



Racial identity and education in social networks^{☆,☆☆}



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ABSTRACT

We investigate identity issues to explain differences in school performance between students of different races. Using a unique dataset of friendship relationships between students in the US, we show that friendship formation can be taken as a measure of racial identity. We then find that having a higher percentage of same-race friends is associated with higher test scores for white teenagers and with lower test scores for blacks. However, the higher is the education level of a black teenager's parents, the lower is this negative association, while for whites, it is the reverse. It is thus the combination of choice of friends and parents' education that seems to be an important factor in shaping differences in school performance between students of different races but also between students of the same race.

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1. Introduction

The educational experience of American school students is a multifaceted phenomenon that encompasses far more than academic achievement. Other important aspects of the educational experience include daily participation in school as well as students' feelings about their school. These latter factors are much less studied and thus understood by economists,¹ even though

these aspects of the educational experience also have important consequences on drop out rates, delinquency activities and school performance. In particular, economists have been trying to explain school performance differences between blacks and whites (see, e.g., the survey by Neal, 2006) by putting forward the role of family inputs, school quality and neighborhood effects. Less research has been, however, devoted to explaining school performance differences within a race and looking at racial differences in attitudes, behavioral and cultural factors. If one controls for different characteristics of the parents (e.g. human capital), the neighborhood (e.g. segregation) and the school quality (e.g. teacher/student ratio, average test scores), one still finds different school performances for black and white students. The natural explanation for this is peer effects. For example, Hoxby (2000) finds that students are affected by the achievement level of their peers and that peer effects are stronger *intra-race*. We go further in this direction by looking at other "sociological aspects" in school performance. Our aim is to investigate the effects of racial identity (here choice of same-race friends) and parent's education on school performances between students of different races but also between students of the same race.

Racial identity is obviously a difficult and complex question. Akerlof and Kranton (2000, 2010) define it as a person's sense of self or self image. A person's sense of self or self image is then said to make his or her identity in that "his or her identity is bound to social categories; and individuals identify with people in some categories and differentiate themselves from those in others."

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¹ Sociologists have been more interested by such issues. See e.g. Coleman (1961) or more recently, Kirkpatrick Johnson et al. (2001). Akerlof and Kranton (2002, 2010) survey some of these issues from the noneconomic literature and propose to "translate" them into an economic model of students and schools.

(page 720).² In other words, self-image, or identity, is associated with the social environment; example of social categories include racial designations. Pursuing this idea, [Akerlof and Kranton \(2002\)](#) try to link together identity and schooling. A student's primary motivation is his or her identity and the quality of the school depends on how students fit in a school's social setting. In the context of schools, social categories could be, for example, "jock" and "nerd". In particular, it has been observed that African Americans tend to "choose" to adopt what are termed "oppositional" identities, that is, some actively reject the dominant (e.g., white) behavioral norms while others totally assimilate to it (see, in particular, [Ainsworth-Darnell and Downey, 1998](#)). Studies in the US and in the UK have found, for example, that African American students in poor areas may be ambivalent about learning standard English and performing well at school because this may be regarded as "acting white" and adopting mainstream identities ([Wilson, 1987](#); [Delpit, 1995](#); [Fordham and Ogbu, 1986](#); [Ogbu, 1997](#); [Austen-Smith and Fryer, 2005](#); [Battu et al., 2007](#); [Selod and Zenou, 2006](#); [Currarini et al., 2009, 2010](#); [De Martí and Zenou, 2009](#); [Battu and Zenou, 2010](#); [Fryer and Torelli, 2010](#)). In some instances, oppositional identities produce significant economic and social conflicts.

In the present paper, we pursue this line of research by investigating the impact of "identity" on school performance for black and white students.

Our empirical investigation exploits a unique and very detailed data set of friendship networks in US schools (the National Longitudinal Study of Adolescent Health), which allows us to construct a novel and objective measure of individuals' attachments to their culture of origin on the basis of the number of same-race friends nominated by each student as his/her best friends, as well as to obtain information on family background, school and neighborhood characteristics.³ This strategy, however, embeds an empirical challenge. Friends as well as school performance are choice variables. As a result, there may be unobservable factors affecting both the choice of friends and school performance. The richness of information of our data allows us to tackle this issue. Indeed, our dataset provides information on various aspects of the religious behaviors of the adolescent that allows us to select some religion-based variables, i.e. religious affiliation, religious service attendance and involvement in church youth groups, that provide plausible instruments for the number of same-race friends. Indeed, the religion affiliation and church attendance of adolescents (rather than of adults) are likely to reflect the transmission of identity from their parents rather than some unobservable traits, such as, for example, self-discipline, which also influences educational outcomes. Virtually all related research in sociology (see e.g. [Ozorak, 1989](#); [Hyde, 1990](#); [Bao et al., 1999](#)) documents an extremely high correlation between parents' and children's religious beliefs and participation. We reinforce our argument by providing some evidence on the age of religious conversions. Indeed, there is strong evidence that conversions are more likely to occur beyond adolescence (see e.g. the literature surveys by [Snow and Machalek, 1984](#)). This evidence confirms that our religion-based variables are an indication of a transmission of an identity rather than a personal choice from adolescents.

Our analysis proceeds as follows.

First, we investigate whether the choice of same-race friends is a good indicator of racial identity. To this end we use a technique that is well-established in economics for estimating consumers' preferences: revealed preference theory ([Mas-Colell et al., 1995](#)). One infers preferences of the individual by careful observation of

the choices that they make based on the opportunities that they have. We observe in our data that in *integrated schools* (where there are between 35 and 75% of black and white students), blacks tend to have "oppositional identities" since some have mainly white friends while other have mainly black friends. On the contrary, white students tend to have mostly white friends. Even if they have the possibility of choosing friends from different races, some black and most white students prefer to have most of their friends of the same race, confirming the fact the choice of friends is an indicator of racial identity.

Second, we investigate the consequences of this choice on educational outcomes. Controlling for individual socio-demographic and family backgrounds, protective factors, residential neighborhood and school characteristics, we find that, having a higher percentage of same-race friends has a positive effect on white teenagers' test score while having a negative effect on blacks' test scores. When we investigate, however, the interaction between our indicator of racial identity and the most important driver of racial differences in school performance, i.e. parental education, we find significant effects. Indeed, the higher the education level of a black teenager's parent, the lower this negative effect is, while for whites, it is the reverse. It is thus the combination of the choice of friends and the parent's education that is potentially responsible for the difference in school performances between students of different races but also between students of the same race.

The paper unfolds as follows. In the next section, we describe our data and provide some descriptive evidence. In Section 3, using a revealed-preference approach, we determine whether choice of same-race friends is a good a measure of racial identity. Section 4 is devoted to the empirical strategy and the econometric issues. The empirical results are exposed in Section 5. Finally, Section 6 concludes.

2. Data and descriptive evidence

Our analysis is made possible by the use of a unique database on friendship networks from the National Longitudinal Survey of Adolescent Health (AddHealth). The AddHealth database has been designed to study the impact of the social environment (i.e. friends, family, neighborhood and school) on adolescents' behavior in the United States by collecting data on students in grades 7–12 from a nationally representative sample of roughly 130 private and public schools in years 1994–1995. Every student attending the sampled schools on the interview day is asked to compile a questionnaire (in-school survey) containing questions on the respondents' characteristics and friendship. Friendship information is based on actual friend nominations. All students were asked to list their best friends (up to five for each sex), and it is possible to assemble the characteristics for each friend.^{4,5} We exploit this feature of the dataset to derive the percentage of same-race friends each student actually nominates as best friends.⁶ This sample contains information

⁴ Note that, when an individual identifies a best friend who does not belong to the sampled schools, the database provides no information about this friend. Fortunately, in the large majority of cases, best friends appear to be in the same school and thus are systematically included in the network.

⁵ The limit in the number of nominations is not binding. Less than 1% of the students show a list of ten best friends. On average, white students declare to have 5.79 friends with a small dispersion around this mean value (standard deviation equal to 0.99). Blacks have on average a slightly lower rate of nominations (the average number of best friends is equal of 4.98), but with a much higher variation (standard deviation equal to 2.11).

⁶ Obviously we do not consider the absolute number of same-race friends but the percentage in total number of nominations to avoid problems arising from the presence of unobserved factors (such as wearing particular clothes or having special electronic gadgets) that might induce a teenager to be more popular among her/his same-race (or different race) peers regardless of ethnic preferences.

² See also [Bisin et al. \(2010, 2011a,b\)](#).

³ [Faccini et al. \(2015\)](#) consider a migrant's friendship ties with natives as a measure of cultural assimilation in the host country.

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