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Robert Schuman Centre for Advanced Studies  
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Calling into Question the Link between Educational  
Achievement and Migrant Background

Anna Di Bartolomeo and Sara Bonfanti



European University Institute  
**Robert Schuman Centre for Advanced Studies**  
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## **Abstract**

In EU societies, the role that immigrants' children play in the educational system is fiercely debated. There exists a consensus that immigrants' children show, on average, lower educational performances than children of natives in all EU states, regardless of grade level, type of school, age, etc. This awareness has led to the perception that the concentration of immigrants' children negatively affects overall school educational performances. This note aims to disentangle the link between educational performance and migration background showing how the reality is much more complex. Specifically, two questions are answered. First, given that immigrants' children represent a heterogeneous group in terms of parents' origin, age at arrival, etc., does a multicultural background bring any kind of advantage to school performance compared with a "mono-cultural" one? Second, what is the effect of attending schools with a high percentage of immigrants' children in terms of average school performance, once controlled for school socio-economic resources?

## **Keywords**

Educational Achievement, Children of immigrants, Children of mixed couples, Group composition effect, International comparison.





## 1. Introduction

In EU societies, the role that immigrants' children play in the educational system is fiercely debated. There exists a consensus that immigrants' children show, on average, lower educational performances than children of natives in all EU states, regardless of grade level, type of school, age, etc. This awareness come out of scientific production over the last 20 years (see, for instance, Brinbaum and Heath, 2007; Di Bartolomeo, 2012; OECD, 2006), which has been made possible thanks to the growing availability of quantitative datasets, linking migration background and educational performance.<sup>1</sup>

These findings have led, in fact, to the perception that the concentration of immigrants' children negatively affects overall school educational performances. According to the European Social Survey, more than three out of ten European citizens agree (or strongly agree) that immigrants "should be allowed to educate their children in their own separate schools". Above-average scores are found in Slovenia (33.5%), Hungary (36.0%), France (37.7%) and the Czech Republic (41.7%), and even higher scores in Ireland (47.0%), Portugal (54.5%) and Poland (70.0%).

These concerns have increasingly pushed natives to adopt a variety of measures to select more homogeneous schools for their children in terms of the background of the student body. In France, a study conducted in the city of Paris in 2003 found that 8% of parents – all belonging to middle/high class – used a false address of residence, changed their residence or simply recurred to private schools to escape the *principe de sectorisation*. This law was in force from 1963 to 2007 (Gilotte e Girard, 2005). While it was initially conceived as a planning instrument to manage educational resources in accordance with local demographics, it led, ultimately, to an increase in local inequalities because of the overrepresentation of immigrants in more deprived neighbourhoods and because of frequent attempts to get around the system. Similar patterns have been observed in Germany and the UK. The highly differentiated educational system of Germany tends to select students early on, on the basis of their curricula, age and *knowledge of German*. Children are sent to different types of lower secondary schools, all leading to different school-leaving qualifications: secondary modern schools (*Hauptschule*); secondary schools leading to intermediate qualification (*Realschule*); grammar schools (*Gymnasium*); or comprehensive schools (*Gesamtschulen*). Special schools (*Förderschule* or *Sonderschule*), which address students with special learning needs, represent an additional option. Language difficulties are the primary reason for which the children of immigrants are overrepresented in *Förderschule* and *Hauptschule* schools and, thus, achieve lower qualifications (Behrens *et al.*, 2002). In the UK, 70% of the people interviewed in a recent survey, which investigated the reasons why people chose to send their children to private schools, declared that they did so because they wanted their children to attend a school composed of pupils from a similar background and with similar aspirations. In securing for their children a place in the "right" school, upper middle class parents increasingly cheat by feigning religious observance, using a false address during the admission process or simply by moving home (Becky and Hutchings, 2013).

This note aims to disentangle the link between educational performance and migration background showing how the reality is much more complex. Specifically, two questions are answered. First, given that immigrants' children represent a heterogeneous group in terms of parents' origin, age at arrival, etc., does a *multicultural* background bring any kind of advantage to school performance compared with a "*mono-cultural*" one? Second, what is the effect of attending schools with a high percentage of

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<sup>1</sup> Some notable examples are: the Programme for International Student Assessment (PISA), developed by the Organisation for Economic Co-operation and Development (OECD); the Trends in International Mathematics and Science Study (TIMSS) and the Progress in International Reading Literacy Study (PIRLS), developed by the International Association for the Evaluation of Educational Achievement (IEA).

immigrants' children in terms of average school performance, once controlled for school socio-economic resources?

## 2. Disentangling the link between migration background and educational performance

### 2.1 Data

In order to develop a well-grounded analysis of the link between migration background and educational performance, we will employ here the 2009 PISA dataset. The OECD's PISA survey is conducted every three years with the aim of assessing the educational achievement of fifteen-years-old students in the most advanced economies. It focuses on three "life skill" domains, namely mathematics, science and reading, which are internationally considered as crucial for improving and adapting education systems in response to new competence requirements. A more in-depth analysis of each domain is carried out every nine years. The 2009 PISA dataset focuses on *reading skills*, measured through standardized tests. Data about students', parents' and schools' characteristics are collected as well. In each country, a sample of at least 150 schools (primary sampling units) is extracted and within each school a sample of 35 fifteen years old students has been selected for a total of at least 4,500 pupils *per* country.

PISA was not initially designed to study immigrants' children. However, it has become today one of the key databases in drawing comparative empirical evidence of their educational performance, as recently recommended by the 2010 European Ministerial Conference on Integration in Zaragoza. Several reasons explain this. First, its sampling design is accurate and valid in allowing the representativeness of immigrants' children in a large number of countries (OECD, 2006). Second, by collecting information on pupils' and parents' country of birth, pupils' country of nationality and age at arrival in their host country, PISA provides national specificities and migration histories. Third, in addition to individual characteristics, PISA contains a wide range of information on school and parent characteristics which allow us to study the influence of contextual factors on pupils' educational performance. Fourth, being a triennial survey, it gives the possibility of assessing trends over time, though not longitudinally.

### 2.2 The added value of having a multicultural background

This section tries to answer the first of our research questions, i.e. "does a *multicultural* background bring any kind of advantage to school performance compared with a '*mono-cultural*' one?"

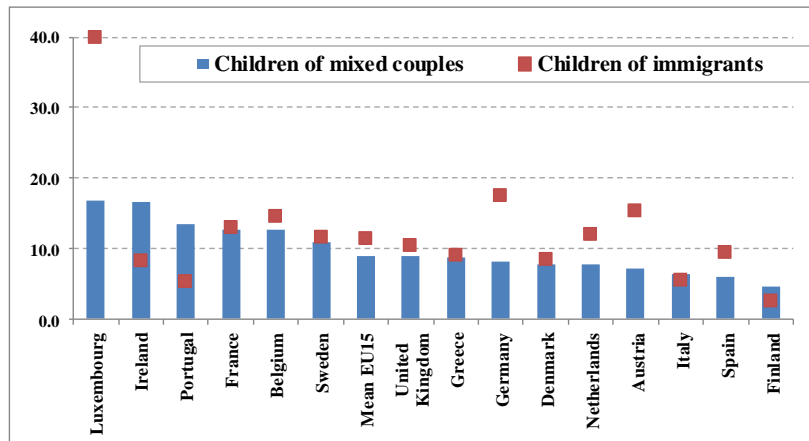
To capture the effect of pupils' multicultural background, we compare here the educational trajectories of *children of mixed couples* with those of *children with a 'mono-cultural' background*. *Children of mixed couples* are defined as children with one parent born in the host country and another one born abroad, regardless of the child's country of birth.<sup>2</sup> *Children with a 'mono-cultural' background*" include both *natives' children* (i.e. pupils who have both parents born in the country of destination) and *immigrants' children* (i.e. pupils with both parents born abroad regardless of the child's country of birth).

Our sample is composed of 117,654 students attending 4,832 schools. This sample represents 3,307,215 fifteen-years-old students in the EU15 (see table A1 in the Appendix). Children of mixed couples are a non-negligible proportion (9.0%) of the student population, close to the share of immigrants' children (11.4%) and their proportion largely varies across countries as a result of their different migration histories (see Figure 1).

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<sup>2</sup> It is worth mentioning that the PISA dataset does not allow users to include children whose parents were born in two different foreign countries.

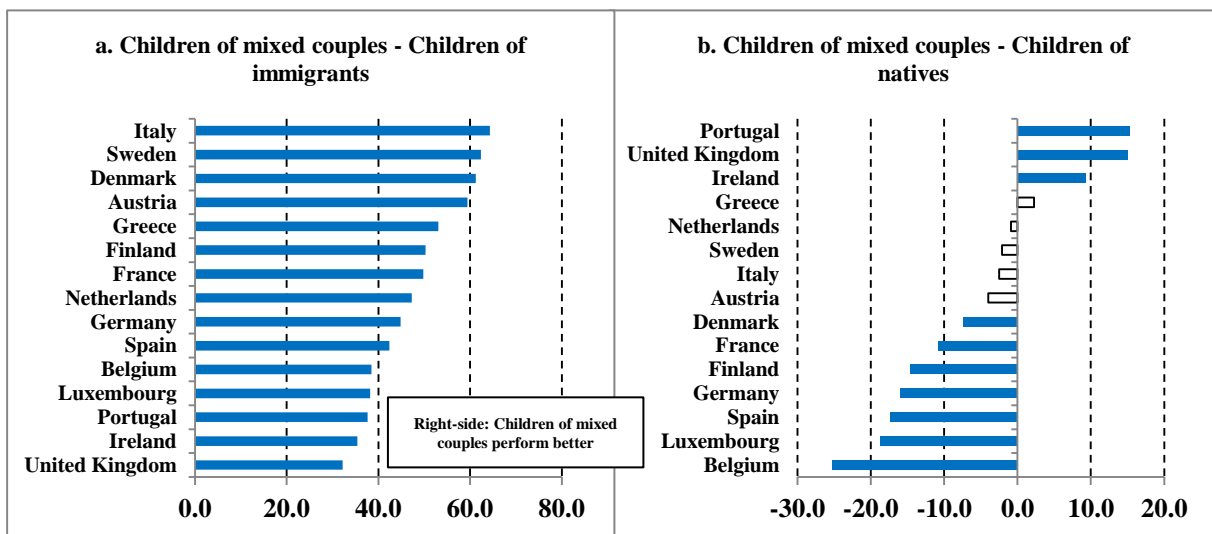
**Figure 1- Share of children of mixed couples and children of immigrants in the population of the fifteen-year-old students in EU15 states**



Source: authors' elaboration on PISA-2009

Figure 2 depicts the educational achievements of these two groups of children, compared to the achievements of natives' children. It clearly shows that children of mixed couples not only perform significantly better than the children of immigrants (figure 2a), but also that their performance is closer to that of natives' children (figure 2b).

**Figure 2 - Average differential of reading performance by country of residence and student origin, 2009 (\*)**



Notes: (\*) No significant values are marked in blank.

Source: authors' elaboration on PISA-2009

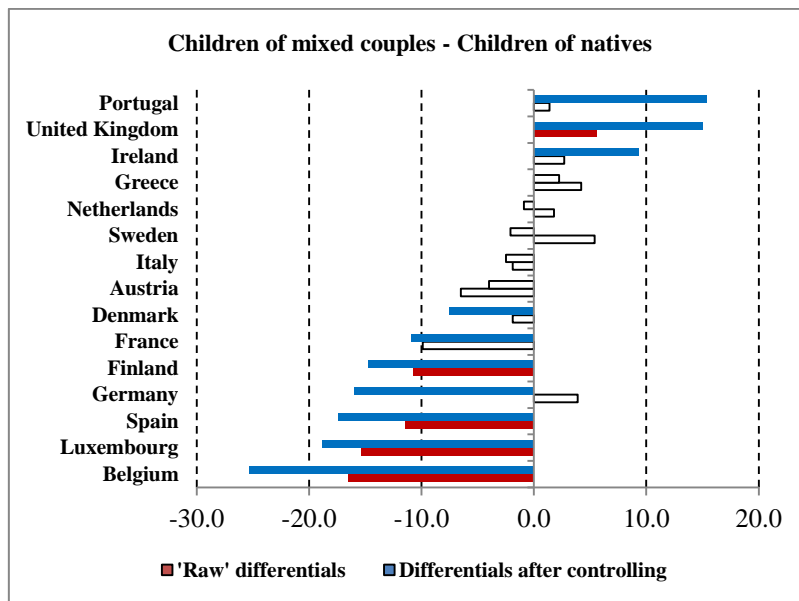
Children of mixed couples perform significantly better than natives' children in three countries (Portugal, UK and Ireland); while their outcomes do not significantly differ from those of natives' children in five countries (Greece, Netherlands, Sweden, Italy and Austria). Such findings support the idea that belonging to a multicultural rather than mono-cultural background has a positive (or at worst neutral) effect on educational performances achievement of students. This seems to be in line with the *variant approach theory* (see, among others, Thornton and Wason, 1995, Rockquemore & Brunnsma, 2002a, 2002b; Van Ours e Veenman, 2008), which has been developed at the empirical level in the

UK and US (see e.g. Kao, 1999; Shih et al. 2007; Muttarak, 2007), but also in continental Europe (see, for instance, Becker, 2011). One reason for this advantage is bilingualism (Bialystok, 2001).

Having a multicultural background represents, meanwhile, a disadvantage in Belgium, Denmark, Finland, France, Germany, Luxembourg and Spain (figure 2a). However, after controlling for structural characteristics (unrelated to migration background), children of mixed couples no longer perform significantly different from children of natives in Denmark, France and Germany, while the gap substantially diminishes in other countries (figure 3).

As a matter of fact, even in the last countries, educational performance is not affected by the presence of children of mixed couples *per se* but “only” by their socio-economic conditions.

**Figure 3 - Average differential in reading performance by country of residence and origin before and after controlling for structural characteristics (\*), 2009 (\*\*)**



Notes: (\*) The following structural characteristics were controlled for: sex, parents’ educational and occupational level, PISA Index of home cultural possessions and type of family; (\*\*) No significant values are marked in blank.

Source: authors’ elaboration on PISA-2009

To conclude, we found evidence that in more than half of the countries, having a multicultural background has a positive or neutral effect on scholastic performance. In other countries, the worst educational performance of children of mixed couples with respect to natives’ children is (almost fully) explained by socio-economic – rather than origin – differences. Here, educational policies should, thus, focus not on children of mixed couples because of their multicultural origin. Rather, they should address all students with a disadvantaged socio-economic background, regardless of their origin.

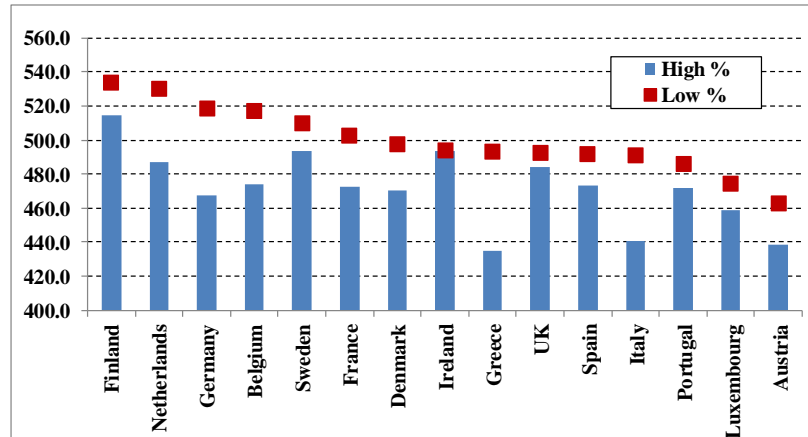
### 2.3 The effect of ethnic segregation on school educational performances

In section 2.1 we showed that immigrants’ children have lower performance as compared to both children of natives and children of mixed couples.

Accordingly, one should expect that schools with high percentages of immigrants’ children report, on average, worse educational achievements than schools with lower shares of immigrants’ children. For instance, this is what figure 4 shows: in EU15 countries, the average reading performance of

schools with low percentages of immigrants' children is higher than that of schools where immigrants' children are concentrated.

**Figure 4 - Average reading performance of schools with percentages of immigrants' children higher or lower/equal to the median school value by country of residence, 2009**



Source: authors' elaboration on PISA-2009

Here, we are interested in empirically verifying if and to what extent school performance variation is associated with the presence of immigrants' children, once controlled for schools' socio-economic characteristics.

School performance variation may, indeed, be affected by the so-called group composition effects – i.e. the effect that is found when individual characteristics are aggregated at a higher level, such as in a class or a school. Once controlled for individual characteristics, the significance of this effect implies that student performance is affected by school composition (Verhaeghe *et al.*, 2011). Here, we verify what kinds of school composition effects, namely ethnic or socio-economic composition, are associated with school average performance.

To this end, the multilevel modelling technique has been employed since it allows us to estimate the share of variance which is attributable to each level within which students are clustered (classes, schools, etc.). In so doing, it allows us to quantify the actual contribution of school level determinants related to both ethnic and socio-economic conditions.

We performed, then, two multilevel models for each country. In both models, the dependent variable is students' reading performance, while the independent variables at the individual level (first level) are sex, parents' socio-economic status (educational and occupational level), PISA index of cultural possessions at home (e.g. number of books, dictionaries, etc.) and type of family. At the school level (second level), while the first model considers ethnic composition, the second model takes into account both the ethnic and the socio-economic school composition (for the detailed variables used see note under 1 below table 1). Our purpose is to verify whether ethnic composition is significantly associated with school performances and whether this effect changes after controlling for socio-economic composition.

Synthetic results of the analyses performed are shown in Table 1, where – for the sake of simplicity – only the signs of the coefficient related to school level variables (ethnic and socio-economic composition) are reported.

**Table 1 – Results of 2-level multilevel regression: signs of school-level variables capturing ethnic and socio-economic school composition (\*). Dependent variable: reading performance, 2009 (\*\*)**

Country of residence	Ethnic composition		Socio-economic composition
	(1) Model 1	(2) Model 2	(3) Model 2
Austria	–	<b>n.s.</b>	+
Belgium	–	<b>n.s.</b>	+
Denmark	–	<b>n.s.</b>	+
Finland	<b>n.s.</b>	<b>n.s.</b>	+
France	–	<b>n.s.</b>	+
Germany	–	<b>n.s.</b>	+
Greece	–	–	+
Ireland	<b>n.s.</b>	<b>n.s.</b>	+
Italy	–	<b>n.s.</b>	+
Luxembourg	<b>n.s.</b>	<b>n.s.</b>	+
Netherlands	–	–	+
Portugal	–	–	+
Spain	–	<b>n.s.</b>	+
Sweden	–	<b>n.s.</b>	+
United Kingdom	–	–	+

Notes: (\*) The ethnic composition is proxied by the percentage of immigrants' children *per* school (continuous variable), while the socio-economic composition is proxied by the PISA Index of economic, social and cultural status (ESCS) (continuous variable). As a matter of fact, signs should be read as follows: the negative ethnic composition coefficient implies that the higher the percentage of immigrants' children at school, the lower the school performance; a positive socio-economic coefficient implies that the better the socio-economic conditions of schools, the higher the school performance. (\*\*) n.s. stands for "not significant".

Source: authors' elaboration on PISA-2009

The group composition effect related to students' ethnic background is significantly negative in the vast majority of cases (column 1 – Table 1), thus confirming that a concentration of pupils from a migrant background is associated with lower scores in schools' reading skills. However, once controlled for schools' socio-economic composition, the effect of the ethnic background becomes non-significant for almost all countries (column 2 – table 1), while the socio-economic composition is significantly correlated with reading performances everywhere (column 3 – table 1). This suggests that the better the school socio-economic conditions the higher the school performance in all countries. Our results are in line with other studies performed at a national level with different datasets: see e.g. Fekjaer and Birkelund (2007) on Norwegian upper secondary education; Cebolla-Boado (2007) on French lower secondary school; Cebolla - Boado and Medina (2011) on Spanish primary education; and Brannstrom (2008) on Swedish upper secondary education. Our analysis contributes to the previous literature as it shows the effect of ethnic composition over countries when the same dataset and methodology is applied to all countries.

Our findings, then, strongly suggest that a concentration of immigrants' children in schools should not be an issue of concern. Certainly, there is no evidence for a detrimental effect on student learning in most OECD countries. What needs to be addressed by national policy-makers is the problem of a deprived socio-economic background. It is this that seems to characterize most schools attended by students from a migrant background.

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## Appendix

**Table A1 - Fifteen-year-old students in EU15 states by country of residence and category (sample and weighted data)**

Country of residence	Sample data			Weighted data		
	Children of natives	Children of mixed couples	Children of immigrants	Children of natives	Children of mixed couples	Children of immigrants
Austria	4,993	533	890	66,098	6,022	12,972
Belgium	5,999	1,043	1,203	84,118	14,601	16,741
Denmark	3,986	475	1,276	49,700	4,656	5,062
Finland	5,310	298	128	56,367	2,759	1,547
France	3,133	533	532	491,938	83,792	85,887
Germany	3,290	361	780	507,372	55,506	119,555
Greece	4,084	425	385	75,365	7,986	8,208
Ireland	2,818	613	306	37,619	8,304	4,131
Italy	26,786	2,198	1,549	441,704	31,772	27,279
Luxembourg	1,989	743	1,756	2,147	834	1,992
Netherlands	3,761	371	541	144,154	14,045	21,550
Portugal	5,008	859	324	77,485	12,724	4,995
Spain	21,379	1,679	2,190	319,841	22,771	35,667
Sweden	3,505	491	501	86,184	12,238	12,905
United Kingdom	10,132	859	727	530,419	58,694	68,355
<b>Total</b>	<b>106,173</b>	<b>11,481</b>	<b>13,088</b>	<b>2,970,511</b>	<b>336,703</b>	<b>426,844</b>

Source: authors' elaboration on PISA-2009



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