Cheating in university exams: the relevance of social factors

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Cheating in University Exams:
The Relevance of Social Factors[*]

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Abstract

We implemented an online anonymous survey targeted to current and former students, where the interviewed indicate whether and to what extent they cheated during written university exams. We find that 61% of respondents have cheated once or more. Cheaters are more likely to report that their classmates and friends cheated, and that in general people can be trusted. Two different cheating styles emerge: 'social cheaters', who self-report that they have violated the rules interacting with others; 'individualistic' cheaters, who self-report that they have used prohibited materials. Only social cheaters exhibit higher levels of trust compared to individualistic cheaters.

Keywords: Academic dishonesty; Honesty; Trust; Online survey; College students.
JEL Classification: I21; D01.

1. Introduction

Many real-life situations involve some form of fraud, of which we constantly receive information from the media. These range from the financial sector and firms in general, to politics, public transport, sports and health sector, among others.

A relevant scenario for committing frauds is represented by academic dishonesty, which occurs in educational environments and is characterized by three main elements: the (young) age of the individuals who have the chance to commit frauds; the educational environment which should also transfer ethical principles and not just knowledge; and the presence of a common social context and community, in which students have many chances to interact and to observe peers acting dishonestly. Academic dishonesty thus appears an important context worth investigating, due to its diffusion, persistency, its social and pedagogical character and the presence of social contagion effects (Carrell et al., 2008).

According to McCabe et al. (2012), colleges and universities are the last good chance to form honest young adults who will be future professionals and possibly role models in the society. Moreover, dishonesty at the university has been found to positively correlate not only with cheating in earlier stages of a student career (Davis and Ludvigson, 1995), but also with dishonesty in future life circumstances, especially at the workplace (Wowra, 2007). In this respect, not only dishonesty at the university undermines the credibility of the academic system, but it may also influence the quality of individuals holding leadership positions, who can be more prone to spread corruptive behavior in their work environment. This implies that understanding and contrasting academic dishonesty may have beneficial subsequent effects for the society overall.

In this study, we investigate to which extent academic dishonesty is correlated with social factors such as the beliefs about peers' dishonesty and the level of trust. To this end, we collect information about self-reported academic dishonesty among a large sample of current and former students enrolled in Italian universities.

Our contribution is multiple. First, we employ data on self-reported dishonest behavior of students from different universities and different fields of study within the same country, this way obtaining a heterogeneous sample in terms of geographical distribution but also type and quality of university attended by the respondents – within a homogeneous institutional

setting. Second, our online survey allows to elicit self-reported dishonesty in a completely anonymous setting detached from elicitations conducted in classrooms, where the presence of fellow colleagues and professors when the data are collected may play a role.

Third, we elicit not only individual characteristics of respondents and contextual variables, but also variables related to their cultural and social context (e.g., the beliefs about peers' dishonesty, the level of trust, the perceived importance of merit in life and the perceived degree of opportunism and inefficiency in the society, etc.). In contrast, prior studies (for a review see McCabe et al., 2012) mostly focus on individual–characteristics (such as age, religiosity, GPA, etc.) and contextual factors (such as surveillance, rewards/sanctions, etc.) but disregard the role played by social factors such as trust, which is indeed relevant in explaining schooling and educational outcomes (Bjørnskov, 2009). Moreover, since some form of cheating implies not only trusting others' knowledge, but also trusting that others who witness the cheating activity will tolerate it and keep it secret, including trust in the analysis enriches our level of understanding of dishonesty during exams.

Fourth, we are able to distinguish two types of cheaters at written university exams: 'individualistic' cheaters, who self-report that they have used prohibited materials and 'social' cheaters, who self-report that they have interacted with others. To the best of our knowledge, we are the first ones to identify the identikit of these two different cheating styles, and to derive implications in relation to the social context (mainly, regarding beliefs about others' dishonesty and trust in others).

We focus on a specific dishonest behavior, i.e., cheating at university exams defined as 'breaking the rules of conduct during a written exam', for instance when copying from different sources, or speaking with other students during the exam. We opted for this specific definition of dishonesty for several reasons. First, it is easily identifiable and it allows us to exclude other forms of academic dishonesty such as, for example, plagiarism and cheating in home assignments. These widespread forms of academic dishonesty are much more complex phenomena, subject to different interpretations by students and, also, to different levels of consciousness (e.g., Gullifer and Tyson, 2014). Furthermore, we can claim that the rules that

are violated with cheating at university exams are clearly communicated and unambiguous, with respect to other forms of cheating.

Second, using this definition, cheating can be observed in any academic discipline contemplating written examinations, while this is not the case for other forms of dishonest behavior, such as plagiarism. Indeed, the extent and nature of material subject to potential plagiarism varies substantially across disciplines: in humanities and social sciences plagiarism can be committed in the writing of master theses or essays, whereas in STEM (Science, Technology, Engineering and Mathematics) plagiarism may also involve the possibility to create or manipulate scientific data. Third, we choose a form of dishonesty which is taken more seriously by students with respect to cheating in home assignments, as evidenced by Ashworth et al. (1997) and for which the saliency of committing something not allowed is more evident than in the case of plagiarism (Newstead et al., 1996).

Our findings indicate that cheating in university exams is widespread: about half of the sample of our respondents (48%) self-report to have cheated in one or two exams; 13% of respondents report that they cheated three or more times, while the remaining 39% report that they never cheated. Cheaters are more likely to report that their classmates and friends cheated, and that in general people can be trusted. When looking at how cheating was implemented, individualistic cheaters and social cheaters are almost equally represented in our sample. Interestingly, only social cheaters exhibit higher levels of generalized trust compared to individualistic cheaters, as well as a positive correlation with perceived cheating of classmates.

The remainder of the paper is organized as follows: in Section 2, we review the related literature on academic cheating and introduce our research hypotheses. In Section 3 we present the data and some descriptive statistics. Section 4 reports and discusses our results, while Section 5 concludes. An online appendix reports the full questionnaire.

2. Related Literature and Research Hypotheses

In the past decades, dishonest behavior gathered massive attention in both the economics and psychology literature (Jacobsen et al., 2018). Prior studies show that in the last decades, dishonesty in academia has been exhibiting increasing trends, both in frequency (Jones,

2011) and repertoire (McCabe and Trevino, 1996; McCabe et al., 2012). Several reasons have been put forward to explain these trends (Ashworth et al., 1997): a growing mass enrollment of students at universities, with a consequent reduction in teacher-student ratio, and a growing competition on the job market, with a parallel sharpened pressure for high grades, are considered among the major determinants. Moreover, specific types of dishonest behavior have either declined or increased in association with the technological change experienced by students. For example, McCabe et al. (2012) report how cut-and-paste plagiarism from the Internet has increased, whereas cheating on exams by copying from others on exams or tests has decreased.[1]

Dishonest behavior is difficult to observe and to measure reliably using real-life, happenstance data, since people try to conceal it (Zitzewitz, 2012); for this reason, in most of the cases, data used in the literature focusing on cheating behavior performed in universities (e.g., during written exams or in the execution of assignments) are self-reported, and they have been mainly gathered through surveys administered in classrooms, at least until recently, when web-based surveys started being employed (McCabe et al., 2012). Although self-reported data are typically considered less reliable than data obtained in controlled and incentivized environments, such as laboratory experiments, a growing number of studies report a high correlation between the two types of data.[2] More specifically, in the context of rule violation in schooling, a recent study by Cohn and Maréchal (2018) compares cheating data collected on middle and high school students in a controlled laboratory setting with data coming from teachers' evaluations of students' misconduct at school, and finds a positive association between the laboratory elicitation and the students' misbehavior at school. This evidence speaks in favor of our study: despite the lack of an incentivized measure of

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[1] Since the definition of cheating varies across studies (in some cases encompassing only cheating in written exams – see, e.g., Harpp and Hogan (1993) – and in other cases also including plagiarism – see, e.g., Griffin et al., 2015), comparisons of magnitudes of cheating rates across studies are not very informative, although magnitudes themselves are suggestive of a highly widespread phenomenon. Most statistics show that more than half of students have engaged in academic dishonesty at least once (Jones, 2011), but some studies report much higher peaks, around 75% (Baird, 1980).

[2] See for instance Cohn et al. (2015), Dai et al. (2018), Hanna and Wang (2017), Kröll and Rustagi (2017) and Potters and Stoop (2016).

university cheating elicited in a controlled environment, lab and field data in the domain of university misconduct seem to be very highly correlated.

Another branch of literature uses an incentivized way of asking questions about uncomfortable behaviors – the so-called truth-serum mechanism designed by Prelec (2004). This is a method to elicit subjective information when objective truth is intrinsically unknowable. In practice, a respondent is asked to provide an answer to a question and also a prediction of the empirical distribution of answers. According to bayesian updating, holding a specific opinion corresponds to a good signal on the general popularity of that opinion. Yet, we believe that this method is not necessary in our study since elicitation of rule violation is implemented in a completely anonymous setting, with the person not being surrounded by peers or authorities such as professors. Therefore, social image concerns should be mitigated and possibly neutralized.

Following this reasoning, it is important to underline that the methodology used to elicit dishonest behavior is crucial as it affects the amount of dishonesty reported. In this respect, a key issue is represented by the degree of anonymity perceived by the respondents: Kervliet (1994) finds that using randomized response surveys 42% self-report cheating compared to 25% under direct questions. In our study self-reported cheating is elicited in a completely anonymous setting: respondents fill in an online survey, from their computer or mobile phone and not in their classroom where the presence of fellow colleagues and professors might exert an influence in the self-reported amount of cheating.

Researchers have been mainly interested in the reasons underlying academic dishonesty, with the goal of designing targeted interventions meant to limit the problem (Ledwith and Rísquez, 2008; Sattler et al., 2017). More in general, prior contributions show a distinction between individual characteristics (such as age, gender, GPA, etc.) and situational or contextual factors, the latter being related to the institution or to a series of circumstances and features of the contexts where cheating takes place (Aljurf et al., 2019; McCabe and Trevino, 1997). Among the individual factors, higher levels of cheating are found in younger students, and those reporting lower levels of religiosity and involvement in clubs, fraternities/sororities, and athletics. Both students with high and low GPA are more likely to cheat but for different reasons: those with high GPA in order to 'thrive', while those with low

GPA in order to survive (i.e., to maintain a financial aid award requiring some minimum GPA to remain eligible for); see McCabe et al. (2012). When considering the contextual factors, Rettinger and Kramer (2009) and McCabe et al. (2012) report that the knowledge of others' cheating is the biggest predictor of cheating. There may be three explanations for this correlation: respondents self-report to have cheated because they found an excuse to cheat in not being the only cheater (in line with the social contagion explanation; Gino et al., 2009; Naghdipour and Emeagwali, 2013); they are linked to classmates and friends with the same cheating attitude (homophily in the network of acquaintances and friendships; Currarini et al., 2009); they cheated because of competitive pressure for marks in seeing others cheating (Atanasov and Dana, 2011). Other contextual factors affecting cheating relate to the perception of the probability of detection (Bisping et al., 2008), to the presence of honor codes at the university, and more in general to the university climate and professors' attitude (McCabe et al., 2012; McCabe and Trevino, 1996).

Our main contribution is the focus on cultural and social factors, such as trust and reward for merit. Trust has received scant attention in the literature investigating dishonesty so far. One interesting exception is the study by Neville (2012), who uses a novel source of data regarding academic dishonesty in the US: Google state-level queries searching for term-paper mills and help with cheating. He finds a positive correlation between the amount of dishonest queries and income inequality at the state level, advocating that the relation is fully mediated by trust. In contrast to Neville (2012), our study allows to investigate the relationship between trust and academic dishonesty at the individual level, thus controlling for a set of individual characteristics and contextual variables identified by previous studies. Also in the domain of trust, but again at an aggregate level, Paccagnella and Sestito (2014) show that social capital, measured as voter turnout at national elections, is negatively correlated with cheating in standardized tests administered to primary and lower-secondary students in Italy. Their results seem to validate the use of measures of cheating as proxies for social capital.

2.1 Research Hypotheses

We test two main hypotheses on the correlation between social factors and the self-reported cheating at university exams: i) the beliefs about others' dishonesty, ii) trust in others.

The first hypothesis is not new in the literature (see, e.g., McCabe and Trevino, 1996) and we look at it to see if our results are consistent with the prevailing findings. The second hypothesis, instead, has been disregarded to a large extent so far, although it is likely to be relevant for students' decisions of engaging in academic dishonesty. Hypothesis 1 suggests a role played by the existing social norms about cheating, while hypothesis 2 refers to its tolerance in the respondents' reference groups.

Hypothesis 1
Individuals who believe that friends and classmates engage in dishonest behavior are more likely to self-report cheating.

Hypothesis 1 refers to the existing social norm about cheating in the reference group and to the presence of contagion effects operating through peers, and specifically friends and classmates (Carrell et al., 2008). Gächter and Schulz (2016) have shown how the individuals' tendency to follow norms and engage in dishonest behavior is influenced by how widespread norm violations are considered. If cheating is a common practice, then it could be considered as more acceptable (Lefebvre et al., 2015) and, as a consequence, if one indulges in cheating, this would occur without compromising the individual's self-image of honesty (Gino et al., 2009; Naghdipour and Emeagwali, 2013). This hypothesis is compatible with a social contagion effect as well as with sorting according to homophily in the network of acquaintances and friendships (Currarini et al., 2009). Moreover, it is also compatible with the existence of strong competition for marks: it could be the case that the cheating practice is exerted in order to level the playing field against fellow colleagues who are seen as competitors, especially if evaluations are implemented in a comparative fashion (Atanasov and Dana, 2011). Previous studies on academic dishonesty have found robust evidence on the relation between perceived cheating by friends and willingness to perform and report cheating (for a survey see McCabe et al., 2012).

Hypothesis 2
Individuals who report a higher level of trust are more likely to self-report cheating.

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This hypothesis may seem counterintuitive; however, in a context where dishonesty is widespread and socially accepted, it can be trusted that others will not report about one's dishonest behavior. This is the case if the reference group that participants have in mind when answering this question adheres to a culture of non-reporting cheating, when observed.[3] In this sense, cheaters trust others' loyalty, consisting in avoiding reporting dishonest behaviors (see Hildreth and Anderson, 2018). This hypothesis is in contrast with the finding that in presence of high levels of generalized trust people are less inclined to cheat as a reaction to others' dishonesty, as reported by Neville (2012).

3. Data

We implemented a non-incentivized web-based survey which was accessible to everybody who wanted to fill it in through a link between May and June 2017. The link was advertised in the main student and former student associations of all Italian Universities, most of which operating through Facebook groups.

The survey questionnaire (translated in English) is reported in the Appendix. The purpose of the survey was stated in the introduction of the questionnaire, where respondents learned that it consisted in investigating the practice of dishonesty during written exams identified as 'breaking the rules of conduct during a written exam'. The survey was composed of 32 questions, divided in three main groups: questions about cheating during written exams (self-reported dishonest behavior: questions Q1-Q6; others' dishonest behavior: Q7-Q9; suggestions to limit dishonest behavior and sanctions: Q10-Q11), questions about preferences and beliefs (trust:[4] Q12-Q14; merit and risk attitude:[5] Q15-Q17), questions

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[3] This culture is present in our sample as well. In our questionnaire, we included a question on reporting others' cheating (Question Q9; see the Appendix). We found that just 0.7% of those who witnessed dishonest behavior chose to report it to the professor.

[4] To elicit generalized trust we use the question from the World Value Survey (*Generally speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people?*) and from the US General Social Survey (*Do you think most people would try to take advantage of you if they got the chance, or would they try to be fair?*).

[5] To elicit merit, we defined the following question: '*Generally speaking, do you think that merit is rewarded in the public sector and in the private sector*'. To elicit risk attitude, we used the question from the SOEP ('*Do you consider yourself a person who is willing to take risks or a person that avoids taking risks? Mark*

about demographics and the social context (demographics: Q18-Q21; university attended: Q22-Q30: importance of religion: Q31-Q32).

3.1. Summary Statistics

Our dataset is composed of 2,157 observations. The key dimension we aim at investigating is captured by Q1, where we ask if the individual ever behaved dishonestly in a written exam and, if so, with which frequency. The answers are summarized in Figure 1, where we learn that dishonest behavior in written exams is a widespread phenomenon. About half of the sample (48%) self-report to have cheated in one or two exams; 39% of the respondents report that they never cheated, while the remaining 13% reported that they cheated three or more times.

FIGURE 1 ABOUT HERE

Table 1 reports summary statistics on the variables we consider in our analysis, that are defined in Appendix Table A.1. Our key variables are two dummies that we label 'ever cheated', equal to 1 if the respondent declares to have cheated in one or more exams, and 'frequently cheated', equal to 1 if the respondent declares to have cheated in three or more exams. In the full sample, 61.4% of the respondents ever cheated and 13.1% frequently cheated. We construct two more dummy variables to account for the type of dishonest behavior performed: 'ever interacted' is equal to 1 if the respondent ever cheated either by interacting with others during the exam(s), while 'ever used material' is equal to 1 if the respondent reports he used material not allowed. These two forms of cheating are the most frequently self-reported, and they arise in the sample with a frequency equal to 32.9% and 33.1%, respectively.[6]

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one of the underlying numbers, where 0 means "absolutely not willing to take risks" and 10 means "totally willing to take risks"').

[6] Note that the sum of the two frequencies is slightly higher than that of the variable 'ever cheated' because in the questionnaire it was possible to report more than one way of cheating. Overall, 61.4% of the subjects report any form of cheating. Specifically, 48.3% report just one type of cheating while 13.1% report both types of cheating.

Moreover, as explanatory variables we define through factor analysis one continuous variable, that we rescale in the 0-1 range, measuring 'general trust' (from raw variables Q12 and Q14)[7]; in one exercise in the Appendix we will replace this variable with two dummy variables that we label 'People can be trusted' (from Q12) and 'People take advantage' (from Q14). We also consider a set of further dummy variables, namely: 'Classmates cheated' (from Q7) and 'Friends cheated' (from Q8), that in one exercise in the Appendix we combine into one single dummy variable labeled 'Others cheated'; 'Merit rewarded first job' (from Q17); 'Aware of the sanction' (from Q11); 'Not religious' (from Q31).[8] This way, we understand that 59.7% of the respondents believe that their classmates cheated, and a lower percentage (35.3%) believe that their friends cheated. Only 27.6% of the respondents believe that people can be trusted, and as many as 76.8% of the respondents believe that people are opportunist, i.e., that they try to take advantage if they have a chance. When looking for the first job, merit seems to be rewarded, indicating efficiency of the job market, although by a small majority of the respondents: 58.4%[9]. Only a minority of the respondents (29.7%) are aware of the sanction that will be applied in case of getting caught cheating.[10] Finally, risk tolerance is a discrete, self-reported indicator from 0 to 10 (where 0 indicates maximum risk aversion and 10 maximum risk tolerance); the average in the sample is 5.936, slightly higher than the central value.

We also control for demographic characteristics. The average age of the respondent is 24, while the average age at the time of the degree is 23, and it is retrieved as the age of the respondent minus the difference between the survey year (2017) and the year in which the

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[7] As a robustness check we defined the index from a factor analysis based on raw variable Q12, Q13 and Q14. This index is highly correlated (0.69) with the one used in this analysis, and results based on it are in line with our benchmark findings. Evidence is available upon request.

[8] The 'Merit rewarded first job' dummy is equal to one if variable Q17 is higher than 6; the 'Not religious' dummy is equal to one if variable Q13 reports 'No, I am atheist/agnostic'. All the other dummy variables are set equal to one if the corresponding variable indicates any of the two 'Yes' options.

[9] The result may also depend on the fact that Italy is one of the EU countries with the highest youth unemployment rate (32.2% against the EU average of 15.2%. Source: Eurostat).

[10] The sanction is varying across universities and departments. Typical sanctions include automatic failure at the exam, skipping the following exam session, and a dishonorable mention to the faculty head.

degree was obtained.[11] Other statistics inform that more females (61.1%) responded to the survey. Moreover, the average respondent is Italian (the foreign respondents are just 3.1%), slightly more likely to live in Northern Italy (51.5%) and study in the North (58.6%), and he or she moved to another region for studying (most typically, from South to North) in 31% of the cases. We are aware that this sample is not representative of the population as there might be some self-selection of the respondents, although we have a quite even distribution of participants who report that they never cheated and participants who report that they behaved dishonestly at least once. For this reason, we will be cautious in drawing general conclusions.

Still, we believe that our sample captures the target population relevant for our study. In fact, the demographic statistics are in line with official data from Almalaurea, a cross-university association representing almost universally the population of Italian graduates, and in addition, the cheating frequencies that we report in this study are in line with findings from the literature about cheating in universities using self-reported data.[12] However, it is undeniable that self-selection, as in any study in which participation is voluntary (e.g., surveys, laboratory experiments), is influenced by the prospective respondent's interest in the topic (Frippiat et al., 2010). In other words, the more the prospective respondent feels about the subject to be investigated, the more likely it is that she will fill in the online form. In our specific context, we may expect that respondents feel particularly close to the topic either because they have experienced it directly in their university career, or indirectly. However, it is not *a priori* clear which kind of subjects we may attract to a larger extent: they could be former or current cheaters, or they could be non-cheaters that have witnessed a lot of cheating during their university career and want to express their opinion on this. Moreover, unlike laboratory experiments, in which being dishonest often accrues additional earnings for

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[11] If the degree still has to be obtained, i.e., if the respondent is a student, we keep his or her current age. This change affects 21.19% of the respondents, that on average are 29 years old.

[12] In 2016, across all universities and fields, the average graduate was 26.1 years old, female in 59.2% of cases, and immigrate in 3.5%. Source (Accessed February 8 2019): http://www2.almalaurea.it/en/cgi-php/lau/sondaggi/intro.php?lang=en&config=profilo. We only notice some geographical concentration, with 46.9% of the answers coming from three regions (Friuli-Venezia Giulia, Lazio and Veneto) whose population accounts for about 20% of the total population in Italy. In a separate robustness check, we perform our analysis using sample weights proportional to the population size of each region (source: ISTAT). This way statistics on the distribution of the observations are consistent with the actual distribution of the population. The results, available upon request, confirm our key findings.

subjects (thus leading to a sort of experimenter demand effect), participation in our survey setting is not incentivized; we can therefore rule out money-driven reasons for admitting cheating.

Respondents frequently hold or are studying for a bachelor degree (in 57.1% of the cases), study or studied in a public university (only 8.6% report a private university), and declare to earn top grades (20%, between 29 and 30 on a 30-point scale; it is equivalent to 'A' in the ECTS grading system). Finally, fields of study are grouped in Social Sciences, STEM and Humanities, with respondents in the Social Sciences group being slightly more frequent (38.8%) than the other two groups (36.7% and 24.5%, respectively for STEM and Humanities).

To shed some light on our research hypotheses, we split the sample in two groups, cheaters and non-cheaters, according to the definition of the 'ever cheated' dummy variable. The rest of Table 1 shows the average of the variables in the two sub-samples, together with the outcome of a test on the equality of proportions (for dummy variables) or the equality of means (for the other variables). The outcome of the test informs that, at the 5% significance level, cheaters are more likely to indicate that classmates and friends cheat, and they are less likely aware of the sanction if they get caught. More frequently they are also younger, come from and study in the North, study or studied in public universities, earned lower grades and their field is more likely to be STEM and less likely to be Social Sciences. No other significant difference is found in this preliminary analysis.

This evidence is intuitive to a large extent. However, this preliminary exercise is univariate and does not take into account the correlation of all the dimensions at play. Section 4 is meant to provide a more accurate analysis, through the implementation of regression models.

TABLE 1 ABOUT HERE

4. Results

Table 2 reports average marginal effects from probit regressions, using four different dependent variables (ever cheated, ever interacted, ever used material, frequently cheated). The specification includes all the variables presented in Sub-section 3.1. In the following, we use the rule to comment only on effects that are significant at the 5% or lower level.

Starting from Column (1), where the dependent variable is the dummy 'ever cheated', we see that the probability to self-report having ever cheated increases by about 15% if classmates or friends are believed to cheat, supporting our Hypothesis 1 and confirming evidence from the existing literature (see, e.g., McCabe and Trevino, 1996). The output also shows that cheating is 1.7% more likely with a 10% increase in the trust index. This result is in line with our Hypothesis 2: many cheaters do not necessarily see their own dishonest behavior as going against trust, but as a method to 'protect' themselves from an overwhelming situation. They then translate into the others their way to justify inappropriate behavior, which results in an average belief of more trust in others' loyalty about avoiding to report cheating behavior.

Regarding the other variables, not surprisingly the probability to cheat falls with the awareness of the fine (by nearly 7%). Cheating is also significantly associated to the age at the time of the degree (Chi-squared test: 12.92; p-value: 0.002). This dimension is treated as a squared polynomial in the specification; the output informs that the probability to cheat increases with age up to $100*(0.041/(2*0.086)) = 23.69$ years, and decreases at later ages, in line with previous results in the literature (e.g., Kerkvliet and Sigmund, 1999). Cheating is more likely among those studying in the North of Italy (+8.2%), with a master's degree or studying for a master's degree (+5.5%), and is less likely among those earning top grades (-11.2%) and studying Social Sciences (-10.5%) or STEM (-6.6%) rather than Humanities. The result concerning top graders corroborates several studies reporting a negative correlation between GPA and the extent of cheating, perhaps because students with lower grades are the least affected by the threat of sanctions (Kervliet and Sigmund, 1999; Scheers and Dayton, 1987). However, it could also be the case that well-performing students feel a higher competitive pressure, and this may translate into the decision to cheat in order to get a high GPA. Along these lines, students in more competitive fields and with higher workloads

could be more likely to self-report cheating, with performance being the most widespread justification for academic cheating (Baird, 1980; Marsden et al., 2005).

Columns (2) and (3) of Table 2 split cheating depending on the self-reported way of cheating. In Column (2) we identify a form of 'social' cheating resulting from interaction with other students during the exam (captured by the dummy 'ever interacted'). In Column (3) we define an 'individualistic' form of cheating resulting from the use of material not allowed during the exam(s) (captured by the dummy 'ever used material').[13] The two methods of cheating that we study differ extensively from each other: by using prohibited material, the student is sure about its quality, whereas by interacting with other people, e.g. by copying a classmate's exam, there is a higher level of uncertainty involved: the person to whom help is asked may refuse to help and, moreover, the quality of the transmitted information is unsure, due to uncertainty about others' knowledge. It could therefore be that individualistic cheaters are more risk-averse than social cheaters, either because they do not want to face the risk of not being able to communicate with others or because they already had negative experiences when asking help to others before (either because someone refused to help or because their attempt got discovered). However, note that, in this second type of cheating, the degree of uncertainty is lower when friendship among the students' cohort is strong: one can be better informed about others' preparation and willingness to help. According to the theoretical model of Griebeler (2017), friendship among students affects their probability of cheating to the extent to which it increases it only for low-performing students.[14] Moreover, another dimension that differs across the two types of cheating is likely to be trust in others: by construction, a person that decides to exert social cheating trusts other

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[13] The two types of cheating are not mutually exclusive. Each one occurs in about 33% of observations; overall, 13% of the respondents report to implement both types of cheating. We do not find different results when separately considering single-type cheaters.

[14] One may argue that the choice of individual vs. social cheating can be also driven by the size of social network in the classroom. Yet, we cannot control for social networks in university courses. Also, there is high heterogeneity in the structure of social networks at university across faculties and across Bachelor's vs. Master's courses, mainly due to i) the number of students attending the lectures and ii) how many other courses students share and attend together. It is possible that higher trust in others correlates with a larger social network in the classroom and hence that the relationship between trust and social cheating is also mediated by the extent of the social network.

colleagues not only in their level of knowledge but also for not reporting the misconduct to professors. On the other hand, an individualistic cheater does not need to trust anyone else in his university misconduct. It is therefore reasonable to expect that general trust plays a larger role among social cheaters.

Comparing the two columns we notice that both forms of cheating correlate with the belief that friends cheated (positively, +6.5% and +7.6% respectively). However, only 'social' cheating (Column (2)) involves some form of self-justification, as only this form of cheating is correlated with the beliefs that classmates cheated (positively, +13.4%), further supporting our Hypothesis 1, and that people can be trusted (positively, +2.1% for a 10% increase in the index), supporting our Hypothesis 2. Another possible interpretation for the former finding is that interaction involves a two-way communication. It could be the case that, occasionally, both parties benefit from the misconduct.[15] As a consequence, social cheaters may be more likely to report that classmates cheated. Moreover, the lack of nexus between the dummy 'Classmates cheated' and the dependent variable 'Ever used material' seems to suggest that motivations such as social norms, contagion effects and competitive forces are not relevant when perceived misconduct of vaguely connected peers is considered. When it comes to the perception of cheating committed by friends, these factors seem to be at work, possibly due to the higher frequency of interactions among friends. Following the previous argument on the two-way communication, if seats at written exams were randomly assigned, students would most probably seat next to classmates rather than friends, and this may also contribute at explaining the positive and significant coefficient of 'Classmates cheated' that we find in case of social cheaters and not in case of individualistic cheaters.[16]

In contrast, only 'individualistic' cheating shows awareness of the sanction (negative effect, -6%) and this way possibly also consciousness of the morality of their actions. The probability of cheating by using prohibited material seems to change with age (Chi-squared test: 9.48; p-value: 0.009) and, in particular, the marginal effect is positive up to age 27.22,

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[15] In many instances, however, interactive cheating occurs from someone who has more knowledge to another person who needs help. The person who has better knowledge may not be interested in committing cheating for her own benefit.

[16] We do not have any information about how seats are assigned at university exams, although we recognize that this could be an interesting input in the analysis of individualistic vs. social cheating for future research.

and tends to fall at higher ages. We explain these results with the fact that the varying implementation of cheating itself may attract individuals with different pro-social attitudes: 'social' cheaters, who rely on others in their cheating episodes, are more inclined to trust others, and also to think that others will be willing to help and do not want to take advantage by signaling the cheating behavior. This is in contrast with a more self-centered and opportunistic attitude of 'individualistic' cheaters, who do not count on their fellow colleagues when cheating.

Column (4) replicates the analysis of Column (1), considering a narrower definition of cheating, and using as dependent variable the dummy 'frequently cheated'. Several differences emerge when making a comparison with Column (1). First of all, we no longer find support to Hypothesis 2, as the coefficient on trust is no longer significant. There are no more significant effects also on age (the Chi-squared test of joint significance is 3.89, with p-value 0.143), area of study, degree and field of study. This indicates that frequent cheating is equally widespread across all these dimensions. All the other significant effects we found previously are preserved, with in addition the evidence that frequent cheating is less likely among females (-5.7%). This result tells that, although in general females may be tempted to cheat as much as males (see Column (1)), they are much less prone to undertake serial cheating. This result is in line with most of prior literature (see, e.g., Baird, 1980; Crown and Spiller, 1998; Whitley, 1998): not only males seem to be less committed to follow academic prescriptions with respect to their female colleagues, but they also feel less guilty after committing cheating.[17] Only in Column (4) we also find that frequent cheating is more likely for individuals who report higher risk tolerance (+0.8% going from totally risk averse to totally risk tolerant) and in private rather than public universities (+6.3%). It is not surprising that risk tolerant individuals are also frequent cheaters: individuals who engage in dishonest

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[17] There are however few exceptions in the gendered pattern of academic cheating, pointing out no difference between males and females (Naghdipour and Emeagwali, 2013), or males cheating less than females (Kervliet, 1994). Interestingly, McCabe et al. (2012) note that female students (in some majors such as engineering) appear to have narrowed the gap with their male counterparts in cheating. The authors believe that this pattern can be attributed to female students trying to play by 'men's rules' to be successful in that major, with engineering as a historically male-dominated field.

behavior also face the risk of being caught cheating.[18] The latter result may indicate that either private universities have more competitive environments that stimulate cheating, or they are more indulgent with respect to cheaters.

To summarize, our results support Hypothesis 1, i.e., the existence of a positive correlation between cheating and the dishonest behavior of classmates and friends as well as Hypothesis 2, i.e., the existence of a positive correlation between cheating and trust, which we interpret as trust in others' willingness to help and loyalty. However, this evidence is universal only for Hypothesis 1: regarding Hypothesis 2, it is not confirmed when looking at frequent cheating or an individualistic form of cheating that manifests itself on the use of prohibited material.

TABLE 2 ABOUT HERE

4.1. Robustness checks

We perform three robustness checks on our benchmark estimates of Table 2. The output of these further analyses is reported in the Appendix.

We start with Appendix Table A.2, where we replace the two variables on 'Classmates cheated' and 'Friends cheated' with a dummy variable labeled 'Others cheated', equal to one if the respondent reports that at least one between classmates and friends cheated. The reason is that there may be overlapping between classmates and friends, and the two original variables may end up to measure a similar thing. The new variable is always largely significant, and does not alter the findings on the other coefficients.

In Table A.3 we replace the 'General trust' variable with its components, namely the two dummy variables 'People can be trusted' and 'People take advantage'. All our previous results are confirmed. Regarding trust, we notice the opposite direction of the coefficients on 'People can be trusted' (positive) and 'People take advantage' (negative). Both coefficients are significantly different from zero in Columns (1) and (2), i.e., when the 'General trust'

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[18] Further information, not used for this analysis, refers to the frequency of detection of the dishonest behavior by instructors: in 89% of the cases respondents report that instructor(s) never noticed the dishonest behavior.

variable was found significant. The variable on people taking advantage is also significantly different from zero in the model of Column (4). This suggests that frequent cheating is more likely among those who see the others as more opportunistic.

Finally, in Appendix Table A.4 we perform a multinomial logit analysis to explain the type of cheating (individualistic or social). The reason is that the two types may be intertwined, and the options every time available to a student are three: not to cheat, be a social cheater, or be an individualistic cheater. In so doing, we reduced the sample size and removed all those respondents belonging to both categories of social and individualistic cheaters. The output is comparable with Columns (2) and (3) of Table 2; although we find fewer significant effects (possibly because of the reduced sample size), most results are preserved. Importantly, we confirm the result that general trust and the belief that classmates cheated matter only to determine social cheating. In this case, we are able to provide statistical support to this evidence (Chi squared test of equality of the coefficients in the two columns: on general trust, 7.57, p-value: 0.006; on the belief that classmates cheated, 9.27, p-value: 0.002).

5. Discussion

Cheating in educational environments such as colleges and universities is a widespread and growing phenomenon constantly investigated in the economic literature since it represents a threat for the future of our educational institutions and, more in general, our societies. Colleges and universities are indeed the places where the adults and professionals of the future are formed.

We designed an anonymous web-survey aimed at collecting information about academic dishonesty in the form of rule violations in written exams. Our primary aim was to isolate the relevance of social factors such as the beliefs about peers' dishonest behavior and the level of trust in others. More than 2,000 students from different Italian Universities completed the survey and about half of them reported to have cheated at least once. Even if our sample is not built to be representative, we find that both i) the demographic statistics are in line with official data from Almalaurea, a cross-university association representing almost universally

the population of Italian graduates and ii) our results are in line with findings from the literature about cheating in universities using self-reported data.

Our results confirm the view that dishonest behavior in written exams is a widespread phenomenon. Cheaters are more likely to report that their classmates and friends cheated. This could be due to different channels, one of which being that being aware that other classmates cheated, the moral cost of acting dishonestly decreases (Griebeler, 2019). Another channel could be identified in the so-called peer effects. According to Baird (1980), students who are also members of fraternity/sorority associations are more likely to cheat, perhaps as a need for acceptance by the group. In general, when the identification with others is strong, others' behavior is going to have a larger impact on observers' social norms (Gino et al., 2009; McCabe, 2005). Moreover, cheaters are more likely to report that in general people can be trusted. This result is opposite to what Neville (2012) advocates, regarding his finding of a negative correlation between state-level dishonesty queries and income inequality. Yet, the author does not provide a measure of trust and dishonesty at the individual level, and hence does not control for a set of individual characteristics.[19] In contrast, being aware of the sanction and earning top grades is negatively correlated with self-reported cheating.

Interestingly, two different styles of cheating can be identified from our analysis: individualistic cheaters, who self-report that they have used prohibited materials, and social cheaters, who self-report that they have interacted with others. Social factors seem to play a different role for the different types of cheater: social cheaters exhibit higher levels of trust compared to individualistic cheaters, while no other difference between the two groups is found when looking at other dimensions. Our findings complement those in Scrimpshire et al. (2017) focusing on *why* students help others cheat and *which* students are being asked to help others cheat.

Our results highlight that different types of cheating exist, and each has its own features. Policies aimed at reducing cheating should take into consideration both types of cheating, given that our data suggest they are equally likely to take place. An intervention aimed at

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[19] Even though the survey was anonymous, there may still be heterogeneity in self-reporting cheating episodes across subjects. The two aforementioned results may be driven by more trustful individuals being more willing to self-report cheating or by a higher tendency of individuals who are willing to self-report their own cheating to also self-report the cheating of others.

discouraging social cheaters seems more likely to succeed if it targets the social norm about being loyal when facing cheating behaviors, and, more in general, the belief that others are willing to help in breaking the rules; in contrast, an intervention aimed at limiting individualistic cheating is more likely to succeed if targeted at changing the perception and acceptance of the cheating behavior in the relevant reference groups.

One of the most effective policy interventions undertaken worldwide to hinder cheating at university is signing an honor code which encompasses ethical practices to adhere to at university (Iberahim et al., 2013; McCabe, 2005; Shu et al., 2011). The intuition for the success of this policy is twofold: i) it represents a very cheap policy intervention; ii) when dishonest behavior is made more salient, people seem to be more reactive to their moral standards and behave consequently. According to our results, this policy could be even more beneficial if the honor code also mentions that cheating is detrimental also for society and for fellow colleagues who do not cheat, hence making more salient the social context in which cheating takes place. Furthermore, more attention could be devoted to developing a sense of shared responsibility for integrity at university exams. More generally, as a deterrent against cheating, before the exam starts, professors could make salient, either verbally or written in the text of the exam, that committing cheating is unfair towards other students (this would target the social cheating phenomenon) and that it is nevertheless a wrong conduct to take (this would target individualistic cheating). Currently, at university exams, only the second component is occasionally applied. To extend the generalizability of this approach, future research should try to detect the profile of the cheater outside from the academic domain.

We are aware that our analysis is potentially flawed by self-selection bias of our sample of respondents, despite the fact that several observable characteristics in our sample are in line with the population of Italian graduates. Future research should then be also devoted to limit this problem by developing methodological refinements.

Our study presents a number of further limitations, which also constitute the main avenues for future research on the topic. For instance, in case a respondent cheated at university exams, we do not know how much benefit in terms of percentage of the final grade she obtained from violating the rules. Eliciting this kind of question in the online survey would allow us to investigate not only the extensive margin of cheating, but also its intensive

margin. Furthermore, it would be interesting to dig more deeply into the different motivations of occasional vs. frequent cheaters. We expect that frequent cheaters have intrinsic motivations for cheating that depart from the specific context, whereas occasional cheaters may be tempted by specific characteristics of the exam or of the teaching style (e.g., a very difficult exam or an examination style that favours cheating). Moreover, although violating the rules of conduct during a written university exam in Italy is subject to the same national legislation, and it entails a forgery of a public deed, every university applies its own regulation and we cannot capture this through our survey. Hence, in the regression analyses, we can control for whether the respondent is aware of the sanction but, unfortunately, we cannot control for the type of punishment.

Statements

The authors declare that they have no conflict of interest. The data that support the findings of this study are available from the corresponding author upon request.

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<p align="center">**Table 1.** Summary Statistics</p>

Sample	Mean All	Mean Non-cheaters	Mean Cheaters	Test
Ever cheated (d)	0.614	0	1	
Frequently cheated (d)	0.131	0	0.214	
Ever interacted (d)	0.329	0	0.535	
Ever used material (d)	0.331	0	0.539	
Classmates cheated (d)	0.597	0.459	0.684	10.406***
Friends cheated (d)	0.353	0.218	0.437	10.355***
Others cheated (d)	0.624	0.485	0.712	10.611***
General trust	0.439	0.428	0.446	1.951*
People can be trusted (d)	0.276	0.252	0.291	1.957*
People take advantage (d)	0.768	0.786	0.756	-1.621
Merit rewarded first job (d)	0.584	0.570	0.592	1.005
Aware of the sanction (d)	0.297	0.341	0.270	-3.528***
Not religious (d)	0.501	0.483	0.513	1.368
Risk tolerance	5.936	5.833	6.001	1.771*
Age	23.051	23.251	22.924	-2.030**
Female (d)	0.611	0.625	0.601	-1.124
Foreign (d)	0.031	0.038	0.026	-1.562
Lived in North (d)	0.515	0.471	0.543	3.279***
Studied in North (d)	0.586	0.532	0.621	4.088***
Moved to another region (d)	0.310	0.322	0.303	-0.922
Bachelor degree (d)	0.571	0.587	0.561	-1.181
Private university (d)	0.086	0.104	0.074	-2.457**
Top grades (d)	0.200	0.245	0.171	-4.154***
Social sciences (d)	0.388	0.433	0.359	-3.463***
STEM (d)	0.367	0.330	0.390	2.831***
Observations	2,157	833	1,324	

Note: dummy variables are marked with (d). The last column reports a test on the comparison between the groups of cheaters and non-cheaters: for dummy variables, we run a test on the equality of proportions; for the other variables, we run a t-test on the equality of the means. *** p<0.01, ** p<0.05, * p<0.1.

Table 2. Probability to cheat

VARIABLES	(1) Ever Cheated	(2) Ever interacted	(3) Ever used material	(4) Frequently cheated
Classmates cheated	0.151***	0.134***	0.035	0.039**
	(0.022)	(0.023)	(0.024)	(0.018)
Friends cheated	0.159***	0.065***	0.076***	0.146***
	(0.024)	(0.023)	(0.024)	(0.016)
General trust	0.170***	0.210***	0.036	0.044
	(0.048)	(0.048)	(0.048)	(0.033)
Merit rewarded first job	0.020	0.033	-0.009	-0.019
	(0.020)	(0.020)	(0.020)	(0.014)
Aware of the sanction	-0.067***	-0.015	-0.060***	-0.046***
	(0.022)	(0.022)	(0.023)	(0.016)
Not religious	0.014	-0.011	0.015	-0.000
	(0.020)	(0.020)	(0.020)	(0.014)
Risk tolerance	0.008*	-0.000	-0.000	0.008**
	(0.005)	(0.005)	(0.005)	(0.003)
Age	0.041**	0.009	0.067***	0.028*
	(0.016)	(0.016)	(0.022)	(0.016)
Age squared /100	-0.086***	-0.028	-0.123***	-0.048
	(0.029)	(0.028)	(0.041)	(0.030)
Female	-0.034	0.033	-0.032	-0.057***
	(0.021)	(0.021)	(0.021)	(0.014)
Foreign	-0.061	-0.024	-0.082	0.001
	(0.057)	(0.059)	(0.061)	(0.040)
Lived in North	-0.016	-0.016	0.020	-0.007
	(0.033)	(0.034)	(0.034)	(0.024)
Studied in North	0.082**	0.056	0.013	0.023
	(0.033)	(0.035)	(0.035)	(0.025)
Moved to another region	-0.027	-0.046**	-0.007	-0.018
	(0.023)	(0.023)	(0.023)	(0.016)
Bachelor degree	-0.055**	-0.028	-0.076***	0.002
	(0.022)	(0.022)	(0.022)	(0.015)
Private university	-0.033	-0.042	0.001	0.063***
	(0.036)	(0.038)	(0.038)	(0.024)
Top grades	-0.112***	-0.017	-0.102***	-0.066***
	(0.025)	(0.026)	(0.026)	(0.019)
Social sciences	-0.105***	-0.017	-0.038	0.007
	(0.025)	(0.025)	(0.025)	(0.018)
STEM	-0.066**	-0.062**	-0.011	0.010
	(0.026)	(0.026)	(0.026)	(0.018)
Pseudo-R^2	0.092	0.041	0.033	0.135
Observations	2,157	2,157	2,157	2,157

Note: The table reports probit average marginal effects. Standard errors in parentheses.
*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Figure 1. Frequency of Cheating at the Exams
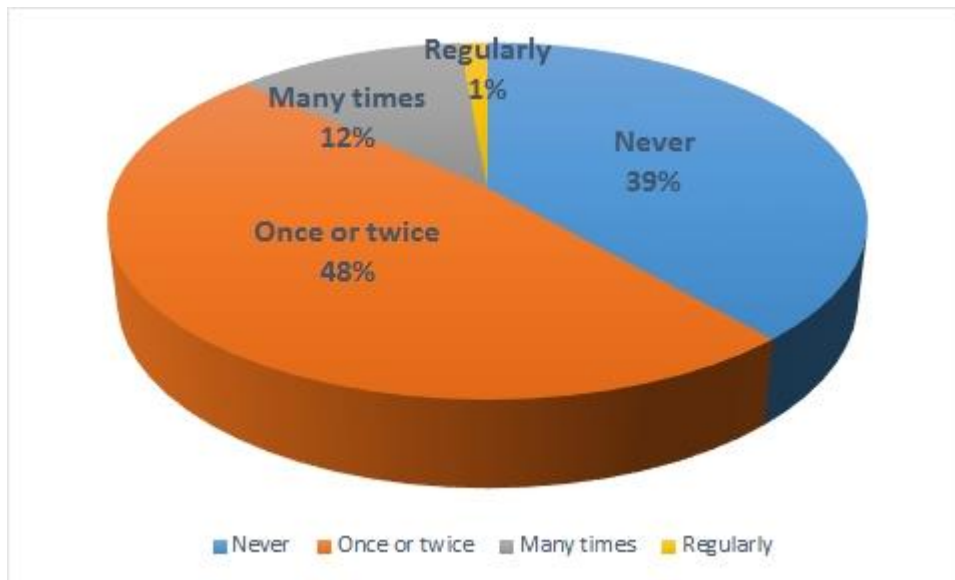
Cheating in University Exams:
The Relevance of Social Factors

Appendix. Online Questionnaire

Not for Publication

A. Questionnaire

B. Robustness check

A. Questionnaire

In this appendix we present the English translation of the questionnaire.
Text in Italics is not part of the questionnaire.

SURVEY ON DISHONESTY IN THE UNIVERSITY

The survey is addressed to current and former University students and is part of a research project being carried out by the Universities of Bologna and Verona in Italy.

Filling out the survey will take less than 10 minutes.

Please answer the questions honestly. Your answers will be anonymous and there is no way for us to trace your answers to your identity. The answers will be used for scientific research purposes only. They will be presented and discussed in an aggregate way.

If you have any doubts or questions, or you want to be updated on the results of this project, we invite you to contact *[Here the name and email address of one of the researchers was written.]*.

It is important that as many people as possible fill out this survey. Please, share the link with your friends!

THANK YOU FOR YOUR PARTICIPATION!

Our aim is to study the frequency of dishonest behavior at the University. In this survey, by dishonest behavior we mean breaking the rules of conduct during a written exam (i.e., copying from different sources, speaking with other students, etc.).

Q1. Have you ever behaved dishonestly during an exam?
☐ Never
☐ Once or twice
☐ Many times
☐ Regularly

[If "Never": go to Q7]

Q2. In which way did you behave dishonestly? (more than one answer is possible)
☐ I used materials which are not allowed (books, notes on paper or written on the body, cheat sheets)
☐ I used my phone to search for information
☐ I interacted with one or more classmates during the exam
☐ I asked another person to take the exam in my place
☐ Other: _____

Q3. Was your behavior of any help?

☐ No, I did not benefit from it eventually

☐ Yes, in this way I answered to what I did not know and I was thus able to pass the exam

☐ Yes, in this way I answered to what I did not know and I was able to obtain a higher grade

☐ Other: _____

Q4. Have the professors ever noticed your dishonest behavior?

☐ No, they never noticed it

☐ Yes, they noticed it sometimes

☐ Yes, they noticed it regularly

Q5. If the professors noticed it, what measure did they take?

☐ They never noticed it

☐ They did not take any measures

☐ I had to skip one or more exam session

☐ I was summoned to the law office/ executive board/ dean

☐ I got expelled from the University

☐ Other: _____

Q6. Why did you behave dishonestly?

☐ The course was too difficult

☐ I did not have enough time to study everything

☐ There was too much to study

☐ I did not like the course/ I found it useless

☐ I had studied but I did not feel self-confident

☐ To improve my performance

☐ Other: _____

Q7. Do you think that dishonest behavior during the exams is frequent among your classmates?

☐ No, it happens rarely (I never noticed it or heard about it in fewer than three exams)

☐ No, it happens quite rarely (I noticed it or heard about it in fewer than half of the exams)

☐ Yes, it happens quite frequently (I noticed it or heard about it in more than half of the exams)

☐ Yes, it happens frequently (I noticed it or heard about it in every exam or almost every exam)

Q8. Do you think that dishonest behavior during the exams is frequent among your friends?

☐ No, it happens rarely (I never noticed it or heard about it in fewer than three exams)

☐ No, it happens quite rarely (I noticed it or heard about it in fewer than half of the exams)

☐ Yes, it happens quite frequently (I noticed it or heard about it in more than half of the exams)

☐ Yes, it happens frequently (I noticed it or heard about it in every exam or almost every exam)

Q9. If you have ever witnessed dishonest behavior during the exams among your classmates, what was the effect on you?

☐ None, I prefer to behave honestly regardless of the others
☐ I was bothered but I did not report it to the professor
☐ I was bothered and I reported it to the professor
☐ Other: _____

Q10. How do you think the problem of dishonesty during the exams could be solved?

☐ By increasing the punishment
☐ By providing different versions of the text of the exam
☐ By decreasing the material of the teaching program
☐ By offering (or increasing the number of) practice exercises or mock examinations in class
☐ By providing more information to the students regarding the immorality of this behavior
☐ By introducing a compulsory oral exam after the written examination
☐ By increasing the knowledge about the punishment
☐ Other: _____

Q11. Do you know what the sanctions are for those who behave dishonestly during an exam?

☐ Yes, I read them in the University rules
☐ Yes, they were explained by the professors
☐ No
☐ I am not sure
☐ Other: _____

In this section you will find questions about your view on several topics.

Q12. In general, do you think that you can trust most people?

☐ No, you always have to be careful
☐ No, you have to be careful most of the times
☐ Yes, you can trust most people most of the times
☐ Yes, you can always trust most people

Q13. How much do you trust these groups?

	Not at all	A little	Quite enough	A lot
Family	☐	☐	☐	☐
Neighbors	☐	☐	☐	☐
Acquaintances	☐	☐	☐	☐
Church	☐	☐	☐	☐
Political parties	☐	☐	☐	☐
Institutions	☐	☐	☐	☐

Q14. In general, do you think that most people try to take advantage of others when given the chance to do so?

☐ No, they always behave in a fair way

☐ No, they behave in a fair way most of the times

☐ Yes, they try to take advantage of others most of the times

☐ Yes, they always try to take advantage of others

Q15. Generally speaking, do you think that merit is rewarded in the public sector and in the private sector?

	Yes, always	Yes, most of the time	No, only some of the time	No, never
Public sector	☐	☐	☐	☐
Private sector	☐	☐	☐	☐

Q16. Do you consider yourself a person who is willing to take risks or a person that avoids taking risks? Mark one of the underlying numbers, where 0 means "absolutely not willing to take risks" and 10 means "totally willing to take risks".

Absolutely not   0   1   2   3   4   5   6   7   8   9   10   Totally
willing to take risks   ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐   willing to take risks

Q17. How much do you think merit matters for finding one's first job compared to other factors like references and recommendations? Mark one of the underlying numbers, where 0 means "Not at all" and 10 means "A lot".

                0   1   2   3   4   5   6   7   8   9   10
Not at all   ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐   A lot

You are almost done with the questionnaire. Please answer some final socio-demographic questions.

Q18. How old are you?

☐ Between 18 and 20

☐ Between 21 and 23

☐ Between 24 and 26

☐ Between 27 and 29

☐ Between 30 and 32

☐ Between 33 and 35

☐ Between 36 and 38

☐ Between 39 and 41

☐ Between 42 and 44

☐ Between 45 and 47

☐ Between 48 and 50

☐ Between 51 and 53

☐ Between 54 and 56
☐ Between 57 and 59
☐ Between 60 and 62
☐ Between 63 and 65
☐ Between 66 and 68
☐ Between 69 and 71
☐ Over 71

Q19. What is your gender?
☐ Male
☐ Female

Q20. What is your nationality?
☐ Italian
☐ foreign

Q21. What is your region of origin (where you lived most of your life)?
☐ Abruzzo
☐ Basilicata
☐ Calabria
☐ Campania
☐ Emilia-Romagna
☐ Friuli Venezia Giulia
☐ Lazio
☐ Liguria
☐ Lombardia
☐ Marche
☐ Molise
☐ Piemonte
☐ Puglia
☐ Sardegna
☐ Sicilia
☐ Toscana
☐ Trentino-Alto Adige
☐ Umbria
☐ Valle d'Aosta
☐ Veneto
☐ Other: _____

Q22. What is the region where your university is based?

☐ Abruzzo

☐ Basilicata

☐ Calabria

☐ Campania

☐ Emilia-Romagna

☐ Friuli Venezia Giulia

☐ Lazio

☐ Liguria

☐ Lombardia

☐ Marche

☐ Molise

☐ Piemonte

☐ Puglia

☐ Sardegna

☐ Sicilia

☐ Toscana

☐ Trentino-Alto Adige

☐ Umbria

☐ Veneto

Q23. Which year did you begin your University studies in?

☐ Before 2010

☐ 2010

☐ 2011

☐ 2012

☐ 2013

☐ 2014

☐ 2015

☐ 2016

☐ 2017

Q24. What level is your current degree? If you are not currently studying, answer with the highest level you have obtained.

☐ Bachelor's degree

☐ Master's degree or Advanced degree

☐ Single cycle degree (i.e., Med school or Law school)

Q25. When do you expect to finish/ did you finish your University studies?
- ☐ Before 2000
- ☐ Between 2000 and 2009
- ☐ Between 2010 and 2016
- ☐ 2017
- ☐ 2018
- ☐ 2019
- ☐ 2020
- ☐ 2021
- ☐ 2022

Q26. Is the University that you are/were attending private or public?
- ☐ Private
- ☐ Public

Q27. What is/was your field of studies?
- ☐ Agricultural
- ☐ Architecture
- ☐ Economics
- ☐ Law
- ☐ Engineering
- ☐ Literature or History
- ☐ Medicine
- ☐ Psychology
- ☐ Science or Biotechnology
- ☐ Political Science
- ☐ Mathematics or Physics
- ☐ Foreign Languages
- ☐ Other: _____

Q28. Why did you enroll in the course that you are attending/ attended?
- ☐ Because I found it interesting
- ☐ Because I thought it could increase the chance of finding a job after the graduation
- ☐ I was driven by my family or friends
- ☐ Other: _____

Q29. What is your average grade at the exams?
- ☐ Between 18 and 20
- ☐ Between 21 and 23
- ☐ Between 24 and 26
- ☐ Between 27 and 28

☐ Between 29 and 30

Q30. Who finances/ financed your University studies?
☐ Scholarship based on income and merit
☐ Scholarship based on merit
☐ My family
☐ Myself working
☐ Other: _____

Q31. Do you have a religious belief?
☐ No, I am atheist/ agnostic
☐ I am Catholic/ Christian
☐ I am Muslim
☐ I am Buddhist
☐ Other: _____

Q32. How much does your religious belief influence your daily life? (mark 1 if you don't have a religious belief)

	1	2	3	4	5	6	7	8	9	10	
Not at all	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	Very much

Thank you for participating! Your contribution is really useful for our research!
We would be grateful if you could link the survey to your friends.

[At the end of the questionnaire, when all the answers are submitted, a confirmation message appears on the screen with this text:]

Thank you! We recorded all your answers. If you want to be informed on our research, please send an email to *[Here the name and email address of one of the researchers was written.]*.

B. Robustness checks

Table A.1. Variable definition

Label	Definition
Dependent variables	
Ever cheated	Dummy =1 if ever cheated (once or more)
Frequently cheated	Dummy =1 if cheated frequently (several times or regularly)
Ever interacted	Dummy =1 if cheated by interacting with others
Ever used material	Dummy =1 if cheated by using material not allowed
Explanatory variables	
Classmates cheated	Dummy =1 if classmates frequently cheated
Friends cheated	Dummy =1 if friends frequently cheated
Others cheated	Dummy =1 if classmates or friends frequently cheated
General trust	Index of general trust, from 0 to 1, with factor analysis from the two variables below
People can be trusted	Dummy =1 if believes most people can be trusted, always or most of the time
People take advantage	Dummy =1 if believes people try to take advantage, always or most of the time
Merit rewarded first job	Dummy =1 if believes skills are rewarded in the first job, always or most of the time
Aware of the sanction	Dummy =1 if aware of the sanction
Not religious	Dummy =1 if not religious
Risk tolerance	Risk tolerance index, from 0 to 10
Age	Age in years
Female	Dummy =1 if female
Foreign	Dummy =1 if foreign nationality
Lived in North	Dummy =1 if lived in the North
Studied in North	Dummy =1 if studied in the North
Moved to another region	Dummy =1 if moved to another region to study
Bachelor degree	Dummy =1 if bachelor degree
Private università	Dummy =1 if studied in a private university
Top grades	Dummy =1 if earned top grades (29-30 range)
Social sciences	Dummy =1 if studied Social Sciences
STEM	Dummy =1 if studied Hard Sciences

Table A.2. Probability to cheat: Others cheated

VARIABLES	(1) Ever Cheated	(2) Ever interacted	(3) Ever used material	(4) Frequently cheated
Others cheated	0.231***	0.166***	0.072***	0.133***
	(0.019)	(0.020)	(0.021)	(0.017)
General trust	0.149***	0.199***	0.026	0.023
	(0.048)	(0.048)	(0.048)	(0.034)
Merit rewarded first job	0.019	0.033	-0.009	-0.018
	(0.021)	(0.020)	(0.021)	(0.014)
Aware of the sanction	-0.071***	-0.018	-0.062***	-0.051***
	(0.022)	(0.022)	(0.023)	(0.016)
Not religious	0.010	-0.013	0.013	-0.004
	(0.020)	(0.020)	(0.020)	(0.014)
Risk tolerance	0.010**	0.001	0.001	0.010***
	(0.005)	(0.005)	(0.005)	(0.003)
Age	0.046***	0.012	0.069***	0.031**
	(0.016)	(0.016)	(0.022)	(0.015)
Age squared /100	-0.094***	-0.031	-0.126***	-0.052*
	(0.029)	(0.028)	(0.040)	(0.028)
Female	-0.047**	0.026	-0.038*	-0.071***
	(0.021)	(0.021)	(0.021)	(0.015)
Foreign	-0.054	-0.020	-0.078	0.004
	(0.057)	(0.059)	(0.061)	(0.041)
Lived in North	-0.019	-0.018	0.019	-0.012
	(0.033)	(0.034)	(0.034)	(0.025)
Studied in North	0.085**	0.058*	0.013	0.026
	(0.034)	(0.035)	(0.035)	(0.025)
Moved to another region	-0.029	-0.047**	-0.008	-0.023
	(0.023)	(0.023)	(0.023)	(0.017)
Bachelor degree	-0.051**	-0.026	-0.075***	0.004
	(0.023)	(0.022)	(0.022)	(0.016)
Private università	-0.033	-0.044	0.002	0.064***
	(0.037)	(0.038)	(0.038)	(0.025)
Top grades	-0.115***	-0.019	-0.103***	-0.067***
	(0.025)	(0.026)	(0.026)	(0.020)
Social sciences	-0.104***	-0.015	-0.037	0.010
	(0.025)	(0.025)	(0.025)	(0.018)
STEM	-0.068**	-0.063**	-0.011	0.010
	(0.027)	(0.026)	(0.026)	(0.019)
Pseudo-R^2	0.079	0.038	0.029	0.085
Observations	2,157	2,157	2,157	2,157

Note: The table reports probit average marginal effects. Standard errors in parentheses.
*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table A.3. Probability to cheat: components of trust

VARIABLES	(1) Ever cheated	(2) Ever interacted	(3) Ever used material	(4) Frequently cheated
Classmates cheated	0.150***	0.132***	0.034	0.041**
	(0.022)	(0.023)	(0.024)	(0.018)
Friends cheated	0.156***	0.062***	0.075***	0.145***
	(0.023)	(0.023)	(0.024)	(0.016)
People can be trusted	0.056**	0.052**	0.013	-0.015
	(0.024)	(0.024)	(0.024)	(0.016)
People take advantage	-0.045*	-0.059**	-0.004	-0.055***
	(0.025)	(0.025)	(0.025)	(0.017)
Merit rewarded first job	0.021	0.035*	-0.008	-0.019
	(0.020)	(0.020)	(0.020)	(0.014)
Aware of the sanction	-0.065***	-0.012	-0.060***	-0.046***
	(0.022)	(0.022)	(0.023)	(0.016)
Not religious	0.015	-0.010	0.015	0.000
	(0.020)	(0.020)	(0.020)	(0.014)
Risk tolerance	0.009*	0.000	-0.000	0.008**
	(0.005)	(0.005)	(0.005)	(0.003)
Age	0.041**	0.009	0.067***	0.028*
	(0.016)	(0.015)	(0.022)	(0.016)
Age squared /100	-0.086***	-0.027	-0.123***	-0.048
	(0.029)	(0.027)	(0.041)	(0.030)
Female	-0.034	0.032	-0.032	-0.056***
	(0.021)	(0.021)	(0.021)	(0.014)
Foreign	-0.064	-0.027	-0.083	0.003
	(0.057)	(0.059)	(0.061)	(0.039)
Lived in North	-0.014	-0.013	0.021	-0.008
	(0.033)	(0.034)	(0.034)	(0.024)
Studied in North	0.081**	0.055	0.013	0.022
	(0.033)	(0.035)	(0.035)	(0.025)
Moved to another region	-0.027	-0.045*	-0.007	-0.017
	(0.023)	(0.023)	(0.023)	(0.016)
Bachelor degree	-0.056**	-0.029	-0.077***	0.003
	(0.022)	(0.022)	(0.022)	(0.015)
Private università	-0.034	-0.045	0.000	0.063***
	(0.036)	(0.038)	(0.038)	(0.024)
Top grades	-0.113***	-0.018	-0.102***	-0.068***
	(0.025)	(0.026)	(0.026)	(0.019)
Social sciences	-0.106***	-0.017	-0.039	0.008
	(0.025)	(0.025)	(0.025)	(0.018)
STEM	-0.067**	-0.062**	-0.011	0.011
	(0.026)	(0.026)	(0.026)	(0.018)
Pseudo-R^2	0.092	0.039	0.032	0.140
Observations	2,157	2,157	2,157	2,157

Note: The table reports probit average marginal effects. Standard errors in parentheses.
*** p<0.01, ** p<0.05, * p<0.1

Table A.4. Probability to cheat: Multinomial logit

VARIABLES	(1) Ever Interacted	(2) Ever used material
Classmates cheated	0.106***	-0.005
	(0.022)	(0.022)
Friends cheated	0.025	0.033
	(0.022)	(0.023)
General trust	0.173***	-0.033
	(0.046)	(0.047)
Merit rewarded first job	0.032	-0.015
	(0.020)	(0.020)
Aware of the sanction	0.011	-0.040*
	(0.021)	(0.022)
Not religious	0.001	0.031
	(0.019)	(0.019)
Risk tolerance	-0.002	-0.002
	(0.004)	(0.004)
Age	-0.008	0.061**
	(0.017)	(0.024)
Age squared /100	0.002	-0.111**
	(0.033)	(0.047)
Female	0.041*	-0.040*
	(0.021)	(0.021)
Foreign	0.010	-0.060
	(0.054)	(0.061)
Lived in North	-0.032	0.009
	(0.032)	(0.032)
Studied in North	0.052	0.006
	(0.033)	(0.033)
Moved to another region	-0.028	0.017
	(0.022)	(0.022)
Bachelor degree	0.020	-0.035
	(0.022)	(0.021)
Private university	-0.055	-0.004
	(0.038)	(0.038)
Top grades	0.004	-0.096***
	(0.025)	(0.026)
Social sciences	-0.038	-0.073***
	(0.023)	(0.024)
STEM	-0.075***	-0.020
	(0.025)	(0.024)
Pseudo-R^2	0.041	0.041
Observations	1,875	1,875

Note: The table reports probit average marginal effects. Standard errors in parentheses.
*** p<0.01, ** p<0.05, * p<0.1