

The Effect of Integration on Immigrants' School Performance: A Multilevel Estimate

Flavia Fossati

University of Zurich
NCCR Democracy

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Universität Zürich

ETH

Eidgenössische Technische Hochschule Zürich
Swiss Federal Institute of Technology Zurich

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Abstract

Through the analysis of 25 OECD countries, this article seeks to investigate the assumption that political macro level variables such as welfare state systems and immigration-regimes shape the conditions encountered by young immigrants and thus impact on their school performance.

The results show that native students benefit from social-democratic welfare states and immigration-friendly integration-regimes, whereas immigrant students actually suffer under these types of regimes. So while the finding for native students supports the argument found in the body of literature, claiming that social-democratic welfare states lead to a reduction in inequality and to less stratification, the findings for immigrant students suggests that positive discrimination may under some circumstances lead to a counterproductive result.

The argument is tested with a multilevel modeling procedure on three levels (student, school and country) basing on four different data sources (PISA 2006, MIPLEX 2007, Comparative political dataset 2010 and Word Bank Indicators).

Keywords: immigration, welfare state, immigration-regime, education, positive discrimination, integration

Author

Flavia Fossati, lic. phil. I
NCCR Democracy
University Zurich
Seilergraben 53
CH- 8001 Zürich, Switzerland
Telephone: +41 (0)44 634 50 28
Fax: +41 (0)44 634 49 25
ffossati@nccr-democracy.uzh.ch
Website: <http://www.nccr-democracy.uzh.ch/>

New Address as of May 2010

Flavia Fossati, lic. phil. I
NCCR Democracy
University Zurich
Affolternstrasse 56
CH-8050 Zurich, Switzerland
Phone: +41 (0) 44 634 52 01
Fax: +41 (0) 44 634 52 00
ffossati@nccr-democracy.uzh.ch
Website: <http://www.nccr-democracy.uzh.ch>

Introduction

OEDC countries are characterized by conflicting patterns of inclusion and exclusion concerning citizenship and the provision of welfare state benefits to immigrants. In this context two issues have to be dealt with by the host state: one regards political and cultural integration, the other the concession of social (welfare) rights. In western (philosophical) tradition universalism and democratic equality should apply to all citizens, including foreigners. In reality however, welfare state benefits focus specifically on the needs of native population and therefore represent a closed system. But in times of diminishing steering capacity of the nation-states these access-barriers to welfare state benefits are becoming blurred. Consequently foreigners experience odd patterns of partial integration: often excluded from political participation, they benefit from (restricted) welfare state provision, pay taxes and work in the national economy.

The cultural integration of immigrants is of practical relevance, helping to maintain social peace and prevent the formation of an underclass. In different theoretical approaches immigrants are seen as a potential new outsider group due to, for example, their lower educational attainments and their professional placement in the lower service sector (Esping-Andersen 1993).

Problems arising from increased immigration are handled differently in different countries. Sainsbury (2006) and Morissens and Sainsbury (2005) empirically identified differences in the level of generosity and the areas in which welfare state benefits are provided to immigrants. Areas in which discrimination to the disadvantage of immigrants arise are manifold: examples include precarious residence permit status, cultural and/or religious discrimination, limited economic or social assistance, etc.. Out of all the possible inequality dimensions, the following analysis will concentrate on inequality in the educational context. This specific choice has been made considering the importance education has in the modern "*Wissensgesellschaft*". As Geissler (2005) argues education is the central resource allowing participation in economic, political, cultural and social life. Therefore it is an important investment in life-chances and determines the achievable status and possibility for social mobility especially for the young.

Consequently, in the modern, service-oriented economic world, skills and knowledge can be defined as a potential dimension generating inequality (Esping-Andersen 1998; 1993). In fact education is a relevant chance-determining factor not only for natives but especially for foreigners, because it provides immigrants with the possibility of mastering the host country's national language and introduces them to local culture, facilitating social integration and poverty reduction, by allowing successful professional integration. Holger (2004) provides evidence that immigrants with good language skills are less discriminated against when entering the labor market, than trainees with inadequate language proficiency. It follows, that the provision of equal chances in education, as possible in a social-democratic understanding à la Rawls, could help prevent overly dramatic inequalities between immigrants and native citizens, and the social unrest this may provoke.

Recognising that such important consequences for life-chances rest on the educational achievement of young immigrants, the aim of this paper is to analyze the causes of the divergent educational outcomes of native and non-native students in different western democracies. This will be reached by relying on a multilevel approach, which enables the assessment of the impact of macro level variables on pupils' school performance, while additionally controlling for individual and school characteristics.

To answer the question: *how can different school-performances between foreign and national students in different welfare states be explained*, this article will first provide some theoretical insight in the reasons proposed for explaining differences in educational outcomes at country-level (macro). In a following step, a model including all relevant explanatory variables from different aggregation levels will be drawn. After specifying two different sets of hypotheses, various multilevel models will be estimated and empirical evidence will be generated to test the argument. To conclude, the principal findings will be summarized and the work will be critically reviewed, indicating relevant areas for further research.

Theory

The Explanatory Model

<Figure 1 about here>

The argument proposed here is that both *welfare state* characteristics and *national integration-regimes* influence the school-performance of both native and non-native students. This relationship manifests itself in two distinct ways: one by direct influence and the other by influence mediated through the *national educational institutions*.

The first, direct influence on the performance of students manifests itself through a general national context characterized by differing levels of social stratification (welfare states) and integration-friendliness (integration regimes) in different countries. The second aspect influencing the students' results is mediated by the specific organization of the educational system in a particular country, which, shaped by both the national state and the integration-regime, takes a more or less egalitarian orientation. This difference in orientation is described by Dupriez and Dumay (2006) as two ethai: one of *integration* and one of *differentiation*. Thus national school systems can be placed on a continuum from integration-friendly to differentiation adept, as a result of their national imprints.

Welfare State Typologies

Thus, the first relevant macro level variable, situated at the beginning of the chain of causation, as illustrated above, is the welfare state. Originally cultural and economic conflicts or cleavages (Lipset and Rokkan 1967) shape the national political party systems and specific national institutional settings through a process of power-allocation to different ideologies and actors (Esping-Andersen 1998). In a second step, the interaction between institutions and actors gives birth to specific path-dependent institutional patterns, which are stabilized in coherent *welfare state regimes*. Thereafter, welfare state regimes not only are actor-driven institutions but are also long-term institutional arrangements, which interact with the dominant government ideologies. The resulting institutional patterns differ with

regard to generosity of benefit-providing practices, in respect to equality conceptions and notably also in *social stratification* (Esping-Andersen 1998; Huber and Stephens 2000).

The manifestation of equality- or inequality adeptness of a specific welfare state regime can consequently be analyzed according to the generosity of social benefits provisions (decommodification), general stratification outcomes and opportunities for both natives and immigrants.

Theories explaining specifically the situation of immigrants in different welfare states are thus often based on Esping-Andersen's typology of welfare states. Morissens and Sainsbury (2005: 637--641) illustrate that social-democratic welfare regimes lead to less stratified societies first and foremost thanks to higher redistribution. Additionally, this kind of regime is committed to universalistic values, which foster openness towards diversity. These variables, which could be defined as integration-enhancing, are claimed to effect both natives' and immigrants' situations positively.

It is consequently assumed that pronounced generosity and redistribution will positively affect social outcomes in general, and especially lessen discrimination against foreign-born people (Sainsbury 2006). The logic of this argument is that each social stratum, and particularly the disadvantaged, profit from universalistic and generous welfare state benefit provision.

Thus it could be expected that in social-democratic welfare states natives and especially immigrants have improved (life) chances, and can be expected to perform better at school as compared to students in other welfare state regimes.

Citizenship and Integration-Regime Models

The second theoretical approach, seeking to explain the differences in integration chances especially for immigrant students across different countries consists of either citizenship or integration-regime models. *Citizenship models*, as described by Brubaker (2000), concentrate primarily on inclusion and exclusion mechanisms with regard to political participation (voting right) and the formal requirements for obtaining host state citizenship. State practices are distinguished by the author as either being based on *ius soli* or on *ius sanguinis* criteria. Nation states conferring citizenship on the basis of *ius*

solis mainly consider residence criteria and therefore are considered as being less strict in conceding to the guest state nationality or political rights, than countries relying on *ius sanguinis*. More restrictive institutional patterns can be expected to lead to a more stratified society, in which the immigrant population has fewer chances than in countries where their status is quickly adapted allowing them to become a potentially politically active citizen.

Integration-regime models on the other hand, not only focus on legal access requirements (citizenship), but consider a holistic integration perspective, underlining the multidimensionality of the integration concept. Çinar (1999) and Waldrauch et al. (2002) analyzed different legal domains and classified six European countries on a continuum, measuring the integration-friendliness of the regimentation in different areas. They considered; security of residence status, naturalization regimentation, access to the labor market, family reunification ruling, social security rights, civil and political rights, with the aim of covering all relevant aspects of integration-regimes according to, for instance, Castles and Miller (2003) or Freeman (1986; 2004; 2006). Hence, not only the political dimension must be considered, but for a holistic approach cultural (individual vs. group rights) (Koopmans et al. 2005) and social rights dimensions must also be included in the evaluation of the immigration-friendliness of integration-regimes.

Educational Systems' Influence on Integration

Turning now to the mediated impact of both welfare state and integration-regime, *the education system* can be considered as playing a central role (Dronkers and Levels 2007; Levels and Dronkers 2008). One of the core activities of the western welfare state is to provide education. Furthermore, because education spending focuses on the younger stratum of citizens as opposed to old-age spending on pensions and health care, it is the most important long-term investment that a country can make (Lynch 2006). In a more theoretical approach provided by Dupriez and Dumay (2006), the cultural and political context of a nation-state is identified as a determining factor of a specific school structure. They concretely differentiate between an “ethos of differentiation” that is characteristic for countries as Luxemburg, Switzerland or the Netherlands, and an “ethos of integration” represented by

Scandinavian states. These different cultural understandings affect social inequality not only among native students but are expected to particularly influence the integration mechanisms affecting students of immigrant background. Institutional discrimination and the social composition of schools either encourage the classification of non-nationals as “normal” and part of the system, or lead to their exclusion in terms corresponding to an ethos of differentiation, inflicting their educational career with important restrictions and closures.

Hansen and Wenning (2003) further concretize the link between educational system and nation-state. The authors claim that the development of an education system has to be related to nation-state formation and to the positions countries have adopted towards immigrants during the course of history. In this process, the role assumed by the school system in nation-state development was one of homogenization of the national language and culture. Consequently it was placed at the front line in dealing with integration issues. Therefore the role assumed by the educational system is to implement national political decisions concerning immigrants in scholar integration or exclusion measures. Therefore, the conclusion can be drawn that nation-state formation influences not only the welfare state system organization, but also the integration or differentiation ethos characterizing the different integration-regimes, and above all that a specific *integration logic* characterizing a country, plays a central role in the national *education system*, and thus determines the chances of native students and students with an immigration background.

In an educational context, a generous welfare state providing schools with the possibility to offer additional schooling, e.g. language courses or accessory coaching, could significantly enhance the performance of immigrants. This theoretical framework can therefore help to identify and account for the general “equality or inequality ethos” in different western democracies.

In summary, according to the theoretical argument, the successful performance of immigrant students in particular depends heavily on country-level characteristics. In fact, student performance depends above all on the integration-regimes and their distinct integration logic. Also, the welfare state influences the general social context students and their families are confronted with and these

variables interact, shaping the specific school structure. The macro level variables have not only a direct effect on the performance of the students, but also a mediated influence through the educational system. Therefore it can be argued that schools, even though structurally belonging to the meso level, are an important indicator of the “integration ethos” of a country.

The last variables in the causal chain, which explains the nature of the variables influencing school-performance, are micro-level characteristics. According to sociological literature the most important effects are located in: family background, immigration status and language spoken at home (Levels and Dronkers 2008; Dronkers and Levels 2007).

Institutional Discrimination

The argument presented above assumes that additional investments in social equality and more respect for cultural otherness automatically lead to enhanced integration results. Considering a different approach to the theory elucidated above, the discourse on equal opportunities of immigrant students, can be embedded in a *general theory of discrimination*. In this context a body of sociological and political science literature questions the efficacy of integration initiatives that seek to enhance the outcomes of immigrants. More precisely, the institutional discrimination literature concludes that under some circumstances, positively-intended integration measures may actually lead to an increase in the discrimination they originally intended to reduce. It is thus a well-known phenomenon that positive discrimination can generate disadvantages (Gomolla and Radtke 2002: 264). The logic behind this argument is that through provision of specific tuition in special classes, already underperforming students are segregated from their native and better performing colleagues, and thus “banished” into outsider groups, where deprived of a stimulating environment, they fail to progress. As an example, the only achievement of special language classes that differentiated curricula for students from immigrant families, or with problematic backgrounds, was to separate these students from the rest and place them in lower-achieving groups. Furthermore, in other studies it has been shown that immigrant students allocated in classes with an on average lower socioeconomic background or with a higher proportion of foreigners, underperform markedly (Diefenbach 2004; Solga and Wagner 2004). Thus,

on the whole, measures intended to enhance students' performance with the help of special training, actually had counterproductive effects.

Koopmans and his collaborators (2005) present an analogous argument and point to the same (negative) consequences with respect to the multicultural policies adopted in the Netherlands. In this country, special attention was devoted to the concession of cultural and religious group rights to immigrant populations. However, the stressing of diversity, even though performed under a well-intentioned frame of respecting other cultures, actually increased the disadvantages immigrant people were exposed to. In fact, the choice of ethnic criteria as a base for furthering special policies, made immigrants more “i-identifiable” and thus lead to a racialization of social relations. The ultimate consequence was a ghettoization of immigrants into something resembling diaspora-communities, and segregation from the native population (Koopmans et al. 2005: 14--15). Thus multicultural policies resulted in enhanced segregationist tendencies instead of facilitating integration.

The institutional discrimination literature therefore challenges the idea that the more generous the measures taken to further integration, the better the results. In the light of this, the present empirical research will first and foremost seek to investigate the direction of the influence of national institutions on the performance of native and especially non-native students.

Hypotheses

Based on the previously presented theoretical argumentations, it is possible to define *two sets of contrasting hypotheses*. On one hand lies the theoretical framework, which argues that integration-friendly environments lead to enhanced performances of immigrant students, and on the other hand a body of literature can be found arguing that positive discrimination may lead to counterproductive results.

The first set of hypotheses postulates a *positive* relationship between social-democratic welfare state regimes, or integration-friendly immigration regimes and the school performance of students from an immigration background. Firstly, it can be expected that welfare states defined as social-democratic in Esping-Andersens' sense, generally result in improved student performance at school. More precisely it can be expected that in these countries students from an immigration background perform better than their colleagues in liberal, corporatist or in eastern democracies (Esping-Andersen 1998: 52; Sainsbury 2006; Morissens and Sainsbury 2005).

Secondly, it can be expected that in countries where the immigration regime is integration-friendlier, and where foreigners can be expected to be better integrated, also their children will perform better at school than their colleagues in countries, where the immigration regime is closed or restrictive.

Even though immigration regimes are institutions typically affecting the immigrant population, it can be argued, that also native students profit from more integration-friendly settings, or at least their learning progress is not obstructed.

This relationship can then be transposed to the principal sub-dimensions characterizing immigration regimes, those of: political participation, naturalization policies, anti-discrimination measures, access to national labor markets, family reunion policies and the obtainment of long-term residence permits, generating a set of six sub hypotheses. Consequently, it can be hypothesized that in countries where these immigration regime dimensions allow a facilitated integration, outcomes concerning people from immigrant backgrounds should be substantially and significantly better with the consequence that young immigrants' educational performance is improved.

Of course not all of the above cited dimensions of integration are equally important in explaining school performance. It can be anticipated that the provision of political rights, naturalization policies, and measures taken against discrimination should have the greatest impact on the enhancement of immigrant students' chances.

In contrast, the institutional discrimination literature hypothesizes a *negative* relationship between both social-democratic welfare state incumbency and integration-friendly immigration regimes and school

performance. Hence, although the institutional measures developed by generous welfare states and integration-friendly immigration regimes aim to enhance the performance of native and immigrant students, the measures taken will generate counterproductive results. In this framework the integration-enhancing measures, and the additional resources dedicated to the integration issue, will ultimately result in a lowering of students' performances, especially students from an immigrant background. The reasons for the expected underperformance of non-native students in such settings can be attributed foremost to the increase of social segregation in both society and in schools, and the easier identifiability of immigrant students as different, leading to stigmatization.

Data, Operationalization and Method

The empirical analysis of the influence of social-democratic welfare states and integration-friendly immigration regimes on the performance of native and immigrant students is based, with the aim of measuring individual educational performance and school-level characteristics, on the PISA survey 2006. With regard to country-level data, data from MIPEX 2007, the World Development Indicators of the World Bank and the Comparative Political Dataset were considered (Armengeon et al. 2009; World Bank 2009; MIPEX 2007; OECD 2006a).

The PISA survey measures the school performance of students at age 15 in the OECD countries in different disciplines. Moreover information concerning students' background and school, or teacher information, is collected. PISA is the most comprehensive dataset including variables describing social outcomes, which also allows a precise identification of the language spoken at home, helping to differentiate between native and immigrant students. This characteristic is often absent in other datasets that capture indicators relevant for social research questions connected to immigration issues. To measure the degree of immigration regime integration-friendliness, this analysis relies on the MIPEX-Index, which is based on an expert survey (Niessen et al. 2007). MIPEX compares immigration practices in the 25 EU-countries and in Canada, Switzerland and Norway. For each country included, two national experts were asked to evaluate the integration-friendliness of specific legal regulations. The indexes are composed using a total of 140 questions concerning six different

policy areas (labor market access, family reunion, long-term residence, political participation, access to nationality and anti-discrimination)¹. Each of the 140 questions is answered with the allocation of a value from 1 (not integration-friendly) to 3 (integration-friendly). Then a standardized mean value for each policy domain in each country is calculated.

The dependent variable measures the *general school performance* of a student. It consists of the mean of the score that students reach in mathematics, reading and science, whereby each of the discipline scores itself results of an averaging of five plausible values².

The choice of the variables measuring immigration background, language spoken at home and gender was rather straight forward. The variable, socioeconomic status, is a composite measure available as an index in the PISA dataset, and includes the highest educational level of the parents, their highest occupational status (father or mother) and the index of home possession (OECD 2006a: 333). This variable it is accordingly a precise operationalization of Bourdieu's concept of socio-cultural capital (Bourdieu 1966; 1983). At school level only the average socioeconomic status of the pupils (for each distinct school) was included. This variable captures the effect of positive peer-group influence thus indirectly describes the nature of the "integration ethos" as theorized by Dupriez and Dumay (2006). According to Huber and Stephens (2000), there are two actors that play a substantial role in promoting the development of a social-democratic welfare state; the left and women. Thus, an indicator capturing these two fundamental players was included in the model as a proxy to capture the social-democratic orientation of the welfare states studied: the mean left government incumbency and the mean share of women in parliament from 1990 to 2007, which are drawn from the comparative political dataset (Armingeon et al. 2010). Moreover, the effect of a dummy-control variable for the social-democratic countries (Finland, Norway, Sweden and the Netherlands) was modeled.

To measure the integration-friendliness of the immigration regimes, the general MIPEX score and the six scores for the sub-dimensions were included. Furthermore, to control for a possible source of endogeneity, the share of immigrants in the different countries, based on the World Development Indicators of the World Bank, were employed (World Bank 2009).

Combining these four data sources, a dataset allowing multilevel modeling at three levels was computed. The first level consists of students ($N=137668$), the second level refers to schools ($N=5502$) and the last level refers to countries ($N=25$). Unfortunately some constraints regarding the analyzable cases were present due to data-restriction. MIPEX 2007 consists of data for the 25 EU countries, Canada, Norway and Switzerland. Regrettably Cyprus, Malta and France had to be excluded because they were missing.

In the literature, the problem of small samples at the macro-level is frequently discussed. Langer (2007: 15) defines a criterion of at least 10 cases pro macro-level parameter necessary for adequate estimation results. Another issue regarding countries as higher level groups is that they often do not represent a random sample of cases and thereafter should not be included in multilevel models. The methodical assumption behind this statement is that without a random selection procedure the residuals might not be normally distributed. The analysis shows, that in the present case the residuals at their highest level are almost normally distributed and therefore should not cause difficulties. Normal distribution has also been controlled for at individual and school level, moreover in the asymptotes these assumptions have less far-reaching consequences, due to the high number of cases included, which in the present analysis are 5500 schools and 137668 students.

The choice of method to apply emerges from the specific data structure. In fact the chosen multilevel-model estimation technique permits us to control for the amount of variance explained by variables at each level (micro, meso and macro). Unlike in simple OLS estimations, robust estimates of standard errors can be achieved, which consequently do not lead to overestimated test-statistics (Rabe-Hesketh and Skrondal 2008). The current analysis will be based on estimates of random intercept models with constant variance function at all levels.

The formula for the multilevel models estimated consists of variables on three different levels (i indicating student level, j school level and k country level) and an intercept term, which is allowed to vary randomly, generating residuals at three levels (v , u , e). These random terms allow for the evaluation of the model fit and the explained variance at each distinct level.

$$y = \beta_{0ijv} \text{cons} + \beta_1 x_{1i} + \beta_2 x_{2ij} + \beta_3 x_{3ijk}$$

$$\text{cons} = \beta_0 + v_{0k} + u_{0ik} + e_{0ijk}$$

The decision to estimate random-intercept models was based on both methodological and theoretical considerations. Firstly, a Hausman-test was performed to assess if a random effects estimation can be methodically justified, or if the analysis should be performed with fixed effects. The result of the Hausman test is significant, accordingly it would be advisable to estimate fixed effects models. But considering the present hypotheses, this is not a logical way to proceed. As Snijders and Berkhof (2008) note, the decision to use random or fixed effects should not only rely on the group mean test, which simply compares the variance between and within countries, but should also be based on theoretical considerations. In the present analysis this problem has been accounted for by estimating fixed and random effects and by comparing the individual-level coefficients. As they do not differ in amount or in significance, the decision was made to estimate a random-intercept model. As for the specification problems indicated by the Hausman test, they were accounted for, including the school means, and modeling the individual-level variables as deviance from the respective school means. Thus the coefficients representing the means of the variables act as fixed effects and by including the mean of each variable, the remaining “deviance” term is uncorrelated with the grouping effects (Rabe-Hesketh and Skrondal 2008).

The major drawback of this method is that the intercept term becomes very difficult to interpret because it now represents the mean average deviance for each student from the respective school mean. However, the interpretation of the coefficients for the single regression parameters remains the same.

The Influence of Social-Democratic Welfare States on the School-Performance of Students across 25 OECD Countries

The general model shown in Table 1 (Model 1) includes gender, socioeconomic status, immigration status (first or second generation student) and language (foreign or a national language other than the test language) at student level, and mean socioeconomic background at school level. The estimation of country-level parameters was restricted to including only one variable at the time in this general model, due to the relatively small sample size at country-level. Table 1 shows the effect of the first country-level parameter, the incumbency of left partisanship, whereas the values estimated for the other ten macro level effects are displayed in Table 2.

To test the different hypotheses, three different sets of multilevel regression models were estimated. Firstly, eleven different models were estimated for the whole sample of students including native students and students from an immigrant background (Table 1, Model 1 and Table 2, Model a). Additionally, for both groups (natives and immigrants) the models were re-run separately in order to better identify differences in variable effects, without needing interaction models.

In Table 1 first the parameters for the variables included are shown (fixed part), followed by a section dedicated to the random terms, i.e. the unexplained variances at the different levels.

<Table 1 about here>

The present research emphasizes the importance of the *country level variables*, which are postulated as determining whether students in different national contexts benefit or suffer disadvantage independently of their individual ability and family background. From the results displayed in Table 1, it can be observed that the country-level observations have a rather small random variance, and accordingly can add little explanatory power to the overall model, as compared to the variance explainable at student- or at school level. In fact analyzing the nesting structure, only 2-5% of the overall variance is due to grouping effects derived from the differences between countries (Models 2 and 3). This suggests that differences between countries in students' academic performance are systematically small. The grouping effect exerted by the school-level variable instead turns out to be more powerful, and hence variables at meso level bear a big explanatory potential for the general

school performance of a student. In fact, influence or rather the “homogenizing” effect schools exert is conspicuously higher (34-36%) than the effect at country-level (2-5%). This finding is especially interesting in the light of the fact that schools are institutions created by the different nation states, and that schools’ influence on performance is thus highly likely to be influenced by the regimentation of the countries. Therefore, the hypothesis that welfare state and integration-regimes' influences on school-performance are mediated by educational institutions can be upheld.

Interpreting the results in Table 1, it is interesting to note that the coefficient measuring the mean left incumbency is negative. Hence the second set of hypotheses, postulating a *negative* relationship between social-democratic welfare state incumbency and school performance are empirically supported. In fact, a high left incumbency over the last 20 years actually sees a decrease in the overall performance of students. This negative relationship is neither significant for *all students* (Model 1), nor for the subset containing only the *native students* (Model 2). Instead, it is significant for students from an immigrant background (Model 3), effectively decreasing the performance of non-native students by 0.37 PISA-points for each additional percent of mean left incumbency in parliament. For instance, when the effect of social-democratic incumbency is compared between the countries with the lowest (Canada) and the one with the highest share of left representatives (Sweden) the difference amounts to 28 points. The more a country devotes attention to integration issues and is prone to seek a less stratified and thus more egalitarian society, the worse foreign students seem to perform. This result confirms the observation made by Koopmans and his collaborators (2005), which identified the Dutch multiculturalist approach as leading to a more segregated and thus less egalitarian society. This finding for students from an immigrant background is further emphasized by the second variable measuring social-democratic incumbency i.e. the share of women in parliament. While this variable has a significant and positive influence on the performance of all students and on native students, it has a negative, although a not significant influence on the performance of immigrant students (see Table 2 below). Thus it can be concluded that for students from an immigrant background, left incumbency and a higher share of women in parliament in general have a negative influence on their educational outcome. The body of literature, which criticizes positive institutional discrimination, is

accordingly shown to have valid arguments because, when considering the direction of the relationship of the variables capturing the effect of social-democratic welfare states they can be shown to have a negative effect on the performance of immigrant students.

However, the picture for *native* students is more differentiated. In fact, they seem to perform better in countries with a higher share of women in parliament and consequently more social-democratic oriented. For instance, comparing Greece with 8.2% share of women in parliament and Sweden (42%), an achievement difference of 30.5 points results. Native students in Sweden accordingly perform 30.5 PISA-points better than native students in Greece. The influence of the left, although not significant, instead seems to contradict the effect of the impact of the share of women in parliament. Finally, controlling the results with a dummy variable for social-democratic countries (Sweden, Norway, Denmark and the Netherlands), this overall impression can be confirmed. Whilst native students benefit 17 points from the welfare arrangement in these countries, the immigrant students underperform (although not significantly).

Thus it seems that in countries with a social-democratic welfare state, the effort to increase equality of opportunities with the goal of a less stratified society positively affects the performance of native students, but not that of immigrant students.

Lastly, a control variable for the number of immigrants in a country was introduced to control for a possible source of endogeneity. In fact, it was expected that especially in countries with a high share of immigrants, the governments might experience difficulties with the political integration of foreigners. This does not seem to be the case, because both the subsets for native and immigrant students do not show significant results, and interpreting the sign of the relationship, it can be noted to the contrary that a higher total number of immigrants in a population, seems to increase the overall performance of immigrant students.

The Influence of Immigration Regime Integration-Friendliness on the School Performance of Students across 25 OECD Countries

<Table 2 about here>

Turning to the second set of specified hypotheses, the effect of integration-regimes is tested. In general, when considering the results for *all students*, the totality of the macro variables have a positive influence on school performance, although not always a significant one. The only exception is the indicator “anti-discrimination”, which shows a negligible negative and not significant effect. In general, the argument stating that countries acting according to the “ethos of integration” display an increased school performance seems to be applicable. In this sense, the most interesting finding is the coefficient concerning the accordancy of the *political participation rights*, which has a positive and significant effect on the school performance of students across the 25 OECD countries. For each additional point that a country achieves on the MIPEX-Index for “political participation”, the student’s performance increases by 0.28 points. In fact, the variance between for example, Sweden (93 MIPEX-Points) and Latvia (11 MIPEX-points) adds up to a difference of 23 points. The same observation can be made for the granting of *host-state nationality*. Also in this context, an integration-friendly regimentation has a positive effect on students’ performance, however the overall effect of this variable is less pronounced because of its smaller variation between countries. As a consequence, it contributes to a difference of only 20 points between students in Sweden (71) and students in Austria (22).

The analyses, which considered all 137668 students, seem to confirm the logic of the hypotheses stating a positive relationship between a more integration-friendly regime and better school outcomes, even though the significance criteria are not always fully met. Moreover, the sub-hypothesis stating that political participation, the granting of nationality and anti-discrimination measures, are the most relevant dimensions of the MIPEX-Index, can be at least partially underpinned.

Turning to the models considering *only native students*, the general trends can be confirmed. In fact all coefficients, except those for anti-discrimination, have a positive effect on native students’ school-performance. The most interesting findings are on the measures apt to facilitate the political

participation of immigrant populations and the granting of citizenship to foreigners. Both these explanatory variables significantly enhance native students' achievements.

In contrast, considering the result for the *non-native students* the picture that can be drawn is quite different. In general, the more an immigration regime endeavors to facilitate integration, the worse non-native students seem to perform. The only exceptions to this general negative relationship are initiatives that facilitate the obtainment of the host state nationality and measures against discrimination. However, the influence of the latter is so small that it can be considered negligible.

Regrettably, none of the macro-level indicators measuring the integration-friendliness for the subset containing immigrant students is significant and therefore no assured facts can be extrapolated from this analysis. Hence, the finding that native students in particular benefit from both a more egalitarian welfare state and an integration-friendlier immigration regime is consequently supported. In fact, the only positive relationship shown by the integration-regime variables for the immigrant student subset are not significant.

Furthermore, some general remarks about the models can be made. Analyzing the nesting structure of the data, 34 to 36% of the variance at individual-level can be explained by the allocation of the students in different schools (Intra School-Correlation). In contrast, the "homogenizing" effect of the countries is shown to be much lower; only 2% of the variance for the immigrant and 5% of the variance for the native students can be ascribed to systematic differences between the countries.

The models were tested for significance in a stepwise procedure, first including only the individual level variables and then school and country level variables. All these different steps are significant according to the deviance statistic, and thus the specified models are more powerful compared to the intercept-only model. Generally, the different models explain about 16% of the variance when including individual and school level variables, the different country level variables are generally able to add more or less 1% to the overall explanatory power of the model so as to reach about 17%.

Summing up the results, it can be concluded that the positive influence that social-democratic welfare states and integration-friendly immigration regimes were expected to exert on students' school

performance is found to hold true, for both the general analysis and the subset of *native* students. In fact, except for the anti-discrimination measures (negligible) and left incumbency (not significant), all other variables show a positive relationship at least by trend. Instead, when the subset for the students from an immigrant background is considered, the second set of hypotheses, which predicted a negative influence from both social-democratic welfare state and integration-friendly immigration-regimes are corroborated. Indeed, except for granting of host-state nationality (not significant), all other variables have negative or negligible positive influences on immigrant student performance. In this subset, the most interesting, and only significant finding, is the influence of left incumbency, which is shown to have a significantly negative effect on the school performance of immigrant students.

The influence of Individual- and School-Level Variables on the School-Performance of Students across 25 OECD Countries

Briefly assessing the impact of the individual level variables, the findings are revealed to be consistent with those of former research. Speaking a foreign or another national language, and especially belonging to the first immigration generation leads to underperformance. Instead being a *female* and belonging to a higher socioeconomic class has a positive effect on the average achievement (OECD 2006a; OECD 2006b; Dronkers and Levels 2007; Levels and Dronkers 2008).

Interestingly the most important variable able to explain school performance is situated at meso-level (*schools social background*). This variable appears to capture the positive effect of a competent learning climate and peer-groups with generally higher performing students (Andersen 1982; Zimmer and Toma 2000). The positive and significant effect of this variable adds impressive support to the sociological argument that in countries where there is a highly selective school system, only the elite will benefit from a more stimulating environment, and this will lead to segregation and inequality. In fact, in schools where the majority of students emanate from lower socioeconomic backgrounds, the outcome will be drastically lower allowing these students no chance to catch up. Consequently for lower performing students it would be more advantageous if the influence of the mean socioeconomic status could be reduced. This is especially true for students, who are already disadvantaged because of

their immigrant status and who also can often be expected to belong to lower social classes. In fact, their additional exposure to a less stimulating peer-group structure adds one more variable to the accumulation of disadvantages they face.

The most important influencing factor is thus environmental. It follows that the indirect influence countries have on academic performance though the educational structure is higher than its other direct modes of influence.

Conclusion

Students from an immigrant background are known to perform worse than native students, and the sociological sources causing these inequalities have been systematically studied (OECD 2006b).

Considering inequality from a political scientist's perspective, the most important question arising out of this empirical puzzle is: how can the political actors and the institutional settings explain the differing amounts of underperformance among immigrant students between the OECD-countries. This question can be analyzed with two different theoretical approaches. On the one hand there is evidence showing that social-democratic welfare states and integration-friendly immigration-regimes could reduce the social stratification, leading to a more egalitarian society and consequently to better outcomes for weaker students. On the other hand, institutional discrimination literature argues, that under some circumstances positive discrimination may lead to counterproductive results. The empirical evidence shows that the influence of the macro-level settings has to be differentiated according to the student subset considered. Whereas for the whole sample including *all students*, and the subset including only the *native* students, the first set of hypotheses, postulating that social-democratic welfare states and immigration-friendly integration-regimes positively affect the school career of the pupils, can be supported. For the students from an immigrant background a very different story appears. The empirical analysis for this group of students supports the second set of hypotheses, which postulated a negative influence of both an integration-friendlier immigration regime and a welfare state prone to encourage a more egalitarian social structure. Thus the theoretical arguments of Morrissens and Sainsbury or Dupriez and Dumays could not be corroborated for the case of non-

native students. In this case, the body of sociological literature including Gomolla and Radtke (2002), and the argument made by Koopmans et al. (2005) seem to make a good point. In fact the performance of immigrant students turned out to be negatively influenced by all macro level variables (although not always significantly) except for the MIPEX variables “general”, “nationality” and “anti-discrimination measures”. All the variables that have by tendency a positive effect, are however far from significant, moreover “general” and “anti-discrimination measures” are negligible.

Therefore, it seems that the different integration measures performed by the countries analyzed miss the target group (foreign students), and instead primarily increase the performance of students belonging to the national majority. This provides a relatively strong case for the argument that positive discrimination may, under some circumstances, lead to counterproductive results.

Considering the effect of the control variables, it can be concluded that belonging to a family with high socioeconomic status, having a higher cultural capital and speaking the official national language, provides an advantage to native children compared with students from an immigrant background, and enhances their general school performance. For what concerns non-natives, it is shown that first-generation students perform worse than second-generation students, but that the latter still do not reach the performance level of their native peers. Furthermore, the school-level variable confirms the theoretical assumptions that a stimulating environment leads to higher achievements. For both foreign and native students it is beneficial to attend a school with a high average socioeconomic-status level. Unfortunately this implies that in countries where there are schools with a much higher average socioeconomic background, there probably will also be some with much lower average backgrounds, leading to a strong stratification, which is not advantageous for poorly performing students because it carries the risk of segregation.

In conclusion there is still need for further research. The results found in this analysis require deeper analysis. In fact with respect to the MIPEX-Index is not possible to differentiate precisely enough between the inclusion arrangements so that the evaluation of integration-regimes in all their complexity, remains only tentative. Another point that is worth considering, is the relevance of the

different cultural contexts and public opinions in interaction with the political framing of the “immigration issue”, to explain levels of openness and enhanced integration efforts towards foreigners.

It would also be interesting to take a closer look at school structures, which have been shown in this article as having the highest impact on academic performance. A possible approach would be to analyze in detail a sample of countries belonging to different *integration-differentiation ethoses* in order to spot national differences in school organization, and thus confining the analyses to two levels (student/school). By doing this indicators for the specific nationality of immigrants could be included in order to analyze in more detail the integration of different national minority groups, and the interaction of low socioeconomic status with other discriminatory patterns.

Notes

¹ See Annex, Table 3, page 27.

² For a detailed description of the plausible value computation see OECD 2005: 72-80.

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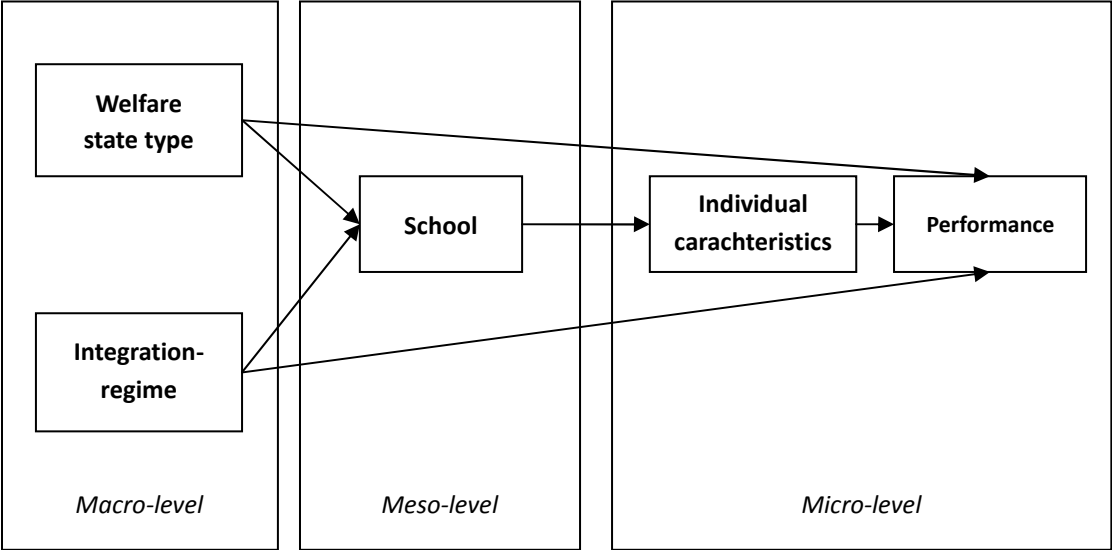
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Tables and Figures:

Figure 1: The Model Explaining School-performance of Students from an Immigration

Background



Source: own illustration

Table 1: Micro, Meso and Macro-Level Effects on the General School-Performance of Different Student Subsets

| | (1) | | (2) | | (3) | |
|---------------------------|--------------------|-----------|--------------------|-----------|--------------------|-----------|
| | All Students | | Native Students | | Immigrant Students | |
| | <i>Coefficient</i> | <i>se</i> | <i>Coefficient</i> | <i>se</i> | <i>Coefficient</i> | <i>se</i> |
| Fixed | | | | | | |
| Intercept | 505.21*** | (9.12) | 505.43*** | (9.37) | 499.36*** | (7.42) |
| <i>Individual Level</i> | | | | | | |
| Female | 3.52*** | (0.34) | 3.67*** | (0.39) | 4.46** | (1.44) |
| Socio-Economic Status | 19.88*** | (0.23) | 19.86*** | (0.24) | 23.62*** | (0.80) |
| Immigration (Second) | -12.66*** | (1.08) | | | | |
| Immigration (First) | -23.08*** | (1.19) | | | -10.59*** | (1.62) |
| Foreign Language | -19.72*** | (1.17) | -29.34*** | (2.29) | -14.35*** | (1.68) |
| Other National Lang. | -3.57*** | (0.94) | -2.74** | (1.02) | -17.55*** | (3.63) |
| <i>School Level</i> | | | | | | |
| School Socio-E. Status | 47.54*** | (2.98) | 45.41*** | (2.97) | 52.61*** | (5.65) |
| <i>Country Level</i> | | | | | | |
| Left incumbency | -0.23 | (0.22) | -0.22 | (0.22) | -0.37* | (0.17) |
| Random | | | | | | |
| Var. Student | 4163.57 | | 4120.60 | | 4465.19 | |
| Var. School | 2105.77 | | 2072.70 | | 2245.35 | |
| Var. Country | 305.74 | | 323.55 | | 146.24 | |
| Intra-School Correlation | 36.68% | | 36.77% | | 34.88% | |
| Intra-Country Correlation | 4.65% | | 5.00% | | 2.13% | |
| Log-Likelihood | -775968.08 | | -715345.18 | | -61324.84 | |
| N Students | 137668 | | 126980 | | 10688 | |
| N Schools | 5502 | | 5489 | | 2851 | |
| N Countries | 25 | | 25 | | 25 | |

Source: PISA 2006; MIPEx 2007; Comparative political Dataset, World Bank 2009; own calculation
Controlling for school means of the individual-level variable, shown only significant ones.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table 2: Macro-Level Variables Effects for Different Student Subsets

| Different macro-level variables | (a) All students | | (b) Native Students | | (c) Migrant Students | |
|--|-----------------------------|-----------|--------------------------------|-----------|---------------------------------|-----------|
| | <i>Coefficient</i> | <i>se</i> | <i>Coefficient</i> | <i>se</i> | <i>Coefficient</i> | <i>se</i> |
| <i>Social-democracy</i> | | | | | | |
| Left incumbency | -0.23 | (0.22) | -0.22 | (0.22) | -0.37* | (0.17) |
| Women parliament | 0.85* | (0.35) | 0.91* | (0.36) | -0.24 | (0.34) |
| <i>Control variable</i> | | | | | | |
| S-D Dummy | 16.85° | (9.427) | 17.37° | (9.65) | -1.45 | (8.86) |
| <i>Integration-Regime</i> | | | | | | |
| General-Index | 0.36 | (0.26) | 0.38 | (0.27) | 0.005 | (0.24) |
| Participation | 0.28* | (0.03) | 0.29* | (0.03) | -0.08 | (0.13) |
| Nationality | 0.43° | (0.23) | 0.43° | (0.23) | 0.28 | (0.20) |
| Anti-discrimination | -0.09 | (0.18) | -0.09 | (0.19) | 0.02 | (0.16) |
| Labour | 0.16 | (0.18) | 0.18 | (0.18) | -0.06 | (0.16) |
| Long-term | 0.28 | (0.47) | 0.31 | (0.44) | -0.55 | (0.32) |
| Family | 0.14 | (0.24) | 0.13 | (0.25) | -0.02 | (0.21) |
| <i>Control variable</i> | | | | | | |
| Immigrant share | 0.34 | (0.55) | 0.34 | (0.55) | 0.50 | (0.46) |
| N Students | 137668 | | 126980 | | 10688 | |
| N Schools | 5502 | | 5489 | | 2851 | |
| N Countries | 25 | | 25 | | 25 | |

Source: PISA 2006; MIPEX 2007; Comparative political dataset, World Development Indicators 2009; own calculations.

Adaptation of Model 1, 2 and 3; shown only the respective macro level parameters.

° $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Appendix

Table 3: Sub-Areas of the MIPEX-Index

| | |
|--------------------------------|--|
| Labour Market Access | <ol style="list-style-type: none">1. Eligibility2. Labour market integration measures3. Security of employment4. Rights associated with status |
| Family Reunion | <ol style="list-style-type: none">1. Eligibility for the sponsor2. Eligibility for the whole family members, conditions for the acquisition of the status3. Security of the status4. Rights associated with this status |
| Long-Term Residence | <ol style="list-style-type: none">1. Eligibility2. Conditions for acquisition of status3. Security of this status4. Rights associated with this status |
| Political Participation Rights | <ol style="list-style-type: none">1. Formal political rights2. Informal political rights3. Presence of consultative and advice bodies4. Implementation policies |
| Nationality Obtainment | <ol style="list-style-type: none">1. Eligibility2. Conditions for acquisition of the guest state nationality3. Security of status4. Regulation of dual nationality |
| Anti-Discrimination Measures | <ol style="list-style-type: none">1. Definitions and concepts2. Application fields3. Enforcement4. Equality policies |

Source: Table according to Niessen, Huddleston and Citron 2007.

Table 4: Descriptive Statistics

| Variable | Mean | Std. Dev. | Min | Max |
|----------------------------|-------------|------------------|------------|------------|
| General School Performance | 507.61 | 86.04 | 114.23 | 849.12 |
| Female | 0.50 | 0.50 | 0 | 1 |
| Socio-Economic Status | 0 | 0.90 | -5.67 | 3.31 |
| Immigration (Second) | 0 | 0.19 | -0.61 | 1 |
| Immigration (First) | 0 | 0.18 | -0.96 | 0.99 |
| Foreign Language | 0 | 0.20 | -0.84 | 0.99 |
| Other National Language | 0 | 0.24 | -0.86 | 1 |
| School Socio-E. Status | 0.09 | 0.22 | -2.21 | 1.37 |
| Left Incumbency | 37.07 | 18.44 | 0 | 76.41 |
| Social Democracy Dummy | 0.10 | 0.31 | 0 | 1 |
| Woman Share | 19.81 | 7.98 | 8.25 | 41.47 |
| Immigrant Share | 9.94 | 7.09 | 1.60 | 33.10 |
| General MIPEX | 57.66 | 11.74 | 30 | 88 |
| Labour | 66.64 | 19.59 | 20 | 100 |
| Participation | 46.85 | 22.00 | 11 | 93 |
| Nationality | 46.57 | 14.71 | 22 | 71 |
| Anti-Discrimination | 58.27 | 18.53 | 22 | 94 |
| Family | 62.24 | 13.97 | 34 | 92 |
| Long-Term Residence | 61.94 | 8.54 | 39 | 76 |

Source PISA 2006, MIPEX 2007, Comparative political Dataset 2009, World Bank 2009; own calculations.