2592c974-en

OECD. (2020). *PISA 2018 results (volume V): Effective policies, successful schools*. PISA, OECD Publishing. https://doi.org/10.1787/ca768d40-en

Pathak, P. A., & Sönmez, T. (2008). Leveling the playing field: Sincere and sophisticated players in the Boston mechanism. *American Economic Review*, *98*(4), 1636–1652. https://doi.org/10.1257/aer.98.4.1636

Phares, V., Fields, S., & Kamboukos, D. (2009). Fathers' and mothers' involvement with their adolescents. *Journal of Child and Family Studies*, *18*(1), 1–9. https://doi.org/10.1007/s10826-008-9200-7

Pinquart, M. (2016). Associations of parenting styles and dimensions with academic achievement in children and adolescents: A meta-analysis. *Educational Psychology Review*, *28*(3), 475–493. https://doi.org/10.1007/s10648-015-9338-y

Pleck, J. H. (2010). Paternal involvement: Revised conceptualization and theoretical linkages with child outcomes. In M. E. Lamb (Ed.), *The role of the father in child development* (pp. 58–93). John Wiley & Sons, Inc.

Riina, E. M., & Feinberg, M. E. (2012). Involvement in childrearing and mothers' and fathers' adjustment. *Family Relations*, *61*(5), 836–850. https://doi.org/10.1111/j.1741-3729.2012.00739.x

Saatcioglu, A., & Snethen, A. R. (2022). Preference compromise and parent satisfaction with schools in choice markets: Evidence from Kansas City, Missouri. *Educational Evaluation and Policy Analysis*, *45*(3), 367–398. https://doi.org/10.3102/01623737221121812

Schneider, M., Teske, P., Marshall, M., & Roch, C. (1998). Shopping for schools: In the land of the blind, the one-eyed parent may be enough. *American Journal of Political Science*, *42*(3), 769–793. https://doi.org/10.2307/2991729

Woessmann, L. (2007). International evidence on school competition, autonomy, and accountability: A review. *Peabody Journal of Education*, *82*(2–3), 473–497. https://doi.org/10.1080/01619560701313176

Yaffe, Y. (2020). Systematic review of the differences between mothers and fathers in parenting styles and practices. *Current Psychology*, 1–14. https://doi.org/10.1007/s12144-020-01014-6