Civicness drain

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ONLINE APPENDIX

September 10, 2021

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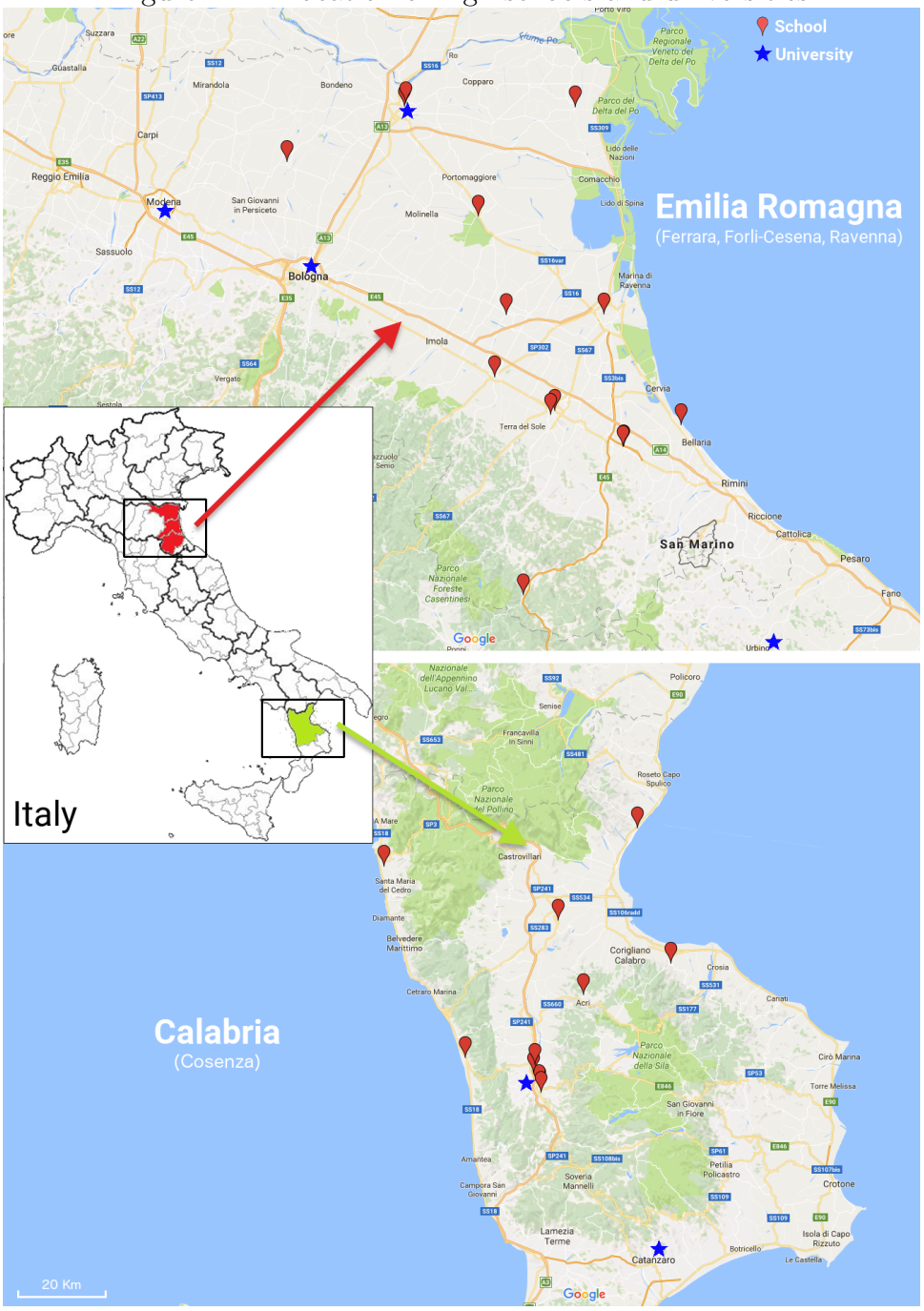
A–2.1 Location of high-schools and universities

Figure A–1: Location of high-schools and universities



A–2.2 Descriptive statistics

Table A–1: Descriptive statistics of study participants

Variable	Mean	St. Dev.	Min	Max
Calabria (South of Italy), N=671				
Female	.57	.50	0	1
Intellectual ability	4.77	1.76	0	9
Average intellectual ability in class	4.77	0.39	4.07	5.53
Risk seeking attitude	7.03	1.71	0	10
Impatience level	3.15	1.66	0	6
Trust for others	.08	0.27	0	1
High family income	.24	0.43	0	1
Low family income	.09	0.29	0	1
Years of average parental education	13.47	3.10	5	18
Urban area	.46	.50	0	1
Classical high school	.22	0.42	0	1
Class size	21.18	4.01	11	28
Missing real migration information	.03	.18	0	1
Emilia-Romagna (North of Italy), N=394				
Female	.56	.50	0	1
Intellectual ability	6.00	1.77	0	9
Average intellectual ability in class	6.00	.66	3.77	7.09
Risk Seeking attitude	6.75	1.75	0	9
Impatience level	2.24	1.45	0	6
Trust for others	.21	.40	0	1
High family income	.29	.45	0	1
Low family income	.11	.31	0	1
Years of average parental education	13.85	2.88	5	18
Urban area	.38	.49	0	1
Classical high school	.26	.44	0	1
Class Size	18.18	3.85	7	23
Missing real migration information	.10	.31	0	1

Notes: The table reports descriptive statistics for the students who participated in the study. Intellectual ability: number of correct answers to 9 (non-incentivized) questions, of which 8 are taken from the PISA questionnaire and 1 is a follow up statistical question asked to participants after the die-roll task. Risk seeking: each student positioned herself on a scale from 0 to 10 in which 0 indicated "no willingness to take risks" while 10 indicated "full availability to take any risk" (non-incentivized). Impatience level: it was measured through an incentivized task with six choices, each one between receiving €100 on the day after the session or a larger amount (increasing by €5 at each subsequent choice) after four weeks; the impatience level is the number of decisions in which the student indicated to prefer the €100 immediately; therefore, the minimum impatience level is 0 and the maximum is 6. To five students who did not answer these questions we imputed the average impatience level. Trust for others: 1=most people can be trusted, and 0 otherwise, in the following question taken from the World Value Survey: "Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?". Family income: high (low) if students self-reported that it was above (below) the average in their region (Calabria or Emilia-Romagna respectively). The omitted category (medium) includes students who declared their family income to be around the Calabrian or Emilia-Romagna average. Urban area: 1=living in the cities of Cosenza, Rende, Ferrara, Forlì, Ravenna, 0 otherwise. Classical high school: 1 = Liceo Classico, 0 = Liceo Scientifico. Average class size differs from that reported in Section 2.1 of the main text, because here the unit of observation is an individual student while in the text it is a class.

A–2.3 Whole distribution of the die-roll reports of students

Table A–2: Distribution of the die-roll reports of students in Calabria and Emilia-Romagna

	Calabria		Emilia-Romagna	
Die-roll result	Absolute frequency	Relative % frequency	Absolute frequency	Relative % frequency
1	47	7.00	57	14.47
2	57	8.49	49	12.44
3	53	7.90	53	13.5
4	78	11.62	66	16.75
5	96	14.31	55	13.96
6	340	50.67	114	28.93
Total	671	100.00	394	100.00

Notes: Raw distributions of the reports of students on the seventh die-roll, by region.

While in Emilia-Romagna the distribution is uniform in the 1-5 range of die-roll values, in Calabria die-roll values 4 and 5 are slightly over-represented. Canonical theoretical models makes no predictions about what the distribution should be. Behavioral considerations may play a role. A possible explanation for this pattern can be found in Utikal and Fischbacher (2013), who present experimental evidence on the propensity of nuns to lie in the die-roll task. They find that nuns are willing to lie to protect the reputation of honesty of the group in the eyes of external observers. Applied to our context, the higher frequency of 4-5 reports in Calabria could be due to the fact that the "Ultra-Civic" students in Calabria prefer to lie when they get a 6 because they expect the presence of Uncivic cheaters in their class and they want to influence the perception of external observers.[A–1] This does not happen in Emilia-Romagna, where the "Ultra-Civic" do not expect a high frequency of Uncivic and thus have no reason to worry. Importantly, we wish to stress that if this explanation is correct then it does not contradict our classification of students into Civic and Uncivic but rather strengthen it, as we identify these "Ultra-Civic" as (surely) Civic.

[A–1] And, as suggested by the evidence in Fischbacher and Foellmi-Heusi (2013) and Gneezy, Kajackaite, and Sobel (2018), it is not surprising that they prefer smaller to bigger lies.

A–2.4 Experimental procedures

Schools were contacted first with a short e-mail or phone call to the principals introducing the research team and the general goal of the research project, which was aimed at collecting information on the determinants of college choices of high-school students. The letters we used to communicate with the schools are reported below in this Online Appendix. Principals and teachers were informed that some students would receive a payment related to the assignments they were asked to perform, and that the school would receive paper for copy machines as a thank you for its collaboration. Students received information as well about the general goal of the data collection effort and they had to sign a consent form and a data release permission in order to participate.

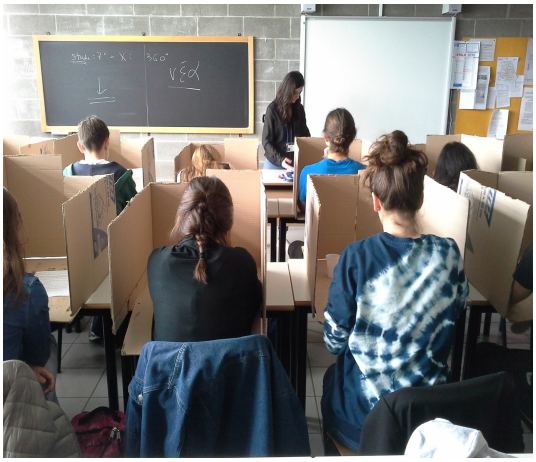
Sessions took place in April-May 2015 in Calabria and in April-May 2016 in Emilia-Romagna. We chose this period of the year because it is close to the final matriculation exam, thus students' awareness of their future choices was the highest possible. During the experiment students were asked to provide their e-mail address, their mobile phone number and their parents' phone number in order to be approached during the following year to gather information on their college choices. They provided these contacts voluntarily and formally agreed to be approached in the future.

The class experiment was run by two helpers per class. Before starting with the assignments we allowed students who did not want to participate to leave the room, but nobody did so. After the experiment, 4 students of one school asked us to remove their data although they had signed the consent. We removed them from the analysis.

The assistants placed numbered separators on students' desks in order to avoid communication and visual contact. Then the students picked a random number from a bag and were seated at the corresponding desk. See Figure A–2 for a picture of a class during the experiment. This was done to avoid clusters of students by friendship. The teachers were usually not present during the activity. In one class in Emilia-Romagna and one class in Calabria the teachers stayed in the room without interfering with the activity.

The experiment was run by pen and paper and it comprised three incentivized tasks, an ability task and a questionnaire. At the beginning of each task, the relevant instructions were handed out and read aloud. The instructions that were distributed to students follow below in this Online Appendix. Before each task, students had to answer a quiz to ensure correct understanding of the task while helpers were going around to check for the answers and give explanations when needed. For the incentivized tasks students were paid in private at the end of the experiment using gasoline vouchers.

Figure A–2: A Class during the experiment

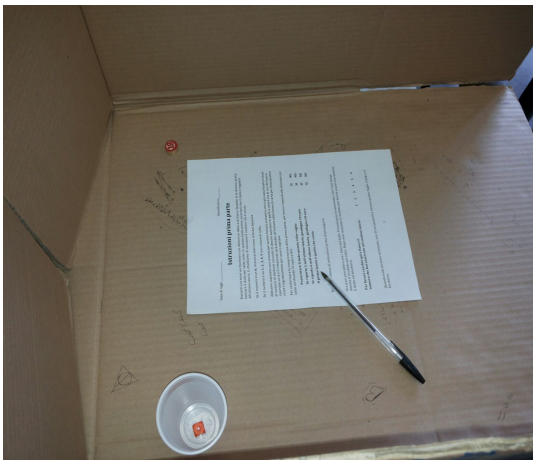


Notes: This picture has been taken during one of the experimental sessions in Emilia-Romagna. The assistants placed numbered partitions on students' desks in order to avoid communication and visual contact. Students were, then, randomly assigned to a desk in order to avoid clusters by friendship.

A–2.5 Main and collateral experimental tasks

A–2.5.1 Modified die-roll game

Figure A–3: The dice roll task



Notes: This picture has been taken during one of the experimental sessions in Emilia-Romagna. The assistants gave each student a die and a plastic cup. Students could roll the die in the paper glass so to keep the result out of sight. Then, they had to report the drawn number on the form shown in the picture. The picture also shows the token used as student's identification number.

Students received a plastic cup with a six-sided die (see Figure A–3), which they were asked to roll inside the cup for six times in order to check that it was fair. They were then asked to report the number drawn from the seventh roll, knowing that they would gain €10 if a six was reported and €0 if they reported a number between one and five. Participants also knew that experimenters had allocated a fixed budget for the school, and that what remained of this budget after payments for the task would be transferred to the school in the form of paper for copy machines. Therefore, participants faced a trade-off between private earnings and school resources.

After reporting the number, participants were asked to put back the die in the plastic cup. The sheet on which the number was reported was collected immediately after the completion of the task. The procedures were carefully designed in order to ensure anonimity and to make clear to participants that the experimenters were not able to check if they had reported the true number. After the task, students were asked to answer two questions, one on their understanding of simple probability theory and one about repetitions in their die draws. These questions were added in order to keep the framing of the task as neutral as possible and to distract participants' attention from the honesty feature of the game. Participants were paid in private at the end of the session and experimenters delivered the paper to the school together with a thank you note for the principal.

For the first task, we allocated an amount to be spent in each school based on a fixed per-capita endowment for participant. A portion of the funds went to the student participants in the form of gasoline vouchers and the remaining to the school as paper for the copy machine. The amount was computed as follows: a fixed amount of money had been allocated for each student participating to the experiment. Therefore, the total amount to be spent for the school was set equal to the number of students participating multiplied by this fixed amount. The amount left after subtracting participants' gains from the dice roll was spent on paper packages. The amount allocated for the experiment was estimated on the basis of a pilot conducted in a school in Bologna (Emilia-Romagna) and then adjusted for Calabria. This was done to ensure that both groups of schools had a reasonable amount of paper packages and to keep the incentives comparable. Actual choices in this task had no influence on the experimental budget. The number of paper packages to be transferred to the school ranged, for logistic reasons, between 5 and 25 paper packages of 500 sheet each. In one school in Emilia-Romagna we delivered the wrong number of packages due to a material error. The school received one package less than the due ones.

A–2.5.2 Inter-temporal preferences

The second task had the aim to measure participants' inter-temporal preferences. Participants had to choose between receiving a smaller amount of money the day after the experiment or a larger amount in four weeks. They faced six choices in which the difference between sooner and later amounts increased gradually as shown in Table A–3. Participants could receive an amount of money ranging from 100€ to 125€ in gasoline vouchers. Only one random participant per class was paid for this task. At the end of the activity the experimenter randomly drew and announced the selected participant for the payment. The participant was paid only for one of the six choices he/she made, which was also randomly drawn and announced. This was done to make the procedure transparent and to strenghthen the research team credibility. The experimenter handed over an envelope to the principal of the school containing the amount gained by the participant. The student could collect it at the chosen date.

Table A–3: Inter-temporal preferences task

Choice	Option A (Tomorrow)	Option B (In four weeks)
I	100€	100€
II	100€	105€
III	100€	110€
IV	100€	115€
V	100€	120€
VI	100€	125€

A–2.5.3 Prisoner's Dilemma

In the third task participants were informed that they had to play a game in random pairs. Participants did not know the identity of their partner, and they had to decide how to invest 10 euros. They could invest zero, half of the amount, or the whole amount. The amount invested was doubled and gained by the partner. The amount kept instead was cashed as earnings by the participant. The students were shown all the possible outcomes of the game (see table A–6 and table A–7 in the experimental instructions), everyone made two decisions (A and B). First they had to choose how much to invest without knowing the partner's choice (Decision A), second they were asked how much to invest conditional on the partner's choice (Decision B). At the end of the experiment two randomly chosen students were paid for this task.[A–2] A coin was tossed to determine which of the selected students was paid for his/her Decision A and which for his/her Decision B. Students knew that the combination of the two decisions would have determined their payments. If both invested 10 euros they would have earned the maximum amount (30 euros) while if one invested 10 euros and the other defected, the former would have earned zero and the latter 30 euros. The payoffs for other combinations ranged between these two, as described in detail in the instructions. The outcome and the selected participants were not revealed to the class in order to guarantee the privacy of their choices.

This task was designed to measure the willingness of students to give money to a randomly matched partner from the class. Cooperation in such a game captures a different kind of behavior than civicness as measured by our version of the die-roll task with social consequences of cheating. Indeed, our data show that PD cooperation and civicness in our die-roll task have a very low and, if anything, negative correlation.[A–3] This evidence is in

[A–2] The student who was selected for the inter-temporal preference task was not included in this random draw

[A–3] This observation applies to two different measures of PD-based conditional cooperation that we have constructed. The first measure labels as "cooperative" any subject who chose (in strategy method) to give

line with the literature showing that cooperation within one's small circle (classmates in our case) is not indicative of one's attitude toward adherence to social institutions (the school in our case).[A–4] Moreover, while there is a substantial gap in civicness between North and South, we do not see any gap in PD cooperation which, if anything, is lower in the North.[A–5]

A–2.5.4 Ability test

Participants had 15 minutes to answer 8 multiple choice questions with no monetary incentives. These questions were a subsample of the PISA (Programme for International Students Assessment) tests used to assess scientific competencies worldwide. These are part of an international survey which aims at evaluating education systems. We chose to use this test as a measure of ability rather than school marks to ensure comparability across schools. Moreover tests for University admission adopt similar criteria and numeracy is shown to be correlated with labor market outcomes (McIntosh and Vignoles, 2001 and Hanushek et al., 2015). Figure A–4 shows the distribution of students' ability in the sample.

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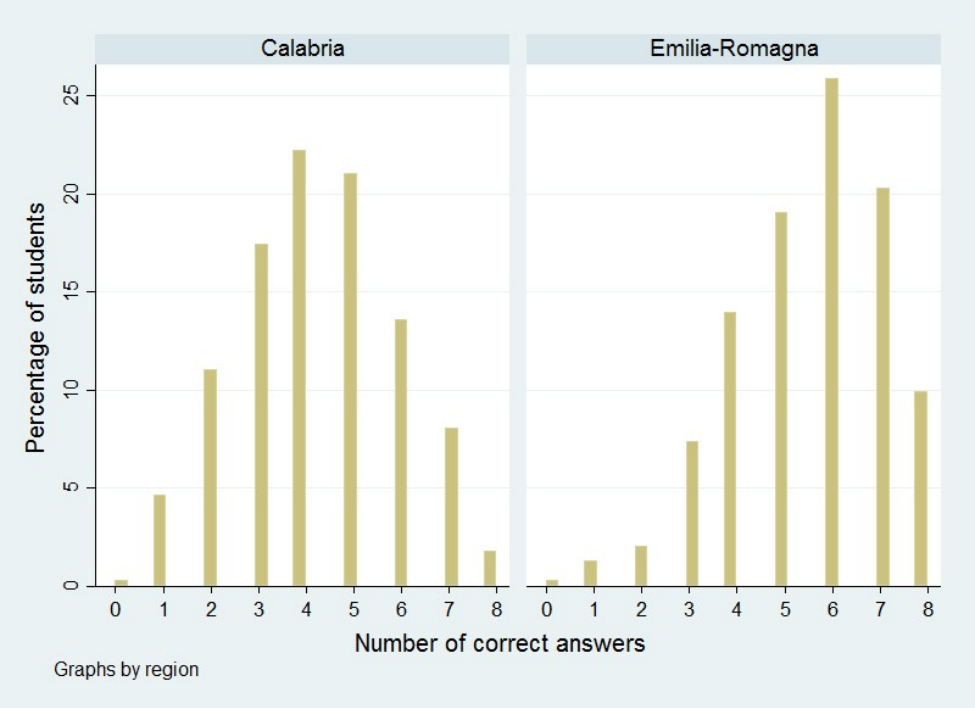
either 5 or 10 euros when conditioning on her opponent giving 10 euros. In our data, the correlation between this first measure of PD cooperation and civicness in the die-roll task is -0.06 in Calabria and -0.05 in Emilia-Romagna. At the level of classes, the corresponding correlations are equal -0.2 in both regions. The second measure labels as "cooperative" any subject who chose to give at least as many euros as her opponent when conditioning on the opponent giving either 5 or 10 euros. The correlation between this second measure of PD cooperation and civicness in the die-roll task is -0.02 in both Calabria and Emilia-Romagna. At the level of classes, the corresponding correlations are equal -0.4 in Calabria and 0.08 in Emilia-Romagna.

[A–4] Sociologists indeed distinguish between limited vs. generalized morality; see, for example, Banfield (1958) and Platteau (2000) and the model subsequently developed in Tabellini (2008). As Tabellini (2008) writes: "Norms of limited morality are applicable only to a narrow circle of friends or relatives; with others, cheating is allowed and regularly occurs. Generalized morality instead applies generally towards everyone, and entails respect for abstract individuals and their rights." This distinction between the two types of cooperation level is also at the core of Greif and Tabellini (2017), who analyze the differences between the 'Clan' culture (i.e. limited cooperation) of China and the 'Corporation' culture (i.e. generalized cooperation) of Europe. Finally, Alesina and Giuliano (2014) show that strong family ties are negatively correlated with generalized trust, in line with the negative correlation we report here.

[A–5] Using the first measure of PD cooperation described in footnote A–3, 69% of students cooperate in the South, while a lower fraction (66%) cooperate in the North. The corresponding figures using the second measure are 32% and 39%, respectively. In this case North cooperates more than South, but the difference is considerably smaller than the one emerging in the die-roll task.

Figure A–4: Ability Task. Students' ability distribution.



Notes: The graph shows the distribution of the number of correct answers in Calabria and Emilia-Romagna. Expected score from randomly given answers =1.75

A–2.5.5 Socio-economic questionnaire

Participants were asked to answer some questions on their socio-demographic status, preferences, and plans for the future. In particular, we asked about their intention to migrate after graduation and about their most favorite place to live and work. We also elicited their risk preferences, trust level and optimism. Finally, we gathered information on their family background and income.

A–2.6 Follow-Up Stage

During their classroom experiment students were asked to provide their e-mail address, their mobile phone number and their parents' phone number. They provided these contacts voluntarily and formally agreed to be approached in the future. The follow-up stage started in December 2015 in Calabria and in December 2016 in Emilia-Romagna. We contacted participants to find out where they lived and where they would see themselves living in 10 years. The follow-up contact took 5-10 minutes, students were also asked information about their field of study, or work choice, and their beliefs about relative honesty of people in the North vs. South of Italy. Participants were asked if they thought that the probability with which their lost wallet would have been returned in Cosenza was lower, equal or higher than in Forlì. Then, participants from Calabria were asked to guess what would be the answer to the same question by a person born in Forlì (Emilia-Romagna) and participants from Emilia-Romagna had to guess what a person from Cosenza (Calabria) would have answered.

When students were not reachable the research assistants tried to gather information from their parents. Parents were asked to answer by phone to a shorter version of the questionnaire.

A–2.6.1 Migration indicators in the experiment and in the follow-up stage

Table A–4 compares the different measures of migration that we have obtained during the experiment and in the follow-up stage for the 648 students of Calabria. As mentioned in the text, we observe a considerable positive correlation between these measures. As for Emilia-Romagna, only 3 students were observed to be in the South during the fall after graduation, which is the reason why, in this paper, we concentrate mainly on the interaction between civicness and migration from South to North. To give an indication of the propensity to migrate of Emilia-Romagna students, in Table A–5 we compare measures related to their decision to emigrate out of the region. Broadly speaking, students from Emilia-Romagna are less mobile than those from Calabria, even if just to go to a different northern region, and for them as well the measures of migration at our disposal are positively correlated.

Table A–4: Available measures of migration to the North for Calabria students

Measure of migration	Share of students	Correlation with observed migration to North	Observations
Went to North in the fall after graduation	33%	1	648
Intend to go to North in the fall after graduation	46%	0.53	648
Calabria is not the ideal place where to live	83%	0.17	648
Unlikely that in 10 years I live in Calabria	59%	0.23	596

Notes: The table reports statistics about four indicators of migration to North for Calabria students. In the first column, the first row reports the fraction of students observed in the North during the fall after graduation, which is the dependent variable in the empirical analysis of Section 3 of the main text. The second and third rows report, respectively, the fraction of students who intend to migrate to North after graduation and the fraction of students who think that Calabria is not the ideal place to live, both as declared in the spring before graduation. The fourth row is the fraction of students who think it is unlikely that they will live in Calabria in ten years, as declared during the follow-up stage. The second column reports the correlations of each indicator with respect to the indicator in the first row.

Table A–5: Available measures of migration out of the region for Emilia-Romagna students

Measure of migration	Share of students	Correlation with observed migration to North	Observations
Left the region in the fall after graduation	16%	1	353
Intend to leave the region the fall after graduation	17%	0.44	353
Emilia-Romagna is not the ideal place where to live	51%	0.19	353
Unlikely that in 10 years I live in Emilia-Romagna	35%	0.25	348

Notes: The table reports statistics about four indicators of migration out of the region for Emilia-Romagna. In the first column, the first row reports the fraction of students observed outside the region during the fall after graduation. The second and third rows report, respectively, the fraction of students who intend to migrate out of the region after graduation and the fraction of students who think that Emilia-Romagna is not the ideal place to live, both as declared in the spring before graduation. The fourth row is the fraction of students who think it is unlikely that they will live in Emilia-Romagna in ten years, as declared during the follow-up stage. The second column reports the correlations of each indicator with respect to the indicator in the first row.

A–2.7 Letters to contact the school principals

The research team approached the schools first with a short e-mail or phone call to the principal, introducing the research team and the generic goal of the research project. Further details were then communicated in a letter sent to the principal after confirmation of interest. Overall, we identified 34 eligible schools, we approached 31 schools and 24 schools accepted to participate to the study. The letters we used to communicate with the schools are reported below.

A–2.7.1 Letters used to contact the school principals in Calabria (Emilia-Romagna): First Contact

Dear xxxx,

I am a professor at the Department of Economics, Statistics and Finance of the University of Calabria (University of Bologna). I would like to describe to you a research project (joint with the University of Bologna (University of Calabria) and the European University Institute) that we would like to conduct with the high-schools of the province of Cosenza (Forlì-Cesena, Ravenna and Ferrara).

Would you please be so kind as to indicate a telephone contact (and a day and time suitable for you), so that I can provide you with more details about the research project?

Thank you for your attention.

Best regards,

Prof. xxxx

A–2.7.2 Letters used to contact the school principals in Calabria (Emilia-Romagna): Second Contact

Dear xxxx,

Following our recent conversation, I am writing to give you further information about the research project "Students' Individual Characteristics and College Choices", to which you kindly agreed to participate. Ten (Twelve) other schools will take part in the project. The project is funded by the European University Institute (Fondazione Cassa dei Risparmi di Forlì) and it is the result of collaboration between the University of Bologna, the University of Calabria and the European University Institute (EUI) of Fiesole. Our aim is to study how individual characteristics of senior high-school students influence their decisions regarding college. These characteristics include risk aversion, inter-temporal preferences, intellectual-ability and socio-economic status. The collection of necessary data will occur in two phases.

In the first one, through appropriate questionnaires, we will collect data about students of two (three) classes of your school. The questionnaires will be delivered in the classrooms, at a time of your preference ranging between 9am and 12pm, during the months of March, April or May. Our research assistants will simultaneously administer the questionnaires to the chosen classes. For this kind of research projects, to ensure the maximum engagement of the participants, a payment is provided, conditioned on the answers, which will consist of around 10 or 15 euros per student on average. For tax purposes these amounts will be paid in the form of gasoline vouchers. In order to study inter-temporal preferences, which are relevant for investments and especially for the investment in education, some students will be paid the day after the questionnaire or four weeks later. In these cases, we will entrust you with two (three) envelopes to be handed over to the addressed students on the indicated due date.

Any residual amount, after the payment of students, will be devolved to your school in the form of paper for copy machines and printers. It might not be a large amount, but we would still like to reward the school for participating. In order to ensure the confidentiality of the answers given by each student, we will need to install cardboard partitions on the school desks, so that the students will not be able to see their neighbors' answers. For this purpose, our research assistant will visit your school beforehand to see the shape of desks and figure out how to position the partitions.

In the second phase of the project, which will take place next fall, we will contact the students by mail or phone for some short questions about their college or work choices. For this reason, in the last part of the questionnaire given in the first phase, we will ask students to indicate their phone number and their e-mail address.

We are available - email and telephone numbers are below - to provide further clarifica-

tions about our research project and the data collection.

Our research assistant will contact you shortly to arrange with you the date in which we are going to collect the data at your school.

We would like to express our deepest gratitude for your willingness to participate in this project. We hope it will provide useful information to help Italian students with their college choices.

With our best regards,

The Research Team

A–2.7.3 Thank you note for the school principals in the two regions

Dear xxxx,

these packages of paper for copy machines are our sign of gratitude for your school's participation in the experiment we have conducted today. Unfortunately, the available research funds do not allow us to fully compensate you for all the trouble.

Please extend our gratitude to the entire teaching staff. Within this year, after having interviewed the students involved in the experiment about their college choices, we will share with you the results of our research.

Best Regards,

The Research Team

A–2.8 Experimental Instructions

Thank you for accepting to participate to this activity. This study is part of a research project funded by the European University Institute (Fondazione Cassa di Risparmio di Forlì) and conducted by the University of Bologna, the University of Calabria and the European University Institute.

At the end of this activity you will receive gasoline vouchers in accordance with the procedure that I will explain in a moment. Everyone will receive a sealed envelope. The number of vouchers in your envelope will depend on the choices that you will make today and it may also be zero.

As part of this project, you will be contacted by email or by phone after your graduation, and you will be kindly asked to provide information about your study or working choices. Your choices and all the information you provide will be treated anonymously.

Please, do not talk to other students and turn off your phones. If you have questions, please raise your hand at any time and one of us will come to you to answer in private.

Today's activity is composed by four parts and a final questionnaire. It is important that you pay attention to the following instructions. I will now read the instructions for the first part.

Instructions for the first part

In front of you there is a cup containing a six-sided die. When we instruct you to do so, you can roll the dice seven times. In this way you can check that the die is fair. You will have to report the number that you obtain from your last roll.

If the number is **6**, you will gain ten euros in gasoline vouchers.

If the number is **1, 2, 3, 4, 5** you will not receive anything.

We have allocated an amount of money to your high school based on the number of students participating in this activity. Part of the money will be given to those of you who reported a 6 and the remaining part will be donated to your high-school in the form of paper packages for copying machines as a thank you for hosting this project. To confirm your understanding of the first part, please answer the questions below by circling YES or NO:

I can roll the die as many times as I want **YES NO**

If I report the number 1 in my last roll, I will gain 10 euros **YES NO**

If I report the number 6 in my last roll, I will gain 10 euros **YES NO**

The first roll is the one that matters for my payment **YES NO**

Please, wait for further instructions before proceeding with the activity.

Now you can proceed with the die rolls. Go ahead independently, at your own pace. Report the result below. Once you have written down the result, please, shake the cup with the die.

Please indicate the number you obtained in the last roll **1 2 3 4 5 6**

When everybody is done, we will collect this form, the die and the cup.

Please answer these questions regarding the **first part**:

How many times, in the first 6 rolls, did you get the same number as in the last roll?
(Please circle the right answer)

[never] [once] [twice] [three times] [four times] [five times] [six times]

Suppose you have to repeat a lot of sequences of this task (roll the die seven times). How many times on average do you expect to get in the first six rolls, the same number you got in the seventh roll? (Circle the answer)

[Less than once] [once] [more than once]

Instructions for the second part

Look at the choices presented in the table below:

	Decision A (Payment Tomorrow)	Decision B (Payment in four weeks)	Circle A or B in each row
I	100€	100€	A B
II	100€	105€	A B
III	100€	110€	A B
IV	100€	115€	A B
V	100€	120€	A B
VI	100€	125€	A B

Each choice corresponds to a row of the table. **For each row** you have to choose between A or B:

- Choice A: entails the PAYMENT TOMORROW of €100 in gasoline vouchers.
- Choice B: entails the PAYMENT IN FOUR WEEKS of an amount greater or equal to €100 in gasoline vouchers.

A sealed envelope with the corresponding amount will be delivered to the Principal. If you choose A you can collect the envelope tomorrow. If you choose B, you can collect the envelope in four weeks from tomorrow.

For example, for the first row you can choose between €100 tomorrow (A) or €100 in four weeks (B). For the second row you can choose between €100 tomorrow and €105 in four weeks and so on until the last row, where you can choose between €100 tomorrow or €125 in four weeks.

How are your earnings determined?

- At the end of the session, one person in the class will be drawn at random and will receive a payment for this part.
- Only the choice made in one row will be paid. There will be a bag containing six numbered tokens. One token will be drawn at random. We will pay the choice made by the drawn participant for the row corresponding to the drawn token's number.
- If the choice is A, €100 will be paid tomorrow.
- If the choice is B, the amount corresponding to the drawn row will be paid in four weeks.

Earnings for this part are summed up to the earnings from previous parts.

Do you have questions? If you have any questions please raise your hand and we will answer in private.

To confirm your understanding of this part, please answer the questions below by circling YES or NO:

Today there will be no payments for this part, irrespectively of your choice **YES NO**

I can choose the row for which I will get paid **YES NO**

If I wait for four weeks the payment will be generally higher **YES NO**

Wait before proceeding.

Now you can select your choices in the table.

We kindly ask you to leave us your contact information. We need this information in case of problems with the payment and to contact you by e-mail or telephone after graduation to know about your choices of study and work. The anonymity of your answers will be protected. In no circumstances the results

will be linked to your choices or to your identity.

Email:

Phone (parents):

Mobile phone:

Instructions for the third part

Imagine to perform the next task in pair with another person in this classroom, not knowing who he/she is. The pairs will be formed randomly and no one will be informed about the identity of his/her partner.

You will have to decide how to use an endowment of 10 euros. You can transfer the 10 euros into your personal account, you can invest the whole amount in a project, or you can invest half of it.

- The amount you decide to keep will be automatically transferred into your personal account.
- The amount that you decide to invest in the project is doubled and transferred to your partner. If you invest 5 euro, the other person increases his/her earnings by 10 euros. If you invest 10 euro, the other person increases his/her earnings by 20 euros. Therefore, there is a multiplying effect on the invested amount.

Your final gain will be equal to the sum of the amount that you transfer to your personal account and of the earnings from your partner's investment in the project:

Your final earnings = Transfer to personal account + Earnings from group project
Your total earnings = (10 - Investment) + (amount invested by your partner x 2)

Everybody decides **simultaneously** without knowing the choices of the others. The table in the next page shows the **final earnings** for each combination of choices made by the two persons in the pair.

Table A–6: My Earnings Table

		Partner's Choice: Invest 0 and keep 10	Partner's Choice: Invest 5 and keep 5	Partner's Choice: Invest 10 and keep 0
My Choice	Invest 0 and keep 10	10	20	30
	Invest 5 and keep 5	5	15	25
	Invest 10 and keep 0	0	10	20

Table A–7: My Partner's Earnings Table

		Partner's Choice: Invest 0 and keep 10	Partner's Choice: Invest 5 and keep 5	Partner's Choice: Invest 10 and keep 0
My Choice	Invest 0 and keep 10	10	5	0
	Invest 5 and keep 5	20	15	10
	Invest 10 and keep 0	30	25	20

To confirm your understanding of this part, please answer the questions below by circling YES or NO:

I can choose among three levels of investment **YES NO**

If we both invest 0, I earn 10 euros **YES NO**

If I invest 10 and my partner invests 5, my partner earns 15 euros **YES NO**

If I invest 5, I earn exactly 5 irrespectively of my partner's choice **YES NO**

Wait for further instructions before proceeding.

Now we will proceed in this way: each participant must make two decisions, Decision A and Decision B.

We want to understand what would be your decision in two different scenarios. Only one scenario will be realized. When choosing, you do not know what decision (A or B) will be relevant for your payment. Therefore it is in your best interest to pay attention to both decisions.

Decision A. You have to choose how much to keep and how much to invest without knowing the choices made by others. Select your choice in the table below (circle one cell).

My decision A →	I invest 0 and keep 10	I invest 5 and keep 5	I invest 10 and keep 0

Decision B. Once you have made Decision A, look at the table below. Suppose you know the investment choice made by your partner. Your partner has three options, one for each row. The table shows your options in response to your partner's choices.

How are your earnings determined?

- At the end of the session, two participants in the class will be drawn at random and will receive a payment for this part. The participant paid for the previous part will be excluded.
- We will toss a coin to determine the payments for the drawn pair.
  - If it's heads: the participant with the smaller identification number is paid for his/her Decision A, while the other participant will be paid for his/her Decision B.
  - If it's tails: it will be the opposite.
- We observe the choice made by the participant paid for his Decision A. Then, we observe how much the participant paid for his/her Decision B would have invested.

Let's see an example.

1. Decision A is "Invest 10 and keep 0": we look at the third row of the table for Decision B.
2. Suppose that in the third row the choice is "I invest 5 and keep 5".
3. Then the person paid for his/her decision A receives 10 euros.
4. while the person paid for his/her decision B receives 25 euros.

If my partner invests 0 and keeps 10	**My Decision B will be →**	I invest 0 and keep 10	I invest 5 and keep 5	I invest 10 and keep 0
If my partner invests 5 and keeps 5	**My Decision B will be →**	I invest 0 and keep 10	I invest 5 and keep 5	I invest 10 and keep 0
If my partner invests 10 and keeps 0	**My Decision B will be →**	I invest 0 and keep 10	I invest 5 and keep 5	I invest 10 and keep 0

Indicate your choice in the table by circling one cell for each row.

Let's make another example.

1. Decision A is "Invest 0 and keep 10": we look at the first row of the table of Decision B.
2. Suppose that the choice is "I invest 5 and keep 5".
3. The person paid for his/her decision A receives 20 euros.
4. While the person paid for his/her decision B receives 5 euros.

The gains of this part are summed up to the gains of the previous part.

Are there any questions? If you have any questions please raise your hand and we will answer them in private.

Instructions for the fourth part

Read the following eight questions and try to answer them in the best possible way. **You have 15 minutes.** If you need, you can make computations and write notes on these sheets, but please indicate clearly which is your final answer by circling one option.

Question 1

Figure 1 shows changing levels of Lake Chad, in Saharan North Africa. Lake Chad disappeared completely in about 20,000 BC, during the last Ice Age. In about 11,000 BC it reappeared. Today, its level is about the same as it was in AD 1000.

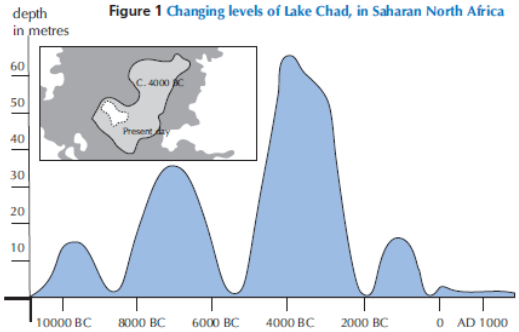


Figure 1 Changing levels of Lake Chad, in Saharan North Africa

Figure 2 shows Saharan rock art (ancient drawings or paintings found on the walls of caves) and changing patterns of wildlife

Source: Past Worlds: The Times Atlas of Archaeology, Times Books Limited 1988

Use the above information about Lake Chad to answer the questions below.

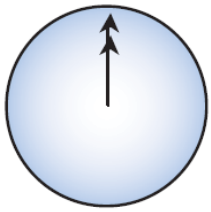
What is the depth of Lake Chad today?

1. About two metres
2. About fifteen metres
3. About fifty metres
4. It has disappeared completely
5. The information is not provided

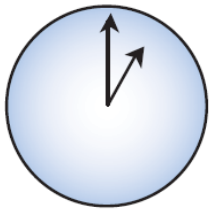
Question 2

Mark (from Sydney, Australia) and Hans (from Berlin, Germany) often communicate with each other using "chat" on the Internet. They have to log on to the Internet at the same time to be able to chat.

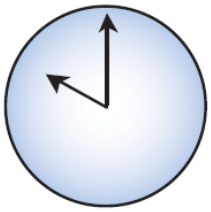
To find a suitable time to chat, Mark looked up a chart of world times and found the following:



Greenwich 12 Midnight



Berlin 1:00 AM

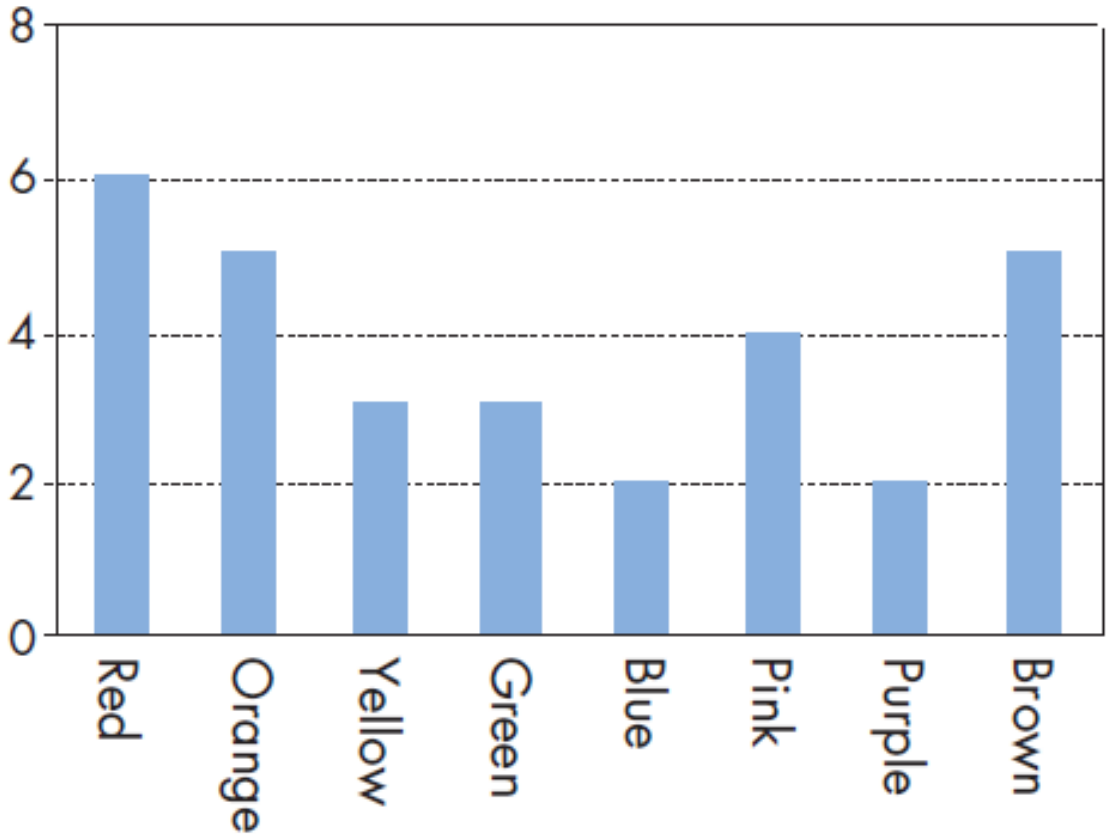


Sydney 10:00 AM

At 7:00 PM in Sydney, what time is it in Berlin?

1. 1:00
2. 4:00
3. 9:00
4. 10:00
5. Midnight

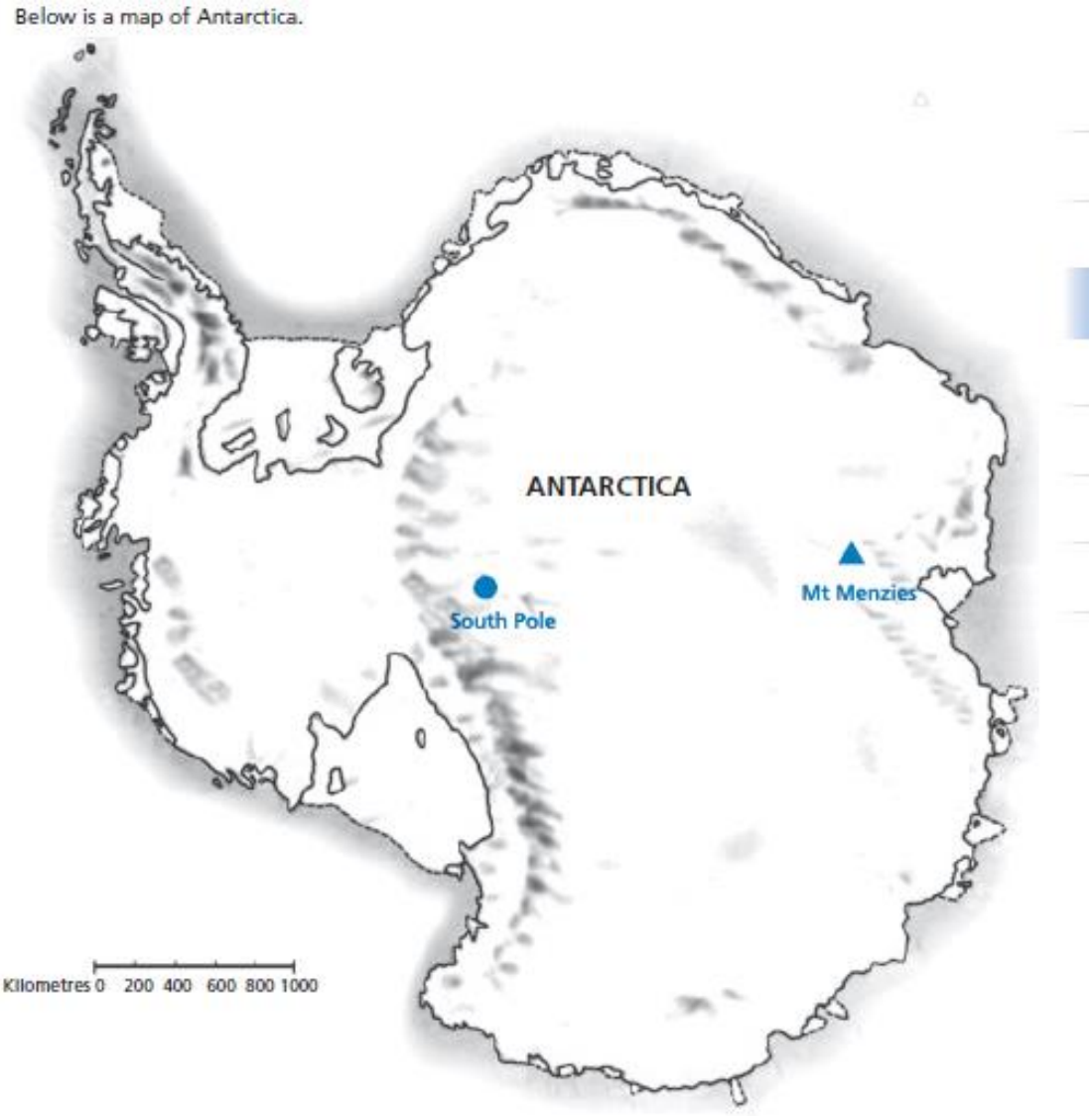
Question 3



Robert's mother lets him pick one candy from a bag. He can not see the candies. The number of candies of each colour in the bag is shown in the following graph. What is the probability that Robert will pick a red candy?

1. 10%
2. 20%
3. 25%
4. 50%

Question 4

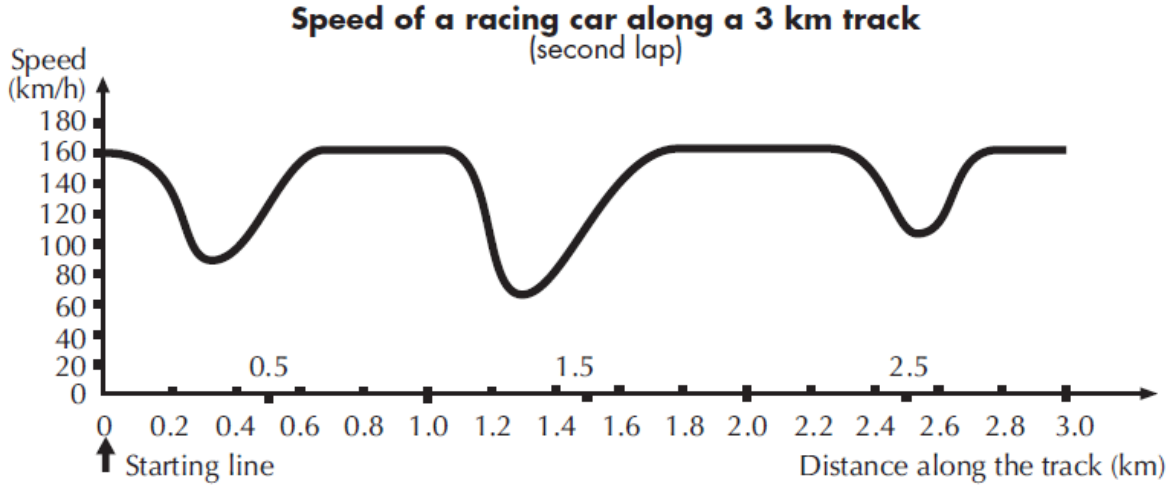


Estimate the area of Antarctica using the map scale. You can draw over the map if it helps you with the estimation.

1. 16.000 km^2
2. 140.000 km^2
3. 9.000.000 km^2
4. 15.000.000 km^2
5. 21.000.000 km^2

Question 5

This graph shows how the speed of a racing car varies along a flat 3 kilometre track during its second lap.

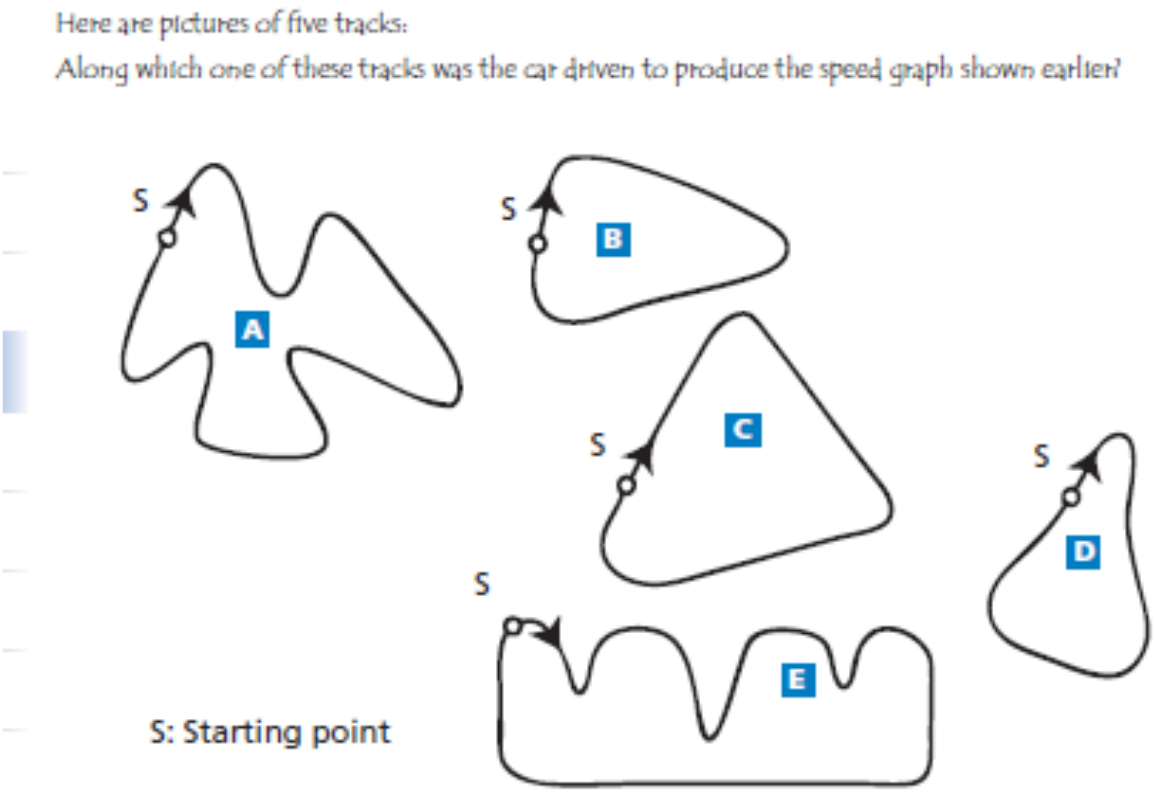


Note: In memory of Claude Janvier, who died in June 1998. Modified task after his ideas in Janvier, C. (1978): *The interpretation of complex graphs – studies and teaching experiments.* Accompanying brochure to the Dissertation. University of Nottingham, Shell Centre for Mathematical Education, Item C-2. The pictures of the tracks are taken from Fischer, R. & Malle, G. (1985): *Mensch und Mathematik.* Bibliographisches Institut: Mannheim-Wien-Zurich, 234-238.

What is the approximate distance from the starting line to the beginning of the longest straight section of the track?

1. 0.5 km
2. 1.5 km
3. 2.3 km
4. 2.6 km

Question 6



Which of these circuits has been covered by the car, taking into account the graph from the previous question?

1. A
2. B
3. C
4. D
5. E

Question 7

Read the following newspaper article and answer the questions which follow.

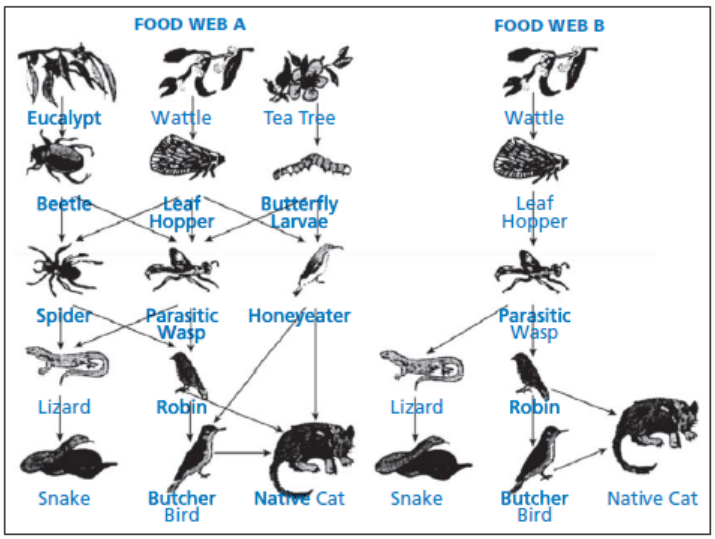
BIODIVERSITY IS THE KEY TO MANAGING ENVIRONMENT

An ecosystem that retains a high biodiversity (that is, a wide variety of living things) is much more likely to adapt to human-caused environment change than is one that has little.

Consider the two food webs shown in the diagram. The arrows point from the organism that gets eaten to the one that eats it. These food webs are highly simplified compared with food webs in real ecosystems, but they still illustrate a key difference between more diverse and less diverse ecosystems.

Food web B represents a situation with very low biodiversity, where at some levels the food path involves only a single type of organism. Food web A represents a more diverse ecosystem with, as a result, many more alternative feeding pathways.

Generally, loss of biodiversity should be regarded seriously, not only because the organisms that have become extinct represent a big loss for both ethical and utilitarian (useful benefit) reasons, but also because the organisms that remain have become more vulnerable (exposed) to extinction in the future.

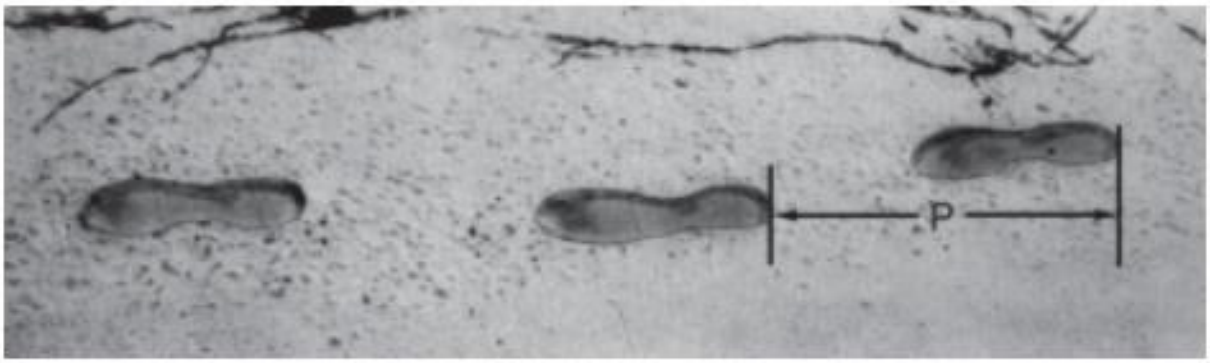


Source: Adapted from Steve Malcolm: 'Biodiversity is the key to managing environment', The Age, 16 August 1994.

Food webs A and B are in different locations. Imagine if Leaf Hoppers have become extinct in both locations. Which one of these is the best prediction and explanation for the effect this extinction would have on the food webs?

1. The effect would be greater in food web A because Parasitic Wasp has only one food source in Web A.
2. The effect would be greater in food web A because Parasitic Wasp has several food sources in Web A.
3. The effect would be greater in food web B because Parasitic Wasp has only one food source in Web B.
4. The effect would be greater in food web B because Parasitic Wasp has only one food source in Web B.

Question 8



The picture shows the footprints of a man walking. The pacelength *P* is the distance between the rear of two consecutive footprints.

For men, the formula, $\frac{n}{P} = 140$, gives an approximate relationship between *n* and *P* where,

n = number of steps per minute, and

P = pacelength in metres.

If the formula applies to Carlo's walking and Carlo takes 70 steps per minute, what is Carlo's lenght of stride?

1. 0.35
2. 0.40
3. 0.45
4. 0.50
5. 0.55

A–2.9 Socio-economic questionnaire

Your answers are important. The results of this research will be published by preserving the anonymity of your answers, which will be not associated to your identity.

1. What are your current intentions for the year after your graduation?

   (a) Circle one option: [Keep studying] [Look for job] [Other / I do not know]

   (b) To live in the following region (circle one option):

   [Abruzzo] [Basilicata] [Calabria] [Campania] [Emilia-Romagna] [Friuli-Venezia Giulia]

   [Lazio] [Lombardia] [Marche] [Molise] [Piedmont] [Puglia] [Sardinia] [Sicily]

   [Tuscany] [Trentino-Alto Adige] [Umbria] [Aosta Valley] [Veneto] [Abroad] [do not know]

2. Sex M F

3. Region of birth (Calabria, Campania, Lazio, etc.)

   ---

4. What is **your mother**'s highest level of education?

   (a) Master Degree (or higher)

   (b) Diploma from Liceo

   (c) Diploma from technical or vocational school

   (d) Other diploma or qualification from secondary school

   (e) Middle School diploma

   (f) Primary school (or lower)

5. What does **your mother** currently do?

   (a) She has a full-time job

   (b) She has a part-time job

   (c) She does not work but she is looking for a job

   (d) Other

6. If **your mother** works, can you describe her job in 5 words?

   ---

7. What is **your father**'s highest level of education?

   (a) Master Degree (or higher)

   (b) Diploma from Liceo

   (c) Diploma from technical or vocational school

   (d) Other diploma or qualification from secondary school

   (e) Middle School diploma

   (f) Primary school (or lower)

8. What does **your father** currently do?

   (a) He has a full-time job

   (b) He has a part-time job

   (c) He does not work but he is looking for a job

   (d) Other

9. If your father works, can you describe his job in 5 words?

   _____

10. How many people are there in your family:

    (a) Members of the family living together (including yourself): _____

    (b) Brothers and sisters (including you): _____

11. If you could choose a place to work and live, what would be your favourite place? You can choose any town in Italy (or region of Italy) including yours.

    _____

12. Have you ever spent at least one month away from home without your parents for study, work or vacation? YES NO

13. Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?

    (a) Most people can be trusted

    (b) You're never too careful.

    (c) I do not know

14. How would you describe yourself: are you ready to take risks, or rather you try to avoid taking any risk? Please choose a number from 0 to 10, where **0** means "not willingness to take risks" and **10**means "full availability to take any risk"

1 2 3 4 5 6 7 8 9 10 [Do not know]

15. Some people think that they can influence their future. Others believe that what they do does not have a big impact on their future. Please tell us, using this scale, where **1** means "no possibility" and **10** means "many possibilities", how much chance and choice you feel you have in conditioning your future life. (Only one answer).

1 2 3 4 5 6 7 8 9 10 [Do not know]

16. Do you know people who study or work in a different region from Calabria (Emilia-Romagna)? (You can give one or more answers)

    (a) Yes, brother or sister

    (b) Yes, cousin or hant or uncle

    (c) Yes, close personal or family friend

    (d) Yes, someone I know or not very close relative

    (e) No

17. How many rooms are there in your parents' house? Number of rooms (also considers the kitchen and bathrooms) _____

18. Indicate how many units of the following items your family owns:

    (a) Computers number _____

    (b) Internet access points (smart phone, home broadband internet, ...) number _____

    (c) Cars number _____

    (d) Holiday homes number _____

19. How would you rate the overall wealth of your family?

    (a) Definitely above average

    (b) Probably above average

    (c) As the average family in Calabria (Emilia-Romagna)

(d) Probably below average

(e) Definitely below average

THANK YOU FOR YOUR COOPERATION!

A–2.10 Follow-up Questionnaire

Good morning,
You are receiving this email because last spring you participated in a research project conducted by the European University Institute of Fiesole, the University of Bologna and the University of Calabria, aimed at understanding the choices of study and work of Italian high-school graduates. For research purposes it is very important for us to know your current occupation. We ask you to answer some short questions. Please, find the questions at the link below.
The research is nonprofit and it has only scientific purposes. For any questions you can contact us by email xxx or telephone xxx. Thanks for your collaboration.

1. What will be your home address in the next few months?
   (a) The same as when I was at high-school
   (b) It has changed, now I live in the municipality (or foreign state) of ...
2. What will be your main activity in the coming months?
   (a) College study,
   (b) Work,
   (c) Other ...
3. What will be your field of study or work in the coming months? ...
4. Imagine yourself in 10 years. How likely is it that you will live in Calabria (Emilia-Romagna)?
   (a) Very likely
   (b) Likely
   (c) Unlikely
   (d) Very unlikely
5. Imagine you lost your wallet (with 100 euros in cash) while you were walking on the main street of your city of residence. The person who finds it was born in that city and does not personally know you. This person can trace you because there is an ID with your name and address in it. In your opinion what is the likelihood that the person who finds it, will return it to you, in the case in which the city is Cosenza (in Calabria)? What about if the city is Forlì (in Emilia-Romagna)?

(a) Much less likely in Calabria than in Emilia-Romagna

(b) Less likely in Calabria than in Emilia-Romagna

(c) Similar in the two cities

(d) More likely in Calabria than in Emilia-Romagna

(e) Much more likely in Calabria than in Emilia-Romagna

6. Imagine one asks the same question to a person who was born in Forlì (Cosenza). What do you think would be his/her answer?

(a) Much less likely in Calabria than in Emilia-Romagna

(b) Less likely in Calabria than in Emilia-Romagna

(c) Similar in the two places

(d) More likely in Calabria than in Emilia-Romagna

(e) Much more likely in Calabria than in Emilia-Romagna

A–3 Online Appendix to Section 3

A–3.1 Probability of being Civic

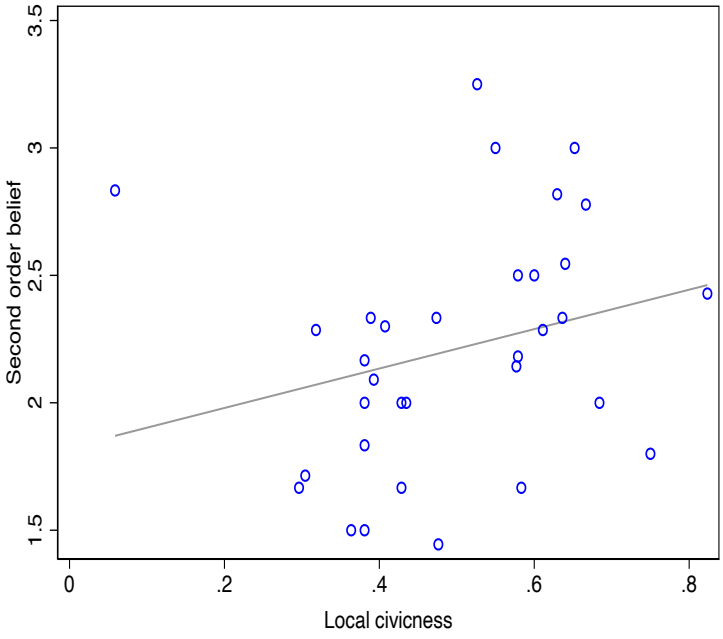
Table A–8: Logit estimates of the probability of being civic

Student in Calabria	-0.271***
	(0.060)
Female	-0.021
	(0.032)
Intellectual ability	-0.010
	(0.010)
Risk seeking attitude	-0.032***
	(0.010)
Impatience level	-0.014
	(0.012)
Trust for others	0.074
	(0.051)
High family income	0.014
	(0.041)
Low family income	-0.060
	(0.043)
Years of average parental education	-0.010
	(0.006)
Urban area	0.027
	(0.040)
Class size	-0.009**
	(0.004)
Classical high school	-0.027
	(0.044)
Average class ability	-0.023
	(0.039)
Helper 1	0.101
	(0.063)
Helper 2	0.051
	(0.058)
Observations	1065

Notes: The table reports the marginal effects (discrete changes for dummy variables) estimated with a Logit model in which the dependent variable is individual civicness (reporting 1-5 in the die-roll task). For the definitions and the descriptive statistics of the variables included in the specification see Table A–1. For family income, the omitted category is medium income (i.e. an income corresponding to the regional average). Standard errors are obtained by the delta method. Significance: * 0.1; ** 0.05; *** 0.01 or better.

A–3.2 Belief formation and local civicness

Figure A–5: Correlation between local civicness and second order beliefs of students in Calabria



Notes: The figure reports the scatter plot (and the related fitted line) of local civicness and of the class average of the second order beliefs of the 234 students in Calabria for whom information on beliefs is available. An observation is a class and the scatter plot is based on the 33 classes in the Calabria data set.

Table A–9: Beliefs about the relative civicness of North versus South (lost wallet questions)

Likelihood that the wallet is returned	Question 1: First order belief of students from: Emilia-Romagna	Calabria	Question 2: Second order belief of students from: Emilia-Romagna	Calabria
Much less likely in Calabria than in Emilia-Romagna	15 (9%)	20 (9%)	5 (3%)	73 (31%)
Less likely in Calabria than in Emilia-Romagna	32 (19%)	50 (21%)	33 (19%)	82 (35%)
Similar in the two places	116 (68%)	134 (57%)	91 (53%)	48 (21%)
More likely in Calabria than in Emilia-Romagna	4 (2%)	20 (9%)	28 (16%)	20 (9%)
Much more likely in Calabria than in Romagna	3 (2%)	10 (4%)	13 (8%)	11 (5%)
Total	170 (100%)	234 (100%)	170 (100%)	234 (100%)

Notes: This table reports the frequency of the answers to the two "lost wallet questions" (see Section 2.3.2) asked to students during the follow up stage. In the first question students were asked to imagine that they had lost their wallet containing €100 and to guess if the probability that their wallet would be returned in Calabria was lower, equal or higher than in Emilia-Romagna. The answers to this question reveal the average first order belief of a person from the South (North) guessing the relative likelihood that her wallet would be returned in the two regions. In the second question, participants from Calabria (Emilia-Romagna) were asked what they thought would be the answer to the same question of a person born in Emilia-Romagna (Calabria). The answers to this question reveal the average second order belief of a person from the South (North) concerning what a person of the North (South) thinks about the relative likelihood that the wallet is returned in the two regions.

A–3.3 A note on the Hump-shaped profile of the truly uncivic

It should be noted that the Hump-shaped profile for the truly Uncivic is probably more pronounced than the one shown in Table 3 of the main text for the six-reporters. This is because at low values of local civicness the presence of lucky Civic among the students reporting a six is unlikely. On the contrary at high values of local civicness a large fraction of 6-reporters probably corresponds to lucky Civic. Assuming that lucky Civic behave like observed Civic, the probability of migration of the truly Uncivic at high local civicness should be lower than the observed probability of migration of six-reporters. Denoting with $\bar{u}$ a truly Uncivic, her probability is

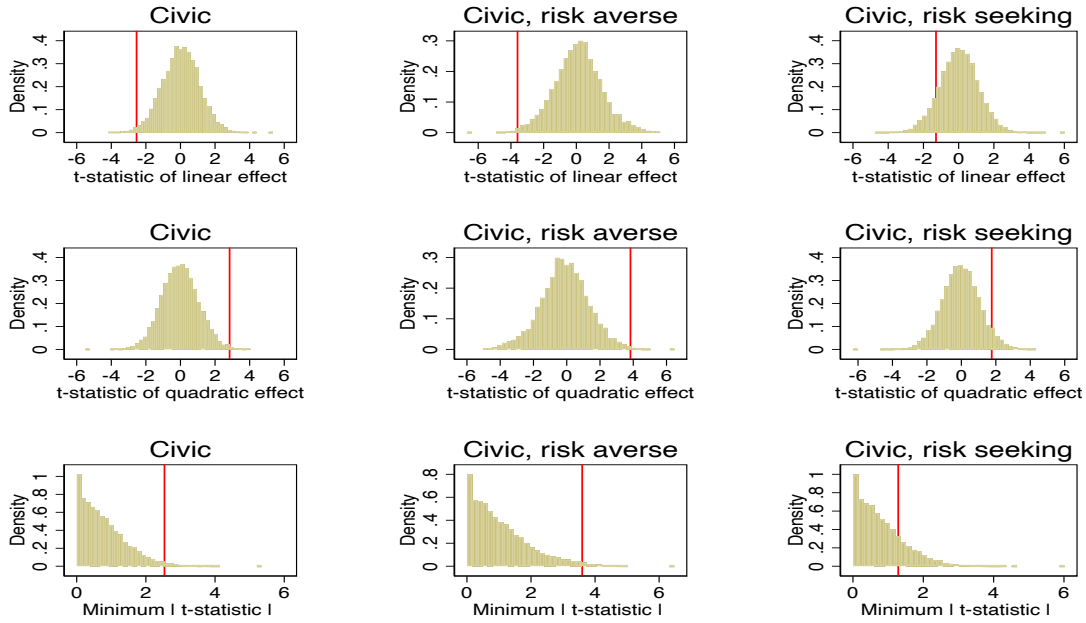
$$\mathbb{P}(M_{i,j}^{S,u}=1)=\frac{1}{(1-p_j^S)}\left[\frac{p_j^S}{5}\mathbb{P}(M_{i,j}^{S,c}=1)+(1-p_j^S-\frac{p_j^S}{5})\mathbb{P}(M_{i,j}^{S,\bar{u}}=1)\right]$$

where, given p_j^S, we assume that there is a fraction $p_j^S/5$ of lucky Civic among the $1-p_j^S$ six-reporters and we assign to the lucky Civic the same probability of migration that we observe for the surely Civic (one-five reporters). This expression implies a steeper decline on the right side of the hump shape.

A–3.4 Robustness checks for the randomization inference analysis in Section 3.3 of the main text

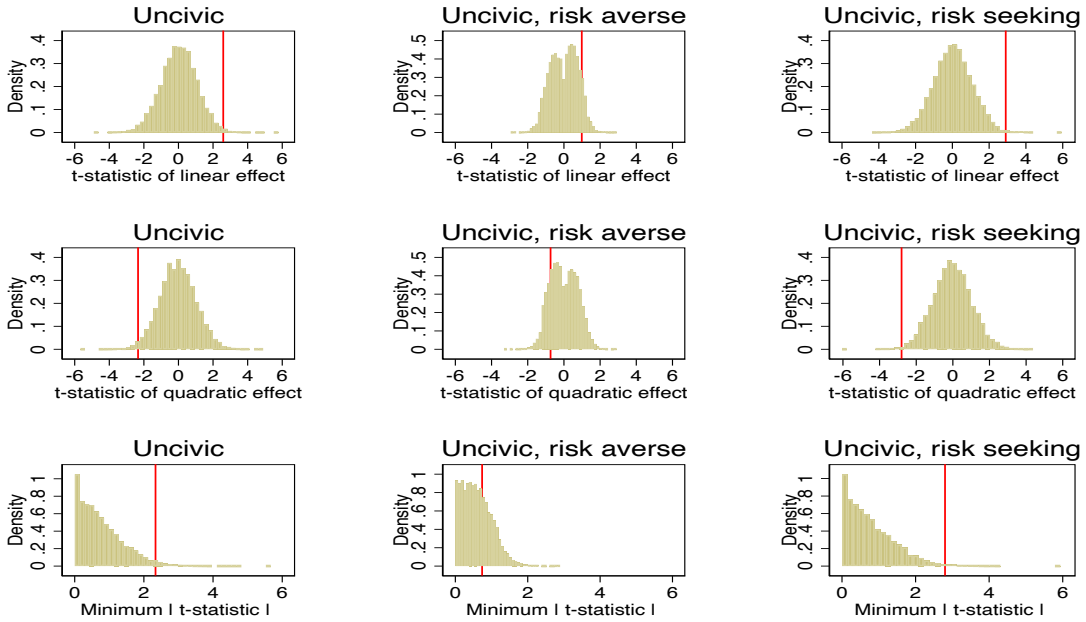
All the robustness checks displayed in the figures and tables of this section confirm the conclusions of the main text.

Figure A–6: Observed and randomized t-statistics under the ENH of no effect of local civicness on the migration decisions of the Civic, with covariates adjusted for class composition



Notes: Each panel of this figure reports the distribution of the counterfactual t-statistics across 10,000 data sets in which students have been randomly re-allocated to the 33 original classes, keeping class sizes equal to the original ones. Therefore, in each counterfactual dataset the local civicness faced by a student is potentially different. Differently than in the main text, the covariates that change with class composition (Class ability, Peer Civic migrants and Peer Uncivic migrants) are adjusted accordingly. The first column is for all the Civic, and corresponds to column 1 of Table 3 in the main text. Using the indicator of risk seeking attitudes that we collected with the procedure explained in Section 2 of the main text and that ranges between 0 and 10, the second column is for the most risk averse among the Civic, defined as those with a risk seeking indicator lower than or equal to 5, and corresponds to column 1 of Table 4 in the main text. In the last column, the evidence is for the remaining more risk seeking Civic, and corresponds to column 2 of Table 4 in the main text. The first row is for linear marginal effects; the second row is for quadratic marginal effects and the third row is for the combined test equal to the minimum of the absolute value of the linear and the quadratic t-statistics. In all panels the corresponding observed t-statistic is marked by the red vertical line.

Figure A–7: Observed and randomized t-statistics under the ENH of no effect of local civicness on the migration decisions of the Uncivic, with covariates adjusted for class composition



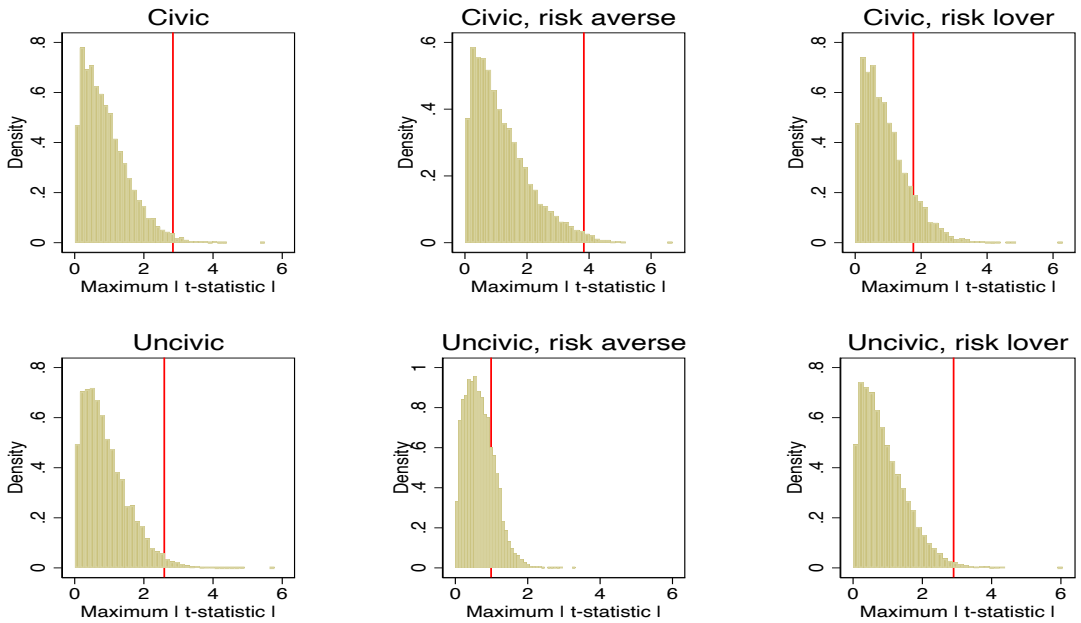
Notes: Each panel of this figure reports the distribution of the counterfactual t-statistics across 10,000 data sets in which students have been randomly re-allocated to the 33 original classes, keeping class sizes equal to the original ones. Therefore, in each counterfactual dataset the local civicness faced by a student is potentially different. Differently than in the main text, the covariates that change with class composition (Class ability, Peer Civic migrants and Peer Uncivic migrants) are adjusted accordingly. The first column is for all the Uncivic, and corresponds to column 1 of Table 3 in the main text. Using the indicator of risk seeking attitudes that we collected with the procedure explained in Section 2 of the main text and that ranges between 0 and 10, the second column is for the most risk averse among the Uncivic, defined as those with a risk seeking indicator lower than or equal to 5, and corresponds to column 1 of Table 4 in the main text. In the last column, the evidence is for the remaining more risk seeking Uncivic, and corresponds to column 2 of Table 4 in the main text. The first row is for linear marginal effects; the second row is for quadratic marginal effects and the third row is for the combined test equal to the minimum of the absolute value of the linear and the quadratic t-statistics. In all panels the corresponding observed t-statistic is marked by the red vertical line. In less than 1% of the counterfactual datasets, convergence of the logit estimation was not achieved for the Uncivic risk averse (who are only 51). This explains the irregular shape of the counterfactual distribution in the corresponding panels.

Table A–10: Exact Fisher p-values for the ENH of no effect of local civicness on migration decisions of the Civic, with covariates adjusted for class composition

	P-value associated to the:		
	t-statistic of the linear marginal effect	t-statistic of the quadratic marginal effect	Minimum of the two t-statistics
Civic	.026	.011	.021
Uncivic	.024	.041	.034
Civic, Risk averse	.006	.0033	.0052
Civic, Risk lover	.25	.12	.23
Uncivic, Risk averse	.49	.61	.58
Uncivic, Risk lover	.011	.016	.013

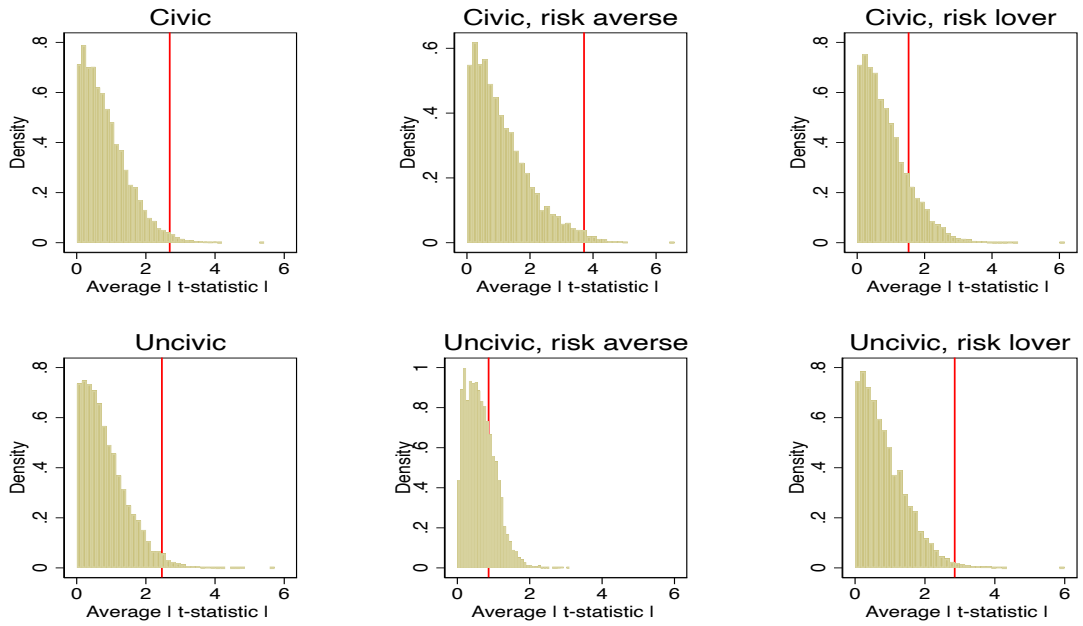
Notes: Each entry in this table is a Fisher Exact P-value (FEP, see Imbens and Rubin, 2015), computed as the fraction of counterfactual t-statistics that are smaller than the observed one, for the group of students denoted by the row and the t-statistic denoted by the column. Therefore, the first two rows correspond, respectively, to columns 1 and 2 of Table 3 in the main text, while the next four rows correspond, respectively, to columns 1-4 of Table 4 in the main text. Moreover, each FEP corresponds to one of the 18 panels of Figures A–6 and A–7. The counterfactual t-statistics are obtained from 10,000 data sets in which students have been randomly re-allocated to the 33 original classes, keeping class sizes equal to the original ones. Therefore, in each counterfactual dataset the local civicness faced by a student is potentially different. Differently than in the main text, the covariates that change with class composition (Class ability, Peer Civic migrants and Peer Uncivic migrants) are adjusted accordingly. Using the indicator of risk seeking attitudes that we collected with the procedure explained in Section 2 of the main text and that ranges between 0 and 10, the risk averse are defined as those with a risk seeking indicator lower than or equal to 5. The risk seeking are the remaining students.

Figure A–8: Combined linear and quadratic randomization inference tests, using the maximum of the absolute values of the two t-statistics instead of the minimum



Notes: The first row of panels in this figure reproduces the last row of panels in Figure A–6 for the Civic, using the maximum of the absolute value of the linear and the quadratic t-statistics, instead of the minimum. The second row of panels similarly reproduces the last row of panels in Figure A–7 for the Uncivic. Each panel reports the distribution of the counterfactual t-statistics across 10,000 data sets in which students have been randomly re-allocated to the 33 original classes, keeping class sizes equal to the original ones. Therefore, in each counterfactual dataset the local civicness faced by a student is potentially different. As in the main text, all the other covariates are unchanged. The first column is for all the Civic or the Uncivic, and corresponds to column 1 and 2 of Table 3 in the main text. Using the indicator of risk seeking attitudes that we collected with the procedure explained in Section 2 of the main text and that ranges between 0 and 10, the second column is for the most risk averse among the Civic and the Uncivic, defined as those with a risk seeking indicator lower than or equal to 5, and corresponds to column 1 and 3 of Table 4 in the main text. In the last column, the evidence is for the remaining more risk seeking Civic or Uncivic, and corresponds to column 2 and 4 of Table 4 in the main text. In all panels the corresponding observed t-statistic is marked by the red vertical line.

Figure A–9: Combined linear and quadratic randomization inference tests, using the average of the absolute values of the two t-statistics instead of the minimum



Notes: The first row of panels in this figure reproduces the last row of panels in Figure A–6 for the Civic, using the average of the absolute values of the linear and the quadratic t-statistics, instead of the minimum. The second row of panels similarly reproduces the last row of panels in Figure A–7 for the Uncivic. Each panel reports the distribution of the counterfactual t-statistics across 10,000 data sets in which students have been randomly re-allocated to the 33 original classes, keeping class sizes equal to the original ones. Therefore, in each counterfactual dataset the local civicness faced by a student is potentially different. As in the main text, all the other covariates are unchanged. The first column is for all the Civic or the Uncivic, and corresponds to column 1 and 2 of Table 3 in the main text. Using the indicator of risk seeking attitudes that we collected with the procedure explained in Section 2 of the main text and that ranges between 0 and 10, the second column is for the most risk averse among the Civic and the Uncivic, defined as those with a risk seeking indicator lower than or equal to 5, and corresponds to column 1 and 3 of Table 4 in the main text. In the last column, the evidence is for the remaining more risk seeking Civic or Uncivic, and corresponds to column 2 and 4 of Table 4 in the main text. In all panels the corresponding observed t-statistic is marked by the red vertical line.

Table A–11: Exact Fisher p-values of the combined test for the ENH of no effect of local civicness on migration decisions of the Civic and the Uncivic, using the maximum or the average of the absolute values of the linear and quadratic t-statistics instead of the minimum

	P-value associated to the:	
	Maximum of the linear and quadratic t-statistics	Average of the linear and quadratic t-statistics
Civic	.013	.016
Uncivic	.02	.023
Civic, Risk averse	.015	.015
Civic, Risk lover	.13	.17
Uncivic, Risk averse	.27	.33
Uncivic, Risk lover	.011	.011

Notes: Each entry in this table is a Fisher Exact P-value (FEP, see Imbens and Rubin, 2015), computed as the fraction of counterfactual t-statistics that are smaller than the observed one, for the group of students denoted by the row and the t-statistic denoted by the column. Therefore, the first two rows correspond, respectively, to columns 1 and 2 of Table 3 in the main text, while the next four rows correspond, respectively, to columns 1-4 of Table 4 in the main text. Moreover, each FEP in the first column correspond to the panels of Figure A–8, while those in the second correspong to the panels of Figure A–9. The counterfactual t-statistics are obtained from 10,000 data sets in which students have been randomly re-allocated to the 33 original classes, keeping class sizes equal to the original ones. Therefore, in each counterfactual dataset the local civicness faced by a student is potentially different. As in the main text, all the other covariates are unchanged. Using the indicator of risk seeking attitudes that we collected with the procedure explained in Section 2 of the main text and that ranges between 0 and 10, the risk averse are defined as those with a risk seeking indicator lower than or equal to 5. The risk seeking are the remaining students.

A–4 Online Appendix to Section 4

A–4.1 Proof of Proposition 1

To see why Part 1 holds, note first that, for any $q_i \in (0,1)$, at $p_j^S = 0$ we have $\mathbb{M}_{i,j}^{S,\tau} > 0 \Leftrightarrow 0 > \bar{X}^\tau(p_j^S = 0) \Leftrightarrow 0 > h + v^\tau(p_j^S = 0)$, and at $p_j^S = 1$ we have $\mathbb{M}_{i,j}^{S,\tau} > 0 \Leftrightarrow 1 > \bar{X}^\tau(p_j^S = 1) = \frac{h+v^\tau(p_j^S=1)}{\lambda-1}$. This means that, at both extremes of the distribution of local civicness, the decision to migrate does not depend on i and hence either all individuals of a given type migrate or all of them stay. Furthermore, noting that the Uncivic derive a higher payoff than the Civic from remaining in the South (i.e., $E_\phi^S < 1 \Rightarrow v^u > v^c$ and therefore also $\bar{X}^u > \bar{X}^c$), we get that, at $p_j^S \in \{0,1\}$, any difference in migration between the two types can only mean that all the Civic migrate and all the Uncivic stay.

Moving to part 2, a Civicness drain at $p_j^S \in \{0,1\}$ implies that (all) the Civic migrate while (all) the Uncivic do not. By equations (4) and (6), the Civic migrate at $p_j^S = 0$ if and only if $0 > h + v^c(p_j^S = 0) = h + \delta + (1-\alpha)\lambda\bar{p}^S - 1 = h_{eff} - 1 \Rightarrow h_{eff} < 1$ and the Uncivic stay at $p_j^S = 0$ if and only if $0 < h + v^u(p_j^S = 0) = h + \delta + (1-\alpha)\lambda\bar{p}^S - E_\phi^S = h_{eff} - E_\phi^S \Rightarrow h_{eff} > E_\phi^S$. Similarly, the Civic migrate at $p_j^S = 1$ if and only if $1 > \frac{h+v^c(p_j^S=1)}{\lambda-1} = \frac{h+\delta+(1-\alpha)\lambda\bar{p}^S+\alpha\lambda-1}{\lambda-1} = \frac{h_{eff}+\alpha\lambda-1}{\lambda-1} \Rightarrow h_{eff} < (1-\alpha)\lambda$ and the Uncivic stay at $p_j^S = 0$ if and only if $1 < \frac{h+v^u(p_j^S=1)}{\lambda-1} = \frac{h+\delta+(1-\alpha)\lambda\bar{p}^S+\alpha\lambda-E_\phi^S}{\lambda-1} = \frac{h_{eff}+\alpha\lambda-E_\phi^S}{\lambda-1} \Rightarrow h_{eff} > (1-\alpha)\lambda + E_\phi^S - 1$.

A–4.2 Proof of Lemma 1

The conditions appearing in the lemma can be interpreted as determining the migration decisions of an individual of type τ for whom $q_i = 1/2$. The first condition, $\bar{q}_j^c < 0.5$ $\forall p_j^S \in [0,1]$, states that if $\tau = c$ then this individual strictly prefers to emigrate, i.e.

$$\mathbb{M}_{i,j}^{S,c} > 0 \quad \Leftrightarrow \quad X_{i,j}^S > \bar{X} = \frac{h + v^c}{\lambda - 1} = \frac{h + \lambda[\alpha p_j^S + (1-\alpha)\bar{p}^S] + \delta - 1}{\lambda - 1},$$

for any $p_j^S \in [0,1]$. Noting that for $q_i = 1/2$ the expression for $X_{i,j}^S$ boils down to simply equal p_j^S, this condition boils down to

$$p_j^S > \frac{h + \lambda[\alpha p_j^S + (1-\alpha)\bar{p}^S] + \delta - 1}{\lambda - 1} \Leftrightarrow [\lambda(1-\alpha) - 1]\, p_j^S > h_{eff} - 1,$$

for any $p_j^S \in [0,1]$. Since the LHS of the last inequality is monotonic in p_j^S, and given that it must hold for any $p_j^S \in [0,1]$, it is equivalent to requiring that it holds at the two extremes, $p_j^S \in \{0,1\}$.[A–6] We thus get $\bar{q}_j^c < 0.5$ $\forall p_j^S \in [0,1]$ if and only if inequalities (7) and (9) hold.

[A–6] Note that the special case in which $\lambda(1-\alpha) - 1 = 0$ is captured by the requirement that the inequality holds for $p_j^S = 0$.

Similarly, the second condition in the proposition, $\bar{q}_j^u > 0.5 \ \forall p_j^S \in [0,1]$, states that if $\tau = u$ then an uncivic individual for whom $q_i = 1/2$ strictly prefers to stay, i.e.

$$p_j^S < \frac{h + v^u}{\lambda - 1} = \frac{h + \lambda[\alpha p_j^S + (1-\alpha)\bar{p}^S] + \delta - E_\phi^S}{\lambda - 1} \Leftrightarrow [\lambda(1-\alpha) - 1]\, p_j^S < h_{eff} - E_\phi^S,$$

for any $p_j^S \in [0,1]$. Again, the LHS of the last inequality is monotonic in p_j^S, implying that $\bar{q}_j^u > 0.5 \ \forall p_j^S \in [0,1]$ if and only if inequalities (8) and (10) hold. This proves the proposition.

A–4.3 Proof of Proposition 2

Consider a Southern locality j with a sufficiently high local civicness p_j^S s.t. $\alpha\lambda > 1 - E_\phi^S$ implies $\alpha\lambda p_j^S > 1 - E_\phi^S$ (which holds by continuity in p_j^S). Then, if $h_{eff} > E_\phi^S$ (which holds by inequality (8)), we have $\bar{X}^\tau = \frac{h+\lambda[\alpha p_j^S + (1-\alpha)\bar{p}^S]+\delta-1}{\lambda-1} = \frac{h_{eff}+\lambda\alpha p_j^S - 1}{\lambda-1} > \frac{E_\phi^S + \lambda\alpha p_j^S - 1}{\lambda-1} > 0$. Hence, in this locality there exists a Civic player with sufficiently small q for whom $\bar{X}^\tau > X_{i,j}^S$, implying that this Civic individual does not migrate.

Similarly, consider a Southern locality j with a sufficiently low local civicness p_j^S s.t. $\alpha\lambda > 1 - E_\phi^S$ implies $\alpha\lambda > \alpha\lambda p_j^S + 1 - E_\phi^S$ (again, holds by continuity in p_j^S). Then, if $h_{eff} < (1-\alpha)\lambda$ (which holds by inequality (9)), we have $\bar{X}^\tau = \frac{h+\lambda[\alpha p_j^S + (1-\alpha)\bar{p}^S]+\delta-E_\phi^S}{\lambda-1} = \frac{h_{eff}+\lambda\alpha p_j^S - E_\phi^S}{\lambda-1} < \frac{(1-\alpha)\lambda+\lambda\alpha p_j^S - E_\phi^S}{\lambda-1} < \frac{\lambda-1}{\lambda-1} = 1$. Hence, in that locality there exists an Uncivic player with sufficiently large q for whom $\bar{X}^\tau < X_{i,j}^S$, implying that this Uncivic individual migrates.

A–4.4 Proof of Proposition 3

From Proposition 1 we know that the conditions that produce a Civicness drain at the extremes of the support of local Civicness are inequalities (7) to (10). Lemma 1 then tells us that if inequalities (7) to (10) hold, then (1) $\bar{q}_j^c < 0.5 \ \forall p_j^S \in [0,1]$, implying that $F_c\left(\bar{q}_j^c\right) < F_c\left(\frac{1}{2}\right)$ for any locality j, and (2) $\bar{q}_j^u > 0.5 \ \forall p_j^S \in [0,1]$, implying that $F_u\left(\frac{1}{2}\right) < F_u\left(\bar{q}_j^u\right)$ for any j.

Proving part (i): An Uncivicness drain at a given range of intermediate levels of local civicness implies that $F_u\left(\bar{q}_j^u\right) < F_c\left(\bar{q}_j^c\right)$ for this range of values of p_j^S. It thus follows that, at this range of intermediate values,

$$F_u\left(\frac{1}{2}\right) < F_u\left(\bar{q}_j^u\right) < F_c\left(\bar{q}_j^c\right) < F_c\left(\frac{1}{2}\right). \tag{A–1}$$

The independence of q_i in p_j^S further implies that, in this case, the inequality $F_u\left(\frac{1}{2}\right) < F_c\left(\frac{1}{2}\right)$ always holds, regardless of the value of p_j^S. We thus get that an Uncivicness drain

at intermediate levels of local civicness can occur only if the Civic are sufficiently more risk averse than the Uncivic, i.e., only if $F_u\left(\frac{1}{2}\right) < F_c\left(\frac{1}{2}\right)$.

Proving part (ii): As written above, inequalities (7) to (10) imply that the only reason why (A–1) would not hold is that $F_c\left(\bar{q}_j^c\right) < F_u\left(\bar{q}_j^u\right)$, which, by definition, implies a Civicness drain at locality j. But, again, the independence of q_i in p_j^S further implies that we get $F_c\left(\bar{q}_j^c\right) < F_u\left(\bar{q}_j^u\right)$ for any p_j^S, implying a Civcness drain occurs at all values of local civicness.

A–4.5 Migration from North to South

Our model does not rule out migration from North to South. While Civic types will never want to migrate from North to South – they will not pay a migration cost to get to a place with a lower level of public good provision where they will be free-rided in the good case and not allowed to play in the bad case – for Uncivic the choice is less clear cut. In particular, an Uncivic type may be tempted to migrate in order to free ride others, which is not profitable in the North (in equilibrium). Our model predicts that such migration will be profitable for an Uncivic migrant from locality j' in the North to locality j in the South if $p_{j'}^N(\lambda[\alpha p_j^S + (1-\alpha)\bar{p}^S] + \delta - E_\phi^S) - h > \lambda - 1$.[A–7] Inequalities (7) to (10) do not exclude this possibility, but our data suggest that such migration is practically non-existent. As mentioned in Section 2 of the text, less than one percent of the students of Emilia-Romagna migrate to a southern region.

If this observation is to be reflected in the model parameters, this would have implications for their possible values. If there is no migration from North to South, then in particular there is no migration even from a purely Civic locality in the North (in which $p_{j'}^N = 1$ hence the migrant is guaranteed to be allowed to play in the South). If we assume that migrants from the North cannot know in advance the exact local civicness in their place of destination in the South, and thus base their decisions on the average civicness in the South $\bar{p}^S$,[A–8] then a sufficient condition that guarantees no migration from North to South is $\lambda[\alpha p_j^S + (1-\alpha)\bar{p}^S] + \delta - E_\phi^S - h < \lambda - 1$ (i.e., migration is not profitable even if the migrant is guaranteed to be allowed to play). If, however, migrants from the North can target an exact locality in the South (in terms of its local civicness), then a stricter condition is required in order to guarantee that even migrating to a purely Civic locality is not profitable. This condition is $\lambda[\alpha + (1-\alpha)\bar{p}^S] + \delta - E_\phi^S - h < \lambda - 1$, with the LHS of the inequality capturing the case where an Uncivic migrant is guaranteed to be able to free-ride a purely Civic locality in

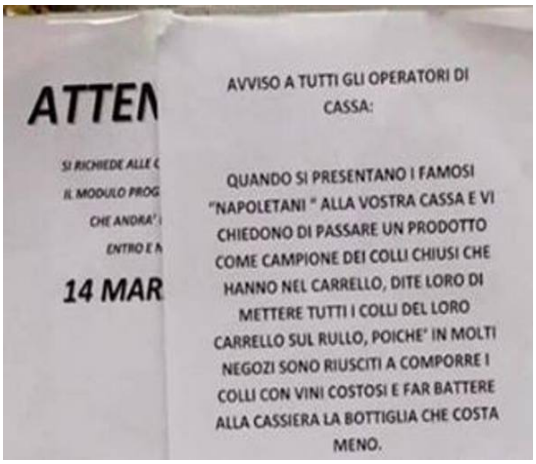
[A–7] $\lambda[\alpha p_j^S + (1-\alpha)\bar{p}^S] + \delta - E_\phi^S$ is the payoff of a free rider in the South and $p_{j'}^N$ is the probability he will be allowed to play the game there.

[A–8] Note that for migration in the opposite direction, i.e. from South to North, it does not matter what the southern migrant knows about the local civicness in the northern destination as long as she knows that enforcement is efficient there and everybody contributes.

the South. Importantly, while not being guaranteed by inequalities (7) to (10), this condition does not contradict them. In particular, it can be joined to these four conditions: in order to produce a Civicness drain at the extremes of the distribution of local Civicness and, at the same time, produce no migration from North to South, the conditions that should be met are $h_{eff} \in (E_\phi^S, 1)$ and $\max\{0, 1 - E_\phi^S - 2h\} < (1-\alpha)\lambda - h_{eff} < 1 - E_\phi^S$.

A–4.6 What North thinks of South (footnote 31 of the text)

Figure A–10: What North thinks of South



Notes: This picture is taken from the national newspaper Corriere della Sera of March 11, 2017. The online version of the article can be found at this link and reports a warning attached to the main board of a major chain of supermarkets in the Northern region of Veneto. Cashiers are warned to be careful of the "well known Neapolitan crooks", a term used to refer to customers (whose geographical origin was in fact unknown) that had found a way to cheat on the price of expensive wine bottles by hiding them under less expensive ones in the kart. The supermarket chain was ordered to remove the warning.

A–4.7 Four examples of the North-South gap in the quality of public services

In relation to footnote 36 of the main text we consider here four examples from the Sole24ore survey on the quality of public services (https://lab24.ilsole24ore.com/qualita-della-vita/), about justice, education, health and public works in recent years, the size of these differences are suggested by the following statistics. Trials last on average 1,142 days in the South compared to 671 days in the North; the average difference in PISA test scores between North and South is about 60-70 points, which according to OECD corresponds to about two full years of education; the fraction of citizens who seek care outside their region of residence, which is likely to reflect a low quality of the local health care system, is 9.0% in the North and 11.7% in the South; finally, out of 610 uncompleted public works, 436 are in the South.

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