

Institution: University of Edinburgh		
Unit of Assessment: 16 Economics and Econometrics		
Title of case study: Informing Reforms of Neighbourhood Priorities in School Choice in Spain		
Period when the underpinning research was undertaken: June 2010 – February 2020		
Details of staff conducting the underpinning research from the submitting unit:		
Name(s): Maia Güell	Role(s) (e.g. job title): Professor of Economics	Period(s) employed by submitting HEI: Since 1 st September 2007
Period when the claimed impact occurred: August 2013 – July 2020		
Is this case study continued from a case study submitted in 2014? N		
1. Summary of the impact		
<p>In Barcelona, Madrid, and many other regions in Spain, parents express a preference over which primary school they would like their child to attend. The rules by which these preferences are turned into allocations are based on a “Boston Mechanism” combined with a points system that reflects neighbourhood and other priorities. Maia Güell’s research analysed the operation of this mechanism in Barcelona using a rich administrative dataset. Güell’s findings highlighted that the neighbourhood component of the mechanism reduced families’ genuine choices and disadvantaged poorer households. Citing the research as key evidence, Barcelona and Madrid implemented a reform of their school-choice mechanisms between 2012 and 2015, reducing the weight of neighbourhood priorities. These changes affected around 105,500 children in each year of the REF period. Early evidence from Madrid suggests that the reform improved parents’ satisfaction and reduced the socio-economic segregation across schools. The reforms in Barcelona and Madrid inspired a change of neighbourhood priorities in the Autonomous Community of Valencia, and a debate about similar reforms in the Basque Country.</p>		
2. Underpinning research		
<p>Güell’s work on the system of school choice for pupils entering primary school began with a collaboration with Caterina Calsamiglia (Barcelona Institute of Political Economy and Governance, Universitat Pompeu Fabra). The research was motivated by the fact that over the last two decades, local authorities in many countries have increased families’ ability to choose schools beyond those closest to their own homes. Typically, parents are asked to submit a list with their ranking of schools, and then a set of rules determines the final allocation.</p> <p>One of the most widely used procedures to arrive at this final allocation is the “Boston mechanism”. This mechanism assigns all applicants to the school they ranked first, but if the demand for a school is too high, places are allocated according to “priorities”. These priorities can be determined either by a lottery, or according to criteria such as distance to the school, presence of siblings in the school, or other socio-economic variables.</p> <p>Those rejected from their first choice of school can opt for other remaining school places only after everyone’s first-choice school has been considered. It is well-known that this Boston Mechanism can lead to inefficient allocations because parents can benefit from misreporting their true preferences. Misreporting of preferences can occur because the mechanism reduces the chances of being allocated to any particular school after being rejected from the first choice. As a result, to avoid rejection at the first stage, parents may record the second or lower preference as their first choice if they believe that their preferred school is likely to be oversubscribed. That is, the Boston Mechanism is not “strategy-proof”. In this setting, neighbourhood priorities can have a large impact on parents’ behaviour. They may lead parents to perceive that the nearest schools – for which they have the highest priority – constitute a “safe choice”, and to coordinate on this choice.</p>		

Commonly used alternatives to the Boston Mechanism are the Deferred Acceptance and Top Trading Cycles mechanisms. Although these two alternatives are strategy-proof, a disadvantage of both is that parents who share the same ordinal preferences will rank schools in the same way and have the same chance of being allocated to any particular school, regardless of which family would gain the most from the allocation. Since each of the mechanisms has advantages and disadvantages, it is an empirical question which of them performs best in practice. Güell and Calsamiglia were able to tackle this question using a rich administrative dataset from Barcelona, covering all primary school applications in the city in the period 2005-2010. The empirical strategy made use of an unexpected and exogenous change in the definition of neighbourhoods that was implemented by the regional authorities in Barcelona in 2007. Consequently, there was an unanticipated change in priority schools for many families. Based on their observed changes in school-choice behaviour, Güell and Calsamiglia were able to show that a change from the Boston to Deferred Acceptance mechanism made families worse off whereas a change from the Boston to Top Trading Cycles mechanism made them better off. Most importantly, their analysis highlighted that most distortions of the allocation under the Boston Mechanism were caused by the neighbourhood or zoning priorities.

Güell and Calsamiglia's findings confirmed that the mechanism used in Barcelona skewed parents' application decisions. The risk involved in applying for a popular, but possibly oversubscribed, school led to most applicants opting for the safer option of choosing the neighbourhood school, irrespective of their true preferences. They also found that neighbourhood priorities gave rise to significant inequalities. Families who could afford a private school, as an outside option, played a riskier strategy, putting down schools outside their neighbourhood as their first choice – and indeed ended up with a better chance of getting a place at one of the best schools in the public system. By contrast, those who did take risks without having a private school outside option were particularly harmed – which rationalises why most families opted for the “safe choice” of a neighbourhood school.

Initial work was carried out from 2010 and as early as 2012, Güell was invited to present the research in a keynote lecture at the annual symposium of the Spanish Economic Association [3.3]. The research was progressed and refined through the next five years and the findings were published in the *Journal of Public Economics* in 2018 [3.1], and the *Journal of Political Economy* in 2019 [3.2].

3. References to the research

- [3.1] Calsamiglia, C., and M. Güell, 2018. “Priorities in School Choice: The Case of the Boston Mechanism in Barcelona”, *Journal of Public Economics*, vol. 163, pp. 20-36 (Impact Factor: 1.581).
<https://doi.org/10.1016/j.jpubeco.2018.04.011>
[https://www.research.ed.ac.uk/portal/en/publications/priorities-in-school-choice\(f4f1fe04-54a6-4991-b616-0d7848e4cfe3\).html](https://www.research.ed.ac.uk/portal/en/publications/priorities-in-school-choice(f4f1fe04-54a6-4991-b616-0d7848e4cfe3).html)
- [3.2] Calsamiglia, C., Fu, C., and M. Güell, 2019. “Structural Estimation of a Model of School Choices: the Boston Mechanism versus its Alternatives”, *Journal of Political Economy*, vol. 128, pp. 642-680. (Impact Factor: 3.593). <https://doi.org/10.1086/704573>
[https://www.research.ed.ac.uk/portal/en/publications/structural-estimation-of-a-model-of-school-choices\(26fdaa7a-b96a-49b6-b636-81f008a8a7ba\).html](https://www.research.ed.ac.uk/portal/en/publications/structural-estimation-of-a-model-of-school-choices(26fdaa7a-b96a-49b6-b636-81f008a8a7ba).html)
- [3.3] M. Güell, XXXVII Simposio de la Asociación Española de Economía-Spanish Economic Association (SAEe), Vigo, Spain, on 13th-15th December 2012. *Revista de Economía Aplicada Invited Lecture: "The Illusion of School Choice: Empirical Evidence from Barcelona"*.
[https://www.research.ed.ac.uk/portal/en/activities/-xxxvii-simposio-de-la-asociacion-espanola-de-economiaspanish-economic-association-saee\(c797b524-67d2-4a29-bbe2-05ca647649d4\).html](https://www.research.ed.ac.uk/portal/en/activities/-xxxvii-simposio-de-la-asociacion-espanola-de-economiaspanish-economic-association-saee(c797b524-67d2-4a29-bbe2-05ca647649d4).html)

4. Details of the impact

Güell and Calsamiglia began working on their project on school choice in 2010. Early results from Barcelona were disseminated beginning in late 2011. While some of these activities pre-date the REF period, they represent key steps on the pathway to impact reported from August 2013 onwards.

In her role as an affiliate of FEDEA, a Spanish independent academic think-tank whose mission is to influence economic and social policy through evidence-based research, Güell, along with other researchers from FEDEA, drafted a proposal to reform aspects of the education choice system in Spain based on underpinning research already outlined in Section 2. Work on the reform proposals culminated in a FEDEA conference on education in September 2012, at which Güell and Calsamiglia presented their initial findings. A non-technical, Spanish-language summary of their findings and recommendations was subsequently published and received considerable attention in online media, including the Spanish digital newspaper *El Confidencial* with 17,000 regular readers [5.1].

Güell and Calsamiglia subsequently published summaries of their findings in a range of other Spanish and international outlets aimed at non-academic audiences: the Spanish-language Politics blog *Politikon*, the blogsites VoxEU and *Nada es Gratis*, and the magazine *The Region* published by the U.S. Federal Reserve Bank of Minneapolis. VoxEU is a website for the dissemination of research to economists in government, international institutions and the private sector, and the post by Güell and Calsamiglia received about 7,400 views. *Nada es Gratis* is a widely read Spanish-language economics blog and the article there attracted 4,400 views and nearly 50 reader comments, with questions about the empirical methodology employed by Güell and Calsamiglia and the interpretation of their findings. Güell and Calsamiglia responded personally to many of these comments. *The Region* and *Politikon* have regular readerships of 70,000 and 3,900, respectively [5.2].

On 22nd December 2011 Güell and Calsamiglia gave a presentation of their findings at the "Consorti d'Educacio de Barcelona" ("Consorti"), the Barcelona Regional Education Authority that had provided the data for the study. In January 2012, the "Consejería de Educación, Comunidad de Madrid" ("Consejería"), the Madrid Regional Education Authority, extended an invitation for Güell and Calsamiglia to present their work to local officials, to inform an ongoing policy discussion about possible changes to the school choice mechanism used in the Madrid region. Calsamiglia gave a presentation at the "Consejería" on 9th January 2012 [5.3].

Based on the evidence presented, both the "Consorti" (Barcelona) and the "Consejería" (Madrid) decided to reform their school choice procedures for publicly funded primary schools, specifically by reducing the weight given to neighbourhood priorities. A Director of Research and Statistics at the Barcelona "Consorti" stated that Güell's and Calsamiglia's presentation "gave us new insights... especially with respect to families' choice of schools in their neighbour[hood] they live, which may not necessarily [be] their preferred school"; and that "during the following months, the conclusions of this work were used when revising the proximity model in Barcelona" [5.4]. A Subdirector General for the Analysis of Education Policy at the Madrid "Consejería" confirmed that "one of the studies that was systematically used and discussed was... by Caterina Calsamiglia and Maia Güell," and "given this piece of evidence [from their research], the Madrid Autonomous Community decided that neighbourhood priorities should be eliminated" [5.5].

The "Consorti" (Barcelona) proposed an increase in the size of the designated neighbourhoods and the proposal passed into law on 13th March 2012, taking effect from the 2012/13 school year. The "Consejería" (Madrid) introduced a similar reform that passed into law on 11th April 2013. The law in Madrid effectively abolished neighbourhood priorities. It was implemented progressively from the 2014/15 school year, with neighbourhood zones being increased in geographic size in the first year, and fully abolished in the second [5.6]. These changes impacted around 13,500 children in Barcelona and 92,000 children in Madrid in each year of the

REF period. The reduced weight of neighbourhood priorities in Barcelona, as well as Madrid's decision to eliminate neighbourhood priorities, received widespread attention in local and national media including *El País*, the second most circulated national newspaper in Spain (with a circulation of 240,000) [5.7].

The Madrid and Barcelona reforms triggered debates about reducing the weight of neighbourhood priorities in the school choice mechanisms of other autonomous communities in Spain. Similar reforms were proposed in Valencia and the Basque Country [5.8]. Like Madrid, Valencia ultimately abolished neighbourhood zones gradually from the 2013/14 school year [5.9]. This affected 60,000 children in the Comunitat Valencia the 2013/14 and 2014/15 school years, after which the reform was partially reversed by a new regional government.

The effect of the Madrid reform on school choice and socioeconomic segregation in the primary school system has been evaluated in an MSc thesis authored by David Mayor (currently, Compass Lexecon, Washington, DC) at the Centre for the Study of Money and Finance (CEMFI) in Madrid in 2017. The thesis shows – in line with Güell's and Calsamiglia's advice to the "Consejería" – that families from lower socioeconomic backgrounds have altered their school-choice behaviour most strongly in response to the reform, targeting better out-of-neighbourhood schools more frequently. Applications to out-of-district schools increased by about one third in the wake of the reform. Moreover, socio-economic heterogeneity within schools (measured by the variation in parents' educational attainment) increased by 12.5%, with the biggest increases occurring in the best-performing schools. On this basis, the thesis concludes that there is evidence that the reduced weight of neighbourhood priorities helped promote equality of opportunity in the local education systems [5.10].

5. Sources to corroborate the impact

- [5.1] Calsamiglia, C., and M. Güell, 2013. "¿Como escogen los padres la escuela de sus hijos? Teoría y evidencia para España," Chapter 3 in A. Cabrales and A. Ciccone (eds.), *La educación en España: Una visión académica*, FEDEA; in Spanish, 18th December 2013
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 "El panorama educativo español, retratado en ocho estudios," *El Confidencial* Website, 7th September 2012, in Spanish: article on file.
https://www.elconfidencial.com/alma-corazon-vida/2013-12-19/el-panorama-educativoespanol-retratado-en-ocho-estudios_67902/
- [5.2] Calsamiglia, C., 2016. "Elección de escuela: Un debate a redefinir," *Politikon*, 15th March 2016.
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<https://voxeu.org/article/illusion-choice-evidence-barcelona>
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<https://nadaesgratis.es/cabrales/la-ilusion-de-elegir-escuela>
- P. Davies. "Gaming the (School) System," *The Region*, Federal Reserve Bank of Minneapolis, 10th December 2014. <https://www.minneapolisfed.org/article/2014/gaming-the-school-system>
- [5.3] E-mail correspondence with seminar invitations in Barcelona and Madrid on file.
- [5.4] Letter on file from 8th May 2018, by the Director of Research and Statistics, Consorci d'Educació de Barcelona.

- [5.5] Letter on file from 20th May 2015, by the Subdirector General of Evaluation and Analysis, Consejería de Educación, Comunidad de Madrid.
- [5.6] Resolució CVE-DOGC-A-12067096-2012, Generalitat de Catalunya, 13th March 2012; Decreto 29/2013, Madrid Autonomous Community, 11th April 2013; both in Spanish: full legal texts on file.
- [5.7] “Distrito único, año cero,” 11th March 2014; *El País* Newspaper, in Spanish. https://elpais.com/ccaa/2014/03/11/madrid/1394560392_763243.html
- [5.8] “Català espera implantar el distrito escolar único en Valencia el próximo curso,” *El País* Newspaper, 28th February 2014. https://elpais.com/ccaa/2014/02/28/valencia/1393612355_406113.html
“El PP propone eliminar los distritos de las matriculaciones escolares en Vitoria,” *El Correo* Newspaper, 16th January 2018; all in Spanish. <https://www.elcorreo.com/alava/araba/propone-eliminar-districtos-20180115131647-nt.html>
- [5.9] Decreto 42/2013, Generalitat de Valencia, 22nd March 2013; in Spanish: full legal text on file.
- [5.10] Mayor, D., 2017. “Effects of School Choice on Students’ Mobility: Evidence from Madrid,” MSc Dissertation, CEMFI Madrid: full text on file.