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Desirable Ideal or Achievable Reality: Gender Gap in Parental Overoptimistic Aspirations

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Abstract

Do parents hold misbeliefs about their children’s future college eligibility? Are these misbeliefs gendered? Do they affect present track choice. We survey approximately 4,000 parents of ninth-graders in Albania and benchmark their future beliefs against administrative records of 9,370 students from an earlier cohort. Parents systematically overestimate their children’s college-eligibility chances — and do so substantially more for sons than for daughters, especially when they aspire for STEM careers. This gap is not explained by son favoritism, nor by ignorance of current academic performance. The primary mechanism is a failure to incorporate a known reality into belief formation: parents know girls do better, but fail to translate this into realistic forecasts. While misbeliefs are positively associated with actual track enrollment, the association is negligible in magnitude because track choice is mainly driven by actual performance.

Keywords: aspirations, college, overoptimism, favoritism, track choice

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1 Introduction

Girls now outperform boys in school grades, and women have surpassed men in tertiary educational attainment (Goldin et al., 2006; Graetz and Karimi, 2022). Yet this female advantage in school performance and educational attainment coexists with persistent underrepresentation of women in math-intensive STEM fields and the highest-paying careers (Kahn and Ginther, 2017; Leslie et al., 2015). A growing literature points to differences in beliefs, expectations, and social environments as potential explanations for this divergence. Beliefs about one’s ability and expected outcomes influence educational choices (Wiswall and Zafar, 2015; Zafar, 2013), while teachers’ gender stereotypes can reduce girls’ achievement and steer them toward less demanding educational tracks (Alan et al., 2018; Carlana, 2019). Parents, too, hold gendered beliefs about their children’s abilities and their educational paths: conditional on test performance, they overestimate boys’ mathematical ability relative to girls’ (Nicoletti et al., 2022); they select more competitive environments for sons than for daughters (Tungodden and Willén, 2023); and they transmit gendered beliefs about academic ability that shape their children’s own self-perceptions and subsequent educational choices (Bleeker and Jacobs, 2004; Carlana and Corno, 2024).

This literature has largely emphasized mechanisms through which girls may be disadvantaged in educational choices and labour market careers. We ask a complementary question: do parents systematically overestimate boys? We show that comparing the beliefs of parents of sons and daughters alone is not enough to identify such a distortion. It becomes visible only when these beliefs are assessed against an objective, gender-specific benchmark of what similar children actually achieve.

To test this, we study roughly 4,000 parents of ninth-grade students in Albania and elicit their beliefs about their child’s future academic trajectory in a large-scale survey. Through our established partnership with the Albanian Ministry of Education, we analyze rich administrative records tracking 9,370 students from grade 9 (end of middle school) through the "State Matura examination" (end of high school) to contrast the beliefs of parents in our sample with actual trajectories of similar students. Albania offers an unusually clean setting for this exercise: at the end of grade 9, pupils have to choose between an academic track, the natural pathway to university, and a vocational track that can also lead to college, but limits the fields and degrees that one can apply to. This decision is typically influenced by parental guidance. In both cases, college eligibility depends on whether the child achieves a GPA of at least 6.5 out of 10 at the end of Matura, with competitive programs requiring 7, 7.5, 8, or 8.5. The administrative data allow us to compute, for each GPA bin and child gender, the actual

probability of clearing each threshold. These computed probabilities provide an objective benchmark against which every parent’s stated belief can be directly evaluated. This allows us to determine not just whether parents of sons and daughters hold different beliefs, but also whether and to what extent those beliefs differ from the actual outcomes of comparable students.

Existing work has documented parental misperceptions about children’s current academic performance, ability, and effort (Dizon-Ross, 2019; Bergman, 2021; Nicoletti et al., 2022; Ziege and Kalil, 2025), but does not examine whether parents’ beliefs about future educational outcomes align with the subsequent outcomes of comparable students. Yet aspirations and beliefs about the future rather than the present often drive track choice. Many parents enroll their children into the academic track today based on expectations of college eligibility years later, a decision that is irreversible and whose consequences, from dropout risk to labor-market mismatch, unfold long after the belief was formed (Goux et al., 2017; Cervantes and Cooper, 2022). This paper fills this gap by precisely quantifying the direction and magnitude of belief miscalibration — the gap between parental beliefs about their child’s college eligibility and the observed eligibility of academically comparable students, by child gender — and by linking the gender gap in college-eligibility beliefs to the actual track choice at the end of middle school.

We find that the standard information-friction story does not apply here. Unlike parents in Andrabi et al. (2017), Dizon-Ross (2019), Bergman (2021), or Ziege and Kalil (2025), among others, Albanian parents are generally well-informed about their child’s current GPA because the education system informs them in real time through an official app that provides parents with up-to-date information on their children’s academic progress and school attendance. Parents of girls report their child’s grade-9 GPA significantly more accurately than parents of boys across all error-tolerance thresholds. Parents also report significantly higher grade-9 GPAs for daughters, consistent with girls’ higher actual performance. Therefore, the friction is not about current performance. We show that it is about the future: parents systematically overestimate the probability that their child will clear college-eligibility GPA thresholds.

This overoptimism, however, is not symmetric. Analyzing administrative records, we find that, on average, students’ GPA declines by 0.87 points between grade 9 and the State Matura, similarly for boys and girls. Yet girls outperform boys at every level of starting GPA: conditional on the same grade-9 performance, girls are substantially more likely to clear every eligibility threshold. Despite this, parents of sons substantially overestimate their child’s future college eligibility relative to the realized outcomes of boys with comparable grade-9 performance. Parents of daughters exhibit smaller forecast errors. The gender gap

in college-eligibility beliefs is 12 percentage points at a threshold of 7, 10.6 percentage points at a threshold of 7.5, and 7.5 percentage points at a threshold of 8.

Next, we examine the potential mechanisms underlying these gender differences in beliefs about future educational outcomes. The natural explanation, that parents are motivated to inflate sons' prospects, consistent with son favoritism, is ruled out directly by our survey design. Each parent was asked both about their own child and about a typical child with the same current GPA. The within-parent difference between these two responses measures motivated own-child optimism, free of any external benchmark. Parents of sons and daughters produce identical within-parent premia: the gender gap in this excess optimism is precisely zero at every threshold. Our evidence suggests that son favoritism is not the mechanism.

The gender gap in forecast accuracy is rooted in systematically wrong beliefs about future academic performance, especially among parents of sons. When asked directly about their child's expected future GPA, parents of daughters anticipate grades that are 0.165 GPA points higher than parents of sons, consistent with what administrative records show. This means that parents' stated expectations recognize the actual direction of the gender gap in academic performance. Yet when these GPA expectations are benchmarked against the realized outcomes of students of the same sex and comparable grade-9 performance, parents of sons overestimate the future high school GPA substantially and persistently more than parents of girls across the entire grade-9 GPA distribution. This gap ranges from 0.065 to 0.095 GPA points in favor of sons.

The potential mechanism underlying our main result is therefore a failure to incorporate a known reality into belief formation about high-stakes educational outcomes. Parents of both sons and daughters recognize that girls outperform boys academically, stating so directly when asked about grade-9 and expected high school GPAs. While neither group fully incorporates the information of the known gender gap into eligibility beliefs, the primary source of the benchmarked gap is the overestimation of boys' future GPA trajectories among parents of sons. Parents of daughters are considerably better calibrated against girls' actual outcomes, while parents of sons expect their son to achieve GPA levels that boys like him systematically fail to reach. We find further support of this mechanism when we examine raw eligibility beliefs. At threshold 7, parents of sons state only slightly higher raw eligibility probabilities than parents of daughters. The gap is 3 percentage points and disappears entirely at the harder thresholds of 7.5 and 8. Therefore, parents of sons are not deliberately inflating their son's chances: at harder thresholds, they believe their son has similar prospects to what parents of daughters believe for their daughter. Importantly, this pattern is not driven by parents' ignorance of their child's current academic standing: the gender gap in forecast

accuracy is identical among parents who accurately report their child’s grade-9 GPA and those who do not. The failure to incorporate reality into the belief formation process concerns what happens between grade 9 and the State Matura, not the starting point itself.

Our estimates are free of logical inconsistencies in stated probabilities: the survey was designed to flag and correct cases where a parent assigned a higher probability to a harder eligibility threshold than to an easier one. This constitutes a logical impossibility known as a monotonicity violation, since the probability of clearing a harder threshold cannot exceed the probability of clearing an easier one. The pattern of violations before correction is itself informative: only 30 % of parents commit such violations, and they are disproportionately concentrated among parents of daughters, including when answering about a hypothetical typical child. This confirms that the violations reflect a general tendency in how these parents reason about probabilities, ruling out response carelessness as an explanation for the greater forecast accuracy among parents of daughters.

It is surprising, however, that parents are more likely to enroll their daughters into the academic track than sons, despite thinking that their sons are more likely to clear college-eligibility thresholds. This shows that gendered overoptimistic beliefs are not associated with the actual track choice. We find that factors including parents’ opinion and beliefs about the vocational track (VET), gender composition in VET schools, and beliefs about access to college after VET are unlikely to affect this decision that occurred after we conducted the survey. On the contrary, their decision is most likely purely based on the academic performance of the child: better performing students continue to the academic track.

Lastly, we find that the gender gap in beliefs about college eligibility is not uniform across families. One dimension of heterogeneity is particularly revealing. The gap is substantially larger among STEM-aspiring families: among parents who aspire for their child to enter STEM careers, the gender gap in eligibility forecast accuracy grows progressively with STEM intensity, reaching up to 20 percentage points larger than among non-STEM-aspiring families at the most competitive threshold. Parents who most want their child to pursue a competitive STEM career are precisely those most wrong about whether their son, relative to their daughter, will actually qualify for it.

First, we contribute to the literature on the role of parents in children’s educational trajectories (Becker and Tomes, 1979; Cunha et al., 2010; Doepke and Zilibotti, 2017; Hastings et al., 2005; Goux et al., 2017). Recent work shows that parental decisions differ by child gender: Tungodden and Willén (2023) show that parents choose more competitive environments for sons, while Carlana and Corno (2024) show that parental recommendations shape adolescents’ field-of-study choices in gender-stereotypical ways. We add to this literature by showing that,

although parents of sons are more overoptimistic about their children’s academic prospects than parents of daughters, they are not more likely to enroll their sons into more competitive secondary education track choices; hence, gendered overoptimistic beliefs do not lead to gendered education decisions.

Second, we contribute to the literature on misperceptions of academic abilities by parents and teachers. Existing work shows that parents can hold inaccurate beliefs about their children’s current effort and academic ability (Dizon-Ross, 2019; Bergman, 2021; Ziege and Kalil, 2025), while related work documents systematic gender biases in teachers’ expectations about students’ educational attainment (Papageorge et al., 2020), as well as evaluations and track recommendations (Carlana, 2019; Carlana et al., 2022). We contribute to this literature by documenting miscalibration in beliefs about future, rather than current, academic performance. We show that parents substantially overestimate both future GPA and college eligibility, despite having accurate information about their children’s current performance.

Third, we contribute to the literature on son preference and gender differences in parental treatment (Jayachandran, 2024). This literature documents son preference in fertility decisions (Dahl and Moretti, 2008; Myck et al., 2024), resource allocation and health investments (Barcellos et al., 2014; Jayachandran and Pande, 2017), educational expenditure (Kaul, 2018), entrepreneurship transmission (Mishkin, 2021), and children’s savings (Haran Rosen et al., 2024). We contribute to this literature by distinguishing two potential explanations underlying the broader preference for sons. Do parents of sons place a greater premium on their own child, i.e., *son favoritism*, or are they more optimistic about the outcomes of their sons, i.e., *gendered overoptimism*? We distinguish these two possibilities by comparing parents’ beliefs about their own child with (1) their beliefs about a comparable typical child, and (2) the actual outcomes of these typical children. We find no evidence that parents of sons place a larger own-child premium on their child than parents of daughters. Instead, the gender difference arises from greater overestimation of boys’ future academic outcomes relative to their objective prospects.

Fourth, we contribute to the literature on gender differences in STEM and the role of gendered beliefs in shaping educational specialization. A growing literature documents that gender gaps are particularly pronounced in fields associated with mathematics, competition, and exceptional intellectual ability (Buser et al., 2014; Leslie et al., 2015; Kahn and Ginther, 2017) while gender stereotypes and social influences can shape performance, confidence, and educational choices in these domains (Brenøe, 2017; Carlana, 2019; Carlana and Corno, 2024; Anaya et al., 2022). We provide evidence on a previously unexplored dimension of this relationship: whether gender differences in parental beliefs vary with the selectivity of the

STEM pathway parents aspire their children to enter. We find that among STEM-aspiring families, the gender gap in parents’ college-eligibility beliefs widens systematically, particularly for more selective pathways.

Finally, we contribute to the literature on how people form beliefs. A growing literature shows that people may adjust their beliefs only gradually in response to new information (Coibion and Gorodnichenko, 2015), rely on salient information when forming statistical beliefs (Enke, 2020), weight multiple information signals differently when forming beliefs (Rury and Kalil, 2026), and hold different beliefs even when they receive the same information (Andre et al., 2022). Recent work further shows that people can form different beliefs from the same information depending on whether they are asked to infer the current state or forecast a future outcome (Fan et al., 2026). We contribute by showing that people can know an important fact about the world yet fail to incorporate it into their beliefs about a particular outcome: parents know that girls perform better than boys, but fail to incorporate this fact into their beliefs about their children’s future college-eligibility chances.

Our findings point to a specific policy implication. Since the failure concerns forecasting trajectories rather than current performance, simply informing parents of their child’s current GPA is unlikely to close the gap. What is needed is a low-cost, scalable intervention: giving parents gender-specific benchmark statistics on academic trajectories at the moment in which students need to choose the high school track. This intervention is directly implementable through the administrative reporting systems that many countries already operate.

The remainder of the paper is organized as follows. Section 2 develops a conceptual framework that formalizes the belief-formation process about college eligibility, and separates own-child favoritism from gendered overoptimism. Section 3 describes the institutional context, our data, and the administrative benchmarks used throughout the analysis. Section 4 presents our main results, following the conceptual framework. Section 5 concludes and discusses what educational policies should be in order.

2 Conceptual framework

Here we describe a conceptual framework that helps us understand the belief formation process of parents. In many countries, parents of children completing middle school make decisions about their children’s subsequent secondary educational track, including academic and vocational pathways. These decisions may be informed by parents’ aspirations for their children’s future education, such as obtaining a college degree. In settings where entry into secondary education is not determined by current academic performance, but access to

university depends on meeting GPA-based eligibility thresholds, parents form expectations about how their child’s academic performance will evolve over time. The relevant question is therefore not only how parents assess their child’s current performance, but also how they translate those assessments into beliefs about whether their child will ultimately meet consequential performance thresholds.

Imagine a parent of a student at the end of middle school deciding how to assess the child’s educational prospects before making a secondary education choice: academic or vocational education. The parent observes the child’s current academic performance and must form a belief about how that performance will evolve through high school and, ultimately, whether the child will achieve the GPA required to access a desired educational pathway. Our framework separates these two beliefs: the parent’s expectation about future academic performance and the parent’s belief about whether that performance will be sufficient to cross a consequential educational threshold.

Consider a student i who enters high school with current academic performance θ_i . Future academic performance is given by

$$\tilde{\theta}_i = \theta_i - \delta + \varepsilon_i, \quad (1)$$

where $\delta > 0$ captures the systematic change in performance between grade 9 and the end of high school, and ε_i captures student-specific shocks during this transition. We assume $\delta > 0$ because our administrative data show that students’ GPA falls by 0.87 points, on average, as they transition from middle school to high school, with more than 90% of students experiencing a decline. Let $\bar{\theta}$ denote the GPA threshold of college eligibility at the end of high school. The objective probability that student i clears this threshold, conditional on current performance, is:

$$p_i(\bar{\theta} \mid \theta_i) = P\left(\tilde{\theta}_i \geq \bar{\theta} \mid \theta_i\right). \quad (2)$$

This probability provides the objective benchmark against which we evaluate parental beliefs.

In our setting, parents first report their expected future high school performance and then the probability that their child will cross particular college eligibility thresholds. Conceptually, beliefs about future performance provide an intermediate input into beliefs about college eligibility. This distinction is central to our setting. Let

$$\hat{\theta}_i = E\left[\tilde{\theta}_i \mid \mathcal{I}_i\right] \quad (3)$$

denote the parent’s subjective expectation of the child’s future performance, where $\mathcal{I}_i$ denotes the information available to the parent. Parent’s belief about eligibility can then be viewed

as a function of the expected future performance, the threshold, and uncertainty about future outcomes:

$$\hat{p}_i(\bar{\theta} \mid \theta_i) = \Phi(\hat{\theta}_i, \bar{\theta}). \quad (4)$$

We characterize this function below.

Using administrative records from the previous cohort, we establish that, conditional on current performance, daughters (d) have better subsequent academic outcomes than sons (s):

$$E[\tilde{\theta}_i \mid \theta_i, g = d] > E[\tilde{\theta}_i \mid \theta_i, g = s]. \quad (5)$$

This inequality constitutes a fact. Parents might or might not recognize this fact when forming expectations about future performance. That is, their stated expectations can satisfy

$$\hat{\theta}_i^d > \hat{\theta}_i^s \quad \text{or} \quad \hat{\theta}_i^d < \hat{\theta}_i^s. \quad (6)$$

Recognizing this difference, however, does not necessarily imply that parents will fully incorporate it into their beliefs about threshold crossing. For example,

$$\hat{\theta}_i^d > \hat{\theta}_i^s \quad \text{but} \quad \hat{p}_i^d(\bar{\theta} \mid \theta_i) < \hat{p}_i^s(\bar{\theta} \mid \theta_i). \quad (7)$$

More generally, the mapping from beliefs about future performance to beliefs about college eligibility may differ from the mapping implied by the objective distribution of future outcomes. Parents may recognize the direction and/or magnitude of the gender difference in future performance without fully carrying that information through to beliefs about college eligibility. To allow for systematic optimism in threshold beliefs without imposing its gender pattern, we characterize the belief formation function that we introduced above:

$$\hat{p}_i(\bar{\theta} \mid \theta_i) = p_i(\bar{\theta} \mid \theta_i) + \beta_g m(p_i(\bar{\theta} \mid \theta_i)), \quad (8)$$

where $m(p) \geq 0$ and $m'(p) < 0$. Here, β_g captures the extent to which optimistic distortion differs by the child's gender. Importantly, the framework does not impose an ordering on β_s and β_d . Whether parents are more optimistic about sons or daughters is an empirical question. The assumption $m'(p) < 0$ implies that optimism is larger when the objective probability of success is lower. Then, parent's belief miscalibration relative to the objective benchmark is

$$B_i(\bar{\theta}) \equiv \hat{p}_i(\bar{\theta} \mid \theta_i) - p_i(\bar{\theta} \mid \theta_i), \quad (9)$$

and the gender-specific benchmarked gap in college-eligibility beliefs is:

$$\Delta B(\bar{\theta}) = E \left[\hat{p}_i(\bar{\theta} \mid \theta_i) - p_i(\bar{\theta} \mid \theta_i) \mid g = s \right] - E \left[\hat{p}_i(\bar{\theta} \mid \theta_i) - p_i(\bar{\theta} \mid \theta_i) \mid g = d \right]. \quad (10)$$

Because the objective probability of crossing a given threshold can differ by gender, conditional on current performance, the raw gender difference in parents' stated eligibility beliefs does not measure the extent to which their beliefs are miscalibrated. We therefore compare parents' stated probabilities not only across sons and daughters, but also with the corresponding objective probabilities for kids with the same current GPA. The resulting forecast error captures the extent to which parents' beliefs depart from the outcomes observed among comparable students.

Our framework imposes a distortion function at the stage of eligibility beliefs, not at the stage of future GPA expectations. This is a parsimonious modeling choice that allows us to treat parents' stated expectations of future performance as an intermediate subjective assessment and to study whether information contained in that assessment is carried through to beliefs about a consequential educational threshold. We do not assume that parents' performance forecasts are necessarily unbiased or immune to motivated reasoning. Rather, we leave the formation of $\hat{\theta}_i$ unspecified and introduce the motivated-belief component only when parents assess the probability of crossing an educational threshold. This belief is directly relevant to whether parents perceive their child as capable of pursuing a desired educational path. This interpretation is consistent with [Bénabou and Tirole \(2002\)](#), who argue that optimistic beliefs can have instrumental value by increasing motivation to undertake ambitious goals and persist in their pursuit. Our conceptual framework does not specify why parents might fail to fully incorporate into their belief formation about college eligibility the correctly perceived gender difference in future performance; rather, it allows us to characterize systematic departures of stated eligibility beliefs from the objective benchmark while leaving the gender pattern to the data.

Finally, we distinguish this forecast distortion from optimism specifically associated with one's own child. Let $\hat{p}_i^{own}(\bar{\theta} \mid \theta_i)$ denote the parent's belief about their own child clearing threshold $\bar{\theta}$, and $\hat{p}_i^{typ}(\bar{\theta} \mid \theta_i)$ the belief about a typical child with the same current performance θ_i . The own-child premium at threshold $\bar{\theta}$ is

$$O_i(\bar{\theta}) = \hat{p}_i^{own}(\bar{\theta} \mid \theta_i) - \hat{p}_i^{typ}(\bar{\theta} \mid \theta_i). \quad (11)$$

Comparing this premium across sons and daughters allows us to separately examine two distinct forms of parental optimism. *Own-child favoritism* refers to the tendency of parents to

rate their own child above a hypothetical child with the same current performance θ_i , captured by $O_i(\bar{\theta}) > 0$. *Son favoritism* refers to whether parents of sons exhibit a larger own-child premium than parents of daughters at the same threshold. We capture this difference by

$$\Delta O(\bar{\theta}) = E \left[O_i(\bar{\theta}) \mid g = s \right] - E \left[O_i(\bar{\theta}) \mid g = d \right]. \quad (12)$$

A value of $\Delta O(\bar{\theta}) > 0$ indicates a larger own-child premium among parents of sons, while $\Delta O(\bar{\theta}) = 0$ indicates that the own-child premium does not differ by gender, conditional on current performance.

To summarize, this framework separates three stages: current performance, beliefs about future performance, and beliefs about the probability of crossing a consequential threshold. Our empirical analysis follows this sequence by comparing parents’ beliefs about future performance and threshold crossing with the subsequent outcomes of students with comparable current performance, and by examining whether the resulting forecast errors differ by the child’s gender.

3 Context and data

First, we describe the Albanian education system and the institutional context. Second, we characterize our datasets: (1) the administrative records of high-school completers, (2) survey data from the parents we interviewed, and (3) administrative records on the actual performance and track choices of their children. Third, we describe gender differences in academic performance in Albania. Fourth, we characterize our sample.

3.1 Institutional context

The education system in Albania is structured into four main levels (see Figure 1). Pre-university education begins with pre-school (kindergarten) for children aged 3–6 (non-compulsory). This is followed by primary education, which lasts 5 years (Grades 1–5), and then lower secondary education for 4 years (Grades 6–9); together, these 9 years are compulsory. Middle school ends at grade 9.

After completing Grade 9, students enter upper secondary education, which lasts three years (Grades 10–12) and is divided into general (academic) high schools, vocational schools (VET), and specialized schools (such as those oriented towards arts or sports). Upon graduation, students may continue to tertiary education, which includes universities and professional

Pre-University Education System		
Pre-Primary Education 3 years	Primary Education (Compulsory) 9 years	Secondary Education 3 years
3–6 years old 2 years kindergarten and 1-year preschool	6–15 years old 5 years elementary & 4 years middle school	15–18 years old 3 years General high school, vocational schools, and oriented education

Figure 1. Pre-university education system in Albania

Notes: Vocational programs vary from two to four years. Conditional on successful completion of the State Matura of the Professional (Vocational) State Matura (for those who choose the VET track), students are eligible to apply to universities (colleges).

colleges, typically structured according to the Bologna system (Bachelor, Master, PhD).

Access to tertiary education is particularly relevant for our study because eligibility is determined by academic performance at the end of high school. Students who complete an academic high school and wish to apply to college must achieve a GPA of at least 6.5, calculated as the arithmetic average of the overall high school GPA and the four State Matura examination grades. The grading scale ranges from 4 (fail) to 10 (highest mark). Some university programs impose higher admission requirements; for example, admission to medicine is considerably more selective. The path to college is displayed in Figure 2.

Those who complete vocational high school can also apply to college programs, provided they successfully complete the vocational State Matura. However, they can only apply to a very limited range of programs, and they have to compete with those who graduated from the academic track. In practice, only a small share of students completing the vocational track subsequently enroll in college.

The institutional setting, therefore, creates a meaningful gap between the decisions parents and students make at the end of Grade 9 and the educational consequences of those decisions several years later. At the time of track choice, parents observe their child’s current academic performance, but college eligibility depends on academic performance at the end of high school. Parents, therefore, form expectations about how their child’s performance will evolve and, ultimately, whether the child will meet the GPA threshold required to access higher education. This feature of the education system is central to our analysis of parental beliefs.

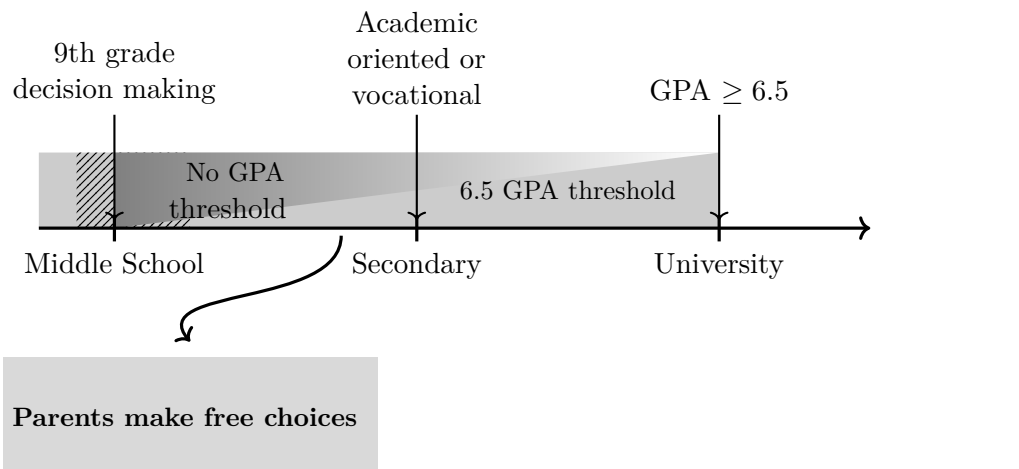


Figure 2. Path to college

Notes: The GPA used to determine college eligibility is the arithmetic average of the high school GPA and the four grades of the State Matura exams.

3.2 Data description

We formed a long-term partnership with the Ministry of Education in Albania in 2024. Through this partnership, we collected rich administrative data tracking 9,370 students from the end of Grade 9 through the State Matura examination at the end of high school. These administrative records allow us to observe students' academic trajectories over time, including their Grade 9 GPA, overall high school GPA, State Matura examination grades, and performance in mathematics, Albanian language and literature, and English, which are the mandatory State examinations at the end of lower secondary education. Importantly, the administrative records allow us to establish how students' academic performance evolves between Grade 9 and the end of high school and, crucially, to calculate the probability of meeting different college-eligibility thresholds conditional on current academic performance. Throughout the paper, we refer to these probabilities as objective benchmarks.

We construct these objective probabilities separately by gender, allowing us to benchmark parents' stated beliefs against the subsequent outcomes of comparable boys and girls. In particular, for each Grade 9 GPA bin and gender, we estimate the share of students who subsequently achieve a GPA of at least 6.5, 7, 7.5, 8, and 8.5. Because we construct the benchmark separately by gender for students with the same current performance, we can assess how accurately parents predict their own children's future outcomes relative to those of comparable boys and girls.

To examine whether these differences are related to observable family characteristics, we

matched the administrative records with socio-demographic information on parents, including educational attainment and occupation, which were provided to us by the Ministry in collaboration with the schools. We find that these characteristics do not systematically predict the probability of meeting the relevant college-eligibility thresholds. Therefore, our administrative benchmark is based only on GPA and gender.

In the summer of 2025, we conducted a survey with around 11,600 parents of students who completed grade 9 in public schools located in urban areas. The survey was distributed to parents through official Ministry channels. The main teacher in each classroom sent a specific survey link to each parent. The survey link contained a unique identifier that was then used to match survey data with administrative records. Around 6,700 parents started the survey, and 3,991 of them completed it. The survey was administered as part of a career-orientation program implemented by the Ministry of Education in middle schools throughout Albania. The survey collected information on parents' aspirations, expectations, perceptions, and beliefs about their children's educational trajectories. Importantly for this paper, it elicited beliefs at several distinct stages of the educational process, allowing us to distinguish parents' knowledge of current performance from their expectations about future performance and their beliefs about consequential educational thresholds.

First, parents reported their child's current Grade 9 GPA and their expectation about the child's GPA at the end of high school. These questions allow us to examine whether parents accurately perceive their child's current academic performance and whether they correctly anticipate the direction and magnitude of the child's subsequent academic trajectory. We can compare these expectations with the actual outcomes observed in the administrative records.

Second, parents were asked to report the probability that a typical child with the same current academic performance as their own child would achieve a GPA of at least 6.5 at the end of high school. We subsequently elicited the same probability for higher thresholds, including 7.0, 7.5, 8.0, and 8.5. Parents then answered the same set of questions for their own child, except that the lowest threshold was 7.0. We omitted the 6.5 threshold from the own-child questions because, in practice, the lowest GPA among students admitted to most university programs is typically above the minimum eligibility threshold of 6.5. The higher thresholds therefore provide more meaningful variation in the likelihood of admission for the own-child comparisons. These questions allow us to examine beliefs about educational outcomes that become increasingly consequential as the required GPA rises. We can directly evaluate the accuracy of parents' threshold beliefs by benchmarking them with the actual probabilities of comparable children. Also, comparing parents' assessments of their own child with their assessments of this hypothetical child allows us to examine whether parents systematically

attach an additional premium to their own child and whether this own-child premium differs between parents of sons and daughters.

The survey also collected rich information on parents’ beliefs and aspirations regarding their child’s future educational trajectory. We distinguish between aspirations, which capture the educational outcomes parents would like their child to achieve regardless of the child’s current performance, and expectations, which capture the outcomes parents expect their child to achieve conditional on the child’s academic performance. Parents reported whether they believed their child should pursue an academic or vocational track and, for college education, identified two programs they would most like their child to attend as well as two programs they expected their child to attend given the child’s performance. We elicited the same two sets of measures regarding the child: parents reported which two college programs they believed their child would aspire to attend, regardless of performance, and which two programs they expected the child to pursue, conditional on performance. We also asked whether the expected or desired degree would be obtained in Albania or abroad. Because each college program can be classified by field of study, these measures allow us to distinguish STEM from non-STEM aspirations and expectations. This rich set of measures allows us to examine whether these aspirations and expectations differ systematically by the child’s gender.

Finally, the survey collected parents’ perceptions of the returns to academic and vocational education, expected employment opportunities after each track, and the perceived social status or stigma associated with vocational education. These questions were designed to shed light on the broader determinants of track choice and to distinguish beliefs about children’s academic trajectories from perceptions of the different educational pathways available to them. Then we linked the survey data to actual grade 9 GPA and track choice data.

3.3 Gender differences in academic performance

Before we move to our main results, we describe the academic trajectories of boys and girls from the end of middle school until the end of high school, using the administrative records of the 2023–2024 cohort. The administrative records reveal a clear and persistent female advantage in academic performance. Girls’ grade-9 GPA distribution lies substantially to the right of boys’, reflecting an average gap of nearly one GPA point (Figure A1).

This advantage carries through to the end of high school: girls’ final GPA distribution remains shifted rightward relative to boys’, with greater mass above every college-eligibility threshold (Figure A2). The transition between the two endpoints involves a GPA decline for virtually

all students, averaging 0.87 points, but the distribution of this decline is nearly identical for boys and girls (Figure A3), confirming that the female advantage in final outcomes reflects girls’ stronger starting position rather than differential trajectories by sex.

Figures A4 and A5 show that this advantage holds for each bin of the grade-9 GPA: conditional on the same starting performance, girls achieve higher final GPAs and are more likely to clear the 6.5 eligibility threshold than boys. This within-bin female advantage motivates the sex-specific benchmark used throughout the paper.

3.4 Sample and balance

Of the 11,600 survey links distributed, 6,726 parents responded at least partially, of whom 3,991 completed the full survey and 2,735 filled in only the demographics section. Table A1 compares completers and non-completers on observable characteristics. Completers have children with somewhat higher grade-9 GPAs (8.356 versus 8.035), are more likely to be parents of daughters (by 3.7 percentage points), and are slightly less likely to live in urban areas (by 2.5 percentage points). None of these differences exceeds the 0.25 threshold for normalized differences (Imbens and Rubin, 2015), below which imbalances are considered negligible irrespective of sample size.¹ Parental education, employment status, and occupation are statistically indistinguishable between completers and non-completers at the 5 percent level. The linear probability model of survey completion on observable characteristics yields an R^2 of 0.013. Although a joint F-test rejects orthogonality ($p < 0.001$), observable characteristics collectively explain less than 2 percent of the variation in completion — a pattern consistent with a large sample in which even negligible differences achieve statistical significance. We therefore proceed with the sample of completers, noting that it is mildly selected on child gender, academic performance, and location type.

Table A2 describes the sample of completers separately by child gender, which is the relevant comparison for the rest of the paper. The only variables whose normalized differences exceed the 0.25 threshold (Imbens and Rubin, 2015) are administrative and self-reported GPAs — a direct reflection of the well-documented female academic advantage, not a failure of balance. Girls outperform boys academically in the population, and the survey sample simply mirrors this reality. Parents of daughters are somewhat more likely to live in urban areas, to have a firstborn daughter, and to be mothers rather than fathers, though none of the normalized differences clears the 0.25 threshold for practical importance. Parental education, employment status, and occupation are statistically indistinguishable across groups at the

¹The normalized difference is defined as the difference in group means divided by the square root of half the sum of the two group variances. Unlike t-tests, it does not mechanically grow with sample size.

5 percent level. The linear probability model of child gender on observable characteristics yields an R^2 of 0.197, and a joint F-test rejects orthogonality ($p < 0.001$), driven primarily by the large and expected GPA gap between boys and girls. In Appendix C we describe the full set of controls that we use in most of our specifications.

4 Results

4.1 Parents' beliefs of current academic performance

We begin our analysis with parental beliefs about the current academic performance of their children (Figure 3 & Table A3). Most parents are well-informed about their child's grade-9 GPA, which is unsurprising given that the Ministry of Education operates a real-time administrative reporting system through which parents can monitor their child's grades and school attendance at any time. Consistent with this, 58 percent of parents report their child's GPA within a 0.2 GPA-point margin and 75 percent within 0.5 points. Errors are mostly small and predominantly upward: 32 percent of parents overreport the GPA by more than 0.2 points, while only 9 percent underreport it. Parents of daughters report more accurately than parents of sons: 65 percent of parents of daughters report within a 0.2-point margin, compared to 51 percent of parents of sons. The gap is driven primarily by overreporting — parents of sons overreport their child's GPA by more than 0.2 points nearly twice as often as parents of daughters (39 percent versus 26 percent). We formalize these differences in the likelihood of misreporting by child gender in Table A4.

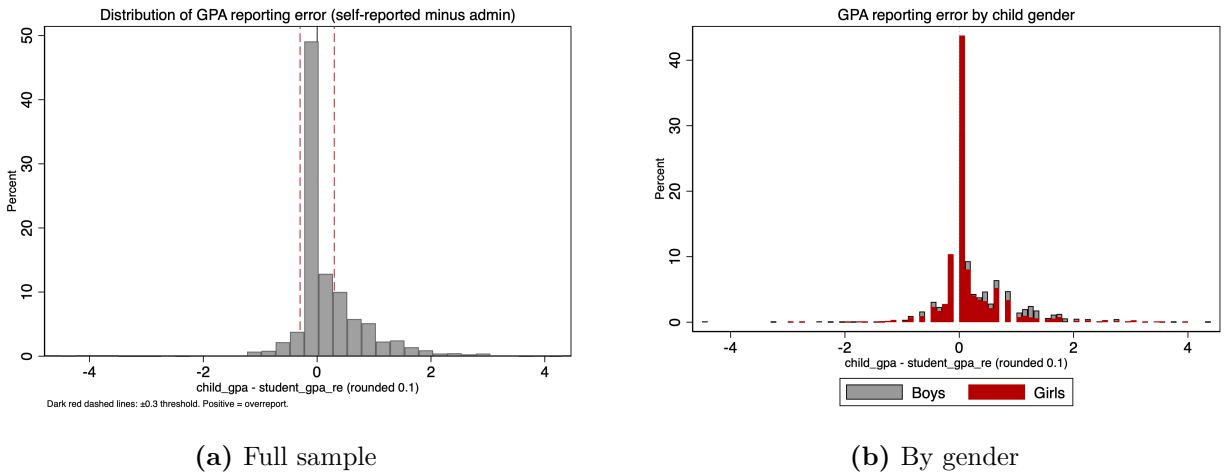


Figure 3. Distribution of grade-9 GPA reporting error
Notes: Positive values indicate overreporting. Vertical dashed lines at ± 0.3 .

4.2 Beliefs about college eligibility

Next, we move to our main result, in which for each parent, we compare the perceived probability that their child reaches a given GPA threshold at the end of the State Matura with the actual probability that we observe in our administrative records for students of the same sex and grade-9 GPA. Conceptually, Equation 13 estimates the gender gap in college-eligibility beliefs defined in Equation 10:

$$\text{Gap}_{ick} = \alpha_k + \beta_k \text{Girl}_i + X_i' \gamma_k + \mu_c + \varepsilon_{ick}, \quad (13)$$

where:

$$\text{Gap}_{ik} = P_{ik}^{\text{own}} - P_k^{\text{actual}}(\text{sex}_i, b_i), \quad (14)$$

where P_{ik}^{own} is the parent’s perceived probability (0–100) that their child reaches a GPA of at least $k \in \{7.0, 7.5, 8.0\}$ at the end of the State Matura, and $P_k^{\text{actual}}(\text{sex}_i, b_i)$ is the share of students of the same sex in the same 0.3-point bin b_i of grade-9 GPA. Positive values indicate overestimation, and β_k is the difference in overestimation among parents of daughters and sons, net of the actual prospects of comparable students. This is conceptually similar to a difference-in-differences estimator.

Table 1 estimates Equation 13. Parents of sons overestimate their child’s probability of reaching a high school GPA of 7.0 by 12.8 percentage points more than parents of daughters, conditional on the reported grade-9 GPA, controls, and school-class fixed effects. This gap shrinks to 10.6 and 7.4 percentage points at thresholds 7.5 and 8.0. The estimates are virtually identical across OLS and PDS Lasso and under robust and clustered standard errors.

We further characterize this gendered overestimation across the distribution of current academic performance (Figure 4). Parents of boys (black line) overestimate their child’s chances more than parents of girls in almost every bin and at all three thresholds. The gap is largest for children with low and intermediate grades and declines with GPA, turning negative at the top of the distribution, where actual probabilities approach 100%.

Among high-performing children, college-educated parents are more pessimistic. Table A5 in appendix D.2 compares college-eligibility beliefs of parents with and without a college degree whose child is in the top quartile of grade-9 GPA (reported GPA between 9.7 and 10). College-educated parents report probabilities of clearing each threshold that are 8.5 to 9.5 percentage points lower than those without a college degree. Perhaps, college-educated parents tend to be more pessimistic or sceptical because they internalize the fact that getting

to college is hard.

Table 1. Gender gap in college-eligibility beliefs benchmarked against actual outcomes

	(1)	(2)	(3)	(4)
	OLS	OLS	PDS Lasso	PDS Lasso
	Robust SE	Cluster SE	Robust SE	Cluster SE
<i>Panel A: Threshold 7.0</i>				
Girl	−12.76*** (1.242)	−12.76*** (1.301)	−12.80*** (1.156)	−12.85*** (1.212)
R^2	0.521	0.521		
<i>Panel B: Threshold 7.5</i>				
Girl	−10.55*** (1.319)	−10.55*** (1.364)	−10.58*** (1.226)	−10.47*** (1.286)
R^2	0.511	0.511		
<i>Panel C: Threshold 8.0</i>				
Girl	−7.355*** (1.415)	−7.355*** (1.479)	−7.454*** (1.310)	−7.363*** (1.382)
R^2	0.424	0.424		
N	3,991	3,991	3,991	3,991

Notes: The dependent variable is Gap_{ik} in (14), the difference (in percentage points) between the parent’s perceived probability (0–100) that their own child reaches a certain college-eligibility threshold at the end of the State Matura and the sex-specific actual probability from administrative data. The coefficient on *Girl* is the difference in this gap between parents of girls and parents of boys; The OLS estimates include all controls and school-class fixed effects. Columns (3) & (4) report PDS Lasso estimates; Columns (2) & (4) use clustered standard errors. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

We further characterize our main result by turning to the heterogeneity of the effects with respect STEM aspirations and current academic performance. Let $S_i \in \{0, 1, 2\}$ be the number of STEM careers among the two reported careers for the child. We estimate:

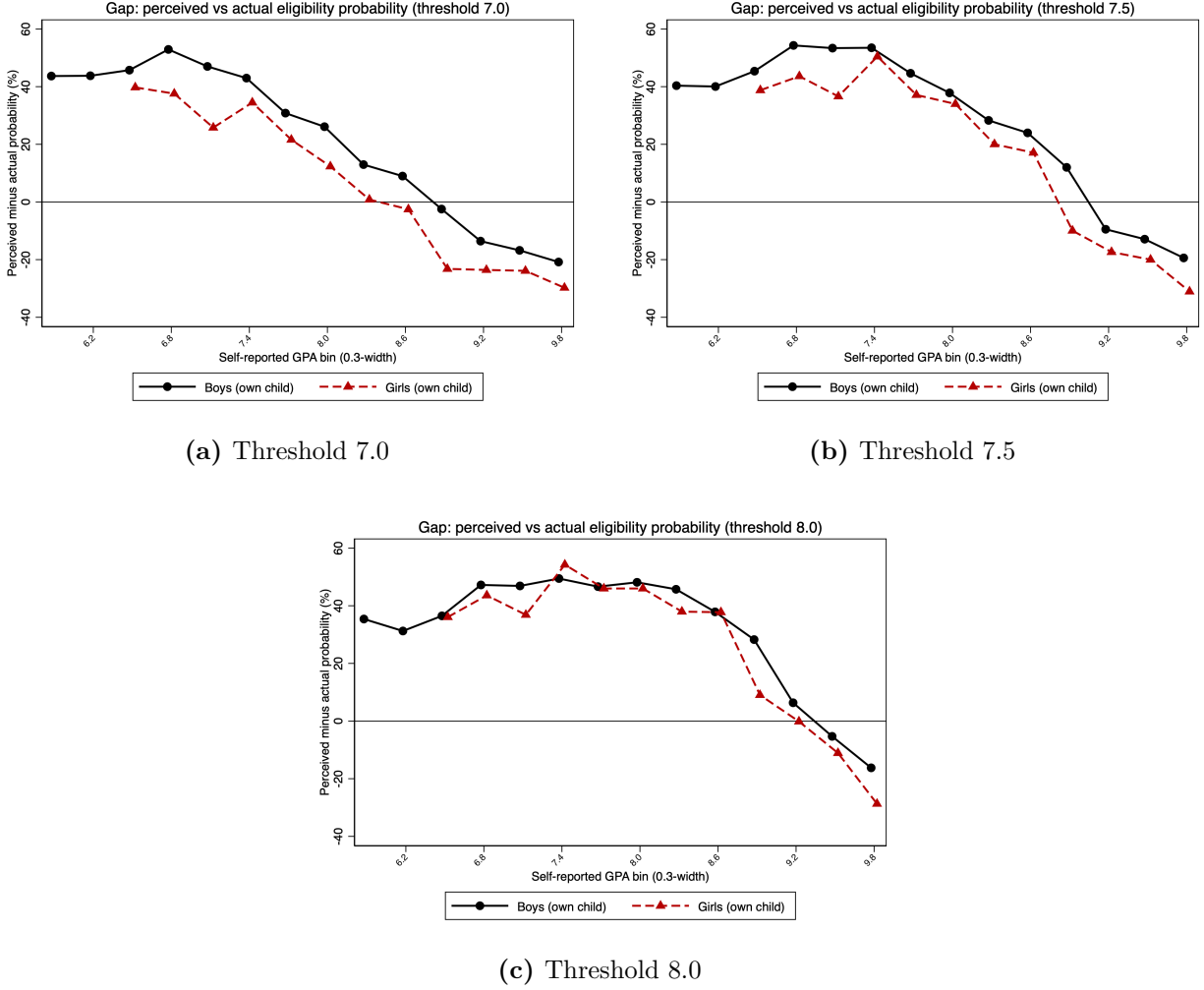
$$\text{Gap}_{ick} = \alpha + \beta \text{Girl}_i + \sum_{s=1}^2 \delta_s \mathbf{1}[S_i = s] + \sum_{s=1}^2 \theta_s \text{Girl}_i \times \mathbf{1}[S_i = s] + X_i' \gamma + \mu_c + \varepsilon_{ick} \quad (15)$$

by PDS Lasso. The gender gap is β in families without STEM aspirations and $\beta + \theta_s$ in families with s STEM careers.

Table A6 reports estimates with STEM aspirations measured either by the parent’s aspirations for the child (Panel A) or by the child’s own aspirations reported by the parent (Panel B). In families with STEM aspirations the gap is large and remarkably stable across thresholds: among families in which both aspired careers are STEM, parents of daughters overestimate their child’s chances by about 13–15 percentage points less than parents of sons at every

threshold.

Figure 4. Gap between perceived and actual eligibility probability by grade-9 GPA bin



Notes: Each panel plots the mean forecast error Gap_{ik} from (14) by 0.3-point bin of parent-reported grade-9 GPA. The forecast error is defined as the parent's perceived probability (0–100) that their child reaches the eligibility threshold at the end of the State Matura minus the actual probability from administrative records. For parents of boys and girls, the benchmark is the sex-specific share of students in the same grade-9 GPA bin who cleared the threshold in the 2023–2024 administrative cohort. Positive values indicate overestimation. Bins with fewer than 10 survey observations or fewer than 10 administrative records are excluded, as are the three lowest GPA bins (5.0–5.89).

Among non-STEM aspiring families, the gap is smaller at threshold 7.0 and vanishes at the more selective thresholds. The pattern is nearly identical whether STEM aspirations refer to the parent or to the child, reflecting STEM-oriented households rather than parents' preferences alone.

Let $Q_i \in \{1, \dots, 4\}$ denote the quartile of the parent-reported grade-9 GPA. We estimate the

fully interacted model:

$$\text{Gap}_{ick} = \sum_{q=1}^4 \lambda_q \mathbf{1}[Q_i = q] + \sum_{q=1}^4 \beta_q \text{Girl}_i \times \mathbf{1}[Q_i = q] + X_i^{-\text{GPA}'} \gamma + \mu_c + \varepsilon_{ick}, \quad (16)$$

where β_q is the within quartile gender gap.

Table A7 shows that the gender gap in forecast accuracy holds throughout the grade-9 GPA distribution, with the largest gaps in the second and third quartiles. The interpretation of the gap, however, varies across the distribution. In the bottom quartiles, both groups overestimate, but parents of sons do so substantially more — by more than 40 percentage points at every threshold in the first quartile. In the top quartile, the pattern reverses: parents of sons underestimate their child’s chances, and parents of daughters underestimate even more. For expected GPA, which is unbounded unlike probabilities, parents of sons overestimate in every quartile, and parents of daughters overestimate by 0.11 to 0.17 points less in three of the four quartiles.

4.3 Mechanisms

Son favoritism

Having documented a sizeable gendered gap in beliefs about future college eligibility, we now focus on examining the possible underlying mechanisms in a descriptive way. The first mechanism we explore is *son favoritism*. Parents might favor their children more than typical children with the same current GPA as theirs. However, they may be more inclined to inflate the prospects of sons than of daughters. This is consistent with son favoritism. Our survey allows us to test this idea directly. Each parent was asked the same questions about their own child and about a typical child with the same current GPA, without specifying the typical child’s sex. The within-parent difference between the two answers measures how much parents rate their own child above a comparable child, a premium that does not depend on any external benchmark:

$$\text{Premium}_{ik} = P_{ik}^{\text{own}} - P_{ik}^{\text{typ}}, \quad (17)$$

where P_{ik}^{typ} is the parent’s perceived probability that a typical child with the same reported grade-9 GPA has to clear a certain GPA threshold at the end of high school. Probabilities for the typical child, elicited on a 0–10 scale, are rescaled to 0–100. Table A8 reports one-sample t -tests of $H_0 : \mathbb{E}[\text{Premium}_{ik}] = 0$; Table 2 estimates equation (A1) with Premium_{ik} as outcome. If parents favor sons more, the premium would be larger for parents of boys, i.e. $\beta < 0$.

Table A8 shows that the own-child premium is large: on average, parents rate their own child about 15 percentage points more likely than a typical child to reach each threshold, and expect a GPA 0.2 points higher. Table 2, however, shows that the premium is the same for sons and daughters. The coefficient on *Girl* is small and statistically insignificant for the expected GPA and at every threshold. Son favoritism, in the sense of a stronger own-child premium for sons, therefore cannot account for the main result.

Table 2. Gender difference in the own-child premium

	(1) OLS Robust SE	(2) OLS Cluster SE	(3) PDS Lasso Robust SE	(4) PDS Lasso Cluster SE
<i>Panel A: Expected GPA</i>				
Girl	0.027 (0.024)	0.027 (0.025)	0.028 (0.022)	0.028 (0.023)
R^2	0.170	0.170		
N	3,925	3,925	3,925	3,925
<i>Panel B: Probability of reaching 7.0</i>				
Girl	-1.228 (1.245)	-1.228 (1.399)	-1.178 (1.147)	-1.178 (1.262)
R^2	0.145	0.145		
<i>Panel C: Probability of reaching 7.5</i>				
Girl	-1.226 (1.273)	-1.226 (1.394)	-1.196 (1.176)	-1.196 (1.269)
R^2	0.147	0.147		
<i>Panel D: Probability of reaching 8.0</i>				
Girl	-0.323 (1.295)	-0.323 (1.418)	-0.277 (1.197)	-0.277 (1.283)
R^2	0.165	0.165		
N (Panels B–D)	3,991	3,991	3,991	3,991

Notes: Estimates of equation (A1) with the own-child premium Premium_{ik} in (17) as outcome. In Panel A the beliefs are the expected GPA at the end of the State Matura (in GPA points); in Panels B–D, the perceived probability (0–100) of reaching a GPA of 7.0, 7.5 and 8.0. The coefficient on *Girl* is the difference in the premium between parents of girls and parents of boys; a negative coefficient would indicate a larger own-child premium for sons. OLS includes all controls and school-class fixed effects. PDS Lasso selects controls via double selection with school-class fixed effects absorbed. $*p < 0.10$, $**p < 0.05$, $***p < 0.01$.

4.3.1 Neglecting a known fact in belief formation

Then, we explore whether there are gender differences in the intermediate beliefs, i.e., the expected high school GPA. Unlike beliefs about college eligibility, expected high school GPA

is an abstract numerical forecast with no immediate decision attached to it: parents are unlikely to have reasoned carefully about what GPA their child will achieve at the end of high school, and there is little instrumental value in holding a particular belief about it. Beliefs about college eligibility, by contrast, are high-stakes and consequential: they directly justify the track choice parents are making today, and there is a tendency for agents to hold more optimistic beliefs precisely when those beliefs serve a motivational or decision-supporting function (Bénabou and Tirole, 2002). We therefore expect GPA expectations to be less distorted than eligibility beliefs — and use the comparison between the two to isolate where in the belief-formation process the gender gap originates.

Table 3 compares parents’ raw beliefs about their children’s expected high-school GPA (Panel A) and benchmarked beliefs (Panel B). Panel A estimates equation (A1) with the expected GPA E_i as outcome, obtaining β^{raw} ; Panel B uses the gap $E_i - \overline{\text{GPA}}^{\text{actual}}(\text{sex}_i, b_i)$, where the benchmark is the mean GPA at the end of the State Matura of students of the same sex and grade-9 GPA bin, obtaining β^{gap} . Because both regressions share the same sample and controls, by linearity of OLS

$$\beta^{\text{bench}} = \beta^{\text{raw}} - \beta^{\text{gap}}, \quad (18)$$

where β^{bench} is the girl–boy difference in the actual benchmark, conditional on X_i and μ_c .

Panel A shows that parents of daughters expect a GPA at the end of the State Matura 0.12 points higher than parents of sons with the same reported grade-9 GPA: parents correctly recognize that girls perform better. Panel B shows, however, that relative to the outcomes of students of the same sex and grade-9 GPA, parents of daughters overestimate their child’s future GPA by 0.11 points less than parents of sons. By (18), girls with the same grade-9 GPA actually reach a GPA about $0.12 - (-0.11) = 0.23$ points higher than boys. Parents, therefore, incorporate only about half of girls’ actual advantage into their expectations.

Table 3. Expected high-school GPA: raw expectations and overestimation relative to the sex-specific benchmark

	OLS		PDS Lasso	
	(1)	(2)	(3)	(4)
	Robust SE	Cluster SE	Robust SE	Cluster SE
<i>Panel A: Expected GPA (raw)</i>				
Girl	0.120*** (0.023)	0.120*** (0.023)	0.122*** (0.021)	0.122*** (0.022)
<i>Panel B: Expected GPA minus sex-specific actual GPA</i>				
Girl	-0.110*** (0.025)	-0.110*** (0.026)	-0.108*** (0.023)	-0.108*** (0.025)
R^2	0.194	0.194		
N	3,990	3,990	3,990	3,990

Notes: Estimates of equation (A1). Panel A: the dependent variable is the parent’s expected GPA for their own child at the end of the State Matura. Panel B: the dependent variable is the expected GPA minus the sex-specific actual GPA benchmark from administrative data, i.e. the mean GPA at the end of the State Matura for students of the same sex in the same 0.3-point bin of grade-9 GPA (assigned on the basis of the parent-reported GPA). A positive coefficient in Panel A indicates that parents of girls expect a higher GPA than parents of boys; a negative coefficient in Panel B indicates that parents of girls overestimate their child’s GPA by less than parents of boys. Since the two panels share the same sample and controls, the difference between their coefficients (about 0.23) equals the girl–boy difference in the actual benchmark (equation (18)). OLS includes all controls, including the parent-reported grade-9 GPA, and school-class fixed effects. PDS Lasso selects controls via double selection with school-class fixed effects absorbed. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

We then look at raw college-eligibility beliefs. Parents of sons may deliberately overstate their child’s chances, for instance, to justify an academic-track choice or because they truly believe sons will do better than girls, regardless of the reality. If this were the case, parents of sons would state higher eligibility probabilities than parents of daughters. Table 4 estimates (A1) with the raw perceived probability P_{ik}^{own} as outcome.

Raw beliefs differ only modestly by child gender. Parents of daughters state average probabilities that are 3.3 percentage points lower at threshold 7.0, 2.0 points lower at 7.5 (significant only at the 10% level) and statistically indistinguishable at 8.0. These differences are small relative to the gender gap in overestimation measured against the sex-specific benchmark (*memo rows*): the raw difference accounts for about 25% of the benchmarked gap at threshold 7.0, 19% at 7.5, and 14% at 8.0. The bulk of the gap does not come from parents deliberately inflating the chances of their sons. The gender gap in overestimation is starker than a partial incorporation of the female advantage: at hard eligibility thresholds, parents of sons state probabilities indistinguishable from those of parents of daughters, behaving as if boys and

girls face identical futures — despite knowing that girls outperform boys academically.

Table 4. Raw beliefs about college eligibility

	OLS		PDS Lasso	
	(1)	(2)	(3)	(4)
	Robust SE	Cluster SE	Robust SE	Cluster SE
<i>Panel A: Threshold 7.0</i>				
Girl	−3.252*** (1.184)	−3.252*** (1.205)	−3.388*** (1.098)	−3.388*** (1.117)
R^2	0.171	0.171		
<i>Memo: Girl, gap vs. sex-specific benchmark</i>	−12.76	−12.76	−12.80	−12.85
<i>Panel B: Threshold 7.5</i>				
Girl	−2.047* (1.215)	−2.047* (1.223)	−2.189* (1.127)	−2.189* (1.138)
R^2	0.183	0.183		
<i>Memo: Girl, gap vs. sex-specific benchmark</i>	−10.55	−10.55	−10.58	−10.47
<i>Panel C: Threshold 8.0</i>				
Girl	−1.001 (1.250)	−1.001 (1.265)	−1.111 (1.159)	−1.111 (1.170)
R^2	0.205	0.205		
<i>Memo: Girl, gap vs. sex-specific benchmark</i>	−7.36	−7.36	−7.45	−7.36
N	3,991	3,991	3,991	3,991

Notes: Estimates of equation (A1) with the parent’s perceived probability P_{ik}^{own} (0–100) that their own child reaches a GPA of 7.0, 7.5 and 8.0 at the end of the State Matura, conditional on completing academic high school, as outcome. The coefficient on *Girl* is the difference in stated probabilities between parents of girls and parents of boys. *Memo* rows report, for comparison, the coefficient on *Girl* from equation (13) (Table ??); the two regressions share the same sample and controls. OLS includes all controls and school-class fixed effects. PDS Lasso selects controls via double selection with school-class fixed effects absorbed. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

The pattern across the three belief layers is revealing for the mechanism. When asked about the future high-school GPA, parents correctly acknowledge that girls will outperform boys. Yet when asked about the probability of clearing an eligibility threshold, this knowledge largely disappears: parents of sons and daughters state nearly identical probabilities, especially at higher thresholds. The female advantage, partially present in expected GPA expectations, vanishes from eligibility beliefs. The benchmarked gaps confirm the consequence: parents of sons overestimate their child’s college eligibility by 7 to 12 percentage points more than parents of daughters, not because they consciously inflate their son’s chances, but because they fail to translate the known fact that girls outperform boys, into a realistic forecast of what that means for their son’s actual college eligibility chances.

4.3.2 Ignorance about current abilities

A further concern is that the gender gap reflects parents of sons being less informed about their child’s current performance. Table A9 splits parents by whether their reported grade–9 GPA lies within 0.2 (Panel A) or 0.3 points (Panel B) of the administrative record, estimating:

$$\text{Gap}_{ick} = \alpha + \beta_1 \text{Girl}_i + \beta_2 \text{Aware}_i^t + \beta_3 \text{Girl}_i \times \text{Aware}_i^t + X_i' \gamma + \mu_c + \varepsilon_{ick}, \quad (19)$$

with Aware_i^t defined in (A2) and $t \in \{0.2, 0.3\}$. The gender gap is β_1 among unaware and $\beta_1 + \beta_3$ among aware parents; $\beta_3 = 0$ indicates that it does not depend on knowledge of current performance.

Two results stand out. First, the gender gap in overestimation is the same for parents who know their child’s current GPA and for those who do not. The interaction between *Girl* and *GPA aware* is small and statistically insignificant. Among parents who are aware, the gap is 11.4, 10.0 and 7.6 percentage points at thresholds 7.0, 7.5 and 8.0 (Panel A), very close to the full-sample estimates. Second, knowing current performance reduces overestimation but does not eliminate it: parents of boys who report grade–9 GPA accurately still overestimate their son’s chances by 11 to 21 percentage points. The error therefore concerns the transition from grade–9 to the State Matura, not the starting point.

4.3.3 Monotonicity violations

The probabilities used in our analysis are monotone by design: the survey did not admit answers assigning a higher probability to a more demanding threshold than to a less demanding one, and asked respondents to revise them. Such violations were nevertheless common at the first attempt. A violation is recorded when the survey flagged the answer at threshold 7.5 or 8.0 as higher than the probability given for the previous threshold and asked the respondent to revise it:

$$V_i = \mathbf{1}[\text{answer at 7.5 flagged or answer at 8.0 flagged}]. \quad (20)$$

Table A10 shows that 30% of parents violated monotonicity at least once when answering about their own child. Violations are about 5 percentage points more frequent among parents of daughters (32% vs. 27%), and the difference persists when estimating (A1) with V_i (and threshold-specific violation indicators) as outcome (Panel B).

To check that these respondents do not drive the main result, Table A11 re-estimates (13) on the subsample with $V_i = 0$. The gap remains negative and statistically significant at the 1% level at every threshold. Its magnitude declines moderately, from 12.8 to 11.2 percentage

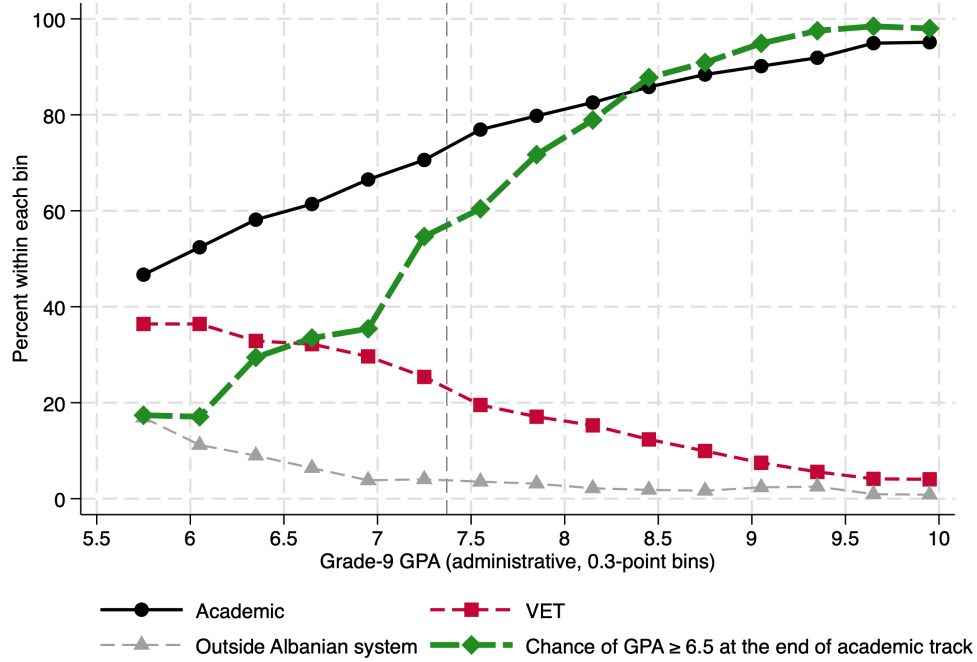
points at threshold 7.0, from 10.5 to 9.0 at 7.5, and from 7.3 to 5.6 at 8.0. The gender gap is therefore not an artifact of inconsistent responses.

4.4 Misbeliefs and track choice

Lastly, we investigate whether these misbeliefs about future affect track choice today using the universe of students who completed middle school in the summer of 2025. The track choice made at the end of grade-9 is consequential: it is largely irreversible, and the academic track is the natural pathway to college. Figure 5 compares, for each bin of grade-9 GPA, the share of students who enroll in each track with the probability of reaching the college-eligibility threshold of 6.5 among students with the same grade-9 GPA who completed the academic track in the previous cohort. Among students with a grade-9 GPA below 7, between half and two-thirds enroll into the academic track, although only 17 to 35 percent of those who complete it become eligible for college. Enrollment and eligibility chances align only above a grade-9 GPA of about 7.5 which corresponds to at least 50 percent chances of being college eligible. This is roughly close to our vague estimate of 7.37, which is the threshold plus the average change in GPA when a student transits from middle school to high school. Vocational enrollment remains below 40 percent even in the lowest GPA bins.

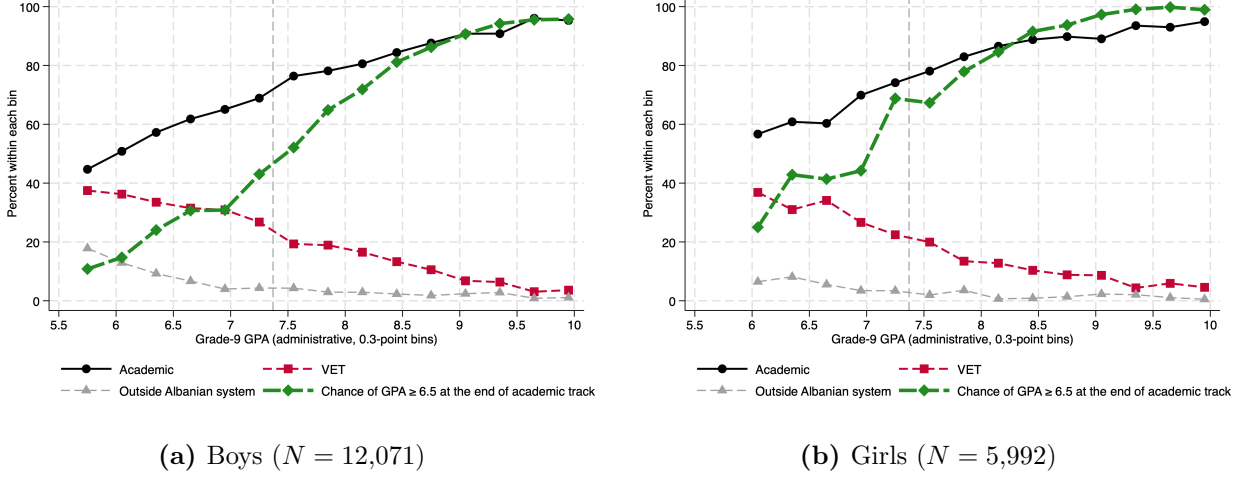
Figure 6 shows that this mismatch is larger for boys. At a grade-9 GPA of about 7, two-thirds of boys enroll in the academic track, but fewer than one in three of those who complete it reach the eligibility threshold; for girls with the same GPA, enrollment is similar but the eligibility chances are 44 percent.

Figure 5. Track choice and chance of college eligibility by grade-9 GPA: all students



Notes: Share of students enrolling in the academic track, in vocational education (VET) and outside the Albanian education system, by 0.3-point bin of administrative grade-9 GPA ($N = 18,063$). The green line is the share of students in the 2023–2024 Matura cohort with the same grade-9 GPA who reached a Matura GPA of at least 6.5; because it is computed among students who completed the academic track, it is an upper bound on the chances of a student entering it. The vertical line marks a grade-9 GPA of 7.37, the eligibility threshold plus the average GPA decline of 0.87 points between grade 9 and the Matura. Bins with fewer than 20 observations are excluded.

Figure 6. Track choice and chance of college eligibility by grade-9 GPA: boys and girls



Notes: As in Figure 5, separately by child gender. The green line is the sex-specific share of students in the 2023–2024 Matura cohort with the same grade-9 GPA who reached a Matura GPA of at least 6.5. Bins with fewer than 20 observations are excluded; few girls have a grade-9 GPA below 6.

We show this pattern formally through regressions and using only our sample of parents. Let Academic_i equal one if the child enrolled in the academic track and zero if enrolled in vocational education. We estimate

$$\text{Academic}_{ic} = \alpha + \beta \text{Girl}_i + \phi \text{Gap}_{ik} + \psi \text{Girl}_i \times \text{Gap}_{ik} + X'_i \gamma + R'_i \rho + \mu_c + \varepsilon_{ic}, \quad (21)$$

where Gap_{ik} is the belief gap in (14) (at the threshold associated with the parent's aspired path, at 7.0, 7.5 and 8.0) or the GPA gap, and R_i are indicators for the parent's beliefs on the reputation of vocational education, returns to different types of education, and reasons why parents might be reluctant to enroll their kids in VET. The association between overestimation and academic enrollment is ϕ for boys and $\phi + \psi$ for girls. Table A12 reports the estimates for the full sample (Panel A) and for overestimating parents only (Panel B). For boys, the belief gap is not associated with academic enrollment. For girls, the association is positive and statistically significant in the full sample for the eligibility gaps, but small: 10 percentage points of overestimation are associated with a 0.2 to 0.3 percentage point higher probability of academic enrollment.

While gendered overoptimism does not translate into gendered track choice, we investigate whether parents who overestimate their child's college eligibility are more likely to enroll their child in the academic track. Let Academic_{ic} equal one if child i in school-class c enrolled in the academic track and zero if enrolled in vocational education; children outside the Albanian

education system are excluded. We estimate

$$\text{Academic}_{ic} = \alpha + \phi \text{Gap}_{ik} + \beta \text{Girl}_i + X_i^{-\text{asp}'} \gamma + R_i' \rho + \mu_c + \varepsilon_{ic}, \quad (22)$$

where $X_i^{-\text{asp}}$ is the vector of controls excluding the parent’s aspired educational path. The coefficient ϕ measures the association between overestimation and academic enrollment among children of the same gender. Table A13 reports estimates of (22). The belief gap coefficient is positive and significant across all specifications: greater overestimation is associated with a higher probability of academic enrollment. However, the magnitude is negligible in practical terms: 10 percentage points of overestimation are associated with only a 0.4 percentage point increase in the choosing the academic track. The modest magnitude of $\hat{\phi}$ partly reflects a ceiling effect: with 84.8 percent of students already enrolling in the academic track, the outcome has limited variance, which mechanically constrains how much any covariate — including beliefs — can move enrollment at the margin. Overoptimistic beliefs about future college eligibility are therefore real and precisely estimated, but they are not what drives children through the door of the academic track: actual academic performance is.

5 Conclusion

This paper asks four questions. Do parents hold accurate beliefs about their children’s future academic performance and college eligibility? Are these beliefs gendered? What drives the gender gap? And do misbeliefs about the future translate into educational decisions today?

We document a systematic overestimation of children’s college-eligibility chances by their parents, and this overoptimism is gendered. These misperceptions are not visible in raw eligibility beliefs: parents of sons and daughters state similar probabilities of clearing mostly hard eligibility thresholds. They emerge only when beliefs are benchmarked against the realized, sex-specific outcomes of comparable students.

The mechanism is not son favoritism — the own-child premium is identical for parents of sons and daughters — nor ignorance of current academic performance. We provide multiple pieces of evidence that the mechanism is a failure to incorporate a known reality into belief formation: parents correctly anticipate that girls will outperform boys in future GPA, but fail to translate this knowledge into realistic probabilistic forecasts of college eligibility. The female academic advantage, partially present in GPA expectations, vanishes from eligibility beliefs — parents of sons behave as if boys and girls face identical futures at hard thresholds, despite knowing otherwise. This gap is especially pronounced among families with STEM

aspirations, where the stakes of miscalibration are highest.

These misperceptions coexist with widespread enrollment in the academic track, even among students whose prior academic performance makes college eligibility unlikely. The association between belief errors and track choice is positive and statistically significant but small in magnitude — track choice is driven primarily by actual academic performance, not by parental beliefs about future eligibility. Girls enroll in the academic track more than boys not because their parents are more optimistic, but because they perform better.

Our findings highlight the role of a specific and previously undocumented information friction: parents lack realistic, gender-specific projections of how children’s academic performance evolves between middle school and the end of high school. Generic encouragement, stigma-reduction campaigns, or information about current performance are unlikely to close this gap. What is needed are clear, data-driven, gender-specific benchmarks on academic trajectories, delivered to parents at the moment of track choice — an intervention that is low-cost, scalable, and directly implementable through the administrative reporting systems that many countries already operate.

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Appendix

A Academic performance and trajectories of boys and girls in Albania

The following figures are produced by analyzing the full administrative cohort of 9,370 students in public urban schools. This is the cohort of students who completed the State Matura in academic year 2023–2024 and whose records are tracked back to grade–9. All figures in this section are based on administrative data only.

A.1 Grade–9 and high-school GPA distributions for boys and girls

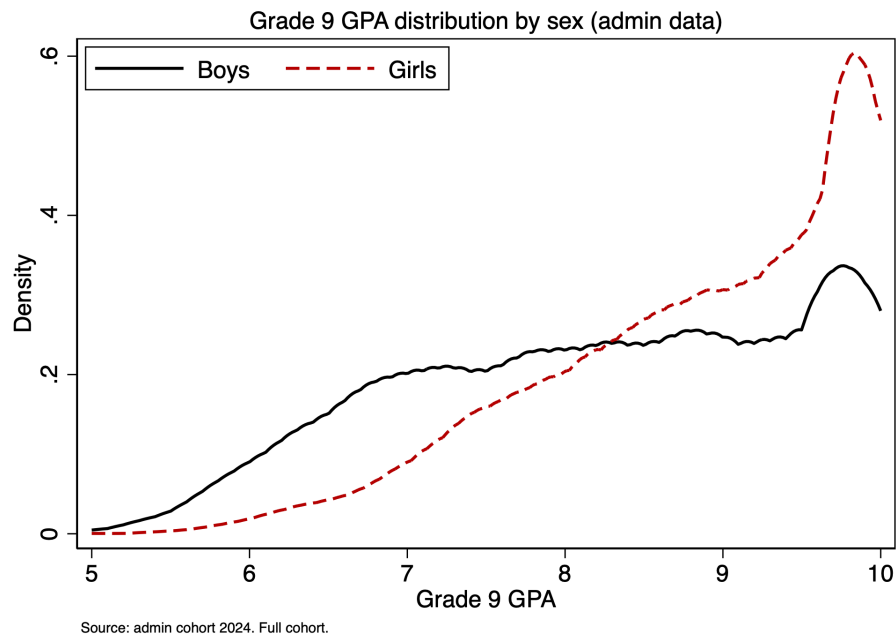


Figure A1. Distribution of grade–9 GPA for boys and girls
Notes: Kernel density estimates.

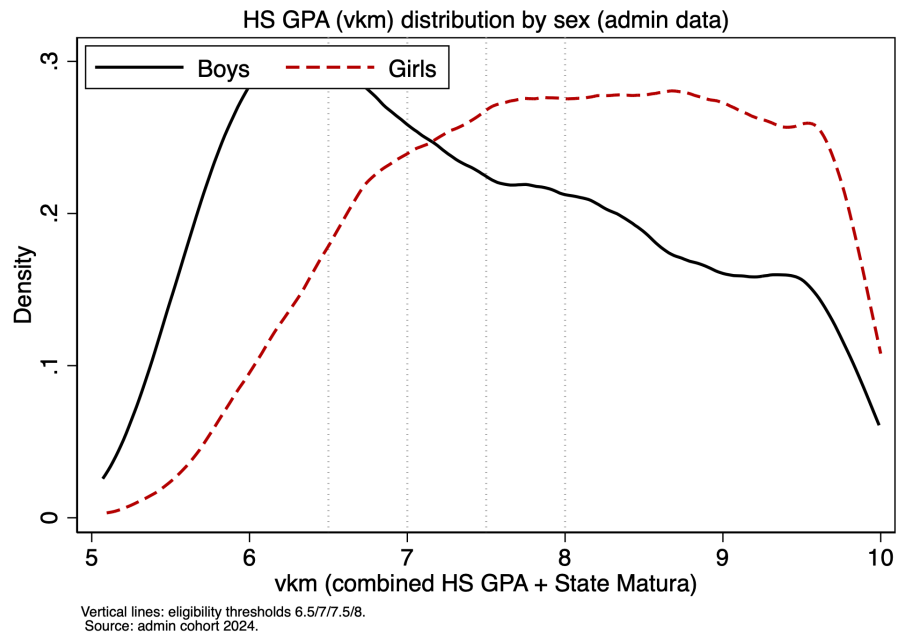


Figure A2. High school GPA (VKM) distribution by sex, with eligibility thresholds
Notes: VKM refers to the arithmetic average of high-school GPA and State Matura exam grades.
 Vertical lines correspond to eligibility thresholds.

A.2 GPA change from grade–9 to end of high school

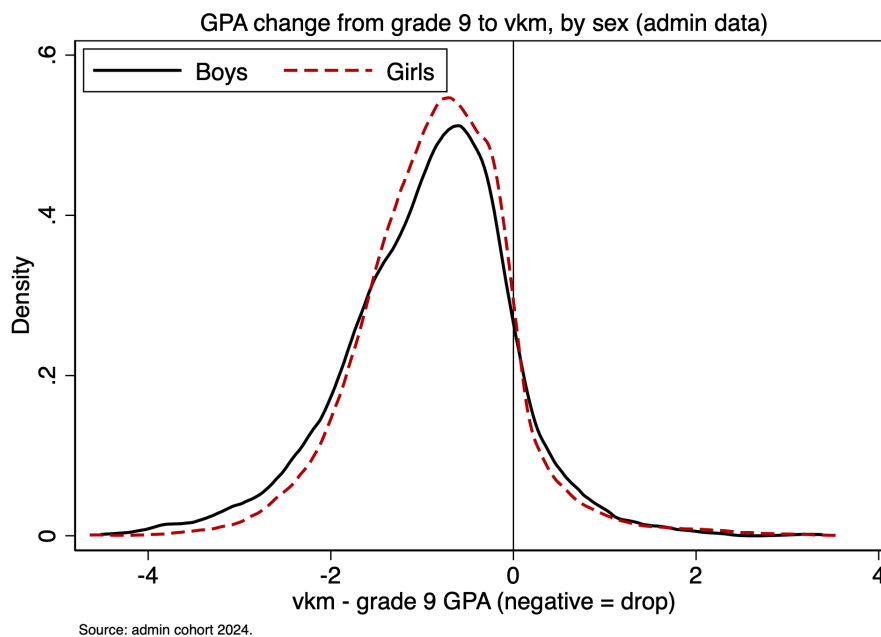


Figure A3. GPA change from grade–9 to end of high school for boys and girls
Notes: Vertical line at zero (no change).

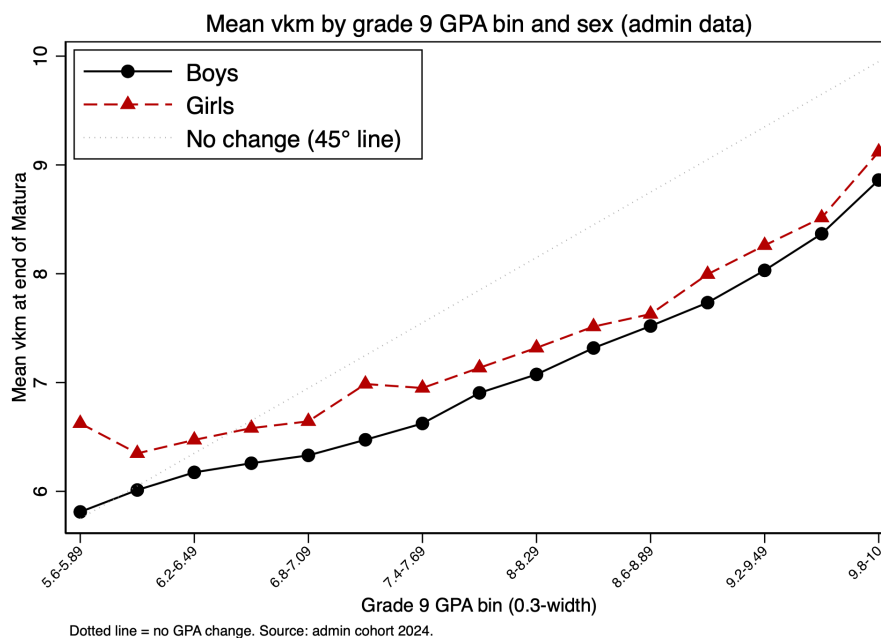


Figure A4. High school GPA (VKM) by grade–9 GPA bins for boys and girls
Notes: The lowest two GPA bins for girls have very few observations.

A.3 College eligibility by grade-9 GPA bin and sex

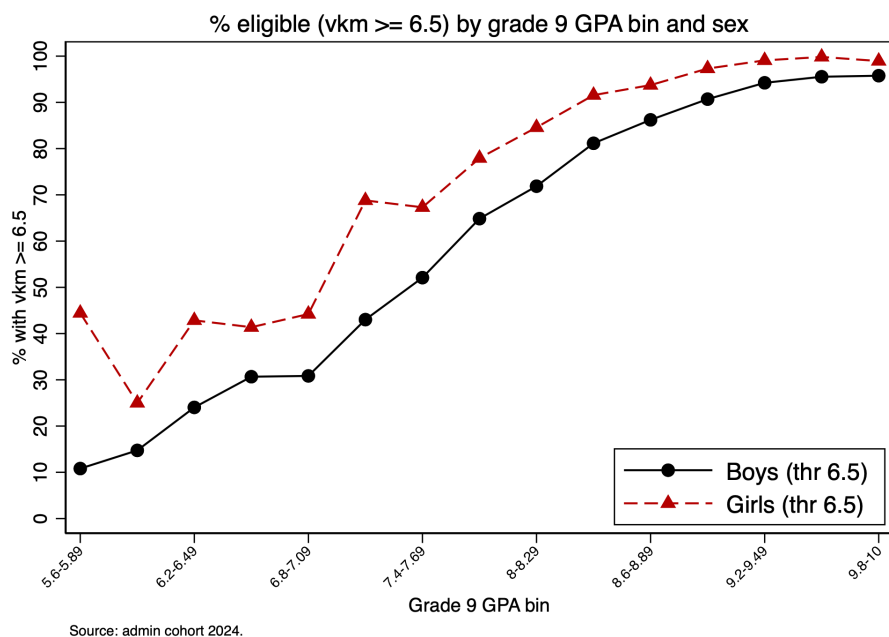


Figure A5. The share of college-eligible ($GPA^{VKM} \geq 6.5$) students by grade-9 GPA bin and sex

B Sample characteristics and balance

B.1 Balance tests: completers vs. non-completers & parents of sons and daughters (among completers)

Table A1. Completed vs. started-but-not-completed surveys: respondent characteristics

	Completed ($N = 3,991$)	Not completed ($N = 2,735$)	Diff.	Normalized diff. $\hat{\Delta}$
Admin grade 9 GPA	8.356	8.035	+0.321***	0.245
Female child (%)	51.5	47.8	+3.7***	0.073
Urban (%)	73.8	76.3	-2.5**	-0.058
<i>Track choice (%)</i>				
Academic	82.4	80.5	+1.9*	0.048
VET	14.8	16.0	-1.2	-0.033
Outside Albanian system	2.8	3.5	-0.7	-0.038
<i>Respondent education (%); joint $\chi^2(7) = 8.47, p = 0.293$</i>				
8-9 years	35.5	36.2	-0.7	-0.015
General secondary	29.4	30.1	-0.7	-0.015
Vocational secondary	4.8	5.3	-0.4	-0.021
Oriented secondary	0.7	1.1	-0.4*	-0.045
Bachelor	6.5	6.6	-0.1	-0.003
Master (professional)	10.8	9.0	+1.8**	0.061
Master (scientific)	11.1	10.5	+0.6	0.018
Doctorate	1.2	1.2	+0.0	0.001
<i>Respondent employment status (%); joint $\chi^2(6) = 11.34, p = 0.078$</i>				
Employed	58.9	59.6	-0.7	-0.014
Unemployed	24.3	21.5	+2.7**	0.065
Family business	7.3	8.4	-1.1	-0.042
Self-employed (without employees)	5.1	4.9	+0.1	0.007
Self-employed (with employees)	3.3	3.7	-0.4	-0.023
Disabled	0.9	1.4	-0.5*	-0.046
Retired	0.3	0.5	-0.2	-0.027
<i>Respondent profession (%); joint $\chi^2(10) = 16.72, p = 0.081$</i>				
Not employed/other	41.1	41.3	-0.1	-0.003
Specialist (high education)	17.3	14.7	+2.5**	0.069
Elementary worker	17.2	16.5	+0.7	0.019
Office worker	10.4	10.6	-0.2	-0.008
Sales/service worker	5.5	6.1	-0.5	-0.022
Manager	3.3	4.4	-1.1**	-0.055
Craftsman/artisan	1.2	2.0	-0.8**	-0.060
Machine operator	1.4	1.6	-0.2	-0.020
Technician/specialist	1.1	1.2	-0.1	-0.010
Armed forces	1.1	1.2	-0.2	-0.018
Skilled agriculture	0.4	0.3	+0.0	0.005
Joint F -test (OLS, all covariates): $F = 4.00, p < 0.001, R^2 = 0.013, N = 6,726$				

Notes: *Completed* and *Not completed* refer to parents who completed the survey and parents who started it but did not complete it. The normalized difference is $\hat{\Delta} = (\bar{X}_1 - \bar{X}_0) / \sqrt{(S_1^2 + S_0^2)/2}$ (Imbens and Rubin (2015)). Joint χ^2 tests refer to the equality of the full distribution of each categorical variable across the two groups. Admin GPA and the sex of the child are taken from administrative records; all other characteristics refer to the survey respondent. Administrative GPA is available for 3,954 completers. The F -statistic refers to the joint-orthogonality test. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A2. Descriptive statistics by child gender: survey completers

	Girls ($N = 2,066$)	Boys ($N = 1,925$)	Diff. (Girls–Boys)	Normalized diff. $\hat{\Delta}$
Admin grade 9 GPA	8.833	7.841	+0.993***	0.823
Parent-reported grade 9 GPA	8.998	8.111	+0.886***	0.810
Urban (%)	71.7	76.1	−4.4***	−0.100
Firstborn (%)	49.8	45.8	+3.9**	0.079
<i>Respondent role (%)</i> ; joint $\chi^2(2) = 31.05$, $p < 0.001$				
Mother	84.2	77.2	+6.9***	0.176
Father	15.3	21.9	−6.6***	−0.170
Legal guardian	0.5	0.8	−0.3	−0.043
<i>Respondent education (%)</i> ; joint $\chi^2(7) = 12.79$, $p = 0.077$				
8–9 years	37.5	33.4	+4.1***	0.086
General secondary	28.8	30.2	−1.4	−0.031
Vocational secondary	4.3	5.4	−1.1*	−0.053
Oriented secondary	0.6	0.7	−0.1	−0.018
Bachelor	5.9	7.2	−1.3*	−0.053
Master (professional)	11.0	10.6	+0.3	0.011
Master (scientific)	11.1	11.1	+0.0	0.001
Doctorate	1.0	1.5	−0.4	−0.040
<i>Respondent employment status (%)</i> ; joint $\chi^2(6) = 7.57$, $p = 0.272$				
Employed	58.1	59.7	−1.6	−0.033
Unemployed	25.8	22.6	+3.1**	0.074
Family business	7.0	7.6	−0.6	−0.024
Self-employed (without employees)	5.0	5.1	−0.2	−0.007
Self-employed (with employees)	2.9	3.7	−0.8	−0.047
Disabled	1.0	0.8	+0.1	0.014
Retired	0.3	0.4	−0.1	−0.013
<i>Respondent profession (%)</i> ; joint $\chi^2(10) = 14.07$, $p = 0.170$				
Not employed/other	41.9	40.3	+1.6	0.033
Specialist (high education)	16.5	18.1	−1.6	−0.042
Elementary worker	17.7	16.8	+0.9	0.024
Office worker	9.9	10.9	−1.0	−0.034
Sales/service worker	5.3	5.8	−0.4	−0.019
Manager	3.2	3.4	−0.1	−0.007
Craftsman/artisan	1.7	0.7	+1.0***	0.088
Machine operator	1.1	1.6	−0.5	−0.043
Technician/specialist	1.3	1.0	+0.3	0.026
Armed forces	1.0	1.1	−0.1	−0.007
Skilled agriculture	0.4	0.4	+0.0	0.004

Joint F -test (OLS, all covariates): $F = 59.07$, $p < 0.001$, $R^2 = 0.197$, $N=3,991$

Notes: Girls and Boys report means for GPA and percentages for all other variables. *Diff.* is girls minus boys, with significance from two-sample t -tests. The normalized difference is $\hat{\Delta} = (\bar{X}_1 - \bar{X}_0) / \sqrt{(S_1^2 + S_0^2)/2}$ (Imbens and Rubin, 2015). Joint χ^2 tests refer to the equality of the full distribution of each categorical variable across the two groups. Admin GPA is taken from administrative records and is available for 3,954 completers; all other characteristics refer to the survey respondent. The F -statistic refers to the joint-orthogonality test. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

C Specification and Controls

All regressions share a common specification in which the variable of interest is *girl*, a binary indicator equal to one if the surveyed parent is the parent or legal guardian of a daughter. The baseline estimator is OLS with school-class fixed effects absorbed via `reghdfe`, and standard errors are reported under both robust and cluster-robust variants, with clusters defined at the school-class level. We complement the OLS estimates with Post-Double-Selection (PDS) Lasso, which selects the control vector from the candidate set in a data-driven way, providing a robustness check against arbitrary choices in model specification. Standard errors for PDS Lasso estimates are likewise reported under both robust and cluster-robust variants.

The full set of controls included in every specification is:

- **Child characteristics:** self-reported grade-9 GPA and a firstborn indicator. Note: grade-9 GPA is excluded from specifications where the sample is defined as a function of GPA (heterogeneity analyses by GPA quantile and current grade-9 GPA distance from the 6.5 threshold).
- **Parent characteristics:** respondents' education (primary/lower, secondary, or tertiary); respondent's profession (unemployed, low, medium, or high); respondent's relationship with the child: mother, father, or legal guardian)
- **Location:** municipality type (urban/rural)
- **Preferences and aspirations:** decision risk approach; aspired educational path for the child; hope scale score (continuous)
- **School-class fixed effects:** fixed effects for each school-class combination, absorbing all time-invariant school- and class-level unobservables.

C.1 Regression specification

Unless stated otherwise, all regression tables estimate variants of

$$Y_{ic} = \alpha + \beta \text{Girl}_i + X_i' \gamma + \mu_c + \varepsilon_{ic}, \quad (\text{A1})$$

where Y_{ic} is an outcome for the parent of child i in school-class c , Girl_i indicates that the child is a girl, μ_c are school-class fixed effects, and X_i is the vector of controls, introduced above.

D Main Results

D.1 Beliefs about current academic performance

Table A3. Grade-9 GPA reporting error, by child gender

	All	Boys	Girls	Diff. (Girls–Boys)
Mean error (reported – administrative)	0.22	0.28	0.17	−0.11***
Mean absolute error	0.36	0.44	0.29	−0.15***
<i>Share of parents (%)</i>				
Reporting the exact GPA	15.1	10.4	19.4	+9.0***
Within ± 0.2 points	58.3	50.7	65.4	+14.7***
Within ± 0.5 points	75.4	69.7	80.7	+11.0***
Overreporting by more than 0.2	32.2	38.6	26.3	−12.4***
Underreporting by more than 0.2	9.4	10.6	8.3	−2.3**
<i>N</i>	3,954	1,902	2,052	

Notes: Reporting error is the parent-reported grade-9 GPA minus the administrative grade-9 GPA; positive values indicate overreporting. Shares are computed over all respondents with an administrative GPA record. *Diff.* refers to the difference between columns Girls and Boys, and p-values are computed from two-sample *t*-tests. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

The regression estimates in Table A4 use as outcome in (A1) the following construct:

$$\text{Aware}_i^t = \mathbf{1} \left[\left| \text{GPA}_i^{\text{rep}} - \text{round}(\text{GPA}_i^{\text{adm}}, 0.1) \right| \leq t \right], \quad t \in \{0.1, 0.2, 0.3, 0.5\}, \quad (\text{A2})$$

where $\text{GPA}_i^{\text{rep}}$ is the parent-reported grade-9 GPA and $\text{GPA}_i^{\text{adm}}$ the administrative one, rounded to one decimal, the precision of parents' reports.

Table A4. Effect of child being a girl on GPA reporting accuracy

	OLS				PDS Lasso			
	± 0.1 (1)	± 0.2 (2)	± 0.3 (3)	± 0.5 (4)	± 0.1 (5)	± 0.2 (6)	± 0.3 (7)	± 0.5 (8)
<i>Panel A: Robust SE</i>								
Girl	0.034** (0.017)	0.033* (0.018)	0.053*** (0.017)	0.069*** (0.016)	0.033** (0.016)	0.035** (0.016)	0.057*** (0.016)	0.071*** (0.014)
R^2	0.301	0.296	0.293	0.225				
<i>Panel B: Cluster SE</i>								
Girl	0.034* (0.018)	0.033* (0.019)	0.053*** (0.019)	0.069*** (0.017)	0.033** (0.017)	0.035** (0.017)	0.057*** (0.017)	0.071*** (0.016)
R^2	0.301	0.296	0.293	0.225				
N	3,954	3,954	3,954	3,954	3,954	3,954	3,954	3,954

Notes: Estimates of equation (A1) with Aware_i^t in (A2) as outcome. A positive coefficient indicates that parents of girls are more likely to report their child's grade-9 GPA accurately than parents of boys. The sample includes all respondents with an administrative grade-9 GPA record. All specifications include the full set of controls, including the parent-reported grade-9 GPA, and school-class fixed effects; Standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

D.2 Beliefs about college eligibility

Table A5. Beliefs of college-educated and non-college parents, top quartile of grade-9 GPA

	No college	College	Diff. (College—No college)	p -value
<i>Perceived probability (0–100)</i>				
Threshold 7.0	74.9	65.4	−9.5***	<0.001
Threshold 7.5	72.0	62.5	−9.4***	<0.001
Threshold 8.0	69.8	61.4	−8.5***	0.002
<i>Gap vs. sex-specific actual probability (pp)</i>				
Threshold 7.0	−21.6	−30.6	−8.9***	0.001
Threshold 7.5	−21.7	−30.7	−9.0***	0.001
Threshold 8.0	−18.7	−27.2	−8.6***	0.002
N	443	534		

Notes: Sample: parents whose child is in the top quartile of the parent-reported grade-9 GPA (9.7–10.0). *College* indicates that the responding parent holds a tertiary degree. The perceived probability is the parent's stated probability that their own child reaches a GPA of at least 7.0, 7.5 and 8.0 at the end of the State Matura. The gap is the perceived probability minus the share of students of the same sex in the same 0.3-point bin of grade-9 GPA who reach the threshold in the 2024 administrative cohort; negative values indicate underestimation. Differences and p -values from two-sample t -tests. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

D.3 Heterogeneity

D.3.1 STEM aspirations

Table A6. Gender gap in overestimation of eligibility probability by STEM aspirations

	(1) Threshold 7.0	(2) Threshold 7.5	(3) Threshold 8.0
<i>Panel A: Parent's STEM aspirations for the child</i>			
Girl (ref.: no STEM aspiration)	−9.486*** (2.114)	−3.171 (2.303)	2.794 (2.510)
Girl × One STEM	−5.378** (2.637)	−9.436*** (2.907)	−10.642*** (3.162)
Girl × Both STEM	−3.547 (2.686)	−10.443*** (2.833)	−16.368*** (3.051)
Girl gap, one STEM	−14.864*** (1.842)	−12.607*** (1.998)	−7.847*** (2.175)
Girl gap, both STEM	−13.033*** (1.914)	−13.613*** (1.948)	−13.574*** (2.038)
<i>N</i>	3,914	3,914	3,914
<i>Panel B: Child's own STEM aspirations (reported by the parent)</i>			
Girl (ref.: no STEM aspiration)	−11.091*** (1.950)	−4.839** (2.113)	1.370 (2.293)
Girl × One STEM	−2.042 (2.536)	−6.609** (2.800)	−8.510*** (3.029)
Girl × Both STEM	−2.182 (2.631)	−9.256*** (2.751)	−16.091*** (2.977)
Girl gap, one STEM	−13.133*** (1.835)	−11.448*** (1.952)	−7.140*** (2.142)
Girl gap, both STEM	−13.273*** (2.061)	−14.095*** (2.111)	−14.721*** (2.207)
<i>N</i>	3,893	3,893	3,893
School-class FE	Yes	Yes	Yes
Controls	Yes	Yes	Yes

Notes: PDS Lasso estimates of equation (15). The dependent variable is Gap_{ik} in (14), defined as the difference between parents' perceived probability and the sex-specific actual probability that their child reaches a GPA of 7.0, 7.5, or 8.0 at the end of the State Matura. *STEM aspirations* count the number of the two careers reported for the child that are in STEM (none, one, or both): careers the parent would like the child to pursue in Panel A and careers the child would like to pursue, as reported by the parent, in Panel B. *Girl gap* reports the implied gap within each group ($\beta + \theta_s$), computed using `lincom`. Controls are selected using double-selection Lasso, with school-class fixed effects absorbed. Clustered standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

D.3.2 Academic performance

Table A7. Gender gap in overestimation by quartile of grade-9 GPA

	(1) GPA gap	(2) Gap 7.0	(3) Gap 7.5	(4) Gap 8.0
<i>Girl-boy gap within quartile</i>				
Q1 (lowest GPA)	−0.11* (0.06)	−13.51*** (1.78)	−5.83*** (1.84)	2.02 (1.99)
Q2	0.01 (0.04)	−14.69*** (1.61)	−9.71*** (1.66)	−5.32*** (1.75)
Q3	−0.17*** (0.04)	−15.09*** (2.33)	−14.64*** (2.53)	−12.27*** (2.66)
Q4 (highest GPA)	−0.11*** (0.04)	−8.49*** (2.90)	−10.45*** (3.04)	−11.10*** (3.15)
Mean boys, Q1	0.87	45.34	48.76	42.44
Mean boys, Q2	1.03	19.40	33.47	44.97
Mean boys, Q3	0.98	−10.64	−2.84	10.30
Mean boys, Q4	0.72	−20.67	−19.03	−15.13
School-class FE	Yes	Yes	Yes	Yes
<i>N</i>	3,919	3,920	3,920	3,920
Clusters (school-class)	439	439	439	439

Notes: Estimates of equation (16); each coefficient is the girl-boy gap within the quartile (β_q). Dependent variables: col. (1) difference between the parent’s expected GPA for their own child and the sex-specific actual GPA benchmark; cols. (2)–(4) Gap_{ik} in (14) at thresholds 7.0, 7.5 and 8.0. Benchmarks are computed for students of the same sex in the same 0.3-point bin of grade-9 GPA, assigned on the basis of the parent-reported GPA. Positive values indicate overestimation. Quartiles are defined on the parent-reported grade-9 GPA: Q1 [5.0–7.7], Q2 [7.8–8.8], Q3 [8.9–9.6], Q4 [9.7–10.0]. *Mean boys* rows report the mean of the dependent variable among boys in each quartile; negative values indicate underestimation. All specifications include quartile fixed effects, school-class fixed effects and the full set of controls except the parent-reported grade-9 GPA. Standard errors clustered at the school-class level in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

D.4 Mechanisms

D.4.1 Son favoritism

Table A8. Own-child premium: mean difference between beliefs about own child and about a typical child

	N	Mean	Std. err.	t (H_0 : mean = 0)
Expected GPA (GPA points)	3,925	0.205	0.009	20.63***
Probability of reaching 7.0 (pp)	3,991	15.62	0.496	31.50***
Probability of reaching 7.5 (pp)	3,991	15.65	0.509	30.77***
Probability of reaching 8.0 (pp)	3,991	15.36	0.522	29.40***

Notes: Each row reports the mean of Premium_{ik} in (17), the difference between the parent's belief about their own child and their belief about a typical child with the same parent-reported grade-9 GPA (sex of the typical child not specified). Positive values indicate that parents rate their own child above the typical child. One-sample t -tests of H_0 : mean = 0. * p < 0.10, ** p < 0.05, *** p < 0.01.

D.4.2 Ignorance about current performance

Table A9. Gender gap in overestimation by parents' knowledge of the child's current GPA

	(1) Threshold 7.0	(2) Threshold 7.5	(3) Threshold 8.0
<i>Panel A: GPA aware = reported GPA within ± 0.2 of administrative GPA</i>			
Girl (unaware parents)	−14.382*** (1.644)	−10.935*** (1.785)	−6.537*** (1.932)
GPA aware	−2.213 (1.436)	−4.386*** (1.583)	−6.119*** (1.766)
Girl $\times$ GPA aware	2.940 (2.200)	0.928 (2.273)	−1.049 (2.436)
Girl gap, aware parents	−11.441*** (1.647)	−10.006*** (1.657)	−7.586*** (1.774)
Mean gap, boys, unaware	26.47	34.42	37.37
Mean gap, boys, aware	11.02	16.85	20.88
<i>Panel B: GPA aware = reported GPA within ± 0.3 of administrative GPA</i>			
Girl (unaware parents)	−14.832*** (1.739)	−11.477*** (1.897)	−6.787*** (2.070)
GPA aware	−2.839** (1.353)	−5.100*** (1.507)	−6.432*** (1.745)
Girl $\times$ GPA aware	3.405 (2.119)	1.848 (2.253)	−0.325 (2.483)
Girl gap, aware parents	−11.427*** (1.522)	−9.629*** (1.561)	−7.112*** (1.693)
Mean gap, boys, unaware	27.20	35.35	38.13
Mean gap, boys, aware	12.31	18.23	22.26
School-class FE	Yes	Yes	Yes
<i>N</i>	3,888	3,888	3,888
Clusters (school-class)	439	439	439

Notes: Estimates of equation (19). The dependent variable is Gap_{ik} in (14), the gap (in percentage points) between the parent's perceived probability that their own child reaches the threshold at the end of the State Matura and the sex-specific actual probability from administrative data. *GPA aware* equals one if the parent-reported grade-9 GPA lies within 0.2 (Panel A) or 0.3 points (Panel B) of the administrative GPA. *Girl (unaware parents)* is the girl–boy gap among parents who do not report the GPA accurately (β_1); *Girl $\times$ GPA aware* is the difference in that gap for aware parents (β_3); *Girl gap, aware parents* is the implied gap among aware parents ($\beta_1 + \beta_3$), computed with `lincom`. *Mean gap, boys* rows report the mean of the dependent variable among parents of boys in each group; positive values indicate overestimation. All specifications include the full set of controls and school-class fixed effects. Standard errors clustered at the school-class level in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

D.4.3 Robustness to monotonicity violations

Table A10. Monotonicity violations at the first attempt, by child gender

<i>Panel A: Share of parents with at least one violation (%)</i>				
	Boys	Girls	All	Diff. (Girls–Boys)
Questions on own child	26.8	32.2	29.6	+5.5
<i>N</i>	1,925	2,066	3,991	
<i>Panel B: Conditional gender difference (coefficient on Girl, linear probability model)</i>				
	Threshold 7.5	Threshold 8.0	Any violation	
Girl	0.022 (0.014)	0.030** (0.015)	0.045*** (0.017)	
<i>N</i>	3,920	3,920	3,920	

Notes: A monotonicity violation occurs when a parent assigns a higher probability to a more demanding threshold than to a less demanding one (equation (20)). The survey flagged such answers and required respondents to revise them; the table refers to answers about the respondent's own child at the first attempt. Probabilities were elicited for thresholds 7.0, 7.5 and 8.0, so violations can occur at 7.5 (probability higher than at 7.0) and at 8.0 (probability higher than at 7.5). Panel A reports raw shares. Panel B reports the coefficient on *Girl* from equation (A1) estimated as a linear probability model, with an indicator for a violation at each threshold, and for at least one violation (V_i), as outcome. Standard errors clustered at the school-class level in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A11. Gender gap in overestimation excluding parents with monotonicity violations

	(1) Full sample	(2) Excluding parents with violations
Threshold 7.0	−12.757*** (1.215)	−11.223*** (1.238)
Threshold 7.5	−10.536*** (1.275)	−9.034*** (1.366)
Threshold 8.0	−7.344*** (1.382)	−5.577*** (1.530)
School-class FE	Yes	Yes
Controls	Yes	Yes
<i>N</i>	3,920	2,734

Notes: Each cell reports the coefficient on *Girl* from equation (13), with the gap (in percentage points) between the perceived and the sex-specific actual probability that the parent’s own child reaches each threshold as dependent variable; a negative coefficient indicates that parents of girls overestimate their child’s probability by less than parents of boys. Column (1) uses the full sample. Column (2) excludes parents with $V_i = 1$ in (20), i.e. who violated monotonicity at least once at the first attempt in the questions on their own child (30% of respondents). All specifications include the full set of controls and school-class fixed effects. Standard errors clustered at the school-class level in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

D.5 Belief Gaps and Track Choice

Table A12. Academic track enrollment and belief gaps by child gender

	(1) Aspired thr.	(2) Thr. 7.0	(3) Thr. 7.5	(4) Thr. 8.0	(5) GPA gap
<i>Panel A: Full sample</i>					
Girl	0.0648*** (0.0114)	0.0699*** (0.0117)	0.0664*** (0.0118)	0.0651*** (0.0120)	0.0613*** (0.0208)
Belief gap (boys)	−0.0002 (0.0002)	−0.0003 (0.0002)	−0.0002 (0.0002)	−0.0000 (0.0002)	−0.0025 (0.0133)
Girl × Belief gap	0.0005** (0.0002)	0.0005** (0.0002)	0.0005** (0.0002)	0.0004 (0.0002)	0.0112 (0.0178)
Belief gap (girls)	0.0003** (0.0001)	0.0002* (0.0001)	0.0003** (0.0001)	0.0003** (0.0001)	0.0087 (0.0125)
Mean academic	0.870	0.848	0.848	0.848	0.848
<i>N</i>	3,600	3,808	3,808	3,808	3,807
Clusters	425	432	432	432	432
<i>Panel B: Overestimating parents only (belief gap > 0)</i>					
Girl	0.0180 (0.0202)	0.0320 (0.0200)	0.0354* (0.0203)	0.0536** (0.0239)	0.0659*** (0.0222)
Belief gap (boys)	−0.0008 (0.0006)	−0.0006 (0.0006)	−0.0005 (0.0005)	−0.0000 (0.0004)	−0.0046 (0.0152)
Girl × Belief gap	0.0016** (0.0006)	0.0014* (0.0008)	0.0011** (0.0006)	0.0005 (0.0005)	0.0057 (0.0191)
Belief gap (girls)	0.0007 (0.0005)	0.0008 (0.0008)	0.0006 (0.0005)	0.0005 (0.0004)	0.0010 (0.0133)
Mean academic	0.850	0.821	0.824	0.827	0.858
<i>N</i>	2,445	2,547	2,763	2,888	3,438
Clusters	385	394	400	407	426

Notes: OLS estimates of equation (21). The dependent variable equals 1 if the child enrolled in the academic track and 0 if enrolled in vocational education; children outside the Albanian education system are excluded. In columns (1)–(4) the belief gap is the difference (in percentage points) between the perceived and the sex-specific actual probability that the child reaches, at the end of the State Matura, the threshold associated with the parent’s aspired educational path (column 1) or a GPA of 7.0, 7.5 and 8.0 (columns 2–4). In column (5) it is the difference (in GPA points) between the parent’s expected GPA and the sex-specific actual mean GPA at the end of the State Matura. *Belief gap (boys)* is ϕ ; *Girl × Belief gap* is ψ ; *Belief gap (girls)* is $\phi + \psi$, computed with `lincom`. *Girl* is the girl–boy difference in academic enrollment at a belief gap of zero. Panel B restricts the sample to parents with a positive gap on the measure used in each column. All specifications include school-class fixed effects, the full set of controls and the parent’s agreement with the statement that vocational secondary education has a lower reputation than general secondary education. Standard errors clustered at the school-class level in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A13. Academic track enrollment and belief gap (continuous), controlling for child gender

	(1) Aspired thr.	(2) Thr. 7.0	(3) Thr. 7.5	(4) Thr. 8.0	(5) GPA gap
Belief gap	0.0004*** (0.0001)	0.0003** (0.0001)	0.0004*** (0.0001)	0.0004*** (0.0001)	0.0223** (0.0101)
Girl	0.106*** (0.013)	0.123*** (0.013)	0.123*** (0.013)	0.122*** (0.013)	0.121*** (0.013)
Mean academic	0.870	0.848	0.848	0.848	0.848
<i>N</i>	3,600	3,808	3,808	3,808	3,807

Notes: OLS estimates of equation (22). Columns (1)–(4): belief gap in percentage points; a coefficient of 0.0004 means that 10 percentage points of overestimation are associated with a 0.4 percentage point higher probability of academic enrollment. Column (5): gap in GPA points. Standard errors clustered at the school-class level in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.