

# Immigration, Naturalization, and Discrimination: Combining a Natural Experiment with a Large-Scale Trust Experiment in Schools\*

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## Abstract

For many immigrant-receiving countries, success in integrating children with migrational backgrounds has become a critical factor for future economic growth and social cohesion. A fundamental, but difficult to study, aspect of integration pertains to interpersonal relations between immigrants and natives. To shed light on this issue, we have (i) conducted a trust experiment with roughly 4,400 adolescents in 57 German schools; (ii) allowed participants to condition their strategies on the migration background of their opponents; and (iii) combined the experimental data with individual background information from an extensive socioeconomic survey. In a first step, we document an interesting, heterogeneous pattern of discrimination: children with migrational backgrounds strongly discriminate in their trust decisions against their native peers but not (or to a much less extent) *vice versa*. On inspection, this discriminatory behavior turns out to be statistically unjustified, not driven by wrong stereotypes, and it involves a sacrifice of money. Thus, we argue that it reflects a taste for discrimination. In a second step, we use multivariate regressions to identify family background factors that have explanatory power for variation in our discrimination measures. Lower discrimination levels are explained in part by parental education for native children and by intra-household use of the host country's language for immigrant children. In a final step, we turn our attention to institutional factors potentially affecting discrimination. Our design allows us to exploit a natural experiment in Germany which saw the introduction of an increasingly common, but still highly contentious, integration policy: *birthright citizenship*, which automatically grants children born to foreign parents the nationality of the host country. We find that the policy substantially reduced the degree of discrimination among male immigrants, but not among females. Additionally, we provide evidence suggesting that the main channel for this effect is not an adjustment of social identity, but an improved educational integration of immigrant males.

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## I. EXTENDED ABSTRACT

Immigration has put many developed countries on a new demographic path. Immigrant children, in particular, make up a large and growing proportion of youth populations around the western world. As a result, many scholars and policy makers argue that success in integrating immigrant children will be a crucial nation-building tool for years to come. From a research perspective, it underscores the importance of assessing integration outcomes of immigrant children and testing the success or failure of policies in this field.

A fundamental, but difficult to study, aspect of integration pertains to inter-personal interactions between immigrants and natives. Many such interactions, from basic activities of everyday life to workplace cooperation to business transactions, involve informal relationships on the basis of trust. Without this building block—i.e., when individuals distrust or discriminate against each other—this informal structure will break down, causing substantial transaction costs (Fukuyama [1995], Putnam [2000]). Evidence in support of this argument indicates that trust can have a positive impact on a wide range of macroeconomic and microeconomic outcomes (Knack and Keefer [1997], Slemrod and Katuščák [2005]). At the same time, there are studies showing that ethnic cleavages in communities or societies at large are inimical to trust (Zak and Knack [2001], Alesina and La Ferrara [2002]).

Connecting this back to our introductory paragraph, if we are to get a glimpse of the future face of western societies, it seems important to understand the extent to which today’s children of different backgrounds trust or discriminate against each other. From this, several important questions surface: Which types of discrimination (e.g., statistical motives, wrong stereotyping, taste-based prejudices) do find among children with and without migrational backgrounds? What kinds of family characteristics are more or less conducive to inter-group trust? And are there policy measures that reduce or increase discrimination among youth?

This paper takes an experimental approach to shed some light on these questions. In particular, we (i) conducted a trust game experiment with 4,417 adolescents in 57 German schools; (ii) allowed participants to condition their strategies on the migration background of their opponents; (iii) combined the experimental data with individual background information from an extensive socioeconomic survey; and (iv) chose a design that allows us to assess the effects of a widely debated integration policy—that is, *birthright citizenship*—using a quasi-experimental approach.

In recent years, Germany has become the OECD’s second largest country of immigration after the United States (OECD [2014]), and the sample we use for our analysis reflects the immigration structure of Germany’s youth population in metropolitan areas: it consists for 54% of native children, 30% of second-generation immigrants, and 16% of interethnic children. In Germany, immigrant children are more likely than non-immigrant children to live in two-parent households, to have parents with low educational attainment, and to grow up under low-income conditions. A good deal of evidence also suggests that immigrant children are outperformed by their German peers along multiple indicators of academic achievement. Thus, we are dealing with native and immigrant children who are segmented in terms educational outcomes and family backgrounds.

In a typical trust game (Berg *et al.* [1995]), one person is endowed with a sum of money and chooses how much of it to invest (Stage 1). The experimenter then triples the investment and puts it in the hands of a second person, who is free to choose a repayment and keeps the rest (Stage 2). In our version of the trust game, we elicited choices using the strategy method and asked participants to condition their strategies on six possible types of opponents: (i) native boys, (ii) native girls, (iii) immigrant boys, (iv) immigrant girls, (v) naturalized immigrant boys, and (vi) naturalized immigrant girls. After the first stage of the trust game, participants were

asked to indicate their expectations about the back payments of the six types of opponents. In the second stage of the trust game, we employed the contingent response method whereby each participant had to make a repayment decision for each possible investment of the six possible opponent types. Our experiment was run at the schoolclass-level, and each of our 219 sessions was either preceded or succeeded by a one-hour slot in which we administered an extensive socioeconomic survey to our participants.

We present four main sets of results. First, we document an interesting, heterogenous pattern of mistrust and discrimination: second-generation immigrant children strongly discriminate in their trust decisions against their native peers who, in turn, themselves are much less inclined to discriminate against immigrants. For example, one of our result shows that the amount immigrant children transfer to native German children is, on average, 13% lower than that transferred to other immigrants. In contrast, for native children the gap between in-group and out-group investments is, on average, only 2%. The data also reveal that immigrant girls discriminate more against natives than immigrant boys. Native girls, by contrast, show no signs of discrimination against immigrants, while native boys can be classified as moderate discriminators.

Second, we seek to understand what drives the decision of adolescents to discriminate. We first check for statistical discrimination in our experiment. The idea is that the discriminatory trust decisions of children with migrational backgrounds can be considered as statistically justified if native German children show systematically less reciprocity than their immigrant peers. Our results show this not to be the case. We next check for discrimination based on wrong stereotypes. Looking at our expectation data, we find that immigrant children expect natives to show a higher willingness to reciprocate than their own peers, suggesting that their discriminatory trust decisions are not due to mistaken stereotypes. This then points to taste-based discrimination—that is, prejudice as part of utility functions—as the likely explanation for immigrants’ differential trust decisions. We substantiate this conjecture by showing that immigrants appear to be willing to pay a price for their discriminatory actions.

Third, we recognize that discriminatory behavior and prejudice in children is likely influenced by their parents and family backgrounds. Within-household characteristics likely to shape children’s preferences and behavior may include such considerations as how educated parents are, whether the family is headed one parents or two, or the presence of siblings. For immigrant children, it would also seem important whether parents actively promote their integration into the host society, which we proxy by within-household patterns of language use. We obtain several interesting results, of which two stand out. One, immigrant children from families that have adopted the host country language at home discriminate significantly less against natives than those from households in which the minority language has been maintained. And two, having highly educated parents has hardly any influence on the discriminatory behavior of immigrant children, but for natives it associated with significantly less discrimination against natives.

Finally, we turn our attention to institutional factors potentially affecting discrimination. Our design allows us to exploit a natural experiment in Germany which saw the introduction of an increasingly common, but still highly contentious, integration policy: *birthright citizenship*, which automatically grants children born to foreign parents the nationality of the host country. The reform provides us with a birth date eligibility cut-off, which serves as our source of identification. In particular, we use a difference-in-differences design which not only compares the experimental choices of immigrant children born shortly before and shortly after the cut-off date, but also draws upon native German children as a control group. Our main finding is that the policy substantially reduced the degree of discrimination among male, but not among female, immigrants. Several robustness checks corroborate this result. Last, we provide evidence suggesting that the main channel for this effect is not an adjustment of social identity, but an

improved educational integration of immigrant males.

To date, there is an impressive body of experimental research on discrimination in economics and psychology (for an insightful review up until the mid-2000s, see Anderson *et al.* [2006]). Notably, many of these studies induce group membership in the laboratory. In contrast, we deliberately ran a lab-in-the-field experiment with immigrant and non-immigrant children, and allowed participants to condition their choices on the migration background of possible opponents. To our knowledge, this type of design was originally implemented by Fershtman and Gneezy [2001] to study trust and discrimination in the segmented Israeli society. In another study closely related to our own, Falk and Zehnder [2013] conducted a trust game experiment in the city of Zurich, in which first movers could condition their investments on the residential districts of second movers.

In this article, we have attempted to connect the advantages of experimental designs in the study of discrimination with the way in which today's labor economists frame causal questions. Delivering such a connection and determining the effects of particular intervention on children's discriminatory behavior is one of the key contributions of our study. Besides that, there are some important pointers for policy consideration. Discrimination and prejudice *against* immigrants is an issue that figures prominently in many public and scholarly debates. This largely ignores the pattern of discrimination that we have identified, i.e, that immigrant children cater prejudices against their native peers. The potential consequences of this discrimination include potential reductions in social welfare if one thinks of interactions between immigrant and non-immigrants outside our experimental setting. On the positive side, the discriminatory behavior of immigrant children is not set in stone: it reacts to changes in parenting behavior and was reduced by the introduction of birthright citizenship.

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