Academic Dishonesty among College Students: Academic Motivation vs. Contextual Factors

E. Shmeleva, T. Semenova

Received in April 2018

Evgeniia Shmeleva
Junior Research Fellow, Center of Sociology of Higher Education, Institute of Education, National Research University Higher School of Economics. E-mail: eshmeleva@hse.ru
Tatiana Semenova
Junior Research Fellow, Center of Sociology of Higher Education, Institute of Education, National Research University Higher School of Economics. E-mail: tsemenova@hse.ru

Address: 20 Myasnitskaya St, 101000 Moscow, Russian Federation.

Abstract. Academic dishonesty among college students is often associated with low academic motivation, which has been confirmed by multiple international findings. However, the role of academic motivation may be overestimated, as such studies do not normally control for contextual factors such as faculty and peer behavior. This study utilized the theoretical framework of Eric M. Anderman and Tamera B. Murdock to identify the factors of academic dishonesty and the self-determination theory of Edward L. Deci and Richard M. Ryan to measure academic motivation. Longitudinal data on students of four Russian universities participating in the Project 5–100 (N=914) is used to measure the ability of academic motivation to predict academic cheating and plagiarism rates while controlling for contextual factors. Regression analysis shows that academic motivation becomes insignificant as a predictor as soon as perceived consequences and peer effects come into play. The best predictor of both plagiarism and cheating is students' perception of contextual factors, i. e. perceived prevalence of relevant behaviors among peers. Unlike with cheating, plagiarism rates are not contingent on the probability of punishment.
Keywords: higher education, academic dishonesty, plagiarism, cheating, academic motivation, self-determination theory.

DOI: 10.17323/1814-9545-2019-3-101-129

Academic dishonesty including cheating and plagiarism in written papers [Pavela 1997], is pervasive in Russian higher education. According to the 2014 Monitoring of Education Markets and Organizations (MEMO), nearly one in five students admit having plagiarized (copied pieces of source text without proper citation), bought papers (essays, reports, term papers) from essay mills, or used cheat sheets in an exam/test [Roshchina, Shmeleva 2016]. Another study involv-

Translated from Russian by I. Zhuchkova.

ing students in economics and management programs of eight Russian universities found that one in six students believe that most exams and tests at their university can be passed by cheating, and over one third are convinced that many of their peers buy papers online [Maloshonok 2016].

A variety of factors are proposed by researchers to explain the high incidence of academic dishonesty Studies show that a lot of students consider academic dishonesty to be an acceptable and justified educational strategy [Lupton, Chapman 2002; Poltorak 1995; Denisova-Schmidt, Huber, Leontyeva 2016], which may stem from school experiences [Latova, Latov 2007] and overall tolerance of corrupt practices in Russia [Magnus et al. 2002; Denisova-Schmidt 2017; 2018]. Some researchers believe that academic dishonesty in Russian higher education may be aggravated by certain peculiarities of the system [Magnus et al. 2002; Denisova-Schmidt, Huber, Leontyeva 2016; Leontyeva 2010], such as the funding model that makes it unprofitable for colleges to dismiss students for academic dishonesty [Denisova-Schmidt 2017; Golunov 2013]. Scholars also emphasize insufficiency of the anti-fraud policies implemented by universities and faculty [Shmeleva 2016; Golunov 2013].

A number of Russian studies have found low student academic motivation to be another factor of high academic dishonesty rates in Russian colleges [Gizhitsky 2014; Gizhitsky, Gordeeva 2015; Shmeleva 2016]. Researchers in Russia as well as in other countries demonstrate that students primarily seeking to learn new knowledge or skills are less likely to cheat than those motivated by extrinsic or performance factors, such as grades or social comparison [Jordan 2001; Rettinger, Jordan 2005; David 2015].

However, the majority of publications studying the relationship between academic motivation and dishonest behaviors do not take into account the influence of contextual factors, which are the most powerful predictors of academic dishonesty [McCabe, Trevino, Butterfield 2001; McCabe, Feghali, Abdallah 2008]. As a result, the role of academic motivation in explaining and predicting academic dishonesty may be overestimated, since such contextual factors as faculty attitudes and actions [Simon et al. 2004; Yu et al. 2016; Broeckelman-Post 2008], peer behavior [McCabe, Trevino, Butterfield 2001; 2002; McCabe, Feghali, Abdallah 2008; Megehee, Spake 2008; Ma, McCabe, Liu 2013], and existence and effectiveness of honor code systems [Arnold, Martin, Bigby 2007; McCabe, Trevino, Butterfield 2002] are significantly related to academic dishonesty. For instance, studies conducted in different cultural contexts show that students who perceive academic dishonesty as commonplace among peers are significantly more likely to engage in dishonest practices themselves [Ma, McCabe, Liu 2013; McCabe, Trevino, Butterfield 2002].

Besides, researchers exploring the relationship between cheating in higher education and academic motivation usually approach

motivation as a goal that students seek to achieve, so they measure it using the tools proposed by achievement goal orientation theory [David 2015; Murdock, Hale, Weber 2001; Anderman, Koenka 2017; Koul 2012; Ozdemir Oz, Lane, Michou 2016]. However, the typology of goals suggested by this theory distills all the diverse goals to only two, discriminating between "mastery" and "performance" goal orientations (as tendencies to achieve positive or avoid negative outcomes, respectively), and excludes goal overlapping. Other researchers use the binary concept of extrinsic vs intrinsic motivation [Rettinger, Jordan 2005; Jordan 2001]. This model, however, is oversimplified, as there is empirical evidence of various subtypes of extrinsic motivation with differing degrees of autonomy in the initiation and regulation of intentional behavior [Vansteenkiste et al. 2010; Ryan, Deci 2000].

This study seeks to shed light on the relationship between academic dishonesty and student academic motivation, overcoming the limitations. Academic motivation is measured using self-determination theory [Ryan, Deci 2000], which offers a more elaborated typology of motivation than the one proposed by achievement goal orientation theory [Maloshonok, Semenova, Terentev 2015]. Meanwhile, contextual factors are controlled for, allowing a more accurate evaluation of the role of academic motivation in predicting academic dishonesty. In addition, the study separately examines the relationship between academic motivation and dishonest behaviors such as plagiarism and cheating on exams, as factors of their prevalence may differ significantly [Passow et al. 2006]. Therefore, in this paper we answer the following research question:

How does the student academic motivation contribute to the explanation of academic dishonesty controlling for contextual factors?

The paper uses data on 914 students of four Russian universities participating in the Project 5–100 (designed to sharpen the competitive edge of Russian colleges in the global scene) that was collected during two rounds of a longitudinal survey performed in fall 2015 (when the students were freshmen) and in spring 2016.

1. Theoretical Framework

This study utilizes the theoretical framework of Tamera B. Murdock and Eric M. Anderman [Murdock, Anderman 2006], derived from a systematized set of data obtained in a variety of correlational studies and quasi-experiments devoted to academic dishonesty. The proposed model approaches academic dishonesty as motivated actions that students decide to take depending on their (a) goals, (b) expectations for accomplishing those goals, and (c) assessments of the costs associated with academic dishonesty (Fig. 1).

International findings indicate that *academic goals* are significantly related to cheating behavior [Jordan 2001; Rettinger, Jordan 2005; David 2015]. The goals pursued by students reflect their *academic motivation*, i. e. educational outcomes that they want to accom-

Figure 1. **Murdock and Anderman's Theoretical Framework** [Murdock, Anderman 2006]

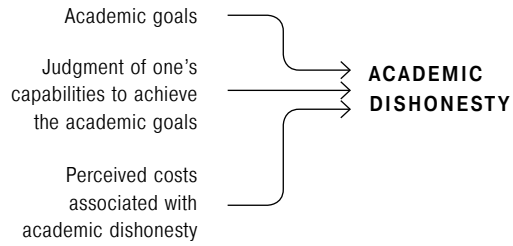
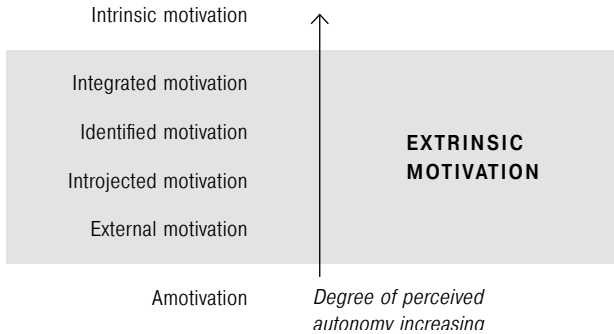


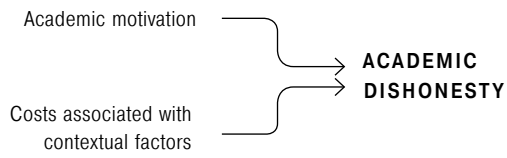
Figure **2. Motivation Typology According to Self-Determination Theory [**Ryan, Deci 2000]



plish. The original model approaches academic motivation through the prism of *achievement goal orientation theory*, distinguishing between mastery-oriented students willing to master a particular body of knowledge and performance-oriented students focused on showing evidence of their ability and avoiding failure [Ames, Archer 1988; Elliot 2005]. A great deal of findings indicate that students are more likely to engage in malpractices if they pursue performance goals of obtaining good grades or showing how smart they are [Newstead, Franklyn-Stokes, Armstead 1996; Anderman, Griesinger, Westerfield 1998] and if they avoid appearing incompetent to their peers [Anderman, Koenka 2017].

Exploiting a binary typology of goals, this theory does not allow embracing the whole spectrum of motivation. For this reason, we draw on *self-determination theory* [Ryan, Deci 2000], which understands academic motivation as the cause of the initiation and regulation of student behavior. This theory discriminates among *intrinsic motivation*, four types of *extrinsic motivation*, and *amotivation*. All of those can be plotted on a single continuum with varying degrees of perceived

Figure 3. **Proposed Theoretical Framework**



autonomy (Fig. 2). *Intrinsically-motivated* students engage in learning for the sake of interest and enjoyment, so this type of motivation is associated with the highest degree of autonomy. *Extrinsically-motivated* students initiate and regulate their actions being driven by external stimuli—external objects related to learning behavior indirectly, such as grades or other incentives (*external motivation*), social norms (*introjected motivation*), perception of an activity as important (identified motivation) and valuable (*integrated motivation*). *Amotivated* students have no motivation to engage in learning.

Murdock and Anderman maintain that academic dishonesty is also affected by *perceived costs of cheating*, which are determined by contextual factors and students' level of moral reasoning. Contextual factors are conditions formed by the learning environment that may promote or hinder academic dishonesty. These include institutional policy to detect and prevent plagiarism and cheating, peer and faculty behavior, and perceived proportion of cheaters going unpunished.

This study zeroes in on the relationship between *academic motivation* and *academic dishonesty*, while making allowance for perceived costs associated with contextual factors, namely faculty and peer attitudes. It is assumed that students with higher levels of academic motivation and perceived costs are less likely to cheat. The adjusted theoretical framework based on Murdock and Anderman's theory is presented in Figure 3.

2. Method

2.1. Data

Data on students of four leading universities of Russia participating in the Project 5–100[1], collected during Trajectories and Experiences of University Students in Russia, a longitudinal survey organized by the Higher School of Economics Institute of Education, provided the empirical basis of research. The survey was targeted at students enrolled in 2015 to various education programs, intending to measure their educational experiences and trajectories. This article uses data obtained

[1] The complete list of 14 universities participating in the Project 5–100 in 2015 is available at https://ioe.hse.ru/collaborative_project/members

Table 1. **Descriptive Statistics**, n = 914

Variable	Description	%
Gender	Female	60.1
	Male	39.9
Mother's education	No college degree	19.8
	College degree	80.2
University	University 1	49.0
	University 2	10.7
	University 3	25.9
	University 4	14.4
Program	STEM	40.5
	Humanities, economics, and social sciences	59.5
Type of funding	State funding	70.5
	Self-funding or apprenticeship contract	29.5
Self-assessed performance	Straight A's	10.9
	A's and B's	43.9
	Mostly A's and B's, some C's	34.0
	Mostly C's	11.2

in two rounds of the survey. The first round was administered during the fall term of 2015. Every first-year student in the selected programs was emailed an invitation to participate in a longitudinal survey with a link to the online questionnaire. The first-round questionnaire consisted of items on entrants' demographic and socioeconomic characteristics, their expectations about university experience, and a module devoted to academic motivation and perceived academic norms. Invitation to participate in the first round was accepted by 1,149 students out of the 8,597 who were sent invitation emails (the average response rate being 16%).

The second round of the survey took place in the spring term of 2016. Respondents to round one were emailed an invitation to participate in the second round. The email contained a link to the online questionnaire designed to measure students' academic engagement, satisfaction, self-assessed performance, academic motivation, and frequency of academic dishonesty. The second-round survey had a response rate of 78% (n = 914).

Table 1 presents descriptive statistics for the sample. Over half of the participants (60%) were enrolled in humanities, economics, and social science programs, of which Economics and Management and

Sociology/ Social Science were represented the most. The rest of the respondents were enrolled in STEM programs (41%), Information & Computer Science and Electrical/ Electronics Engineering Technology being the most popular ones. Women accounted for more than half of the sample (60%). Most students participating in both rounds of the survey were enrolled in state-funded programs (71%).

2.2. Instruments for Measuring Academic Motivation

Two rounds of the survey measured students' motivational characteristics. The first round used an abridged version of the *Academic Motivation Scale* instrument developed by Robert J. Vallerand and his colleagues [Vallerand et al. 1992]. The questionnaire consists of ten items on reasons for engaging in higher education, which students are asked to rate on a seven-point scale. This instrument measures intrinsic motivation, three types of extrinsic motivation—identified, introjected, and external—and amotivation[2]. In the second round of the survey, academic motivation was assessed using the *Scales of Academic Motivation* questionnaire validated by Tamara Gordeeva, Oleg Sychev, and Evgeny Osin [2014]. Being composed of 28 items on reasons for attending university, each to be rated on a five-point scale, this instrument measures three types of intrinsic motivation (intrinsic cognition, achievement, and personal growth), three types of extrinsic motivation (motivation for self-respect, introjected, and external), and amotivation (examples of items measuring academic motivation in both rounds are given in Table A1 of Appendix).

To determine the relationship between academic motivation and academic dishonesty, the Relative Autonomy Index (RAI) was constructed using the methodology proposed in [Sheldon et al. 2017] for the levels of motivation measured at the beginning and at the end of the first year.

First of all, we checked to what extent the types of motivation were falling into two groups, autonomous[3] vs controlled[4] [Ibid.]. Hierarchical cluster analysis found all the items falling perfectly into the two groups and all the indicators being properly grouped, except those related to motivation for self-respect (they were added to the autonomous group instead of the controlled one). After verifying that empirical findings are consistent with the theoretical binary division, factors for each type of academic motivation were extracted. Exploratory factor analysis showed that over 60% of the variance was explained by a single factor for all the types of motivation. All the motivation factors

[2] Theory also postulates integrated motivation as another type of extrinsic motivation, meaning that an individual integrates an activity into their value system, yet it is not measured empirically [Vallerand et al. 1992].

[3] Autonomous motivation includes all the types of intrinsic motivation and the identified type of extrinsic motivation.

[4] Controlled motivation includes amotivation and all the types of extrinsic motivation except the identified type.

Figure 4. **Distribution of the Index of Academic Motivation Reflecting the Degree of Relative Autonomy in the First Round of the Longitudinal Survey**

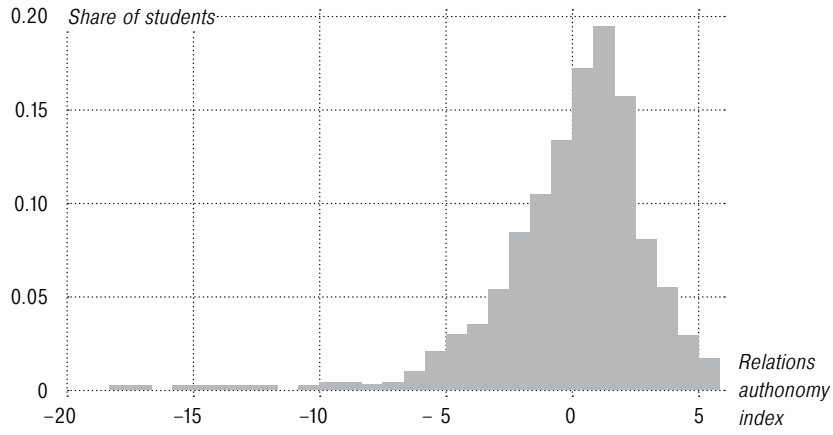
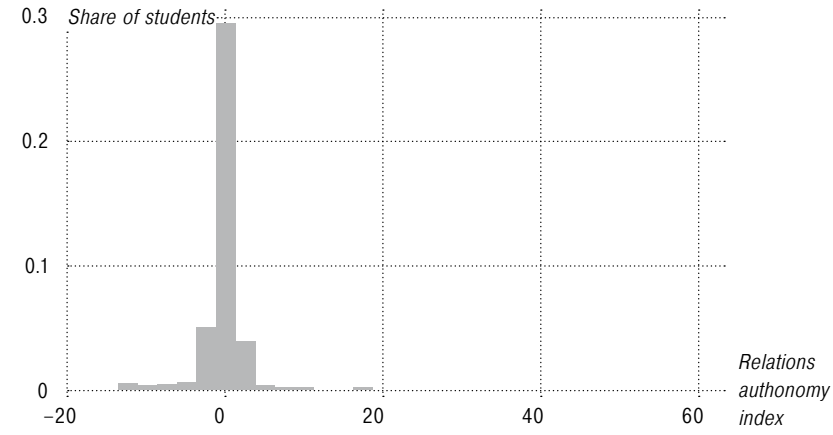


Figure 5. **Distribution of the Index of Academic Motivation Reflecting the Degree of Relative Autonomy in the Second Round of the Longitudinal Survey**



proved to be highly reliable (Cronbach's $\alpha > 0.7$), except the factor of *introjected motivation* assessed during the first-round survey (Table A2, Appendix). The index of academic motivation (IAM) was calculated using the extracted factors except the factor of *introjected motivation* (for the first-round IAM) and that of motivation for self-respect (for the second-round IAM). The IAM distribution is shown in Figures 4 and 5 for the first and second rounds of the longitudinal survey, respectively. Most students demonstrated a high degree of relative au-

tonomy at the beginning of the first year, which implies that intrinsic motivation prevailed at entry (Fig. 4).

The RAI drops by the end of the first year at university, bringing the academic motivation of most students to the medium level, meaning that their attendance was determined by intrinsic as well as extrinsic stimuli at that time (Fig. 5).

2.3. Instrument for Measuring Academic Dishonesty

The second round of the survey was measuring the self-reported frequency of cheating and plagiarism among students. The incidence of plagiarism was measured by the item, "How many times have you copied fragments from other publications or books (including online sources) without citing the source?" To assess the frequency of cheating, students were asked, "How many times have you used cheat sheets (including on a mobile device) or copied from other students during an exam or test?" Students could assess the frequency of cheating and plagiarism on a four-point scale involving "Never", "Once or twice", "3–5 times", and "More than 5 times".

The second round also assessed the costs of academic dishonesty, expressed by three measures, (a) perceived likelihood of severe punishment for cheating and plagiarism, (b) probability of plagiarism check, and (c) perceived prevalence of cheating and plagiarism among fellow students.

In order to measure perceived likelihood of severe punishment for cheating and plagiarism and the probability of plagiarism check, we asked students to assess the following situations as very likely, moderately likely, or unlikely: (i) "Instructors at my university will remove a student from the classroom if they find them cheating during an exam or test"; (ii) "Instructors at my university will give bad grades if they detect plagiarism in written assignments"; and (iii) "Instructors will check my written assignment (e. g. essay or report) for plagiarism".

Perceived prevalence of plagiarism and cheating among fellow students was assessed using questions about the percentage of students who engage in those dishonest practices on a regular basis. The respondents were offered the following options: "No one does it", "Some students do it", "Most students do it", "Everyone does it", and "Don't know".

The first round also analyzed students' tolerance of plagiarism and cheating in terms of institutional policies. Students were asked whether they considered acceptable copying fragments from other publications or books (including online sources) without citing the source, and using cheat sheets (including on a mobile device) or copying from other students during an exam or test. The "Don't know" response option was also available. Intolerance to plagiarism was reported by 91% of freshmen, and intolerance to cheating ("inacceptable") by 83%. These measures were used as control variables in the regression models.

Half of the survey participants engaged in academic dishonesty at least once during their first year at the university (Fig. 6). Cheat-

Figure 6. **Frequency of Plagiarism and Cheating**

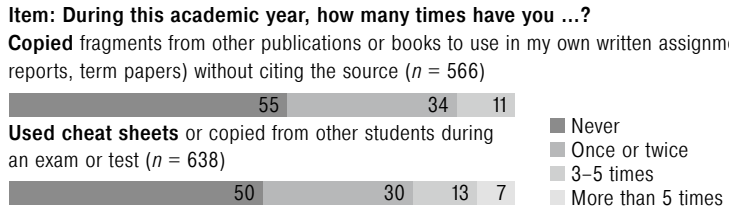


Figure 7. **Percentage of Students Who Have Never Cheated or Plagiarized Across the Surveyed Universities**

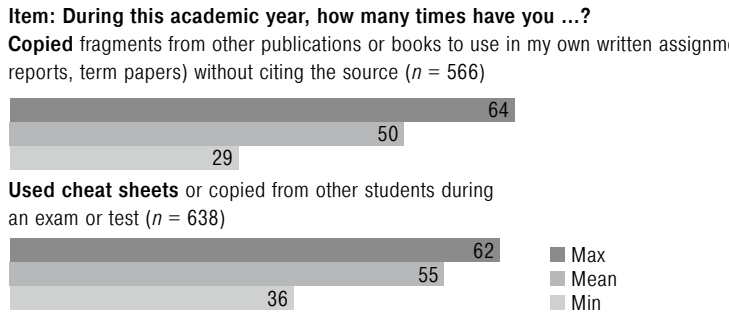


Figure 8. **Perceived Prevalence of Cheating and Plagiarism among Fellow Students**

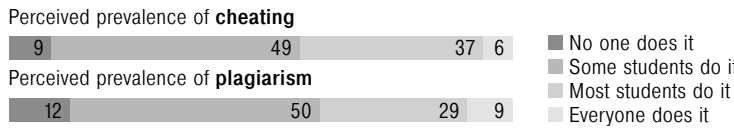
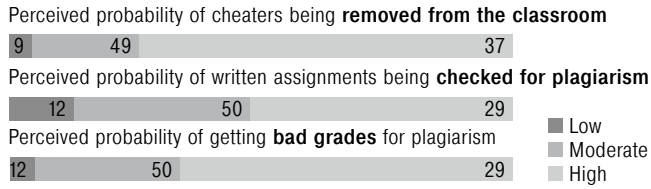


Figure 9. **Perceived Probability of Severe Punishment and Plagiarism Checks**



ing was found to be more prevalent than plagiarism. Seven percent of the students reported having cheated on an exam or test more than five times, but none had copied fragments from other works that often.

Plagiarism and cheating rates vary greatly across the universities (Fig. 7). The percentage of students who have never committed pla-

giarism is 29% in one of the institutions and twice as high (64%) in another one[5]. Variation in the frequency of cheating is relatively lower, 36–62%[6].

Students perceive the prevalence of cheating and plagiarism among peers as high, one in three respondents being convinced that most of their fellow students engage in plagiarism and cheating (Fig. 8).

Although most students believe that academic dishonesty is pervasive among their peers, two thirds of the respondents report a high likelihood of severe punishment for plagiarism and cheating (Fig. 9). At the same time, only half of the participants assess plagiarism checks as highly probable.

3. Findings

3.1. The Contribution of Academic Motivation to the Explanation of the Frequency of Academic Dishonesty Controlling for Contextual Factors

This study aimed to assess the relationship between academic dishonesty and academic motivation while controlling for contextual factors. The incidence of copying fragments from other sources without proper citation and the incidence of cheating during an exam or test were used as dependent variables[7]. As these variables are ordinal, analysis involved constructing ordinal logistic regression models which allowed evaluating the chances of falling under each of the categories (in this case, categories of frequency of academic dishonesty).

Three regression models were estimated for each of the dishonest practices. Model 1 only included academic motivation indicators (for first- and second-year students). The second regression model adds individual characteristics of students, which, according to studies, can be related to differences in the frequency of cheating and plagiarism [Shmeleva, 2015], namely the characteristics of students (gender, level of education of parents), their self-assessment of learning achievement, place of study (university and training direction).

This model also took account for students' perception of institutional norms regarding academic dishonesty. Since students were surveyed at the beginning of their college studies (in September), this variable is regarded as a proxy for students' individual expectations about the existing university rules regarding academic dishonesty, not as a contextual factor. Model 2 allows measuring the role of academic motivation as compared to other individual student characteristics. As the frequency of academic dishonesty may also be affected by contextual factors, Model 3 additionally took into account

[5] Significance level = 0.001.

[6] Significance level = 0.05.

[7] When constructing the models, we excluded students who gave the no-opinion response ("Don't know") to how often they cheated and plagiarized from the analysis. As a result, 638 observations formed the sample in the model with plagiarism rate as the dependent variable. As for the model assessing the frequency of cheating, the sample consisted of 566 observations.

the indicators describing perception of faculty and peer behaviors. It thus allows identifying how academic motivation determines the frequency of plagiarism and cheating while controlling for individual student characteristics as well as contextual factors describing the learning environment.

Analysis of variance as well as Akaike and Bayesian information criteria were used to compare the quality of the models constructed. The Model 3 demonstrated the best goodness of fit for both plagiarism and cheating compared to other models.

3.2. Models Explaining the Frequency of Plagiarism

Results of regression analysis show that the frequency of plagiarism in written assignments is not related to academic motivation of first-year students, yet it is negatively related to motivation measured during the second year of studies. However, the correlation disappears when contextual factors are added to the model (Table A3, Appendix). This means that students with different levels of relative autonomy are equally likely to commit plagiarism in similar learning environments.

Perceived costs of plagiarism were found to be related only partly to the frequency of engaging in this practice, perceived peer behavior appearing to be the only significant predictor. Indeed, the frequency of plagiarism increases dramatically if students believe that most or all of their peers tend to use fragments from other texts without crediting the source. Meanwhile, faculty behavior is not affecting students' decision to plagiarize—the variables describing perceived probability of plagiarism check and punishment in case of detection were found to be insignificant in the model. Consequently, students plagiarize regardless of the associated risks, being guided by perceived prevalence of plagiarism among fellow students in the first place.

The frequency of plagiarism varies greatly across the institutions, the university variable remaining significant even when academic motivation, contextual factors, and other control variables are taken into account. Besides, the frequency of using fragments from other sources without proper citation is related to self-assessed performance. Students getting mostly C's are more likely to plagiarize than straight-A students, the inference remaining robust when the model controls for perceived probability of plagiarism check and punishment. Perceptions of institutional norms measured in first-year students proved to be significant in Model 2. Students who perceived their university as intolerant to plagiarism at entry were less likely to plagiarize, no matter their academic motivation. However, this variable lost its deterring effect as soon as contextual factors were added to the model, which may indicate that perceptions of institutional policies are ultimately irrelevant.

3.3. Models Explaining the Frequency of Cheating

Just as with plagiarism, higher levels of academic motivation measured during the second year of studies correlate with lower frequency of cheating, but this effect fades away when contextual factors come

into play (Table A4, Appendix). No relationship was found between academic motivation assessed at the beginning of the first year and the frequency of cheating.

Another parallel finding is that peer behavior is a significant predictor of cheating rates. Students who believe that most of their peers cheat are significantly more likely to cheat on an exam themselves than those who perceive the prevalence of cheating as low ("No one does it" or "Some students do it").

In contrast to plagiarism, the frequency of cheating turns out to be related to perceived costs associated with faculty behavior. The higher perceived probability of punishment for cheating, the lower the frequency. Meanwhile, cheating rates do not vary across the universities surveyed as the university variable loses its significance in Model 3, which controls for both academic motivation and perceived costs. This way, the frequency of cheating appears to be more situational and more related to the perceived faculty behavior than the frequency of plagiarism, the latter, in contrast, varying greatly across the institutions but showing no correlation with faculty behavior.

Similarly to plagiarism, the frequency of cheating is related to self-assessed performance, being higher among students who mostly get C grades. Besides, students who perceived their university as intolerant to cheating were less likely to cheat on exams/tests at the end of the first year. However, this effect ceases to be significant ($p < 0.1$) as soon as contextual factors are added to the model—which was also observed for plagiarism.

4. Limitations

This study has some limitations which have to be taken into account when extrapolating its findings. First, its theoretical framework differs from the original version in that analysis excludes self-efficacy as one of the factors affecting academic dishonesty. However, the purpose of this study was to explore the relationship between academic motivation and academic dishonesty while controlling for contextual factors, not to test the validity of the original theoretical framework proposed by Murdock and Anderman [Murdock, Anderman 2006]. Second, the relationship between academic motivation and academic dishonesty was analyzed using self-reported data collected from students' responses to sensitive questions about cheating and plagiarism, so it is entirely possible that the prevalence of academic dishonesty among university students is underestimated in this study. Third, the panel sample could have been biased by self-selection towards more motivated, responsible, and engaged students. For instance, some studies [Dey 1997; Porter, Whitcomb 2005] indicate that respondents to student surveys are more likely to be high-performing, socially engaged, and financially secure.

5. Discussion

There is a long-held belief among Russian faculty that students bear responsibility for their academic success and honesty, and a tendency to explain students' academic failures by their lack of "desire to learn" [Terentev et al. 2015]. The widespread opinion, "Who wants to study, will study"[8], reflects the pivotal role of academic motivation, the lack of which may push students to cheat. The relationship between academic motivation and academic dishonesty has also been confirmed empirically by researchers in Russia [Gizhitsky 2014; Gizhitsky, Gordeeva 2015] and other countries [Rettinger, Jordan 2005; David 2015; Anderman, Koenka 2017].

This study was designed to assess this relationship while controlling for contextual factors, which may affect the frequency of academic dishonesty to a significant extent. Drawing upon the theoretical framework proposed by Murdock and Anderman [Murdock, Anderman 2006], we assessed the effects of academic motivation, controlling for the costs of plagiarism and cheating associated with faculty and peer behavior as perceived by students of four Russian universities involved in the Project 5–100.

5.1. Contextual Factors Are More Important than Academic Motivation

This study demonstrates that the frequency of dishonest practices—both plagiarism and cheating—does not depend on students' relative autonomy in the regulation of their behavior. Instead, it is related to contextual factors, such as perceived peer behavior and perceived probability of punishment. These inferences are consistent with earlier findings demonstrating the great influence of peer and faculty behavior on the frequency of academic dishonesty [Broeckelman-Post 2008; McCabe, Trevino, Butterfield 2001; 2002; McCabe, Feghali, Abdallah 2008; Megehee, Spake 2008; Ma, McCabe, Liu 2013; Simon et al. 2004; Yu et al. 2016; Shmeleva 2016].

This study did not reveal a significant relationship between the probability of punishment for using fragments of others' works and the frequency of plagiarism—quite surprisingly, as more than half of the respondents reported high rates of plagiarism checks and punishment in case of detection at their universities. Perhaps, these findings indicate insufficiency of the measures to prevent academic dishonesty. First, despite the relatively high probability of plagiarism checks and punishment, a lot of students witness academic dishonesty around them, 38% of the participants being convinced that most of their peers plagiarize. In this case, the experience of observing fellow students avoiding punishment for plagiarism may be a more powerful factor than perceptions of the probability of being caught [Freiburger et al. 2017]. Second, even though instructors do plagiarism checks, actually detecting plagiarism may be a challenge, which low-

[8] "It Was Only in My First Exam Session that I Didn't Cheat": Why Russian Students Cheat, and International Attitudes towards Academic Dishonesty: https://paperpaper.ru/cheating/

ers the perceived likelihood of punishment as well as the perceived costs of using someone else's words as one's own.

5.2. Cheating is More Contingent on Contextual Factors than Plagiarism

Our findings also allow an inference that decisions to cheat are more contingent on the context than decisions to plagiarize. Students assessing the probability of getting punished as high are less likely to cheat, yet perceived costs (probability and severity of punishment) do not play a significant role in plagiarism behavior. At the same time, the frequency of plagiarism varies significantly across the institutions, but no such relationship is observed for cheating behavior. Otherwise speaking, cheating is more dependent on contextual factors and behavior of specific instructors, while plagiarism rates are rather conditioned institutionally.

International researchers tend to explain differences between colleges by such institutional characteristics as type, size, and academic integrity policies [Arnold, Martin, Bigby 2007; McCabe, Trevino, Butterfield 2002]. Differences in plagiarism rates among the four surveyed universities probably have to do with the types and efficiency of their prevention strategies. To shed more light on this issue, further research should involve a larger sample of colleges, so that relationship between their institutional characteristics and plagiarism rates could be better investigated.

Senior students of Russian colleges are more tolerant to academic dishonesty than freshmen [Chirikov, Shmeleva 2018; Denisova-Schmidt, Huber, Leontyeva 2016]. It may be suggested that students tend to engage in corrupt practices more and more often as they progress through college. The findings obtained herein do not allow saying whether it happens because of academic motivation decreasing over the period of studies or not, as different rounds used different instruments to measure motivation. What the findings do indicate is that contextual factors play a significant role in the prevalence of academic dishonesty—and thus may contribute to students tolerance towards academic dishonesty.

References

Ames C., Archer J. (1988) Achievement Goals in the Classroom: Students' Learning Strategies and Motivation Processes. *Journal of Educational Psychology*, vol. 80, no 3, pp. 260–267.

Anderman E. M., Koenka A. C. (2017) The Relation between Academic Motivation and Cheating. *Theory into Practice*, vol. 56, no 2, pp. 95–102.

Anderman E. M., Griesinger T., Westerfield G. (1998) Motivation and Cheating during Early Adolescence. *Journal of Educational Psychology*, vol. 90, no 1, pp. 84–93.

Arnold R., Martin, B. N., & Bigby, L. (2007). Is There a Relationship between Honor Codes and Academic Dishonesty? *Journal of College and Character*, vol. 3, no 2, pp. 1–20.

Broeckelman-Post M.A. (2008) Faculty and Student Classroom Influences on Academic Dishonesty. IEEE *Transactions on Education*, vol. 51, no 2, pp. 206–211.

Chirikov I. Shmeleva E. (2018) Are Russian Students Becoming More Dishonest During College? *Higher Education in Russia and Beyond*, vol. 3, no 17, pp. 19–21.

David L. T. (2015) Academic Cheating in College Students: Relations among Personal Values, Self-Esteem and Mastery. *Procedia—Social and Behavioral Sciences*, no 187, pp. 88–92.

Denisova-Schmidt E. (2018) Corruption, the Lack of Academic Integrity and Other Ethical Issues in Higher Education: What Can Be Done Within the Bologna Process? *European Higher Education Area: The Impact of Past and Future Policies* (eds A. Curaj, L. Deca, R. Pricopie), Springer, Cham, pp. 61–75.

Denisova-Schmidt E., Huber M., Leontyeva E. (2016) On the Development of Students' Attitudes towards Corruption and Cheating in Russian Universities. *European Journal of Higher Education*, vol. 6, no 2, pp. 128–143.

Denisova-Schmidt E. (2017) *The Challenges of Academic Integrity in Higher Education: Current Trends and Prospects*. The Boston College Center for International Higher Education (CIHE) Perspectives. No 5.

Dey E. L. (1997) Working with Low Survey Response Rates: The Efficacy of Weighting Adjustments. *Research in Higher Education*, vol. 38, no 2, pp. 215–227.

Elliot A.J. (2005) A Conceptual History of the Achievement Goal Construct. *Handbook of Competence and Motivation*, vol. 16, pp. 52–72.

Freiburger T. L., Romain D. M., Randol B. M., Marcum C. D. (2017) Cheating Behaviors among Undergraduate College Students: Results from a Factorial Survey. *Journal of Criminal Justice Education*, vol. 28, no 2, pp. 222–247.

Gizhitsky V. (2014) Uchebny obman kak strategiya psevdoadaptivnogo povedeniya u starsheklassnikov [Cheating as Maladaptive Behavior Strategy of High School Students]. *Scientific Notes of Orel State University. Series «Humanities and Social Sciences»*, no 2, pp. 293–299.

Gizhitsky V., Gordeeva T. (2015) Strategii uchebnogo povedeniya kak mediatory vliyaniya motivov na akademicheskie dostizheniya [Academic Behavior Strategies as Mediators of Motives' Influencing the Academic Achievement]. *Scientific Notes of Orel State University. Series «Humanities and Social Sciences»*, no 2, pp. 253–259.

Gordeeva T, Sychev O., Osin E. (2014) Oprosnik «Shkaly akadimicheskoy motivatsii» ["Academic Motivation Scales" Questionnaire]. *Psychological Journal*, no 4, pp. 96–107.

Golunov S. (2013) *Malpractices in the Russian Higher Education System: Implications for* EU-*Russian Education and Science Cooperation*. Centre for EU-Russia Studies EU-Russia paper No 9. Tartu: University of Tartu.

Jordan A. E. (2001) College Student Cheating: The Role of Motivation, Perceived Norms, Attitudes, and Knowledge of Institutional Policy. *Ethics & Behavior*, vol. 11, no 3, pp. 233–247.

Koul R. (2012) Multiple Motivational Goals, Values, and Willingness to Cheat. *International Journal of Educational Research*, vol. 56, pp. 1–9.

Latova N., Latov Y. (2007) Obman v uchebnom protsesse (opyt shpargalkologii) [Academic Dishonesty (A Study of Cheating Behavior]. *Social Sciences and Contemporary World*, no 1, pp. 31–46.

Leont'eva E. (2010) Standarty i realnost: mozhno li v rossiyskikh vuzakh uchit'sya po pravilam? [Standards and Reality: Is It Possible to Study in Russian Universities if You Follow the Rules?]. *Voprosy obrazovaniya / Educational Studies Moscow*, no 1, pp. 208–224.

Lupton R. A., Chaqman K. J. (2002) Russian and American college Students' Attitudes, Perceptions and Tendencies towards Cheating. *Educational Research*, vol. 44, no 1, pp. 17–27.

Ma Y., McCabe D.L., Liu R. (2013) Students' Academic Cheating in Chinese Universities: Prevalence, Influencing Factors, and Proposed Action. *Journal of Academic Ethics*, vol. 11, no 3, pp. 169–184.

Magnus J. R., Polterovich V. M., Danilov D. L., Savvateev A. V. (2002) Tolerance of Cheating: An Analysis across Countries. *The Journal of Economic Education*, vol. 33, no 2, pp. 125–135.

McCabe D.L., Feghali T., Abdallah H. (2008) Academic Dishonesty in the Middle East: Individual and Contextual Factors. *Research in Higher Education*, vol. 49, no 5, pp. 451–467.

McCabe D.L., Trevino L. K., Butterfield K. D. (2001) Dishonesty in Academic Environments. *Journal of Higher Education*, vol. 72, no 1, pp. 29–45.

McCabe D.L., Trevino L. K., Butterfield K. D. (2002) Honor Codes and Other Contextual Influences on Academic Integrity: A Replication and Extension to Modified Honor Code Settings. *Research in Higher Education*, vol. 43, no 3, pp. 357–378.

Maloshonok N. (2016) Kak vospriyatie akademicheskoy chestnosti sredy universiteta vzaimosvyazano so studencheskoy vovlechennostyu: vozmozhnosti kontseptualizatsii i empiricheskogo izucheniya [How Perception of Academic Honesty at the University Linked with Student Engagement: Conceptualization and Empirical Research Opportunities]. *Voprosy obrazovaniya / Educational Studies Moscow*, no 1, pp. 35–60. DOI: 10.17323/1814–9545–2016–1–35–60

Maloshonok N., Semenova T., Terentyev E. (2015) Uchebnaya motivatsiya studentov rossiyskikh vuzov: vozmozhnosti teoreticheskogo osmysleniya [Academic Motivation among Students of Russian Higher Education Establishments: Introspection]. *Voprosy obrazovaniya / Educational Studies Moscow*, no 3, pp. 92–121. DOI: 10.17323/1814–9545–2015–3–92–121

Megehee C. M., Spake D. F. (2008) The Impact of Perceived Peer Behavior, Probable Detection and Punishment Severity on Student Cheating Behavior. *Marketing Education Review*, vol. 18, no 2, pp. 5–19.

Murdock T. B., Anderman E. M. (2006) Motivational Perspectives on Student Cheating: Toward an Integrated Model of Academic Dishonesty. *Educational Psychologist*, vol. 41, no 3, pp. 129–145.

Murdock T. B., Hale N. M., Weber M. J. (2001) Predictors of Cheating among Early Adolescents: Academic and Social Motivations. *Contemporary Educational Psychology*, vol. 26, no 1, pp. 96–115.

Newstead S. E., Franklyn-Stokes A., Armstead P. (1996) Individual Differences in Student Cheating. *Journal of Educational Psychology*, vol. 88, no 2, pp. 229–241.

Ozdemir Oz A., Lane J. F., Michou A. (2016) Autonomous and Controlling Reasons Underlying Achievement Goals during Task Engagement: Their Relation to Intrinsic Motivation and Cheating. *Educational Psychology*, vol. 36, no 7, pp. 1160–1172.

Passow H. J., Mayhew M. J., Finelli C. J., Harding T. S., Carpenter D. D. (2006) Factors Influencing Engineering Students' Decisions to Cheat by Type of Assessment. *Research in Higher Education*, vol. 47, no 6, pp. 643–684.

Pavela G. (1997) Applying the Power of Association on Campus: A Model Code of Academic Integrity. *Journal of College and University Law*, vol. 24, no 1, pp. 97–118.

Poltorak Y. (1995) Cheating Behavior among Students of Four Moscow Institutes. *Higher Education*, vol. 30, no 2, pp. 225–246.

Rettinger D. A., Jordan A. E. (2005) The Relations among Religion, Motivation, and College Cheating: A Natural Experiment. *Ethics & Behavior*, vol. 15, no 2, pp. 107–129.

Rettinger D. A., Jordan A. E., Peschiera F. (2004) Evaluating the Motivation of Other Students to Cheat: A Vignette Experiment. *Research in Higher Education*, vol. 45, no 8, pp. 873–890.

Roshchina Y., Shmeleva E. (2016) Prepodavateli i studenty vuzov: obrazovatelnye i trudovye strategii v 2014 g. [University Teachers and Students: Educational and Labor Strategies in 2014]. *Monitoring of Education Markets and Organizations*, iss. 6 (95), Moscow: National Research University Higher School of Economics.

Ryan R. M., Deci E. L. (2000) Self-Determination Theory and the Facilitation of Intrinsic Motivation, Social Development, and Well-Being. *American Psychologist*, vol. 55, no 1, pp. 68–78.

Porter S. R., Whitcomb M. E. (2005) Non-Response in Student Surveys: The Role of Demographics, Engagement and Personality. *Research in Higher Education*, vol. 46, no 2, pp. 127–152.

Sheldon K. M., Osin E. N., Gordeeva T. O., Suchkov D. D., Sychev O. A. (2017) Evaluating the Dimensionality of Self-Determination Theory's Relative Autonomy Continuum. *Personality and Social Psychology Bulletin*, vol. 43, no 9, pp. 1215–1238.

Shmeleva E. (2015) Akademicheskoe moshennichestvo v sovremennykh universitetakh: obzor teoreticheskikh podkhodov i rezultatov empiricheskikh issledovaniy [Academic Dishonesty in Modern Universities: A Review of Theoretical Approaches and Empirical Findings]. *Economic Sociology*, vol. 16, no 2, p. 55–79.

Shmeleva E. (2016) Plagiat i spisyvanie v rossiyskikh vuzakh: rol' obrazovatel'noy sredy i individual'nykh kharakteristik studenta [Plagiarism and Cheating in Russian Universities: The Role of the Learning Environment and Personal Characteristics of Students]. *Voprosy obrazovaniya / Educational Studies Moscow*, no 1, pp. 84–109. DOI: 10.17323/1814–9545–2016–1–84–109

Simon C. A., Carr J. R., McCullough S.M., Morgan S. J., Oleson T., Ressel M. (2004) Gender, Student Perceptions, Institutional Commitments and Academic Dishonesty: Who Reports in Academic Dishonesty Cases? *Assessment and Evaluation in Higher Education*, vol. 29, no 1, pp. 75–90.

Terentyev E., Gruzdev I., Gorbunova E. (2015) Sud idet: diskurs prepodavateley ob otseve studentov [The Court Is Now in Session: Professor Discourse on Student Attrition]. *Voprosy obrazovaniya / Educational Studies Moscow*, no 2, pp. 129–151

Vallerand R. J., Pelletier L. G., Blais M. R., Briere N. M., Senecal C., Vallieres E. F. (1992) The Academic Motivation Scale: A Measure of Intrinsic, Extrinsic, and Amotivation in Education. *Educational and Psychological Measurement*, vol. 52, no 4, pp. 1003–1017.

Vansteenkiste M., Smeets S., Soenens B., Lens W., Matos L., Deci E. L. (2010) Autonomous and Controlled Regulation of Performance-Approach Goals: Their Relations to Perfectionism and Educational Outcomes. *Motivation and Emotion*, vol. 34, no 4, pp. 333–353.

Yu H., Glanzer P. L., Sriram R., Johnson B. R., Moore B. (2016) What Contributes to College Students' Cheating? A Study of Individual Factors. *Ethics & Behavior*, vol. 27, no 5, pp. 401–422.

Appendix

Table A1. **Examples of Indicators Used to Measure Academic Motivation, Broken Down by Types of Motivation and Scales**

Type of Motivation	Example of Indicator from the First-Round Instrument	Example of Indicator from the Second-Round Instrument
Intrinsic cognition	Attending a college, I will learn something new about the things I am interested in	I am interested in learning
Achievement motivation		I enjoy learning and solving challenging problems
Personal growth		For the pleasure of outperforming myself academically
Motivation for self-respect	I expect to obtain the knowledge and skills required for work as a result of my college studies	
Integrated motivation		Because I want to prove myself that I am capable of achieving academic success
Introjected motivation	I went to college to avoid disapproval of my friends and relatives	Because learning is my responsibility which I cannot abdicate
External motivation	It is only with a college degree that I will be able to find a high-paying job	I have no other choice, as student attendance is monitored
Amotivation	I have never reflected on why I go to college	To tell the truth, I don't know. It seems to me that I am just losing my time here

Table **A2. Internal Consistency of Indicators Measuring Different Types of Academic Motivation**

Type of Motivation	n	Cronbach's α
1st Round		
Intrinsic cognition	902	0.50
Motivation for self-respect	905	0.79
Introjected motivation	884	0.61
External motivation	882	0.83
Amotivation	888	0.74
2 nd Round		
Intrinsic cognition	903	0.75
Achievement motivation	903	0.88
Personal growth	903	0.71
Introjected motivation	903	0.82
External motivation	903	0.77
Amotivation	903	0.80

Table A3. **Ordinal Logistic Regression Results. Dependent Variable: Copying Fragments from Others Without Proper Citation** (n = 566)

Variable	Model 1	Model 2	Model 3
Academic motivation (relative autonomy scales)			
Academic motivation (1st round)	0.971 (0.029)	1.008 (0.032)	1.001 (0.032)
Academic motivation (2nd round)	0.780*** (0.070)	0.844* (0.081)	0.937 (0.093)
Control variables—individual student characteristics			
Gender (base: female)		0.822 (0.152)	0.830 (0.160)
Mother's education (base: college degree)		1.091 (0.228)	1.095 (0.238)
University 2 (base: university 1)		3.261*** (1.060)	2.463*** (0.853)
University 3		2.843*** (0.619)	2.404*** (0.561)
University 4		3.422*** (0.963)	2.451*** (0.752)
STEM (base: humanities and social sciences)		0.951 (0.212)	0.934 (0.215)
Self-funding or apprenticeship contract (base: state funding)		1.493** (0.298)	1.534** (0.317)
A's and B's (base: straight A's)		1.866** (0.572)	1.955** (0.618)
A's, B's, and C's		1.736* (0.557)	1.735* (0.575)
Mostly C's		2.463** (0.981)	2.513** (1.037)
Copying fragments from others without proper citation is not tolerated by the university (base: it is acceptable to copy fragments without citation or I don't know) (1st year)		0.463*** (0.137)	0.652 (0.205)
Perceived costs associated with contextual factors			
Most students use fragments from other publications or books without citing the source (base: no one or some students)			2.226*** (0.407)
Everyone uses fragments from other publications or books without citing the source (base: no one or some students)			8.640*** (2.899)
Moderate probability of getting bad grades in case plagiarism is detected (base: low probability)			1.328 (0.699)
High probability of getting bad grades in case plagiarism is detected (base: low probability)			1.026 (0.554)

Variable	Model 1	Model 2	Model 3
Moderate probability of instructors checking assignments for plagiarism (base: low probability)			1.040 (0.317)
High probability of instructors checking assignments for plagiarism (base: low probability)			0.903 (0.295)
Chi-squared	10.46	78.19***	136.62***
Number of factors extracted	4	15	21
Akaike Information Criterion (AIC)	1,162.7	1,117.0	1,070.5
Bayesian Information Criterion (BIC)	1,180.1	1,182.1	1,161.6
McFadden's pseudo R-squared	0.009	0.067	0.117

*** significance level = 0.001; ** significance level = 0.01; * significance level = 0.05.

Table A4. **Ordinal Logistic Regression Results. Dependent Variable: Using Cheat Sheets on an Exam/Test** (n = 638)

Variable	Model 1	Model 2	Model 3
Academic motivation (relative autonomy scales)			
Academic motivation (1st round)	0.977 (0.027)	0.992 (0.029)	0.986 (0.030)
Academic motivation (2nd round)	0.665*** (0.057)	0.725*** (0.065)	0.876 (0.084)
Control variables — individual student characteristics			
Gender (base: female)		0.836 (0.151)	0.926 (0.177)
Mother's education (base: college degree)		0.748 (0.152)	0.905 (0.192)
University 2 (base: university 1)		1.845** (0.527)	1.299 (0.392)
University 3		1.401 (0.299)	1.235 (0.278)
University 4		0.952 (0.263)	0.725 (0.211)
STEM (base: humanities and social sciences)		0.786 (0.171)	0.841 (0.191)
Self-funding or apprenticeship contract (base: state funding)		0.727 (0.146)	0.608** (0.130)
A's and B's (base: straight A's)		1.670* (0.480)	1.978** (0.607)
A's, B's, and C's		1.585 (0.479)	1.884** (0.608)

Variable	Model 1	Model 2	Model 3
Mostly C's		3.862*** (1.445)	4.884*** (1.925)
Cheating during an exam/test (base: *acceptable* or *I don't know*) (1st year)		0.567*** (0.118)	0.687* (0.150)
Perceived costs associated with contextual factors			
Most students use cheat sheets or copy from other students during exams or tests (base: *no one* or *some students*)			5.487*** (1.042)
Everyone uses cheat sheets or copies from other students during exams or tests (base: *no one* or *some students*)			6.787*** (2.366)
Moderate probability of instructors removing a student cheating during an exam/test from the classroom (base: low probability)			0.377** (0.152)
High probability of instructors removing a student cheating during an exam/test from the classroom (base: low probability)			0.336*** (0.128)
Chi-squared	27.12	69.44***	177.65***
Number of degrees of freedom	4	15	19
Akaike Information Criterion (AIC)	1,185.4	1,165.1	1,064.9
Bayesian Information Criterion (BIC)	1,203.2	1,232.0	1,149.6
McFadden's pseudo R-squared	0.023	0.058	0.148

*** significance level = 0.001; ** significance level = 0.01; * significance level = 0.05.