

Contents lists available at ScienceDirect

Journal of Public Economics

journal homepage: www.elsevier.com/locate/jpube



# Does greater school autonomy make a difference? Evidence from a randomized natural experiment in South Korea



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#### ARTICLE INFO

JEL classification: H4 H7 I2 Keywords: Private schools Public schools Randomization School autonomy

### ABSTRACT

We exploit the unique features of high schools in Seoul to study the effects of school autonomy on student outcomes. Under South Korea's equalization policy, both private and public schools in Seoul admit students that are assigned randomly to them, receive equal government funding, charge identical fees, and use similar curricula. However, private schools have greater flexibility in personnel decisions, and their principals and teachers face stronger incentives to perform. We find that private high schools have better student outcomes than public high schools. Our results suggest that autonomy in personnel decisions explains the positive student outcomes in private schools.

#### 1. Introduction

The purported benefits of school autonomy underpin various recent school reform efforts around the world, such as the establishment of charter public schools in the United States, academy schools in England, independent public schools in Australia, and community-managed schools in many developing countries. One of the central aspects of these reforms often involves providing publicly funded schools with more direct control over their personnel decisions. Although most research examining these recent reforms shows that they improve student outcomes, it is difficult to identify the effects of autonomy in personnel decisions, because these reforms often include a range of policy measures.

In the current study, we exploit a randomized natural experiment in Seoul, South Korea, to understand the effects of allowing some schools to retain autonomy in making personnel decisions on student outcomes. In 1974, the South Korean government implemented in Seoul what the country calls its 'equalization policy'. High schools governed by this policy have several important features. First, the schools subject to the policy, whether privately owned or publicly owned (hereafter, private or public schools), receive equal government funding, charge the same fees, and follow the same national curriculum. Second, students are assigned randomly into equalization policy schools within their school districts.<sup>1</sup> Students are generally not allowed to transfer to another school within the same school district, and when students and their families move to another school district, they are reassigned randomly to a school in the new district (Kang, 2007). This policy setting contrasts with those in other countries, where randomization may be applied only to schools that face excess demand and to students who express school preferences through enrolment applications. Third, private schools maintain autonomy over their personnel decisions, while public schools do not. This autonomy allows private schools to organize their workforces flexibly to achieve their educational objectives, and allows principals and teachers to select or be selected into schools that offer the best preference matches. In contrast, public school principals and teachers are recruited by the Seoul Metropolitan Office of Education as civil servants and rotate to a different high school every four years.

Although the equalization policy removes various differences in factors that are commonly attributed to the positive effects of private and other forms of independent schooling, the autonomy unique to private schools allows them to vary resource allocations, incentive structures, and teacher compositions. Specifically, their principals and teachers face less job security and greater incentives to deliver good student outcomes. They are more likely to hold principals accountable and have a higher share of teachers with career and promotion concerns. Private schools also have a greater component of performance pay within teacher compensation and larger teacher salary dispersions,

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https://doi.org/10.1016/j.jpubeco.2018.03.004 Received 7 January 2016; Received in revised form 15 March 2018; Accepted 15 March 2018

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<sup>&</sup>lt;sup>1</sup> There are a few special-purpose and autonomous high schools that take priority in student selection and which operate outside the equalization policy (see Section 2 for details).

but they spend less per student, run larger classes, and have fewer experienced and highly educated teachers.

We find that private school students in Seoul are no more likely than public school students to drop out or graduate from high school, but they are 4.4 percentage points more likely to attend colleges and 60% less likely to be cited for disciplinary problems. The increase in college attendance rates reflects a large increase in four-year college enrollment and a smaller decrease in two-year junior college attendance. Private school students also outperform public school students in standardized examinations by roughly 0.07 to 0.13 standard deviations. Although we cannot pinpoint every dimension of school autonomy that explains the outcome differences, we find that private schools with a greater share of teachers with career and promotion concerns produce better student outcomes. We further rule out the longer history of private schools, the religious affiliation of private schools, single-sex schooling, and private tutoring as primary channels of the positive effects of private schools in Seoul.

Our study is broadly related to two strains of research: studies that examine the effects of privately owned and/or managed schools, and studies that examine the effects of school autonomy. While much research has been done on privately owned and/or managed schools, it does not precisely identify the effects of school autonomy on student outcomes. Although studies based on the random assignment of private school vouchers or oversubscribed charter school slots to applicants show the positive effects of attending these schools on student outcomes, it is often uncertain which precise aspects of these schools explain the outcome differences.<sup>2</sup> When various studies compare outcomes between receivers and non-receivers of vouchers or enrollment slots, the estimated effects not only reflect differences in school autonomy, but also differences in student composition, peer quality, resources, and other dimensions of school quality between highly soughtafter schools and default traditional public schools (e.g., Angrist et al., 2002; Angrist et al., 2006; Hoxby and Murarka, 2009, and Abdulkadiroglu et al., 2011).

There are few studies that specifically focus on the effects of school autonomy. Two earlier studies, Jimenez and Sawada (1999) and King and Ozler (2005), use non-experimental approaches to examine the effect of autonomy on student outcomes and find that students in the schools that are given greater autonomy have better test scores. Research that uses experimental and quasi-experimental settings to study the effects of school autonomy is scant. One notable exception is Clark (2009), which exploits a U.K. reform in 1988 that allowed public high schools to opt out of local authority control if they won a majority vote among parents. He shows giving schools greater autonomy has positive effects on achievement gains, in a regression discontinuity framework. The effect of autonomy might be different in the less competitive, more regulated, and conventional school catchment area setting where the majority of public schools around the world operate. The equalization policy in Seoul is ideal for studying the effects of school autonomy in making personnel decisions in these other settings and complements Clark's (2009) findings. More importantly, since the policy in Seoul had been in place for more than three decades and most of the estimates regarding school autonomy and charter schooling came from recent reforms, our findings shed light on the longer term impact of giving schools greater autonomy in making their personnel decisions. The policy experiment in Seoul indicates that even when high schools are

guaranteed funding and enrollment, faced with little competition, and heavily regulated by the government, providing them with a high level of autonomy in their personnel decisions can improve a range of student outcomes.

## 2. Secondary schools and equalization policy in Seoul

The South Korean government first implemented the equalization policy among high schools in Seoul and Pusan in 1974. In Seoul, the equalization policy removed the competitive high school entrance examination and introduced the random assignment of students across schools within school districts.<sup>3</sup> In 2008, there were 208 high schools in Seoul subject to the equalization policy; these schools could be private or public, and coeducational or single-sex. Additionally, private schools can be religiously affiliated or secular.

#### 2.1. School types and randomization in Seoul

Although parents cannot select the preferred equalization policy high schools in which their children will be enrolled, parents with strong preferences for school quality have choices outside these schools. The government permits roughly 20 selective high schools in Seoul to operate outside the equalization policy and take priority in student selection. These selective schools are either special-purpose high schools that specialize in sciences, sports, arts, music, and foreign languages, or they are autonomous high schools.<sup>4</sup> They select students based on academic performance, may charge higher tuition, and enjoy a greater level of autonomy in designing and implementing their own school curriculum than private schools bound by the equalization policy (Paik, 2013). Students can opt for these selective high schools before being subject to the lottery-based enrolment system, but they must attend a randomly assigned equalization policy high school if they fail to enter a selective high school. Thus, special-purpose and autonomous high schools function more like the typical private high schools in other countries, while the equalization policy private schools are essentially government-funded schools with some school autonomy.

In Seoul, after special-purpose and autonomous high schools admit their students (roughly 5% of high school students), the remaining students are assigned randomly into the various general academic high schools within the 11 school districts. Because Seoul's population density is high (i.e., 10 million people in a 605-km<sup>2</sup> area), students need not travel far to attend one of the several equalization policy high schools within their school district.<sup>5</sup> Prior to 2010, new entrants into equalization policy high schools were assigned randomly into schools, unconditional on any potential school preference they had within the school district; however, since 2010, school districts have partly taken into account the preferences of middle school students and their parents.<sup>6</sup> As we are interested in examining the causal effects of school autonomy, we focus on general academic high schools that operate under the equalization policy and the students who were admitted prior to 2010 when school choice was more restricted.

<sup>&</sup>lt;sup>2</sup> Earlier observational studies—such as those of Coleman et al. (1982) and Alexander and Pallas (1983)—find that in the United States, private schooling is more effective in improving test scores than public schooling, even after controlling for the joint influences of private school choice and achievement. Later studies by Figlio and Stone (1999), Krueger and Zhu (2004), and Altonji et al. (2005a, 2005b), however, show the mixed effects of private and charter public schooling on achievement. In contrast, observational studies that focus on the effects of private or Catholic schooling on high school completion and college attendance—such as those of Evans and Schwab (1995), Neal (1997), Altonji et al. (2005a), and Vella (1999)—consistently show positive private school effects.

<sup>&</sup>lt;sup>3</sup> In South Korea, primary and middle school education are compulsory (i.e., up to grade 9). Although high school education is not mandatory, 99.7% of all middle school graduates entered high schools in 2008 (data sourced from the Statistical Yearbook of Education, Korean Educational Development Institute).

<sup>&</sup>lt;sup>4</sup> Special-purpose high schools are mostly private and were established after the 1970s, while autonomous schools were introduced in 2010.

 $<sup>^5</sup>$  As a point of comparison, the population density values of London and New York City are roughly 50 and 40% that of Seoul, respectively.

<sup>&</sup>lt;sup>6</sup> The Seoul Metropolitan Office of Education confirmed that for our sample period (2008–2010), the stated school preferences or any other factors (such as distance to school, siblings, and religion) were not considered in the randomization process in all other school districts. The exception is the small central school district called Jungbu comprising three administrative districts (Jongno-gu, Jung-gu, and Yongsan-gu), where stated school preferences are considered. Our results are not sensitive to dropping this school district (Table A1, Appendix I).

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