Differences in Roma and non-Roma students' ratings of their peers' popularity: an inquiry into the oppositional culture in Hungarian schools with the use of a survey experiment

Tamás Keller[1,2,3]

Abstract

Oppositional culture theory posits that students who belong to oppressed ethnic minority groups define their ethnic identity in opposition to the majority of students. Minority students might restrict their achievements and effort in schools to gain popularity since they believe that their peers regard investing in pro-school attributes as a betrayal of their own culture and adaptation to the majority culture. Thus, peer pressure might explain why minority students' performance lags behind that of their majority peers. We tested this theory among 584 seventh- and eighth grade (13–14-year-old) students in 38 ethnically diverse Hungarian classrooms. We conducted a vignette experiment in which students rated the "coolness" of fictive vignette persons whose attributes (GPA, effort, and school behavior) were randomly combined. Each student rated 12 randomly chosen vignettes. We found that Roma students rated their peers as less popular if the peers had a good GPA in classrooms with high ethnic diversity. We did not find a significant Roma/non-Roma gap in pro-school attributes in other domains such as effort and school behavior, or in non-pro-school attributes in any domain. Accordingly, we conclude that differences in ethnic identity explain little of the Roma/non-Roma achievement gap in Hungarian schools. Therefore, oppositional culture between Roma and non-Roma students appears to occur in context-specific and sporadic ways in Hungary.

Keywords Oppositional culture · Students' popularity · Ethnic gap in school-related attitudes behavior · Roma students · Vignette survey

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Published online: 06 May 2020

⌷ Springer

1 Introduction

Determining the origin of the ethnic gap in students' school achievement has vexed researchers for many decades. Anthropologists argue that discrimination against minority groups might not fully account for the ethnic achievement gap, since all minority groups experience discrimination to varying degrees, and some of them are academically successful (Ogbu 2003: 45).

Minority groups, however, can differ concerning how and why they came to a host country. While some groups of minorities arrive voluntarily, others are involuntarily incorporated into society (Ogbu 1978). These historical differences can determine the sociocultural adaption of minorities to their host country. While voluntary minorities may accept the dominant culture, involuntary minorities might oppose it (Ogbu and Simons 1998).

Minority groups' community forces, such as their dominant patterns of attitudes, beliefs, and behaviors in the domain of education (Ogbu 2008: 13) are hypothesized to hinder their schooling in Ogbu's cultural-ecological model (Ogbu 1987, 1991, 2008; Ogbu and Simons 1998). One specific component of community forces (Ogbu 2008: xxiv) is the minority group's cultural frame of reference (Fordham and Ogbu 1986), which expresses an ethnic group's shared beliefs about how people should behave and act.

Cultural frames of reference may protect the ethnic group's identity and maintain boundaries between them and members of the majority group (Fordham and Ogbu 1986: 181). Minorities might oppose those attitudes (like doing well in school) that they perceive as belonging to the majority group in response to the discriminatory treatment they face from the majority group (Fordham and Ogbu 1986: 179). Thus, minority students might not engage in activities that increase school performance because they associate good school performance with the majority group of students. Tension might thus arise between schools' demands for behaving in ways that promote academic achievement and the demands of minority students' peer group for behaving in ways that do not (Ogbu 2008: 3). This tension is referred to as the burden of 'acting White' (Fordham and Ogbu 1986). Oppositional culture theory (OCT) argues that the burden of acting White leads minority students to withhold or camouflage their academic achievement to secure or maintain their (minority) peers' acceptance (Fordham and Ogbu 1986: 201–202).

Several empirical analyses have tested how peer pressure prevents minority students from doing well in school. This vein of literature is based on popularity measures and assumes that minority students are sanctioned with decreasing popularity when they are doing well in school. Prior scholarship has deployed self-reported measures, such as "respondent often feels put down by students in class" (Cook and Ludwig 1997); "do you think that other students see you as popular" (Ainsworth-Darnell and Downey 1998), and "my friends make fun of people who try to do well" (Farkas, Lleras, and Maczuga 2002). The wording of these measures ultimately reflects how students interpret their peers' reactions. The empirical findings are, however, mixed; some support (Farkas, Lleras, and Maczuga 2002; Fryer and Torelli 2010) and others undermine (Cook and Ludwig 1997) OCT.

To overcome the constraints of self-reported measures, Fryer and Torelli (2010) employed an index that summarizes friends' social status. The index shows how much high-achieving minority students are sanctioned with a loss of high-status, same-race friends for their achievements. The authors find that high-achieving African American students are sanctioned with the loss of their friends, which supports OCT.

OCT is limited in four respects, which prevents the generalization of related predictions. First, OCT assumes clear and visible boundaries between majority and minority students,

and ignores the fact that ethnicity is a social construct (Hogg and Reid 2006; Telles and Paschel 2014) in which social relationships shape racial perceptions (Boda 2018). There is a need, therefore, to research how OCT can be applied to a context in which ethnic boundaries are not salient (Ladányi and Szelényi 2006; Boda 2019) due to obvious phenotypical features.

The majority[1] of the empirical tests of OCT have concentrated on one particular group of involuntary migrants; namely, African Americans.[2] OCT, however, acknowledges that other groups of involuntary migrants such as American Indians, Native Hawaiians, Basques, Catalans, or Koreans in Japan (Fordham and Ogbu 1986) might have developed an oppositional culture as well. Therefore, there is a need to examine how widespread OCT is by extending the focus to other groups of involuntary minorities.

Second, OCT assumes a general and homogeneous peer effect, which means that the theory is not specific to addressing how peer-composition alters the effect of oppositional culture. A growing literature in economics focuses on the relevance of social context in the formation of ethnic identity (Akerlof and Kranton 2000).

Bisin et al. (2011) point out the potential non-linearity of the relationship between the size of a minority group and the prevalence of oppositional culture. More specifically, there is a potential reverse-U-shaped relationship between the share of minority students within a classroom and the intensity of oppositional culture between minority and majority students. This reverse-U-shaped relationship speaks for weak oppositional culture in ethnically homogeneous classrooms (with a large share of Roma/non-Roma students), and intensive oppositional culture in ethnically diverse classrooms.

There are several explanations for why oppositional culture is more prevalent in ethnically diverse classrooms (Bisin et al. 2011). First, in ethnically diverse classrooms, the size of the minority group is large enough to permit the selection of a minority role model whose attitude minority students can imitate. By contrast, in ethnically homogeneous classrooms students are less likely to meet peers from the oppositional ethnic group, and thus minority students are more likely to choose a role-model from their majority peers. Second, in ethnically diverse classrooms the psychological cost of interacting with someone from the majority group is higher, because there is greater peer pressure from minority peers. Third, there is a more intense desire among minority students to define (defend) their own ethnic identity against the majority students in ethnically diverse classrooms, since greater polarization between ethnic identities leads to more intensive demand for strong ethnic boundaries.

For example, Fryer and Torelli (2010) find that minority students in ethnically diverse schools reject their minority peers more for having good grades than minority students in more segregated schools do. The reason is that if the proportion of minority students increases, the need for developing and maintaining an oppositional attitude begins to lose its relevance.

Third, OCT focuses only on attitudes and behavior that promote academic achievement (pro-school attributes) (Ainsworth-Darnell and Downey 1998; Fryer and Torelli 2010).

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[1] However, some prior work has investigated different ethnic minorities (Hajdu et al. 2019; Kisfalusi 2018; van Tubergen and van Gaans 2016; Çelik 2015).

[2] OCT uses the term 'Black' when it refers to the African American population, the latter which is a politically more correct expression than the former. Since OCT uses metaphorical language ('acting White') which becomes imbued with meaning when opposed to the term 'Black,' we sporadically use the term Black without wishing to ignore the need to use more politically correct language.

The claim of OCT that minority students retain or camouflage their achievement hinges, however, on the assumption that minority students earn reputational benefits if they invest in attributes that do not promote academic achievement (non-pro-school attributes). The need for a wider definition of OCT has already emerged in the literature (Neal-Barnett 2001), but few empirical tests have satisfied this demand (Neal-Barnett 2001).

Peer acceptance of non-pro-school attributes could explain why minority students camouflage and restrict their academic achievement, as OCT predicts. For example, ethnic minority students might be negatively sanctioned by their peers if they are diligent (a possible pro-school variant of effort). However, this might or might not mean that minority students are regarded as more popular if they do not do their homework (a potential indication of less effort, and thus a non-pro-school variant of effort).

Fourth, OCT focuses on the issue of how minority students are perceived by their minority peers (passively). Responses say little, however, about how minority students (actively) perceive their peers, Students' perceptions about their peers ultimately regulate the emergence of oppositional culture,[3] a fact which calls for more research into students' active perceptions (judgments) about their peers.

The present paper provides empirical evidence about the above-mentioned four limitations of OCT. Dealing with the limitations related to the assumption of visible ethnic boundaries, we extend OCT to another group of involuntary migrants; namely, the Roma in Hungary, for whom the phenotypical features of ethnicity are less visible.

In order to address the general and homogeneous peer effect, which is not influenced by peers' ethnic composition, we test OCT in ethnically diverse classrooms.

We employ a wide definition of school-related attributes in response to the formerly narrow focus on pro-school attributes that promote academic achievement. We focus also on students' effort and school behavior (not only on school achievement), and we extend the examination of oppositional culture to non-pro-school attributes that do not promote academic achievement.

We test how individual students sanction their peers if the peers' academic achievement improves. We investigate how students perceive or judge their peers' popularity (coolness) depending on peers' academic achievement, behavior, and diligence.

We carried out a vignette survey experiment whereby seventh and eighth-grade students in ethnically mixed Hungarian school (N = 584) rated the popularity (coolness) of twelve randomly chosen fictive vignette persons, whose characteristics (such as grades, effort, school behavior, and gender) were randomly matched. Thus, our measure of the relationship between popularity and peers' attributes relied on the (1) uncorrelated, (2) exogenous characteristics of vignette persons with, (3) considerable variation, and (4) without social desirability bias. The lack of these features has been mentioned as a limitation of prior measures (Fryer and Torelli 2010).

We find context-specific effects for OCT, which speaks for the conclusion that the Roma/non-Roma achievement gap is not strongly rooted in oppositional ethnic identity. More specifically, Roma students rate their peers with good GPA as less popular in

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[3] Furthermore, OCT is "constructed" from the perspective of minority students. The theory makes predictions only about how minority students perceive their minority peers. However, it is agnostic about how minority students perceive their majority peers (if the latter, for example, are doing well at school). More specifically, OCT says little about whether minority students oppose doing well in school in general (regardless of peers' ethnicity) or if they employ double standards (i.e. they oppose certain attitudes if their own kin also hold them, but accept them if majority peers do).

ethnically highly diverse classrooms (but not in all classrooms). Besides students' GPA, oppositional culture is not prevalent in other domains such as with students' effort and school behavior.

1.1 The theory of "acting White" and the Hungarian Roma

The Roma (also known as Gypsies, or Romani people) are a historically oppressed ethnic minority in Europe, including Hungary. Accordingly, the situation of Roma might resemble that of the African American population. Hungarian Roma may develop oppositional attitudes and behavior in school that reflects their resentment towards non-Roma Hungarians. The significant ethnic prejudice against Hungarian Roma (Váradi 2014; Simonovits et al. 2018) and the existence of segregated friendship networks (Boda and Néray 2015) in ethnically mixed Hungarian schools might justify this reasoning.

African Americans and Hungarian Roma are two different ethnic minorities with no racial similarity. However, some similar characteristics of these two minorities might explain why Hungarian Roma could have developed an oppositional culture similar to that developed by African Americans.

The mother tongue of many Roma in Hungary is Hungarian. Furthermore, Roma people do not have any specific national characteristics (Kemény et al. 2004). Similarly to African Americans who were involuntarily and permanently incorporated into society (Fordham and Ogbu 1986: 178), Hungarian Roma do not have any traditions or connections to the homeland of their ancestors. Hungarian Roma are also subject to ethnic stereotyping (Simonovits and Kézdi 2016; Kisfalusi et al. 2018) due to a misinterpreted correlation between ethnicity, low social status, and crime, which lays the ground for over-generalized negative prejudice (Kende 2002).

Roma students' level of education is on average lower than that of Hungarians (Kemény et al. 2004). According to official statistics, the proportion of early school leavers in 2017 was 65% among 18–24-year-old Roma, but 9% among non-Roma Hungarians (KSH 2018).

Roma are segregated on the labor market: 47% of them have temporary labor contracts (7% among non-Roma Hungarians); moreover, Roma are less likely (4%) to work in white-collar jobs than non-Roma (44%) (KSH 2018).

Since Fordham and Ogbu (1986) argue that prejudice, stereotypes, and segregation feed an oppositional culture, we conclude that Hungarian Roma might be alienated from an educational system defined by non-Roma Hungarians. Therefore, Roma students might invest less effort into education.

Prior empirical research has not verified the existence of an oppositional culture in Hungarian schools. More specifically, Kisfalusi (2018) showed that high academic achievement does not lead to more frequent victimization among Roma students in Hungary. Furthermore, Hajdu et al. (2019) found that high-achieving Roma students have more friends and fewer adversaries than their low-achieving Roma peers.

Both of the related studies, however, focused on one particular element of pro-school attributes (namely, school grades). Furthermore, they analyzed how students are (passively) perceived by their peers and did not focus on how students (actively) rated their peers. Therefore, there is a need to expand our perspective by employing more comprehensive measures to increase understanding of oppositional culture in Hungarian schools and see how students with a different ethnic background perceive their peers depending on those peers' school-related attributes.

1.2 Assessment of the relationship between popularity and grades

We conducted a survey experiment to research how *pro-school attributes* (i.e. those attributes that promote academic achievement) and *non-pro-school attributes* (those that do not promote academic achievement) influence popularity. Survey (vignette) experiments have been widely used in situations in which social norms are activated, since this method can give insight into the attitudes behind respondents' appraisals (Jasso 2006).

In our survey experiments, respondents received a random set of vignettes in the form of short descriptions of fictive vignette persons. Respondents were asked to judge the coolness of each vignette person separately.

This design has various advantages in terms of our research question. First, it enabled us to observe how individuals judge their peers' popularity depending on peer characteristics (as described in the vignettes). Similar judgments might take place in the real classroom context. In classrooms, however, it is difficult to observe how individuals' judgments of their peers arise, since peers' characteristics are often not salient and appraisals are usually not conscious.

Second, since the same respondent rated more than one vignette, we can make comparisons within respondents' answers.

Third, since vignettes were different, the same respondent rated the popularity of very different vignette persons, thereby increasing variance compared to a situation in which respondents judged the popularity of their classmates or friends, who are typically much more similar to each other.

Fourth, the random matching of the level of the main characteristics of vignette persons secures unbiased estimations, since there is neither correlation within the characteristics of the vignette person nor between the vignette persons' and respondents' characteristics.

Last, the main characteristics of the vignette persons were not predetermined by popularity. For example, in a real classroom context, students might withhold effort to gain popularity (thus their observed effort might be influenced by their popularity a priori), thereby introducing endogeneity into the estimations.

2 The survey experiment

We originally contacted all primary schools in seven contiguous counties of central and eastern Hungary (where Roma minorities are overrepresented) via the heads of the local school districts for another field experiment[4] in the spring of 2017. Primary education in Hungary is equivalent to primary and lower-secondary education according to international classification (ISCED 1 and ISCED 2 levels), or elementary and middle school in the United States.

We obtained initial participation agreements from 55 schools. From these 55 schools, 37 had eight-year classes in the academic year of 2018/19. These 37 schools are the sample for the current research. In Fall 2018, we contacted these schools again and asked for their permission to conduct new research among seventh- and eighth-grade students. Thirty-four schools agreed to participate.[5]

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[4] https://www.socialscienceregistry.org/trials/2610.

[5] One school no longer exists, one school was flooded and the students distributed between other schools, and one school did not want to participate.

Table 1 Descriptive statistics of respondents in the analytical sample

	Mean	Standard deviation	Minimum	Maximum
Girl	0.507	0.500	0	1
Age	13.70	0.753	12.28	16.96
GPA	3.264	0.950	1	5
Roma	0.284	0.451	0	1

N = 584

During a 1-month period (from November 6 to December 6, 2018), we conducted a paper-and-pencil survey experiment in 34 schools and 63 classrooms. Our sample is not a representative sample of seventh- and eighth-grade students in Hungary, since the geographical area of study is a poor and economically less developed part of the country.

Our analytical sample contains ethnically mixed classrooms in which there was at least one student whose ethnicity differed from their classmates (we excluded classrooms with only Roma or non-Roma Hungarian students). Students who were absent on the day of the survey and those who had not obtained parental consent for participation in the survey[6] were not part of the analytical sample. These restrictions led to an analytical sample of 584 students from 38 classrooms in 24 schools.

2.1 Respondents

We gathered baseline information about the respondents before the start of the fieldwork. Teachers reported students' grades from the previous year (for mathematics, Hungarian language, Hungarian literature, history, and foreign languages) and birthdates. Students' gender was coded according to first names. Table 1 summarizes the sample respondents' characteristics.

2.2 The vignettes

The characteristics of the vignette persons are summarized in Table 2. Vignettes contained four main characteristics describing the vignette persons' grades, behavior, effort, and gender. Each main characteristic had different levels corresponding to the quality or intensity of that characteristic. Every vignette contained only one level of the main characteristic. The main characteristics of the vignette person did not include ethnicity.[7]

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[6] Out of the 60 classrooms in the analytical sample, in 46 classrooms the survey response rate was more than 80%. The response rate was below 50% (38.5%) in one classroom.

[7] Omitting ethnicity as one of the main characteristics of the vignette person was done for practical and theoretical reasons. The practical reason is that some classroom teachers would have refused to participate in the survey if we had included ethnicity as one of the vignette person's main characteristics. These classroom teachers argued that mentioning ethnicity in the questionnaire would enhance preexisting prejudice within the classroom. The theoretical reason for the omission is that ethnic identity is a social construct (Hogg and Reid 2006; Telles and Paschel 2014) with fluid boundaries (Boda 2018, 2019). Therefore, including ethnicity as one of the vignette person's main characteristics would have biased our measurement. In this case, individual stereotypes about Roma would have been activated. Furthermore, obtaining information about both students' and vignette persons' ethnicity would have resulted in the identification of a combination of same/mixed ethnic relationships. For modeling these combinations, OCT does not provide guidance. OCT is specific about the relationship between minority students and their (minority) peers and leaves aside the issue of potential double standards (the relationship between minority students and majority peers).

Table 2 Characteristics of vignette-persons

Characteristics	Values
1. Grades	(a) Good GPA *[baseline category]*
	(b) Average GPA
	(c) Poor GPA
2. Behavior	(a) Good school behavior *[baseline category]*
	(b) Hinders others (by talking, laughing, letter-writing)
	(c) Talks out of turn (makes funny remarks aloud)
	(d) Gets out of the seat (without permission)
	(e) Disobedient (refuses to carry out instructions)
3. Effort	(a) Diligent *[baseline category]*
	(b) Does not do homework
	(c) Lacks/incomplete equipment
	(d) Idleness (is often off-task)
4. Gender	● Girl
	● Boy

Across vignettes, we varied the order of the four main characteristics. In practice, we made sure that each main characteristic appeared in first place on each vignette. This was found to be necessary since we assumed that students might be influenced most by the first information they read about the vignette person.

The vignette persons' main characteristics had different levels. The first level (indicated with an "a" in Table 2) is the *pro-school attribute*. This is an attribute of students that schools might find desirable and that might promote academic achievement. We also deployed several *non-pro-school* attributes. Non-pro-school attributes are those that schools might not find desirable and that might not promote academic achievement.

All the attributes of the vignette person refer to concrete attitudes, since prior research found large ethnic differences in concrete but not abstract attitudes (Mickelson 1990).

Corresponding to the number of levels within each main characteristic, the number of all possible vignettes was 120 ($3 \times 5 \times 4 \times 2$). We randomly selected 48 vignettes, without replacement, from this vignette universe. A fully random set of vignettes was selected instead of employing a D-efficient sample which seeks to maintain the orthogonality of dimensions. Since the vignette universe was small and the selected sample of vignettes relatively large, the fully random selection of vignettes produced similar results to the D-efficient sampling (Auspurg and Hinz 2015).

The selected vignettes were randomly sorted into four different questionnaire versions, each containing 12 vignettes. A sample vignette is included in the "Appendix".

We did not eliminate vignettes based on combinations of main characteristics that rarely occur among real students. Before carrying out the vignette survey, we tested how students (not included in our sample) rated the descriptions of the vignette persons. The results of the test revealed that students did not find rare combinations of vignette persons' characteristics to be implausible.[8]

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[8] For example, there were good students who did not do homework, and diligent students with weak academic performance. The full set of the deployed 48 vignettes is available in the Online Appendix.
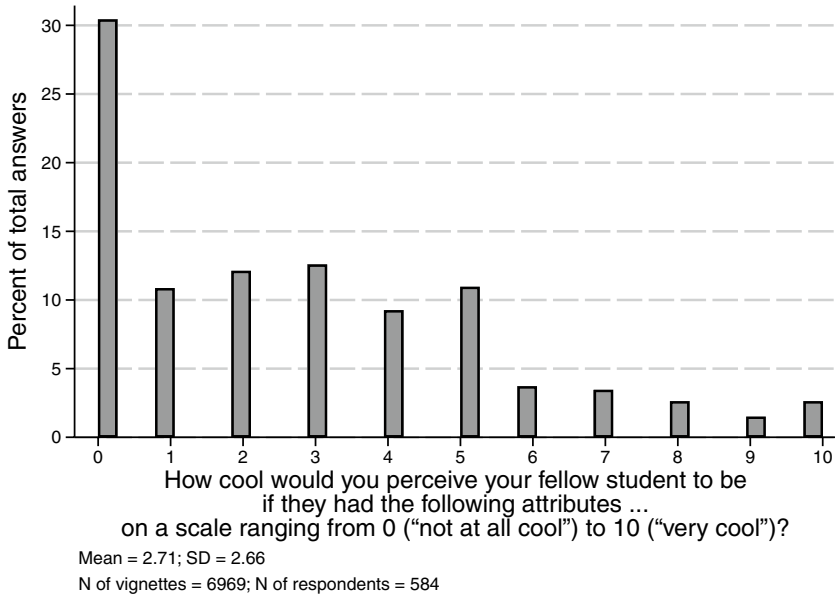
Mean = 2.71; SD = 2.66
N of vignettes = 6969; N of respondents = 584

Fig. 1 Distribution of the dependent variable in the analytical sample

Questionnaire versions were equally and randomly distributed to respondents in each classroom, so versions of questionnaires varied within a single classroom.

3 Coding of main variables, hypotheses, and methods

3.1 Main variables

Our outcome variable is respondents' ratings of the vignette persons' popularity. We asked students to rate the popularity of vignette persons after reading the following: *"Now you will read short descriptions about 12 students. You might recognize yourself or one of your classmates in these descriptions."* This prompt aimed to establish a connection between the fictive vignette persons and students' real peers, corresponding to our aim of learning more about how students' perceptions of their peers emerge.[9]

Before students read the description of the twelve vignette persons, they read the following sentence: *"How cool would you perceive your fellow student to be if they had the following attributes… ("Cool" describes a person who is popular and has an influence on others)."* Students answered this question using a Likert scale ranging from 0 ("not at all cool") to 10 ("very cool").

Figure 1 shows the distribution of the dependent variable.

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[9] A possible contra-argument is that abstract scenarios can yield more generalizable results, since they lead to information equivalence concerning the background scenario (Dafoe et al. 2018).
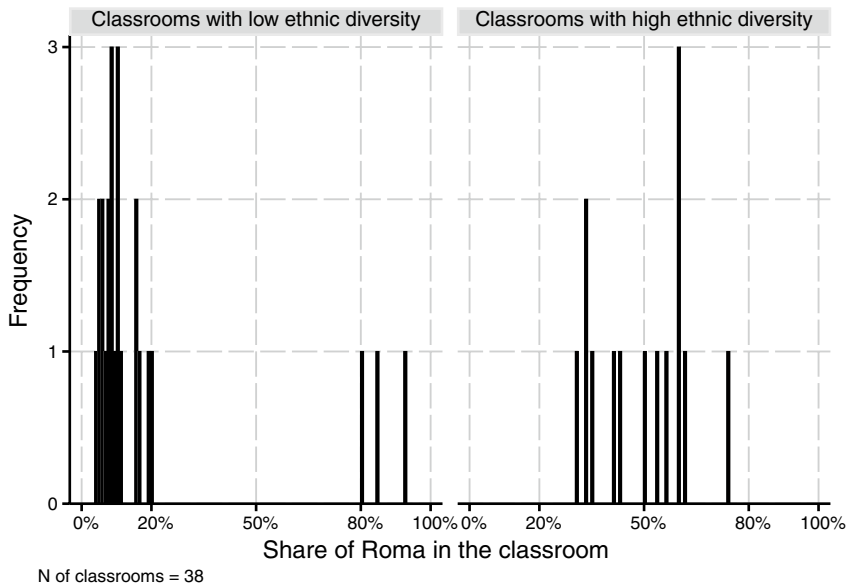
Fig. 2 The ethnic composition of the sample classrooms

The classroom teacher reported students' ethnicity. In the analytical sample (N = 584 students) the number of non-Roma students was 418 (71.6%), and the number of Roma students 166 (28.4%).

All the classrooms in the analytical sample were ethnically mixed, containing at least one student whose ethnicity was different from their peers (i.e. there was at least one Roma student among non-Roma peers, or at least one non-Roma student among Roma peers).

We defined classrooms' ethnic diversity based on the share of students with a different ethnicity. In classrooms with low ethnic diversity, the share of Roma students was below 20% or greater than 80%. This meant that in classrooms where ethnic diversity was low, there were usually 1–2 students with the oppositional ethnicity (Roma or non-Roma). In classrooms with high ethnic diversity, the share of students with the same ethnic identity was between 20% and 80%.

In the analytical sample there were 379 (64.9%) students in classrooms with low ethnic diversity in which the share of Roma students was smaller than 20% or greater than 80%. The number of students in classrooms with high ethnic diversity was 205 (35.1%), where the share of Roma students was between 20% and 80%.

Figure 2 shows how classrooms were classified according to the share of Roma minority students.

3.2 Hypotheses

OCT posits that, due to peer pressure, students belonging to the oppressed ethnic minority will behave in ways that do not promote academic achievement (Ogbu 2008: 3). Therefore, we hypothesized that:

1. Roma students would award *lower* scores to vignette persons with *pro-school* attributes (or they would perceive them as less cool) than non-Roma students.

Furthermore, OCT argues that minority students aim to secure their minority peers' acceptance by restricting or camouflaging their academic achievement (Fordham and Ogbu 1986). Therefore we hypothesized that:

2. Roma students would award *higher* scores to vignette persons with *non-pro-school* attributes (or they would perceive them as cooler) than non-Roma students.

The economic literature on the formation of oppositional identity argues (Bisin et al. 2011) that oppositional culture is more intense in classrooms with high ethnic diversity relative to classrooms with low ethnic diversity (where there is a high share of only Roma or only non-Roma students). Therefore, we hypothesized that:

3. H1 and H2 would be more prevalent in classrooms with high ethnic diversity than in classrooms with low ethnic diversity. In other words, this means that:

   a. in classrooms with *low* ethnic diversity, the Roma/non-Roma difference in pro-school attributes would be higher (less *negative*) than in classrooms with high ethnic diversity.
   b. in classrooms with *low* ethnic diversity, the Roma/non-Roma difference in non-pro-school attributes would be lower (less *positive*) than in classrooms with high ethnic diversity.

In sum, while H1 and H2 test the Roma/non-Roma gap in general, H3 concerns the relative difference in the Roma/non-Roma gap in classrooms with low ethnic diversity relative to classrooms with high ethnic diversity.

3.3 The empirical analysis

We estimated multilevel random effect models (Eq. 1). Random effect models are capable of handling unobserved heterogeneity by allowing each student and each classroom to have different intercepts. The vignette persons' characteristics were randomly allocated; thus we assume no correlation between vignettes and respondents.[10]

We estimated the following model:

$$
\begin{aligned}
Cool_{v,i,c} = & \alpha_{v,i,c} + \beta_1 \times VP_{v,i,c} + \boldsymbol{\beta_2} \times \boldsymbol{R_{i,c}} + \beta_3 \times D_{i,c} + \boldsymbol{\beta_4} \times \boldsymbol{VPQ_{v,i,c}} \times \boldsymbol{R_{i,c}} \\
& + \boldsymbol{\beta_5} \times \boldsymbol{R_{i,c}} \times \boldsymbol{D_{i,c}} + \boldsymbol{\beta_6} \times VPQ_{v,i,c} \times D_{i,c} + \boldsymbol{\beta_7} \times \boldsymbol{VPQ_{v,i,c}} \times \boldsymbol{R_{i,c}} \times \boldsymbol{D_{i,c}} \\
& + \beta_8 \times X_{i,c} + \beta_9 \times V_{i,c} + \theta_{i,c} + \epsilon_{v,i,c}
\end{aligned}
\tag{1}
$$

In Eq. 1, "*Cool*" is the *i*-th respondent's (in classroom *c*) estimate of the *v*-th vignette person's coolness.

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[10] Accordingly, we chose random-effect models instead of fixed-effect models. This choice was supported by the corresponding Hausman test which showed no difference between fixed- and random-effects models. This is an indication that the more effective random-effects model should be chosen.

The vector *VP* contains the vignette person's main characteristics (as described in the vignettes; namely, GPA, effort, behavior, and gender).

The Variable *R* denotes Roma students, and *D* indicates classrooms with high ethnic diversity.

Vector *X* represents the respondent's baseline characteristics such as gender, age, and GPA.

Vector *V* represents the characteristics of the vignette, such as the vignette's rank order concerning the respondent's 12 vignettes in the questionnaire, and the pattern of the vignette (the particular sequencing of the characteristics of the vignette person).

In *VPQ* we introduce the vignette person's *school-related* main characteristics (GPA, effort, and behavior) separately to analyze the interaction between each main characteristic and students' ethnicity. In practice, this means that while all the models contain all the main characteristics of the vignette persons (*VP*) as the main effect, the interaction effect is defined as the product of a given *school-related* main characteristic and students' ethnicity. Therefore, we analyzed the interaction between students' ethnicity and vignette persons' GPA, diligence, and school behavior in different models.

There are two random effects in the model: $\theta_{i,c,s}$ is the random effect of i-th respondent, and μ_c is the classroom random effect. The idiosyncratic error term is $\varepsilon_{v,i,c}$.

The coefficient β_2 shows the difference between Roma and non-Roma students in pro-school attributes (in classrooms with high ethnic diversity, since this is the reference category). We expected $\beta2$ to be negative, meaning that Roma students would regard their peers with pro-school attributes as less cool than non-Roma students.

The coefficient β_4 shows the difference between Roma and non-Roma students in non-pro-school attributes (in classrooms with high ethnic diversity). We expected β_4 to be positive. In other words, we expected that Roma students would find their peers with non-pro-school attributes more popular that non-Roma students.

Coefficient β_5 shows the difference in the Roma/non-Roma gap in pro-school-attributes between classrooms with high ethnic diversity versus low ethnic diversity. We expected β_5 to be positive, meaning that compared to classrooms with *high* ethnic diversity (reference category), in classrooms with low ethnic diversity the Roma/non-Roma difference in pro-school attributes would be lower (less positive). Note that since the reference category is classrooms with high ethnic diversity, β_5 shows the opposite of H3a.

Coefficient β_7 shows the difference between pro-school and non-pro-school attributes in relation to the difference in the Roma/non-Roma gap in classrooms with high/low ethnic diversity. We expected β_7 to be negative, meaning that the Roma/non-Roma difference in non-pro-school attributes (compared to pro-school attributes) would be less positive in

Table 3 The interpretation of coefficients about Roma/non-Roma differences in Eq. (1)

	In classrooms with high ethnic diversity	In classrooms with low ethnic diversity relative to classrooms with high ethnic diversity
Pro-school attributes	Coefficient: β_2 Assumed sign: negative Interpretation: Lower scores for Roma	Coefficient: β_5 Assumed sign: positive Interpretation: β_2 is less negative
Non-pro-school attributes	Coefficient: β_4 Assumed sign: positive Interpretation: β_2 is less negative	Coefficient: β_7 Assumed sign: negative Interpretation: β_5 is less positive

classrooms with low ethnic diversity. Table 3 summarizes the assumptions about Roma/non-Roma differences made in Eq. 1.

4 Results

Based on Table 4 (main results), we can illustrate the Roma/non-Roma difference in separate figures corresponding to each model from the table. The interpretation of the Roma/non-Roma difference using the figures is straightforward, since the estimated Roma/non-Roma gap is not significant if the confidence interval around the estimated coefficient crosses the straight line at zero.

Regarding the vignette persons' GPA (column 1 in Table 4) we find that Roma students in classrooms with high ethnic diversity (reference category) appraise vignette persons with good GPA (pro-school attribute) as less cool ($\beta_2 = -0.521$; $p = 0.032$) than non-Roma students do.

The Roma/non-Roma gap is, however, much smaller on average (*coef.* $= -0.053$; $p = 0.756$) if we do not distinguish between the classrooms based on their ethnic diversity (Fig. 3). Therefore, we find no significant evidence for H1, which posits that Roma students rate their peers with good GPA as less popular than non-Roma students do. The Roma/non-Roma gap is only significant in classrooms with high ethnic diversity and is not significant in general in all classrooms.

Relative to pro-school attributes, the Roma/non-Roma gap is significantly higher (less negative) in non-pro-school attributes in classrooms with high ethnic diversity, both for vignette persons with average ($\beta_4 = 0.590$; $p = 0.003$) and poor GPA ($\beta_4 = 0.786$; $p < 0.001$).

If we do not distinguish classrooms based on their ethnic diversity (Fig. 3), the Roma/non-Roma gap is 0.013 ($p = 0.933$) for vignette persons with an average GPA, and it is -0.063 ($p = 0.698$) for vignette persons with a poor GPA. Thus, the results do not support H2. Roma students (relative to non-Roma students) do not judge their peers as more popular if they have non-pro-school attributes.

We find the Roma/non-Roma gap in the estimated popularity of a vignette person with good GPA (pro-school attributes) to be significantly higher ($\beta_5 = 0.826$; $p = 0.016$) in classrooms with low ethnic diversity relative to classrooms with high ethnic diversity (see the right-hand panel of Fig. 4). Therefore, our results support H3a. The positive interaction-coefficient (β_5) shifts the Roma/non-Roma gap measured in ethnically highly diverse classrooms (β_2) in a positive direction. Nevertheless, in classrooms with low ethnic diversity, the Roma/non-Roma gap is not significant (*coef.* $= 0.31$; $p = 0.221$).

The relative difference in the Roma gap according to classrooms' ethnic diversity is significantly less in terms of non-pro-school attributes than in pro-school attributes. For example, the difference in the Roma/non-Roma gap between classrooms with low versus high ethnic diversity in the case of a vignette person with a poor GPA is significantly lower ($\beta_7 = -1.480$; $p < 0.001$) than the same relative difference in good GPA ($\beta_5 = 0.826$; $p = 0.016$).

We find partial support for H3b. Regarding non-pro-school attributes, the *relative* Roma-gap is smaller (less positive) in classrooms with low ethnic diversity relative to classrooms with high ethnic diversity (Fig. 4, right-hand panel). More specifically, in classrooms with low ethnic diversity, Roma students rate their peers as less popular (*coef.* $= -0.654$ $p < 0.05$) if they have a poor GPA than in classrooms with high ethnic diversity. The Roma/non-Roma gap is, however, not significant if the vignette person has an average GPA.

Table 4 Main results

	(1) GPA model	(2) Effort model	(3) Behavior model
Vignette person's main characteristics (β_1)			
Grades			
Good GPA	Ref.	Ref.	Ref.
Average GPA	−1.421**	−1.095**	−1.089**
	(0.153)	(0.081)	(0.081)
Poor GPA	−2.296**	−1.841**	−1.840**
	(0.151)	(0.077)	(0.077)
Effort			
Diligent	Ref.	Ref.	Ref.
Does not do homework	−1.874**	−2.148**	−1.878**
	(0.096)	(0.172)	(0.096)
Lacks/incomplete equipment	−1.643**	−1.761**	−1.647**
	(0.092)	(0.189)	(0.092)
Idleness (is often off-task)	−1.549**	−1.999**	−1.552**
	(0.098)	(0.186)	(0.098)
Behavior			
Good school behavior	Ref.	Ref.	Ref.
Hinders others	−1.309**	−1.315**	−1.617**
	(0.089)	(0.089)	(0.177)
Talks out of turn	−1.367**	−1.367**	−1.740**
	(0.087)	(0.087)	(0.173)
Gets out of seat	−1.487**	−1.482**	−1.651**
	(0.089)	(0.089)	(0.174)
Disobedient	−1.330**	−1.332**	−1.688**
	(0.094)	(0.094)	(0.178)
Gender			
Girl	Ref.	Ref.	Ref.
Boy	−0.035	−0.038	−0.033
	(0.055)	(0.055)	(0.055)
The Roma/non-Roma gap in pro-school attributes in classrooms with high ethnic diversity (β_2)			
Non-Roma	Ref.	Ref.	Ref.
Roma	−0.521*	−0.452[+]	−0.270
	(0.242)	(0.263)	(0.243)
The high/low ethnic diversity gap in pro-school attributes among Roma (β_3)			
High ethnic diversity	Ref.	Ref.	Ref.
Low ethnic diversity	−0.450*	−0.335	−0.396[+]
	(0.226)	(0.240)	(0.225)
Roma/non-Roma gap in *non-pro-school* attributes in classrooms with high ethnic diversity *relative to* the Roma/non-Roma gap in *pro-school* attributes in classrooms with high ethnic diversity (β_4)			
Good GPA×Roma	Ref.		
Average GPA×Roma	0.590**		
	(0.201)		
Poor GPA×Roma	0.786**		
	(0.203)		

Table 4 (continued)

	(1) GPA model	(2) Effort model	(3) Behavior model
Diligent×Roma		Ref.	
Does not do homework×Roma		0.556*	
		(0.227)	
Lacks/incomplete equipment×Roma		0.281	
		(0.254)	
Idleness (is often off-task)×Roma		0.690**	
		(0.244)	
Good behavior×Roma			Ref
Hinders others×Roma			0.248
			(0.239)
Talks out of turn×Roma			0.505*
			(0.232)
Gets out of seat×Roma			0.186
			(0.233)
Disobedient×Roma			0.448*
			(0.194)
The Roma/non-Roma gap in pro-school attributes in classrooms with *low ethnic diversity relative to* classrooms with *high ethnic diversity* (β_5)			
Roma×High ethnic diversity	Ref.	Ref.	Ref.
Roma×Low ethnic diversity	0.826*	0.376	0.439
	(0.343)	(0.373)	(0.343)
The pro-school/non-pro-school gap in classrooms with low ethnic diversity relative to classrooms with high ethnic diversity (β_6)			
Good GPA×Low ethnic diversity	Ref.		
Average GPA×Low ethnic diversity	0.413*		
	(0.164)		
Poor GPA×Low ethnic diversity	0.611**		
	(0.165)		
Diligent×Low ethnic diversity		Ref.	
Does not do homework×Low ethnic diversity		0.256	
		(0.182)	
Lacks/incomplete equipment×Low ethnic diversity		0.113	
		(0.209)	
Idleness (is often off-task)×Low ethnic diversity		0.538**	
		(0.199)	
Good behavior×Low ethnic diversity			Ref
Hinders others×Low ethnic diversity			0.448*
			(0.194)
Talks out of turn×Low ethnic diversity			0.500**
			(0.189)
Gets out of seat×Low ethnic diversity			0.261
			(0.189)
Disobedient×Low ethnic diversity			0.527**
			(0.193)

Table 4 (continued)

	(1) GPA model	(2) Effort model	(3) Behavior model
The difference between pro-school and non-pro-school attributes in the difference in the Roma/non-Roma gap in classrooms with low relative to high ethnic diversity (β_7)			
Good GPA×Roma×Low ethnic diversity	Ref.		
Average GPA×Roma×Low ethnic diversity	−0.971**		
	(0.282)		
Poor GPA×Roma×Low ethnic diversity	−1.480**		
	(0.283)		
Diligent×Roma×Low ethnic diversity		Ref.	
Does not do homework×Roma×Low e. div.		−0.415	
		(0.319)	
Lacks/incomplete equipment×Roma×Low e. div.		−0.284	
		(0.357)	
Idleness (is often off-task)×Roma×Low e. div.		−0.861*	
		(0.343)	
Good behavior×Roma×Low ethnic diversity			Ref.
Hinders others×Roma×Low ethnic diversity			−0.471
			(0.333)
Talks out of turn×Roma×Low ethnic diversity			−0.826*
			(0.325)
Gets out of seat×Roma×Low ethnic diversity			−0.493
			(0.328)
Disobedient×Roma×Low ethnic diversity			−0.924**
			(0.336)
Respondent's baseline characteristics (β_8 coefficient)			
Girl	−0.297*	−0.298*	−0.292*
	(0.121)	(0.121)	(0.121)
Age	−0.018	−0.018	−0.018
	(0.093)	(0.093)	(0.093)
GPA	−0.156*	−0.156*	−0.156*
	(0.073)	(0.073)	(0.073)
Vignette characteristics	Yes	Yes	Yes
Constant	7.766**	7.731**	7.713**
	(1.391)	(1.395)	(1.392)
Number of vignettes	6969	6969	6969
Number of respondents	584	584	584
Number of classrooms	38	38	38
ll	−14,817	−14,824	−14,823
chi2	3356**	3336**	3337**

All models contain classroom and student random effects

Standard errors in parentheses: **$p < 0.01$; *$p < 0.05$; +$p < 0.1$

Results in relative differences are, therefore, consistent with the findings of Bisin et al. (2011). The relative Roma/non-Roma gap is greater in classrooms with high ethnic

diversity. Specifically, the Roma/non-Roma gap is smaller (more negative) in pro-school attributes, and higher (more positive) at least in some non-pro-school attributes. These findings support the assumption that oppositional culture serves to defend ethnic boundaries in ethnically more heterogeneous classrooms. The absolute Roma/non-Roma gap is not significant, however, as the left-hand panel in Fig. 4 shows, either in classrooms with low ($coef. = -0.389$; $p = 0.101$) or in classrooms with high ($coef. = 0.265$; $p = 0.246$) ethnic diversity.

In sum, our results do not confirm H1 and H2 about the negative Roma/non-Roma gap in pro-school (H1) and the positive Roma/non-Roma gap in non-pro-school attributes (H2) in general (Fig. 3). Our findings do partially confirm the assumed relative differences in the Roma/non-Roma gap between classrooms with low and high ethnic diversity. Namely, we found the Roma/non-Roma gap to be higher (less *negative*) in pro-school attributes in classrooms with low ethnic diversity than in classrooms with high ethnic diversity (H3a). Furthermore, in some (poor GPA) but not all non-pro-school attributes we found (H3b) the Roma/non-Roma gap to be lower (less *positive*) in non-pro-school attributes in classrooms with low ethnic diversity than in classrooms with high ethnic diversity (H3b).

Notably, however, the relative differences (analyzed in H3a and H3b) are less important, since the Roma/non-Roma gap is only significant in pro-school attributes in classrooms with high ethnic diversity. More specifically, Roma students estimate their peers in ethnically highly diverse classrooms as less popular if their peers have a good GPA than in classrooms with low ethnic diversity (Fig. 4 left-hand panel).

Figures 5 and 6 (the corresponding models are in Column 2 and 3 in Table 4, respectively) show qualitatively the same results for vignette persons' effort (Fig. 5) and school behavior
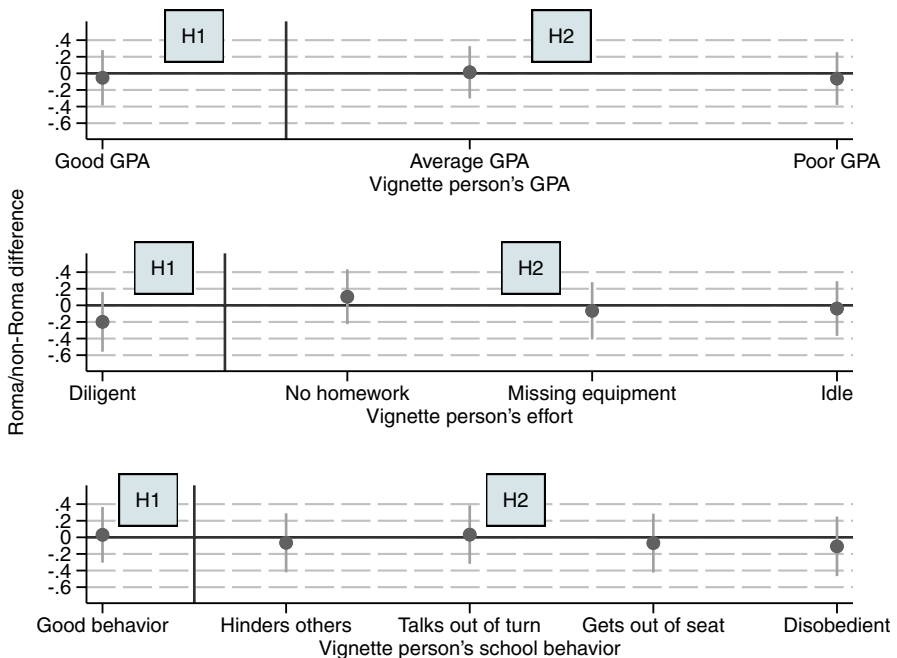

Fig. 3 Tests for H1 and H2 in terms of vignette person's GPA, effort, and school behavior
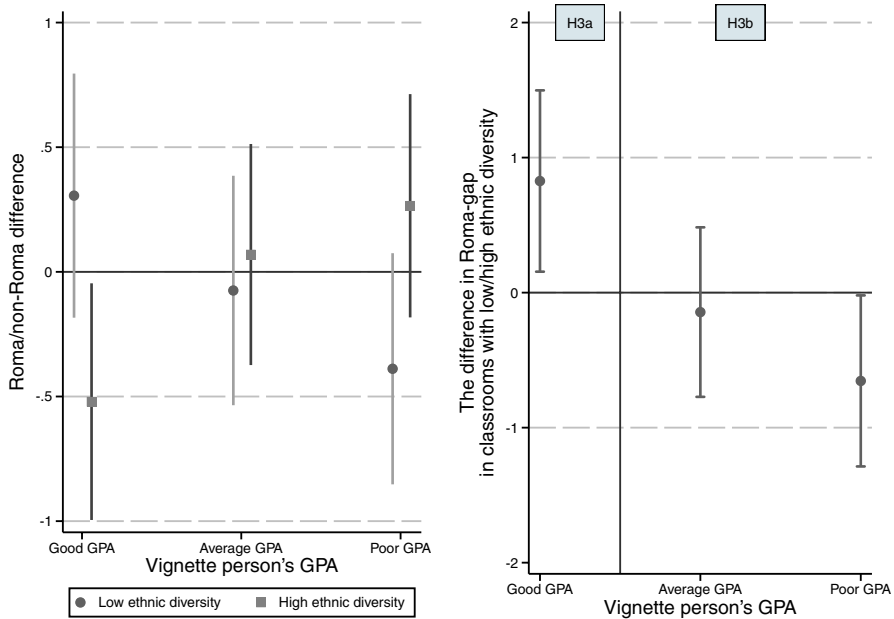
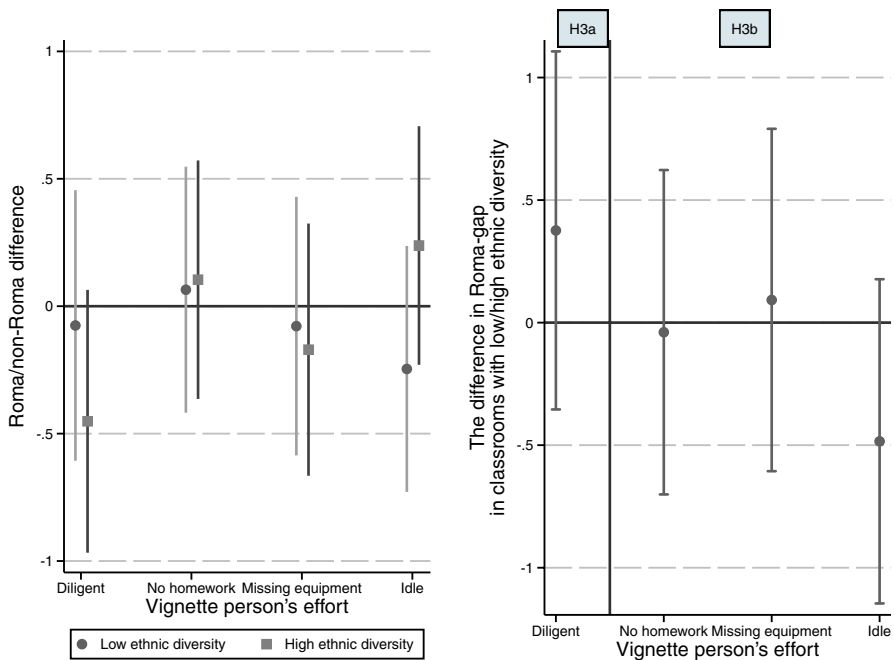**Fig. 4** Roma/non-Roma gap according to vignette persons' GPA and the ethnic diversity of students' classroom

Fig. 5 Roma/non-Roma gap according to vignette person's effort and the ethnic diversity of students' classrooms
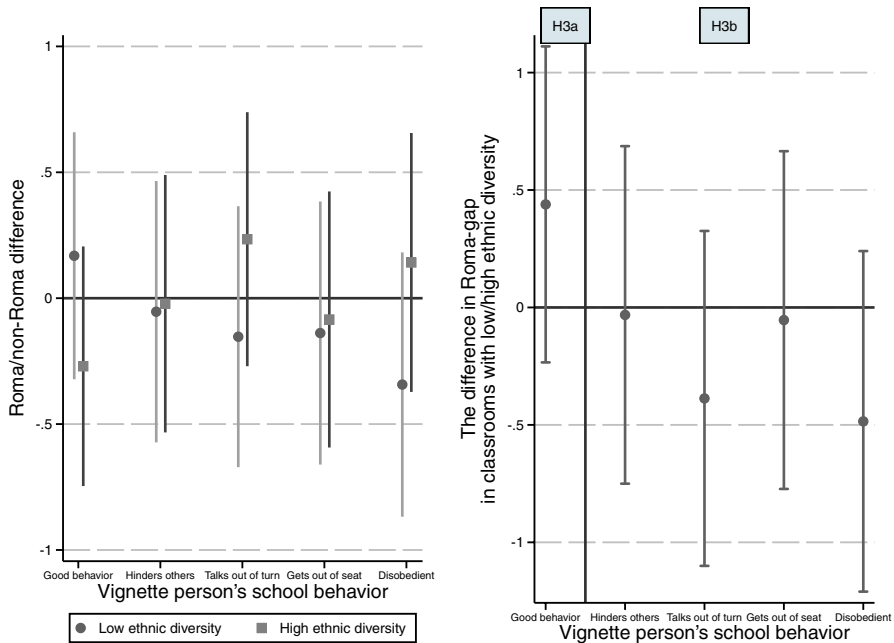
Fig. 6 Roma/non-Roma gap according to vignette person's school behavior and the ethnic diversity of students' classrooms

(Fig. 6) to those we found for their GPA. Overall, Roma and non-Roma differences are not significant either in pro-school or in non-pro-school attributes. Furthermore, the differences in classrooms with low versus high ethnic diversity are also statistically not significant.

The data do not support H1 and H2 (see the corresponding charts in Fig. 3), and the relative differences assumed in H3a and H3b are also statistically not significant.

Based on these results, oppositional culture is not found to be prevalent in students' effort and school behavior either in pro-school or in non-pro-school attributes, and differences between classrooms with low/high ethnic diversity are also statistically not significant.

5 Discussion

The research for this paper inquired into the emergence of oppositional culture in Hungarian primary education (lower-secondary level in international classification). OCT argues that peer pressure prevents minority students from doing well in schools (Ogbu 2003). Minority students might restrict and camouflage their academic achievement to secure their peers' acceptance (Fordham and Ogbu 1986).

The economic literature argues, furthermore, that oppositional culture is more prevalent in classrooms with high ethnic diversity (Bisin et al. 2011) in which oppositional culture protects minority students' ethnic identity by reinforcing the distinction between them and majority students.

We analyzed how Roma and non-Roma students judged their peers' coolness in ethnically diverse Hungarian classrooms. Thus, we extended OCT to a different ethnic

group to the African American community, which is currently the most researched ethnic minority in terms of OCT.

We conducted a survey experiment in which the characteristics of peers (vignette persons) varied randomly, so there was no correlation between the characteristics of students and vignette persons which could bias our estimations. We compared Roma and non-Roma students' judgments about their peers' coolness in classrooms with low/high ethnic diversity to find out how the ethnic composition of classrooms influences the emergence of oppositional culture. Our analysis targeted pro-school and non-pro-school attributes to assess how widespread oppositional culture is in ethnically mixed Hungarian schools.

Based on the related results we can at most claim that oppositional culture is sporadically prevalent among Roma/non-Roma students in Hungarian schools. Roma students judged their peers with good GPA as less popular in classrooms with high ethnic diversity. In other domains (students' effort and school behavior), we were neither able to detect oppositional culture in general, nor to find differences in oppositional culture between classrooms with low/high ethnic diversity. The Roma and non-Roma differences are, furthermore, not prevalent in any of the non-pro-school attributes. Roma students might not restrict or camouflage their school achievement, since they are not appraised positively for doing this by their peers.

In sum, in classrooms with high ethnic diversity, the need of minority students to define their ethnic identity in opposition to majority students is restricted to academic achievement, and it is not generally prevalent in different domains like students' effort or school behavior. Thus, oppositional culture is localized and it is not widespread, which might imply that the Roma/non-Roma achievement gap has predominantly non-cultural explanations.

Furthermore, our specific results for classrooms with high ethnic diversity speak for a non-linear relationship between the share of Roma in classrooms and the prevalence of an oppositional culture. Thus our results explain why linear approximation between the share of Roma and oppositional culture (Kisfalusi 2018) did not produce significant results.

Importantly, our results do not reveal that Roma students appraise their peers as more popular if they develop non-pro-school attributes. Thus, they do not support the claim of OCT that by restricting or camouflaging academic achievement minority students can become popular with their peers (Fordham and Ogbu 1986). We found that non-pro-school attributes are universally rejected by Roma, and also by non-Roma students.

Our results contradict, furthermore, prior research (Hajdu et al. 2019) showing that high-achieving Roma students are appreciated by their peers in Hungarian schools, since these students have more friends and fewer adversaries. Our findings point out important differences in the peer environment, supporting the claim that a heterogeneous peer environment (Bisin et al. 2011) fuels an oppositional culture. In contrast to in classrooms with low ethnic diversity, in classrooms with high ethnic diversity the few inter-ethnic contacts and rare inter-ethnic friendship networks (Boda and Néray 2015) might foster the need for the development of oppositional attitudes which help defend and define minority students' ethnic identity.

Nevertheless, belonging to the Roma minority is a much less objective and visible characteristic than belonging to the African American minority. Some surnames are common to Roma, but the phenotypical features of Roma people are sometimes not obvious. Therefore, irrespective of "objective" features, Roma identity is more likely to involve the interplay between self-perception and peers' attributions. Thus the fluid boundaries of Roma identity (Boda 2019) and the less visible phenotypical features of ethnicity among the Roma might restrict the extension of OCT to the Roma.

The causes of an ethnic achievement gap in Hungarian schools, therefore, are context specific. The latter is restricted to academic achievement and is specific for classrooms with high ethnic diversity. This very specific occurrence of oppositional culture in Hungary

means that the ethnic achievement gap, in general is not rooted in the fear of loss of popularity for being an achiever. However Results imply, however, that mixing Roma and non-Roma students in the same classrooms can potentially induce oppositional attitudes between Roma and non-Roma students at least in terms of how they rate peers with good GPA. Future research should reveal how Roma students' school performance is hindered by oppositional attitudes in classrooms with high ethnic diversity.

Appendix

Mennyire tartod menőnek azt a diákot, akinek a következő tulajdonságai vannak? A menő diák az, aki népszerű és meghatározó az osztályodban.

Válaszaidat egy olyan 0-tól 10-ig tartó skálán jelöld, ahol a 0 jelenti azt, ha egyáltalán nem tartod menőnek a diákot. A 10-es jelentése az, ha nagyon menőnek tartod a diákot. Valamint a 0 és 10 közötti számokat is használhatod úgy, hogy minél nagyobb számot adsz, annál menőbbnek tartod a diákot. Minden jellemzett diáknál csak egy választ jelölj meg!

V/38_2

A 1. diáknak a következő jellemzői vannak:
- Gyakran beszélget, nevetgél, levelezik az órákon
- Gyakran érkezik hiányos felszereléssel
- Négyes ötös tanuló
- Lány

Egyáltalán nem menő					Közepesen menő					Nagyon menő
0	1	2	3	4	5	6	7	8	9	10
$\bigcirc_0$	$\bigcirc_1$	$\bigcirc_2$	$\bigcirc_3$	$\bigcirc_4$	$\bigcirc_5$	$\bigcirc_6$	$\bigcirc_7$	$\bigcirc_8$	$\bigcirc_9$	$\bigcirc_{10}$

How cool would you perceive your fellow students to be if they had the following attributes? ("Cool" describes a person who is popular and has an influence on others)

Please indicate your answer on a scale ranging from 0 to 10, where 0 means not at all cool and 10 means very cool. You can use a number between 0 and 10 to give a more nuanced response. Larger numbers mean that you perceive the student as cooler.
*Please indicate **only one** answer for each student!*

The first student has the following characteristics:
- Often hinders others by talking, laughing, or letter-writing
- Arrives with incomplete equipment
- Good GPA
- Girl

Not at all cool					Medium cool					Very cool
0	1	2	3	4	5	6	7	8	9	10
$\bigcirc_0$	$\bigcirc_1$	$\bigcirc_2$	$\bigcirc_3$	$\bigcirc_4$	$\bigcirc_5$	$\bigcirc_6$	$\bigcirc_7$	$\bigcirc_8$	$\bigcirc_9$	$\bigcirc_{10}$

References

Ainsworth-Darnell, J.W., Downey, D.B.: Assessing the oppositional culture explanation for racial/ethnic differences in school performance. Am. Sociol. Rev. **63**(4), 536 (1998). https://doi.org/10.2307/2657266

Auspurg, K., Hinz, T.: Factorial Survey Experiments. Quantitative Applications in the Social Sciences, vol. 175. SAGE Publications, London (2015)

Bisin, A., Patacchini, E., Verdier, T., Zenou, Y.: Formation and persistence of oppositional identities. Eur. Econ. Rev. **55**(8), 1046–1071 (2011). https://doi.org/10.1016/j.euroecorev.2011.04.009

Boda, Z.: Social influence on observed race. Sociol. Sci. **5**, 29–57 (2018). https://doi.org/10.15195/v5.a3

Boda, Z.: Friendship bias in ethnic categorization. Eur. Sociol. Rev. (2019). https://doi.org/10.1093/esr/jcz019

Boda, Z., Néray, B.: Inter-ethnic friendship and negative ties in secondary school. Soc. Netw. **43**(October), 57–72 (2015). https://doi.org/10.1016/j.socnet.2015.03.004

Çelik, Ç.: 'Having a German passport will not make me German': reactive ethnicity and oppositional identity among disadvantaged male turkish second-generation youth in Germany. Ethnic Racial Stud. **38**(9), 1646–1662 (2015). https://doi.org/10.1080/01419870.2015.1018298

Cook, P.J., Ludwig, J.: Weighing the 'Burden of "acting white"'?: are there race differences in attitudes toward education? J. Policy Anal. Manag. **16**(2), 256–278 (1997). https://doi.org/10.1002/(SICI)1520-6688(199721)16:2%3c256:AID-PAM4%3e3.0.CO;2-H

Dafoe, A., Zhang, B., Caughey, D.: Information equivalence in survey experiments. Polit. Anal. **26**(4), 399–416 (2018). https://doi.org/10.1017/pan.2018.9

Farkas, G., Lleras, C., Maczuga, S.: Does oppositional culture exist in minority and poverty peer groups? Am. Sociol. Rev. **67**(1), 148 (2002). https://doi.org/10.2307/3088938

Fordham, S., Ogbu, J.U.: Black students' school success: coping with the 'burden of "acting white"'. Urban Rev. **18**(3), 176–206 (1986). https://doi.org/10.1007/BF01112192

Fryer, R.G., Torelli, P.: An empirical analysis of 'acting white'. J. Public Econ. **94**(5–6), 380–396 (2010). https://doi.org/10.1016/j.jpubeco.2009.10.011

Hajdu T, Kertesi G, Kézdi G (2019) Inter-ethnic friendship and hostility between Roma and Non-Roma students in Hungary: The role of exposure and academic achievement. B.E. J. Econ Anal Policy **19**(1), 1–17. https://doi.org/10.1515/bejeap-2017-0289

Hogg, M.A., Reid, S.A.: Social identity, self-categorization, and the communication of group norms. Commun. Theory **16**(1), 7–30 (2006). https://doi.org/10.1111/j.1468-2885.2006.00003.x

Jasso, G.: Factorial survey methods for studying beliefs and judgments. Sociol. Methods Res. **34**(3), 334–423 (2006). https://doi.org/10.1177/0049124105283121

Kemény, I., Janky, B., Lengyel, G.: A Magyarországi Cigányság 1971–2003. Gondolat – MTA Etnikai-nemzeti Kisebbségkutató Intézet, Budapest (2004)

Kende, Á.: The Hungary of otherness: the Roma (Gypsies) of Hungary. J. Eur. Area Stud. **8**(2), 187–201 (2002). https://doi.org/10.1080/14608460020014167

Kisfalusi, D.: Bullies and victims in primary schools. Intersections **4**(1), 133–158 (2018). https://doi.org/10.17356/ieejsp.v4i1.372

Kisfalusi, D., Janky, B., Takács, K.: Double standards or social identity? The role of gender and ethnicity in ability perceptions in the classroom. J. Early Adolesc. (2018). https://doi.org/10.1177/0272431618791278

KSH [Hungarian Central Statistical Office].: Munkaerőpiaci Helyzetkép, 2014–2018, [Labor Market Report 2014–2018]. Hungarian Central Statistical Office (2018)

Ladányi, J., Szelényi, I.: Patterns of Exclusion: Constructing Gypsy Ethnicity and the Making of an Underclass in Transitional Societies of Europe. East European Monographs (2006)

Mickelson, R.A.: The attitude-achievement paradox among Black adolescents. Sociol. Educ. **63**(1), 44–61 (1990). https://doi.org/10.2307/2112896

Neal-Barnett, A.M.: Being Black: new thoughts on the old phenomenon of acting white. In: Neal-Barnett, A.M., Contreras, J.M., Kerns, K.A. (eds.) Forging Links: African American Children Clinical Developmental Perspectives, pp. 75–88. Greenwood Publishing Group, Westport (2001)

Ogbu, J.U.: Minority Education and Caste: The American System in Cross-Cultural Perspective. Academic Press, New York (1978)

Ogbu, J.U.: Variability in minority school performance: a problem in search of an explanation. Anthropol. Educ. Q. **18**(4), 312–334 (1987). https://doi.org/10.1525/aeq.1987.18.4.04x0022v

Ogbu, J.U.: Cultural Models and Educational Strategies of Non-Dominant Peoples (The 1989 Catherine Molony Memorial Lecture). City College Workshop Center, New York (1991)

Ogbu, J.U.: Black American Students in an Affluent Suburb A Study of Academic Disengagement. Lawrence Erlbaum Associates, Inc., All, Mahwah (2003). https://doi.org/10.1017/CBO9781107415324.004

Ogbu, J.U.: Minority Status, Oppositional Culture, & Schooling. Routledge, New York (2008). https://doi.org/10.4324/9780203931967

Ogbu, J.U., Simons, H.D.: Voluntary and involuntary minorities: a cultural-ecological theory of school performance with some implications for education. Anthropol. Educ. Q. **29**(2), 155–188 (1998). https://doi.org/10.1525/aeq.1998.29.2.155

Simonovits, G., Kézdi, G.: Economic hardship triggers identification with disadvantaged minorities. J. Polit. **78**(3), 882–892 (2016). https://doi.org/10.1086/685586

Simonovits, G., Kézdi, G., Kardos, P.: Seeing the world through the other's eye: an online intervention reducing ethnic prejudice. Am. Polit. Sci. Rev. **112**(01), 186–193 (2018). https://doi.org/10.1017/S0003055417000478

Telles, E., Paschel, T.: Who is Black, White, or mixed race? How skin color, status, and nation shape racial classification in Latin America. Am. J. Sociol. **120**(3), 864–907 (2014). https://doi.org/10.1086/679252

van Tubergen, F., van Gaans, M.: Is there an oppositional culture among immigrant adolescents in the Netherlands? Youth Soc. **48**(2), 202–219 (2016). https://doi.org/10.1177/0044118X13486901

Váradi, L.: Youths trapped in prejudice: Hungarian Adolescents' attitudes towards the Roma. Springer VS, Wiesbaden (2014)