



Are lotteries the best chance for the success of students and schools? A protocol for a systematic review and meta-analysis of school randomised admissions



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ABSTRACT

Several school systems or specific school programmes around the world involve the use of lotteries to assign students into schools. This admission mechanism is usually favoured to foster equality of opportunities in education. However, there has not been an effort to systematise existing evaluations of this type of interventions. This review protocol proposes to contribute to the literature on this topic with a systematic search and a meta-analysis, from an international perspective, of the effects that randomised school admissions have on student academic performance and school socioeconomic composition measures. The results and policy implications will serve as a new and relevant contribution for researchers and policy makers related to school choice, and for education authorities involved with school lotteries.

1. Introduction

1.1. Background

The use of lotteries for different social decisions is not recent. It dates back to medieval times, even with religious meanings in some cases, and there are still examples of the use of lotteries in modern life: trial jury selection, the start of sports games, military drafts, the distribution of tickets for highly requested events, or the allocation of school places in education (Duxbury, 1999; Stone, 2008).

A lottery is a decision-making process in which the outcome cannot be predicted or influenced by those who apply or implement it. One of the key contributions of lotteries is that they give justice to the process (Duxbury, 1999), but while this mechanism guarantees equality of opportunities, it does not necessarily generate equality in the resources assigned.

In the context of education, random-based decisions are usually set on school choice systems and mainly aim to solve the issue of student allocation into schools. School choice systems base their development and efficiency on a broad and diverse supply of schools and a competition dynamic among these schooling alternatives. In many cases, this type of school system goes in hand with an extension of the private sector and the use of vouchers to spend public funding on the school chosen by families. School choice policies began to be introduced in the second half of the 20th century. Some regions of Canada and Australia started introducing school choice regulations on the 60–70's (Berends, Springer, Ballou, & Walberg, 2009), Chile's national school vouchers reform began in 1981 (Mizala, 2007), and Minnesota was the first state to establish a school choice plan in the U.S. in 1987 (Cfat, 1992). Moreover,

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lotteries have been incorporated into admission processes in schools in different cases, such as in the United States, the United Kingdom, New Zealand, the Netherlands, or Sweden (Stone, 2008; Sutton Trust, 2007).

In the school choice framework, the greater the school supply, the more complex the decision of which school(s) to apply to and which students to allocate into those schools, given their limited capacity. However, only if schools are unable to select among their applying students, the principles of competition and efficiency would be accomplished. Otherwise, the influence of schools on their admission process outcomes – either in the form of enrolment on a first come, first served basis, or through the application of interviews to parents or entry tests to students – would lead to a segregated system (Betts, 2005; MacLeod & Urquiola, 2009; Musset, 2012).

Lotteries could be critical to help pursue this goal of equity in education under a school choice system (Belfield & Levin, 2005; Hill, 2005; Social Market Foundation, 2004; Stone, 2008; Walford, 1996), as they would remove cases of discrimination or hand-picking of students in the school admission processes. On the other hand, school lotteries would also eliminate the ability of parents to ensure a school place due to, for example, a housing decision or an interview outcome.

Randomly-based decisions are proposed to generate a fair outcome because all applicants are assumed equal, yet they are commonly challenged for the absence of consideration of what applicants need or deserve. If there are grounds to differentiate students in a school admission process then a random-based decision, by its own, would not provide an equal treatment of the school places. This is why lotteries are frequently used in combination with other admission mechanisms, generally in the form of priority criteria of admission (Sutton Trust, 2007). Once these priorities are allocated, the remaining students can be assumed to be in equal conditions, and then a random allocation would provide a just decision-making mechanism.

Although we are aware of some individual school programmes or policy evaluations including school random admissions (Allen, Burgess, & McKenna, 2013; Cullen, Jacob, & Levitt, 2006; Deming, Hastings, Kane, & Staiger, 2014; Hoxby & Rockoff, 2005), these show mixed results in terms of student achievement and include a range of other academic (e.g. education attainment) and non-traditional (e.g. arrest rates) outcomes. Moreover, and to the best of our knowledge, there are no research efforts to rigorously and systematically consolidate the international literature available and synthesise the effectiveness of this evidence regarding school lotteries. There are, however, two related studies which share either the research method or research topic with this review, and could serve as indirect precedents.

The first related study is a meta-analysis on the achievement effect of private voucher programmes with an international approach (Shakeel, Anderson, & Wolf, 2016). It includes 19 studies from 11 different voucher programmes and it consolidates their effectiveness using pupil math and reading outcomes. The study finds an overall positive and statistically significant achievement effect of private school vouchers, with heterogeneous effects by subject, location, and funding type. The focus of this research is private scholarship programmes, that is, the offer of funding to attend a private school of choice. One of the inclusion criteria required the use of randomised controlled trials, however, the lottery in these voucher programmes does not necessarily decide a school place in an admission process but rather the opportunity to be offered a scholarship. Hence, though this study partly shares our proposed methods, it does not answer our research question. In addition, and as a review of the research indicates (Lubienski, 2016), the goal of having an international focus is not well achieved – it ultimately includes studies from three countries and the vast majority of them are from the U.S. – and the strategies to select the studies also end up clouding the trustworthiness and usefulness of the meta-analysis.

The second related study is focused specifically on randomised admissions in education (Stasz & Von Stolk, 2007). The research starting point is the UK's School Admissions Code draft which, for the first time, allows schools to use lotteries to manage their vacancies. Given the scarce evidence on this topic, the study focused on lottery schemes in four different countries, considering their purpose, implementation, and evaluations. This exploratory research finds mixed results on the effect of random admissions on student achievement, and seldom evaluations of these schemes on equity, arguing that these types of outcomes are not generally intended or examined. While the study shares some common motivations and research questions with this proposed review, it is not based on the principles of systematic reviews; hence its results may not be replicable, representative, or account for other research biases. The authors conclude that “further research is required to understand how lottery schemes operate in different contexts and what the associated impacts are” (p. vii).

Given the lack of academic rigorous efforts to examine the evidence on school randomised admissions, this protocol proposes a systematic review to build up the literature and inform researchers, government agencies, school systems, and families involved with school lotteries. In the context of an increased offer of school choice schemes internationally (Musset, 2012), this review may become of special relevance for its education policy implications. The review would also be of benefit as we anticipate that our research strategy will accomplish a more comprehensive international perspective that would help to fill the current evidence gap on school lotteries.

1.2. Review objectives

The review aims to, firstly, map and systematise the evidence available on the impact of randomised school admissions. Secondly, and provided there is sufficient data, it intends to meta-analyse an overall effect of randomised school admissions on student academic performance and school socioeconomic composition measures.

The main research question guiding the systematic review is to understand the scope of the evidence available on the impact of randomised school admissions on student achievement, the socioeconomic composition of schools, and a range of other outcomes that may be associated to the admission process. Secondary research questions focus on (i) where these school admissions are used; (ii) which schools use this type of admission, for what purpose, and how are they implemented; and (iii) how has this type of school

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