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ACADEMIC INTEGRITY IN LATVIA'S HIGHER EDUCATION INSTITUTIONS

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Abstract

Academic integrity is a precondition for quality education. If violated, it questions the meaning of higher education. Furthermore, engaging in academic dishonesty during studies is associated with dishonest behaviours later in the workplace. We aim to enrich the research of academic integrity in Latvia by empirically measuring the academic integrity level in ten higher education institutions in Latvia, and highlighting the most prominent academically dishonest behaviours and factors impacting them by surveying students and conducting interviews with faculty members and experts. We find that students most often engage in behaviours like collaborating in individual tasks and giving and getting information from others during tests. Engagement in dishonest behaviours is mainly influenced by coursemates' behaviours, engagement in academically dishonest behaviours in high school, acceptability of these behaviours, and probability of being reported.

1. Introduction

Violation of academic integrity is severe trouble in many education institutions because, as mentioned by Lambert et.al. (2003), it distresses the meaning of higher education and the chase of knowledge greatly. If the diplomas are obtained dishonestly, it questions graduates' actual skills and understanding of subjects studied. The literature shows that high rates of academically dishonest actions are a concern worldwide for an already long time. McCabe and Trevino (1993) estimate that 40-50% of students engage in different academically dishonest behaviours. Other authors state that the percentage of students engaging in cheating actions is 30-96% varying from one type of cheating behaviour to another (Nonis and Swift, 2001). That is an insult to those students who want to take education honestly and also to those lecturers whose determination is to educate (Lambert, et.al., 2003). Even more, it is widely known that students nowadays have access to a significant amount of different kinds of information; also, the marketing of services that provide, for example, essay writing, are becoming progressively popular (Perkins, Gezgin, Roe, 2020). It is important to understand and avoid cheating behaviour in higher education institutions (HEIs) because many of those students will be future leaders in the fields of their specialization (McCabe et al., 2006). Nonis and Swift (2001) show that students who are more accepting of particular dishonest actions, also engage in these behaviours in the workplace.

From McCabe (2006), we understand that academic dishonesty is a violation of academic integrity. Academic integrity is a combination of honesty, trust, fairness, respect, responsibility, and courage to stand up for these values (ICAI, 2014). In regards to academic integrity research in Latvia, Glendinning (2013) points to the absence of research regarding academic integrity in Latvia which substantiates the necessity and topicality of this work. We seek to fill the gap in the research literature by empirically measuring the level of academic dishonesty to provide answers to the following research questions: **What are the most common academically dishonest actions in Latvias' HEIs?** and **What factors impact the engagement in these actions the most?**

We will investigate students' perception of academic dishonesty actions and the level of academic integrity in the largest Latvia's HEIs by looking at a particular list of 10 dishonest

academic actions (related to both - assignments and the examination process) that have been most often researched by other authors described later. We choose surveys and interviews as our set for methodology. After processing survey data in R Studio, a comparison between the actions that are most present in Latvia's HEIs will be drawn and impacting factors explained. Moreover, in interviews with faculty members and experts, after understanding their point of view of the survey results and the situation in their universities, some suggestions about how to improve and ensure academic integrity in HEIs will be discussed.

2. Literature Review

In this section, we look at the definition of academic integrity and academic dishonesty. We further research academically dishonest behaviours that other authors use in their works. Later we discuss the possible factors that influence engagement in academic dishonesty and explain the ways of measuring academic dishonesty. Lastly, we investigate what could be the actions adopted to decrease the engagement in academic dishonesty by action taken by faculty and through honor codes.

2.1 Academic Integrity

The International Center for Academic Integrity (2014) points out that often universities do not provide a clear statement and characterization for their engagement with principles of academic integrity from the positive examples' and useful suggestions' point of view. It happens for the reason that it is easier to recognize and restrict actions that oppose academic integrity. However, the organization emphasizes the need for discussing this topic from a positive perspective to help in transferring the values in real actions to promote and encourage academic integrity in the academic environment (ICAI, 2014). As defined by European Network for Academic Integrity (ENAI, n.d.), academic integrity exists when all actions that are related to the educational institution are based on the involved party's sincere agreement with commonly shared ethical and professional standards, assumptions, procedures, and scale of values. Perception of this definition can be improved by hearing that ICAI defines academic integrity as a commitment to five core values - *honesty, trust, fairness, respect, responsibility*. Firstly, in 1999, the original project of "The Fundamental Values of Academic Integrity" included just these values; however, in the latest version, the sixth value - *courage to operate within these values also in difficult situations* - is added (ICAI, 2014). Also, Jordan's (2013) perception of academic integrity describes it as a combination of belief in what the ideal behaviour should be and actions that are in line with this position. Clear and practical value and positive action declaration should help universities to convert ideal standards into reality ICAI (2014). Values come and work together as one whole by being verified by others and contributing to each other at the same time;

however, as mentioned by ICAI (2014), honesty is a required condition to be aware of other fundamental values.

2.2 Academic Dishonesty

According to Schmelkin et al. (2008), no clear definition of academic dishonesty is provided that could be applied and accepted all over the world. The reason for this issue is that it comes out deceptively to classify the distinct actions that define academic dishonesty. The way students and teachers define academic dishonesty often differs (Schmelkin et al., 2008). McCabe (2006) states that the more students and faculty understand and accept academic integrity policies, the fewer students will be wanting to engage in academic dishonesty. From this relationship, it is clear that academic dishonesty occurs when academic integrity is violated.

In this work, we agree to, use, and also explore definitions summarized and offered by the association called European Network for Academic Integrity (ENAI) because in collaboration with this association some of Latvia's HEIs have involved in joint negotiations about academic integrity's strengthening in Latvia and, even more, Riga Technical University together with foreign specialists has translated the ENAI glossary of terms of academic honesty in Latvian (RTU, 2020). As the best definition of academic dishonesty ENAI has chosen the one provided by Jordan (2013) - defining it as "Morally culpable behaviours perpetrated by individuals or institutions that transgress ethical standards held in common between other individuals and/or groups in institutions of education, research, or scholarship" (p.252). We use this definition as the working definition of this paper.

The International Center for Academic Integrity (2014) highlights that dishonest actions can damage a university's reputation and its degree's valuation because even if at the beginning, it is about what individuals do, at the end, it develops in the behaviour of society of the university.

2.3 Academically Dishonest Behaviours

As discussed, the definitions of academic dishonesty vary around the universities; therefore, also the actions that are perceived as dishonest vary. Even more, when new technologies come to be

used, new opportunities to behave dishonestly occur. However, almost everywhere and through the last decades, some of the commonly agreed academically dishonest behaviours include plagiarism, copying from someone else’s test, purchasing answers to the test, and stealing a test (Schmelkin et al., 2008). Also, according to McCabe et al. (2001), serious cheating includes behaviours like plagiarism, falsifying or fabricating references, submitting work done by someone else, and copying text without referencing it. In the literature, dishonest behaviours like using unallowed materials during tests; collaborating with others on an individual given task; writing an assignment for someone else; giving false excuses for delaying in a submission or taking an exam; not participating in a group project by fair share occur. However, some less often mentioned academic dishonest actions are forging a document; studying from others notes; fabricating results in an experiment (Grimes, 2004 & Ives et al., 2017 & McCabe, 2006 & McCabe et al., 1993 & Schmelkin et al., 2008). The most popular academically dishonest behaviours that have been investigated by the above-mentioned authors are shown in Table 1.

Table 1. Academically dishonest behaviours addressed by the respective authors.

	Schmelkin et al., (2008)	Ives et al., (2017)	McCabe et al. (1993)	McCabe, (2006)	Grimes, (2004)
Copying others’ work without citing	✓	✓	✓	✓	✓
Giving information to others during test	✓	✓	✓	✓	✓
Getting information from others during test	✓	✓	✓	✓	✓
Using unauthorized materials during test	✓	✓	✓	✓	✓
Collaborating on an individual assignment		✓	✓	✓	
Fabricating false references		✓	✓	✓	
Submitting work done by		✓	✓	✓	

someone else			
Getting test information from others in advance	✓	✓	✓
Completing others' assignment	✓	✓	✓
Falsifying excuse to delay	✓		✓

Source: Created by authors.

Based on the results obtained by Schmelkin et al. (2008), students often diversify different academic dishonesty actions in two ways - the first one is whether the action is associated with assignments or with tests; the second one is how serious the violation is in their understanding. However, in the research done by Schmelkin et al. (2008), dishonest behaviours were factored in 5 groups - those that are connected with using false information; those that are related to getting information in a test dishonestly; those that are associated with not honestly done assignments; those sabotaging other student's work; and those that explain that exam was not taken by the right student.

2.4 Motivation for Academic Dishonesty

One of the reasons why students may engage in academic dishonesty is that their thinking is shaped by their surroundings. According to Nonis and Swift (2001), usually, the first time a person is exposed to strong influences is study time because they have to be independent in the new environment. The other factor affecting engagement in academic dishonesty is related to faculty members. According to research made by Jendrek (1989) in a US university, only 67% of those faculty members that have spotted cheating in the classroom meet with the student who had behaved academically dishonestly (as cited in McCabe, 1993, p.649). This issue is explained by the faculty's hesitation to uncover the cheating behaviour because of the belief that they will not have support from the administration. Furthermore, faculty may assume that the student will cheat also in other classes and hope that other members will disclose the student (Nonis and Swift, 2001).

McCabe et al. (2006) argue that engagement in academically dishonest actions is related to social learning theory suggested by Albert Bandura. Namely, most of what we learn is through observation processes, in this case, students observe peers. “The strong influence of peers’ behaviour may suggest that academic dishonesty not only is learned from observing the behaviour of peers but that peers’ behaviour provides a kind of normative support for cheating. The fact that others are cheating may also suggest that, in such a climate, the non-cheater feels left at a disadvantage. Thus, cheating may come to be viewed as an acceptable way of getting and staying ahead” (McCabe et al., 1993, p. 533). Referring to ICAI’s (2014) values about academic integrity, we can observe how, in some situations, values of honesty and courage come together to ensure academic integrity also in difficult situations. On the other hand, if students observe their peers emphasizing the importance of academic integrity, one is less likely to engage in cheating behaviour (McCabe et al., 2006).

According to McCabe et al. (2001), most of the students have faced cheating behaviour during high school; meaning they have some knowledge of what is academically dishonest behaviour. Usually, students expect different experiences coming to college after high school. Thus, when initially starting studies at college, students will not engage in academically dishonest behaviour. However, if they observe cheating among second, third- and fourth-year students, newcomers spot the faculty’s ignorance and failure regarding academic integrity. Consequently, the new students will start to ignore academic integrity in the same way as older students (McCabe et al., 2001). McCabe and Trevino (1993) proved that there are five variables strongly related to engagement in academic dishonesty - the perception of others’ behaviour, understanding, and acceptance of academic integrity conduct, the perceived probability of being reported, the perceived probability of penalties, presence/absence of academic honor code.

As mentioned in the work by Lambert et.al. (2003), some students believe that there are situations in which dishonest behaviours can be justified. The authors mention justifications like for better grade; because a friend asked; to keep a scholarship; to stay in the university; to get into a better master program. Also, the author gives examples that occasionally students have said that the program or tasks given by the lecturer are too difficult or unreasonable. Moreover, students in the last years may claim that they are participating in dishonest activities to get better

grades to get into a better future study program or university. Sometimes as the justification is perceived that a coursemate asked to do it or that someone did it to keep or get a scholarship.

2.5 Measurement of Academic Integrity

As mentioned above and in the project by the ICAI (2014), academic integrity from positive examples point of view is rarely discussed. Therefore, it is also most common to measure integrity from the opposite angle by analysing academic dishonesty, particularly, by looking at different academically dishonest actions. Schmelkin et.al. (2008) mention that it is crucial to use a methodology that does not restrain the respondents from their potential understanding of the topic. Therefore, the authors in their research as one of the methods used multidimensional scaling (MDS) which qualifies as an indirect way for measuring students' and faculty members perceptions' of academically dishonest behaviour. The MDS process contained two parts - firstly, the respondents were asked to group 30 academic dishonesty activities in some groups, as many as they prefer. Afterwards, Schmelkin et.al. analysed the groups made by students to evaluate from what dimensions students look to the offered actions and discussed how significant is each of the dimensions (2008). Additionally, students had to rate each of the provided dishonest behaviours based on a given bipolar rating scale. In 2008, Schmelkin et.al. used 11 different scales, for example, respondents had to evaluate how serious violation is the behaviour, how certain example it is of dishonesty, how important is the competition with coursemates or the environment when behaving in a particular way, how important are possible consequences of acting in each of the ways when doing it and, in the end, how ordinary is the behaviour. The authors combined the data from both methods (Schmelkin et.al., 2008).

Ives et.al. (2017) used a list of fewer behaviours and just four rating scales; however, the method was very close to the second one used by the previously mentioned authors. Students were asked to rate how often they have engaged in each of the behaviour; how often they have seen others engaging in each of the behaviours; how acceptable the behaviour is for them; whether they have experienced any consequences after engaging in the particular behaviour. The academic dishonesty score for each of the students was the average of the rates that the student marked in the Likert scale next to each of the behaviours when answering the question of how

often he or she has engaged in the particular action. To understand the relationship between other values from the scalar questions and the academic dishonesty rate, correlation coefficient tests were run. Also, an ANOVA test was used to understand the connection between the seriousness of consequences met and the person's perception of how acceptable each of the behaviour is (Ives et. al., 2017).

Another researcher, Grimes (2004), also used some different question types in his surveys. Moreover, in all of the questions, he used the term "cheating" and allowed respondents to interpret this as they want. One question type was that he asked students - have the student seen a coursemate engaging in cheating and have the student seen that a coursemate has been experiencing some consequences from the faculty because of cheating. The three possible answers to each of the questions were - never; 1 to 10 times; more than 10 times. And to another six questions were just two answers - yes and no; these questions were: have you cheated, have anybody asked you to cheat, would you assist anybody else in cheating, are you afraid of the punishment that would be for being caught cheating, do you think cheating is ethically wrong, do you think cheating is acceptable. However, the last part of his survey consisted of the method used by also above mentioned authors - Grimes asked students to rate 16 academically dishonest actions by a Likert scale by their perception of how dishonest each of the action is, from "not dishonest at all" to "very severe dishonesty" (Grimes, 2004). The author looked to mean scores of each of the behaviours independently.

Also, in studies conducted by McCabe et.al. (2006) and McCabe (1993), the methods used for measuring academic integrity were very similar but supplemented with unique questions. Firstly, the authors used the most common method - they provided a list of academically dishonest behaviours and asked students to answer a question about how often they have engaged in each of the behaviour by rating each of them using a Likert scale. Then the variable academic dishonesty for each of the respondents was created by calculating a mean of rates of all the behaviours provided. Additionally, McCabe et. al. (2006) looked at four factors that could influence the level of integrity in the institution. The first one - "Understanding and Acceptance of Integrity Policies" was measured by asking five questions to which each had to answer by a four-point Likert scale. The second factor was called "Peers' Behaviour" and was

measured just by one single question - how often your coursemates have cheated (measured by a 5-point Likert scale). “Perceived Certainty of Being Reported by a Peer” which was the third factor and the last factor named “Perceived Severity of Penalties”, both were evaluated by just one question and a four-point Likert scale again. For the four-factor variables, just the averages of rates were taken. Then t-tests and simple bivariate correlation tests were used including the dishonesty and all factors. Afterward, a regression analysis was performed with the dishonesty measure as the dependent variable and all four-factor variables were the independent variables (McCabe et.al., 2006). Overall, in the research by McCabe (1993) the same measurement methods were used, as the biggest difference could be mentioned that one more factor “Explicit honor code” was included which was determined just by a dummy variable - is there one present in the education institution.

Overall, it can be summarized that the most common measurement system for academic integrity is the method of giving students a list of dishonest actions and asking them to rate these actions, based on different questions, using the Likert scale.

Two main difficulties are present when trying to measure academic dishonesty. The first one is that many of the surveyed students could see the topic as quite sensitive and be afraid to tell all their thoughts and experience truly honestly. When researching sensitive topics, Gerxhani (2007), who has experience in examining society’s tax-paying behaviours, suggests that the reliability can be increased by including indirect questions in the surveys. Indirect questions ask about others’ behaviour, not the respondent’s. The second difficulty, as mentioned by Schmelkin et al. (2008), is not to choose a methodology in such a way that the authors are pushing their own opinion to the respondents. It can be avoided by not stating anything about what is good/bad in the topic before asking it to the people themselves.

2.6 Ensuring Academic Integrity

As suggested by McCabe et al. (2006), if there is a perceived probability that exam answers may be shared among students, the faculty should react and create multiple versions of the exam. Creating more than one version of the exam not only reduces the possibility of cheating but also shows that faculty cares about academic integrity. Regarding cheating using cell phones, the way

to access this issue is not to allow enter the exam room with unnecessary equipment (McCabe et al., 2006). There are also ways to reduce the collaboration on an individual task advised by McCabe et al. (2006). The authors state that the assignments should be changed from year to year to avoid cross-year partnership. Moreover, the assignments should be personalized as far as possible because it requires individual analysis and makes it challenging to collaborate.

McCabe et al. (2008) state that understanding the thinking process behind engaging in academic dishonesty among students would provide the opportunity for HEIs to increase the level of academic integrity. Nonis and Swift (2001) argue that academic integrity cannot be enforced; students should accept it. McCabe et al. (2006) state that faculty members should be open to any calls from students reporting cheating behaviour. If the students see that the faculty is not interested and avoid its responsibility for academic integrity, students themselves become less likely to report academic integrity issues. Even more, for example, Nonis and Swift (2001) believe that faculty members are the ones who bear the responsibility to consistently spread the message through rules and academic integrity conducts. Moreover, all parties involved - students, faculty, administrators - should embrace and sustain the concepts (Nonis and Swift, 2001). ICAI (2014) emphasizes that the positive aspects should be advertised and that all of the policies, rules, and procedures regarding violations should be developed and explained to be clear and understandable as much as possible.

McCabe and Trevino (1993) mention three ways of how academic integrity conducts that may decrease the willingness to cheat. First, in most systems, the definition of academic integrity is made clear and students pledge to follow the rules - when the wrongdoing is defined, it is harder to explain and justify cheating behaviour. Second, most systems involve responsibility transfer from faculty to students - students are the ones given the responsibility to detect violation of academic integrity conduct. Thirdly, under academic integrity conduct, students are often honored by privileges (e.g. unproctored exams), so students could value these privileges and act in line with the conduct. Although faculty may be somehow resistant towards academic integrity conduct in a way that it requires additional work (giving to sign statements to students when writing the exam, emphasizing the importance of academic integrity to students), it has been proven that academic integrity conducts benefit faculty (McCabe et al., 2006).

In their work, McCabe et al. (2006) suggest another type of academic integrity conduct called “modified codes”. The authors explain that modified codes similarly to traditional codes promote the acceptance of academic integrity and focus more on underlying trust and strong community, not the punishment of engaging in cheating behaviour. The difference between the two types is that the modified codes leave questions related to exam rules and other course-related questions to the professor running the exact course. The use of modified codes increases the understanding of academic integrity practices in each course as sometimes it can be misleading to look at one common academic integrity conduct when the factors in each course might be different.

However, not always the honor code itself is the only correct solution. The case described by McCabe and Trevino (1993) is about the two schools: the first one had a long-time established honor code but the other had no honor code at all. Counterintuitively, the school with no honor code showed lower levels of academic dishonesty. When the authors analysed this finding in more detail, they found that the school with no honor code had created a community that highlighted academic integrity conduct’s values. Academic integrity was, therefore, encouraged through culture, not a formal code. The school with a 100-year-old honor code did not manage to communicate the importance of its honor code to students. A conclusion was that “an effective honor code must be more than mere window dressing; a truly effective code must be well implemented and strongly embedded in the student culture” (McCabe et. al, 2001, p. 224).

The technique that combines both - formal code and culture - is most precisely described by McCabe et al. (2001). The authors define it as a “hidden curriculum”. The creation of a hidden curriculum involves not only formal ethics guidelines but also allows students to learn about academic integrity by actively discussing and participating in opportunities for teaching academic integrity-related issues in the daily operations in the HEI.

3. Methodology

To answer the research questions - **What are the most common academically dishonest actions in Latvia's HEIs?** and **What factors impact the engagement in these actions the most?** - we used both quantitative and qualitative methods. The quantitative part consists of surveying students studying social sciences in bachelor programs in HEIs in Latvia. When data about students' behaviour and perceptions related to academic integrity was collected, we analysed data using R and Excel. Afterward, with already summarized results from the quantitative part, we organized four interviews with faculty members and experts. The qualitative part is meant to get feedback from lecturers and faculty about their thoughts on the survey results to triangulate the results and discuss possible solutions to increase academic integrity's level in Latvia's HEIs; also, to debate each - students' and faculty's - role in the examined question.

3.1 Theoretical Framework

A part of the survey is multiple choice questions to get students' demographic profiles. The other part, regarding academic integrity, consists of Likert-type questions. As the base for empirical analysis, we chose the most popular academic dishonesty actions that occur in the surveys used in five academic studies (Grimes, 2004 & Ives et al., 2017 & McCabe, 2006 & McCabe et al., 1993 & Schmelkin et al., 2008). We examined all of the mentioned studies, summarized the academic dishonesty behaviours, and selected the most frequent ones. According to this analysis, the ten actions that authors included in the questionnaire created for this work are mentioned in Table 2 below.

Table 2. Academically dishonest behaviours.

Number	Behaviour
1	Copying others' work without citing
2	Giving information to others during a test
3	Getting information from others during a test

4	Using unauthorized materials during a test
5	Collaborating on an individual task
6	Fabricating false references
7	Asking others to complete one's assignment
8	Getting information for test from others in advance
9	Completing another's assignment
10	Falsifying excuse to delay

Source: Created by authors.

This work also uses the most common measurement method for academic integrity - students are asked to answer questions regarding dishonest behaviours by rating each of the dishonest actions using a Likert scale. The first question asked is to rate one's perception of how dishonest each of the behaviour is to understand students' overall attitude. Next, we find out the student's engagement in academically dishonest behaviours in a direct manner, as in most of the examined academic studies this variable stands as the main dependent variable. For the factors that are examined as the dependent variables that potentially influence the level of academic dishonesty, in this work, we take the first four variables the same as McCabe (2006) - perception of others' behaviour (*others*), the perceived probability of being reported (*report*), the perceived probability of penalties (*penalty*), understanding of academic integrity conduct (*conduct*).

For the last variable, we take the closest possible measure to McCabe's (2006) provided "acceptance of academic integrity conduct" as the aim of this work is not related to the research of academic integrity conducts directly. Also, we are not confident about students' knowledge about the institution's conduct, its existence and quality. Therefore, we doubted students' ability to rate their acceptance of it. However, not to lose this variable, we replaced it with students' acceptance of academically dishonest actions (*acc*). Meaning that we assume that the mentioned academically dishonest behaviours should be stated as dishonest in typical integrity conduct for an institution. Bearing this assumption in mind, if a student agrees that the stated behaviours are dishonest, he accepts typical conduct; if the behaviours seem acceptable to the student - he does not accept typical conduct.

We acknowledge that respondents may find this topic sensitive. Consequently, it is likely that they will not be completely honest when answering questions like “How often have you engaged in academic dishonesty?”. Therefore, the question regarding the perception of others “How often have you seen others engaging in academic dishonesty?” serves not only as a factor that could impact one’s engagement in academic dishonesty but also as an indirect question. Putniņš and Sauka (2011) use a similar method to measure shadow economy in Baltics, and Gerxhani (2007) uses this method to measure tax evasion in Albania. Both - tax evasion and engagement in academic dishonesty - are sensitive topics, therefore, we include this type of question in our questionnaire. Gerxhani (2007) states that the authors can increase the reliability of survey data by including different indirect measurements, such as questions about others in the target audience.

In this work, we evaluate each academically dishonest action by respondents according to all five factors mentioned above by separate questions that still use the Likert scale and involve rating for all ten behaviours. Afterward, we calculate the mean values for all of the questions from the ratings of all individual actions and use them as the final variables for the analysis.

Additionally, at the end of the survey, we asked students to rate how acceptable they think are the provided possible justifications for academic dishonesty behaviours. We took given examples from the research by Lambert et.al. (2003) and adjusted the wording to the sample in which all of the students are already bachelor’s degree students in universities. The final question included is about whether students cheated in high school to control a statement from the literature review that students who have cheated more in school, cheat more also in HEIs. We included results of respondents’ perception of the justifications and cheating in school in the regression analysis as dependent variables.

Regarding the scale of the Likert-type questions, Taherdoost (2019) concludes that the even number of response options will force a respondent to choose the optimized answer because if there is an option to choose a neutral, middle answer it could restrain respondents to choose one of the two directions. Although it is perceived that people indeed may have neutral opinions, we understand that in this study, students must choose one of the sides regarding the acceptability of academically dishonest behaviour. Therefore, we organized Likert-type questions in a way that

possible answers include “Strongly disagree”, “Disagree”, “More disagree than agree”, “More agree than disagree”, “Agree”, and “Strongly agree”.

3.2 Surveys and Sampling

We aim to have a representative sample and evaluate the academic integrity level in the social sciences Bachelor programs in the largest HEIs in Latvia. To realize that, we used stratified random sampling and chose both - state and private HEIs. We approached ten institutions to gather the data: state universities - University of Latvia (LU), Riga Stradins University (RSU), Latvia University of Life Sciences and Technologies (LLU), Liepāja University, Vidzeme University of Applied Sciences (ViA), Ventspils University of Applied Sciences; and private institutions - SSE Riga, RISEBA, Riga Business School (RBS), and Turība University. We reached out to institutions’ representatives to distribute questionnaires to students. To ensure higher responsiveness, we sent the surveys to the students via virtual space during an online lecture. When joining the lecture, we briefly introduced ourselves and the importance of this work and kindly asked students to fill out the questionnaire, while we were there in case any questions arise. However, in cases when it was not possible to join the lecture, the survey was sent to students through HEI’s email systems.

3.3 Analysis Method

We arranged the data collected from the surveys about the university and academic integrity as a database and analysed it using R. Altogether we used four kinds of analysis methods - regressions, t-tests, bivariate correlation analysis, and ANOVA. We used regressions to see how the dependent variable (academic dishonesty) is impacted by independent variables (presence of honor code, perceived severity of the penalty, the perceived probability of being reported, how acceptable are dishonest actions, how often others engage in academic dishonesty, how often the student have engaged in dishonest actions in high school).

We run the following two regressions: $y_i = \alpha + \beta_1 others_mean + \beta_2 report_mean + \beta_3 penalty_mean + \beta_4 conduct_mean + \beta_5 acc_mean + \varepsilon_i$ and $y_i = \alpha + \beta_1 others_mean + \beta_2 report_mean + \beta_3 penalty_mean + \beta_4 conduct_mean + \beta_5 acc_mean + \beta_6 high_school_i + \varepsilon_i$

We used two types of dependent variables - the one proposed by McCabe (2006) (how often the respondent engaged in academic dishonesty), and an additional one, where academic dishonesty is calculated as an average of both - how often the respondent engaged in academic dishonesty and how often others engage in academic dishonesty. The dependent variables (*you_mean* and *you_others_mean*) are estimated by calculating the average engagement in all dishonest behaviours mentioned in the questionnaire. The independent variable *high_school* stands for the respondents' average engagement in academically dishonest actions in high school. All the other independent variables are calculated as averages of engagement in all behaviours mentioned in the respective question. *you_mean* refers to respondents' engagement in academic dishonesty on average, *others_mean* refers to respondents' perception of others' engagement in academic dishonesty on average, *you_others_mean* refers to respondents' and others' engagement in academic dishonesty on average, *acc_mean* refers to respondents' perception of how acceptable is academic dishonesty on average, *report_mean* refers to the perception of how likely it is to be reported for dishonesty on average, *penalty_mean* refers to the perception of how likely it is to be penalized for dishonesty on average, *conduct_mean* refers to respondents' knowledge about dishonest behaviours in conduct. Each regression is run two times: one without the variable *high_school*, and one with it, as literature shows that there could be a possible relationship between cheating in high school and university.

We used t-tests to check whether there is a statistically significant difference between the means of the two groups. Concerning this work, we used t-tests for differences in gender, the chosen language to fill the questionnaire, and ways of financing studies. A t-test is also used to see if there is a difference in the means of respondents' engagement in academic dishonesty themselves and their perception of others' engagement in academic dishonesty.

We used bivariate correlation analysis to see the correlation between variables that may affect each other. Furthermore, we used ANOVA analysis to test whether academic dishonesty differs between particular groups of people. The groups used in ANOVA are respondents divided by their perception of how valid are justifications for cheating, by HEI, and by study year. We do not reveal the institutions in the analysis due to sensitivity.

3.4 Interviews

The research's final qualitative part consists of interviews to discuss the results of the quantitative part and think about potential improvements in the HEIs system to support and grow academic integrity. We started the research by an interview with Riga Stradins University's coordinator of academic integrity Ingūna Blese to better understand the current research and implementation status of integrity in Latvia. The other interviews were organized after obtaining the results from quantitative part and discuss them with Inta Jaunzeme, a senior expert at Ministry of Education and Science of Latvia; Agnese Dāvidsone, an associate professor and Dean of Faculty of Social Sciences in Vidzeme University of Applied Sciences; Tālis Putniņš, a professor at SSE Riga and University of Technology Sydney. We held interviews remotely using video conferencing technologies. Interviews aimed to get experienced points of view about the results and overall situation's interpretation in the context of this work's results. We transcribed and analysed the interviews. By this, we have the opportunity to look more deeply into the application and understanding of the concept of "academic integrity" from all of the sides involved in the study process.

4. Results

In this section, we present the results from quantitative analysis. We begin by describing the whole sample and the most popular academically dishonest behaviours and justifications for engaging in academic dishonesty among respondents. Further, we apply t-tests, ANOVA, and regressions and describe the results.

4.1. Sample Description

We gathered data from 591 bachelor students studying social sciences in Latvian higher education institutions. However, in the analysis 496 responses are used. 95 responses were deleted because of incomplete questionnaires. The sample consists of students from 10 HEIs and an option to not disclose the HEI. To maintain anonymity, HEIs' names are substituted by letters A-K, which also does not represent the sequence of the institutions mentioned in the survey.

Table 3. Distribution of responses by HEIs

HEI	A	B	C	D	E	F	G	H	I	J	K
Number of responses from HEI	103	72	64	48	45	42	38	28	28	21	7

Out of all respondents, 162 were first-year students, 185 - second-year students, 84 - third-year students, 61 - fourth-year students, and 4 - fifth-year students. 73% of the students filled the survey in Latvian, others - in English, and 69% of the respondents were females.

4.2. Dishonest Behaviours

Students' answers to the question about their engagement in dishonest behaviours are represented in Table 4. The table represents the average value for the engagement, the answer modes, and the percentage of respondents that have at least once engaged in each of these behaviours (have answered the question by 2-6). The lowest answer number corresponds to lower engagement ("never" (1) to "very often"(6)) (see Appendix C).

The gathered results show that the most popular of dishonest behaviours is collaboration on individual tasks. Almost 90% of students admit that they have at least once engaged in this behaviour. The mean value for own engagement in this activity is 3.22 which by Likert scale stands between answers occasionally (3) and sometimes (4). However, the mode is the answer that a student has engaged in this behaviour sometimes (4), and 30% of all respondents selected this option. Also, almost 30% of respondents noted that they sometimes (4) get information from others during tests and give information to others during tests, which for both of the activities were the most popular answers. On the other hand, the least popular dishonest activity is fabricating false references - 77% of all respondents say that they have never engaged in this behaviour. Additionally, the vast majority of respondents answered that they have never falsified an excuse to delay, completed another's assignment, asked others to complete an assignment, and copied text without referencing. More detailed data can be visible in Appendix D.

By asking “How often have you engaged in these academically dishonest behaviours?”, the occurrence of the 10 studied behaviours can be divided into 3 subgroups by counting how many students have answered with the same rate to the same question. The first subgroup contains behaviours that most students rate as “1” or “2” - they have never engaged in the behaviour or engage in them rarely. Based on Appendix D, we can put in this group behaviours - *you_cop*, *you_ref*, *you_ask*, *you_compl*, *you_mat*, *you_get_adv*, and *you_excuse*. The second subgroup is the one mostly containing students’ answers “3” and “4”, meaning that these activities in the study process appear more than occasionally. This subgroup contains all other behaviours - *you_giv*, *you_get*, *you_collab*. In subgroup 3, would be the behaviours that students mostly have rated with “5” and “6”. However, none of the behaviours classifies for mostly happening often or very often.

The mean of all the answers to all the 10 behaviours for this question was also calculated (*you_mean*), which is 2.27, standing between answers that students overall engage in these behaviours rarely/occasionally. Also, just for 20 students, the *you_mean* variable is 1, which means that less than 5% of the students responded that they have never engaged in any of the provided academic dishonesty behaviours.

Table 4. Answers' means and modes for the question about own engagement in dishonest behaviours

Variable	Mean	Mode	Engaged at least once (%)
<i>Collaborating on individual task</i>	3.21	4	87.10
<i>Giving information to others during test</i>	2.99	4	83.47
<i>Getting information from others during test</i>	2.89	4	81.65
<i>Getting information for test in advance</i>	2.72	2	75.60
<i>Using unauthorized materials during test</i>	2.66	2	75.20
<i>Copying others' work without citing</i>	1.91	1	54.44
<i>Completing other's assignment</i>	1.83	1	43.95
<i>Falsifying excuse to delay</i>	1.71	1	38.10
<i>Asking others to complete one's assignment</i>	1.43	1	27.42
<i>Fabricating false references</i>	1.41	1	23.19
Mean	2.27		

Source: Authors' calculations.

4.3. Correlation Analysis

When analysing the correlations between variables used in regressions (see Appendix G), we can see that there is a strong correlation between the respondent's engagement in academic dishonesty and others' engagement in academic dishonesty. Furthermore, we can conclude that respondents engage in dishonest behaviours more if these behaviours are acceptable to them - there is a positive correlation between students' engagement in academic dishonesty and acceptance of academically dishonest behaviours. Additionally, the possibility of being reported correlates with the possibility of receiving a penalty. We also see a negative correlation between the possibility of being reported and engagement in academic dishonesty.

Adding the variable about engaging in academic dishonesty in high school to the correlation matrix (see Appendix H), there is a positive correlation between cheating in high school and cheating in university.

4.4. Justifications for Dishonesty

In the survey, students were asked to rate how acceptable in their opinion is each of the provided justification for engaging in dishonest behaviours. Five possible justifications were given - being dishonest for a better grade, because friends asked, to keep scholarship/financial aid, to stay in the university, to get into a better master program. Respondents rated these justifications on a 6-point Likert scale (from totally unacceptable to perfectly acceptable).

In Table 5, the gathered results are summarized. As the most acceptable justification respondents rated “to stay in university”. The average acceptance for this point is 3.58 which stands between answers “slightly acceptable” and “acceptable” and the most common answer is that this justification is slightly acceptable. Also, a very high score is for the justification “to keep scholarship/financial aid”. This justification reached an average acceptance of 3.43 which means that it is between “slightly unacceptable” and “slightly acceptable”; however the mode for it was “slightly acceptable”. For the other three justifications, the scores were very similar, between 2.83 and 2.91. Being dishonest for better grades, to get into a better master program, because friends asked as “slightly acceptable”, “acceptable” or “perfectly acceptable” rated 31% of students, 32% of students, and 29% of students respectively.

Table 5. Students’ acceptance of justification for dishonest behaviours

Justification	1	2	3	4	5	6	Average acceptance
<i>To stay in university</i>	38	75	105	155	86	37	3.58
<i>To keep financial aid</i>	54	87	105	131	81	38	3.43

<i>For better grade</i>	63	134	145	104	38	12	2.91
<i>To get into better master program</i>	77	120	142	106	37	14	2.9
<i>Friend asked</i>	70	139	144	99	35	9	2.83
Total	302	555	641	595	277	110	3.13

Source: Authors' calculations.

Additionally, we performed ANOVA analysis for justifications (see Appendix I). The average acceptability of all justifications was calculated for each respondent. Then all respondents, based on these average values for acceptance of justifications, were divided into five equally large groups - quintiles - the lowest 20%, next 20%, ..., highest 20%. We put these five groups in ANOVA analysis to see whether engagement in academic dishonesty differs by groups of how acceptable are justifications for dishonesty for the respective group. The ANOVA output shows a small and significant p-value, which means that indeed engagement in academic dishonesty differs between those for whom justifications mentioned in the survey are acceptable and for those for whom the provided justifications are unacceptable.

4.5. Differences Between Groups

To understand whether there exist some differences between different demographic groups, we run additional four t-tests and two ANOVAs. We tested differences between those who filled the survey in Latvian and English, males and females, those who finance their studies by working and scholarship, and those who finance their studies with the help of family and scholarship.

Table 6. T-test results

	Group 1	Group 2	P-value
<i>Language</i>	<i>Latvian</i>	<i>English</i>	
	2.375	1.999	6.96e-06

<i>Gender</i>	<i>Male</i>	<i>Female</i>	
	2.258	2.275	0.8454
<i>Finance</i>	<i>Scholarship</i>	<i>Work</i>	
	2.165	2.520	0.0114
<i>Finance</i>	<i>Scholarship</i>	<i>Family support</i>	
	2.165	2.258	0.3658

Source: Authors' calculations.

Table 6 shows the results from t-tests. As we can see, people who filled the survey in Latvian tend to engage in academic dishonesty approximately by 0.4 Likert-type points more than those who filled the survey in English. Also, students that work while studying are being more dishonest by 0.35 Likert-type points than those students that receive a scholarship. Both of these results are statistically significant. However, for t-tests regarding gender and study financing (scholarship vs. family support), we cannot reject the null hypothesis as the results are not statistically significant.

We analysed whether academic dishonesty differs by HEI and study year using ANOVA. The p-value for the first ANOVA (with HEIs) was 0.057, which allows us to reject the null hypothesis at a 10% confidence level and state that academic dishonesty differs by HEI. Nevertheless, for the second ANOVA (with study years), the p-value is 0.24, which means that we cannot reject the null hypothesis - academic integrity does not differ by study year.

4.6. Impacting Factors

To understand which factors impact students' engagement in dishonest actions, authors run regressions, similar as in the work by McCabe (2006). Even though McCabe (2006) and other researchers have used students' answers about their actions as a measure for the academic integrity level, we wanted to check how different are the means for questions asking about their own behaviour (*you_mean*) and peers' behaviour (*others_mean*) due to potential students' unwillingness to answer honestly about their own behaviour.

To find out whether there exists a significant difference between these two means, we run a t-test for the two groups - opinion about own engagement on academic dishonesty and opinion about others' engagement in academic dishonesty (see Appendix F.1). The average value of *you_mean* is 2.25; however, the average value of *others_mean* is 3.23. In other words, students think that on average others engage in academic dishonesty by almost 1 Likert-type point more than respondents themselves, although for the same group of respondents these variables on average should have been very similar, as the individual students are “the others” for the rest of students. From this, we suspect the possibility that the respondents have not given an honest answer because of illusory superiority - respondents overestimate their abilities in relation to others. Therefore, we made each regression twice and use two types of dependent variables - *you_mean* and *you_others_mean*. The latest is calculated as the average from the respondents' answers to two questions - how often the respondent himself has engaged in academic dishonesty and also how often this person thinks others engage in academic dishonesty.

Mean variables that are used in regressions were created by calculating the average for all factors (acceptability of dishonest actions, respondents' engagement, others' engagement, probability of being reported, probability of receiving penalty, knowledge about academic integrity conduct, respondent's previous engagement) from all ten individual dishonest behaviours that are mentioned in the survey. See Appendix E for a sample and variable description.

Table 7. Regression results

This table reports estimates from regressions:

$$y_i = \alpha + \beta_1 others_mean + \beta_2 report_mean + \beta_3 penalty_mean + \beta_4 conduct_mean + \beta_5 acc_mean + \varepsilon_i$$

$$y_i = \alpha + \beta_1 others_mean + \beta_2 report_mean + \beta_3 penalty_mean + \beta_4 conduct_mean + \beta_5 acc_mean + \beta_6 high_school_i + \varepsilon_i$$

Variable	<i>you_mean</i>	<i>you_mean</i>	<i>you_others_mean</i>	<i>you_others_mean</i>
Intercept	-0.0695	-0.2086	1.6178 (***)	1.2015 (***)
<i>others_mean</i>	0.3119 (***)	0.2615 (***)		
<i>report_mean</i>	0.0090	0.0236	-0.0839 (**)	-0.0504
<i>penalty_mean</i>	-0.0143	-0.0159	0.0237	0.0182

<i>conduct_mean</i>	0.0055	-0.0026	-0.0083	-0.0195
<i>acc_mean</i>	0.5134 (***)	0.4301 (***)	0.4856 (***)	0.3278 (***)
<i>high_school</i>		0.1548 (***)		0.2421 (***)
Observations	496	496	496	496
R ²	0.5777	0.6275	0.2217	0.3382
Adjusted R ²	0.5734	0.6229	0.2153	0.3315

See Appendix E for regression outputs. (***), (**), (*) report statistical significance at 1%, 5%, and 10% levels, respectively.

Source: Authors' computations.

First, we run the regressions with all variables that explain average opinions. We followed McCabe's (2006) model and defined academic dishonesty as the average of answers to question 4 - how often the respondent himself has engaged in academically dishonest behaviours on average. Table 7 shows the output of the regressions where academic dishonesty is explained by other mean variables. We can see that the results for seeing others engaging in academically dishonest behaviours and respondents' acceptability of these actions are statistically significant. If the respondent answers that others engage in dishonest behaviours by 1 Likert-type point more, the person engages in academic dishonesty by 0.33 Likert-type points more, everything else held constant. Moreover, if in the respondent's opinion the dishonest behaviours seem to be by 1 Likert-type point more acceptable, the person engages in academic dishonesty by 0.39 Likert-type points more, everything else held constant.

We decided to augment the model by McCabe (2006) by adding a variable about how often on average the respondent has engaged in dishonest behaviours in high school. The regression shows that the newly added variable gives statistically significant results. Also, previously statistically significant relationships remain significant. If the person engaged in dishonest behaviours in high school by 1 Likert-type point more, the person engages in academic dishonesty by 0.14 Likert-type points more in university, everything else held constant. The explanation power has improved with the high school variable included.

The first two regressions used *you_mean* as a dependent variable. However, as mentioned before, there is a difference between students' perception of their own and others' engagement in

academic dishonesty. Therefore, the third and fourth regression is run, where the dependent variable is *you_others_mean*. The new regression in Table 6 shows that if the dishonest behaviours seem to be by 1 Likert-type point more acceptable, the person engages in academic dishonesty by 0.40 Likert-type points more, everything else held constant. Furthermore, if the likeliness of being reported for dishonest actions increases by 1 Likert-type point, the students will engage in academic dishonesty by 0.16 Likert-type points less, everything else held constant. As before, we augmented the model by adding the variable about engagement in academic dishonesty in high school. Previously statistically significant relationships remain significant. If the person engaged in dishonest behaviours in high school by 1 Likert-type point more, the person engages in academic dishonesty by 0.23 Likert-type points more in university, everything else held constant. The explanation power has improved with the high school variable included.

Additionally, we made 10 regressions looking separately to factors affecting the respondents' engagement in separate activities: (1) $y_i = \alpha + \beta_1 \text{others_cop} + \beta_2 \text{report_cop} + \beta_3 \text{penalty_cop} + \beta_4 \text{conduct_cop} + \beta_5 \text{acc_cop} + \varepsilon_i$, (2) $y_i = \alpha + \beta_1 \text{others_giv} + \beta_2 \text{report_giv} + \beta_3 \text{penalty_giv} + \beta_4 \text{conduct_giv} + \beta_5 \text{acc_giv} + \varepsilon_i$, etc.

For each of these 10 regressions, variables about how acceptable is this behaviour and how often others engage in this behaviour gave significant results. However, some interesting relationships occurred for the first and second regression. In the first regression about copying others' work without referencing, there was a significant relationship with the probability to receive a penalty. If the perceived probability to receive a penalty about copying others' work without citing increases by 1 Likert-type point, the respondent will engage in this behaviour by 0.16 Likert-type points less, everything else held constant (see Appendix F.5). This relationship is reported by a 1% statistical significance level. Also, for the second regression about giving information to others during the test, the relationship with the perceived probability of being reported occurs statistically significant. If the perceived probability being reported about giving information to others during the test increases by 1 Likert-type point, the respondent will engage in this behaviour by 0.21 Likert-type points less, everything else held constant (see Appendix F.6).

5. Analysis and Discussion

5.1 Most Common Dishonest Behaviours

It is not cheerful that just less than 5% of the students have never engaged in academic dishonest behaviour. However, from a single number that the average value of *you_mean* is 2.25 (between “rarely” and “occasionally”), it is hard to tell - is it high or is it a low average for academic dishonesty? Therefore, we preferred to look at the most popular dishonest behaviours between students and then try to look at the averages for answers to single questions. Also, when looking at the % of how many students have engaged at least once in a behaviour, similar results as by Nonis and Swift (2001) have been obtained. The mentioned authors discussed that student engagement in dishonest behaviours varies between 30% and 96% for different dishonest behaviours (Nonis & Swift, 2001). However, by this work it can be seen that in Latvia the engagement in different dishonest behaviours varies between 23% and 87% (Appendix D). Also, this shows that looking just at the average of all answers for all dishonest behaviours is not the best way to have a meaningful conclusion as the means for different behaviours differ by a big range.

The smallest engagement when looking at the number of students that answered by Likert point scale with any of the answers 2 - 6 (have done the specified action more than never) is for behaviours *you_ref* and *you_ask* which are fabricating false references and asking others to complete one's assignment. These are also the behaviours that McCabe et al. (2001) defined as serious cheating which motivates to think that students engage less in very serious dishonesty and not so much in smaller dishonest behaviours. Additionally, to justify that the point makes sense also when explaining the most popular dishonest action when looking at the other side - collaborating on an individual task are the most common behaviour - more than 89% of students have engaged in this behaviour more than once and this is the only behaviour for which the average engagement is above 3 - students are collaborating on individual tasks more than occasionally. We would like to emphasize that all dishonest behaviours are dishonest and there is not such a thing as less dishonest dishonesty. However, when thinking about these two sharp

opposites - fabricating references/others completing your assignment and collaborating on an individual assignment with others sometimes even by conducts and lecturers point of view is perceived differently.

Tālis Putniņš mentions that this collaboration on individual tasks could be the most popular behaviour of mentioned ones because students do not see it as a very high violation and therefore do not feel guilty by doing that. Additionally, Putniņš states that this action sometimes is a grey area of dishonesty because the extent of violation of rules by doing that, depends on a context. Further, he explains that “if the task is strictly meant to be an individual work or it is an assessment item for an individual, then, yes, you should not be collaborating. But sometimes things are given as individual tasks but there is an implicit understanding that people can collaborate, even though it is advisable to do it solo”.

The second and the third most popular behaviours are giving and getting information from others during a test. The means for these behaviours are almost the same - 2.99 and 2.89 - and the students that have engaged in these behaviours more than never are 83% and 82% of respondents. The fact that these two behaviours stand very near to each other in terms of students' engagement is not surprising because for students to get information from others sometimes (the most popular answer in the surveys - 4) there should be equally many students that are ready to give information to others during a test. From survey results, it can be seen that there are these students that are ready to sometimes give the information to others during the test (the most popular answer by Likert scale - 4).

The three most popular dishonest behaviours are the only ones for which the mode is 4 (sometimes), for all other dishonest behaviours, even if the average engagement in the fourth and fifth most popular behaviours does not decrease significantly, the majority of students rated that they engage in particular behaviours never (1) or rarely (2). It means that for these behaviours in parallel to those who engage in them, there exist many students that are not dishonest in particular ways. Speaking more directly about the fourth popular dishonest behaviour among students, the idea of students' willingness to give and get information dishonestly stays present, as the next behaviour is “to get information for a test in advance”. Quite a significant part of students have done it - 76% and by calculating the average engagement by Likert scale, it gives

the value 2.72. Also, in the fifth most common behaviour - using unallowed materials in the test - at least once have 75%.

Then by popularity comes three behaviours that by the average engagement measure are not very often present in the study process - copying from others without referencing (1.91), completing others assignments (1.83), and falsifying excuses to delay (1.71). However, when looking at how many students have at least once engaged in these activities, we can see that 54%, 44%, and 38% have tried to be dishonest with these behaviours accordingly. Additionally, it is interesting that 44% of students have completed assignments to others and just 27% of students have asked others to complete their assignments. We give three possible explanations - two of them work under the assumption that students have filled the survey honestly. The first possible explanation is that for one student that asks others to do their assignments there is more than one student that agrees and does it. The second explanation could be that students ask to do their assignments to some people outside the university (family members, field experts). There is also a third possible explanation - students that have asked others to do their assignments in the survey were more cautious than those that have done some academic work for others. Additionally, Tālis Putniņš, based on his experience of working in different countries and different universities, states that in environments where on walls, in specific websites, and on Facebook is a lot of information that explains very clearly where to ask, where to go and where to pay for getting an assignment done by someone else, it is more likely that students will use these illegal services than in places where this information is not so easily available.

5.2 Influencing Factors

Students engage in academic dishonesty more if they observe others engaging in these activities and if these behaviours are acceptable to them. It can be visible from the correlation analysis, where there is a strong correlation between one's engagement in academic dishonesty and others' engagement in academic dishonesty. The above-mentioned results from correlation analysis are supplemented by regression results. Regressions show that there is a statistically significant relationship between one's engagement in academic dishonesty and a person's perception of how acceptable are academically dishonest behaviours and others' engagement in academic

dishonesty. The more students recognize cheating among their course mates, the more likely they are to engage in academic dishonesty themselves. As mentioned in the Results part, we also run the regression where the academic dishonesty variable is calculated not as in McCabe's (2006) model, but together with the variable about how often others engage in academic dishonesty. The above-mentioned relationships hold statistically significant also in this regression.

The results clearly show the power of social learning theory described in the work of McCabe et al. (2006) - we learn through observations, we observe our peers. If students see other students engaging in academic dishonesty, it is becoming somewhat normal to do so. And the more students recognize these behaviours around them, the more likely they are to replicate dishonest actions at some point in time in university or in the workplace. As McCabe (2006) stated, fellow students' engagement in academic dishonesty may also create an environment where the non-cheaters are left at a disadvantage, which makes them consider starting to engage in these behaviours as well.

Regressions present a positive relationship between engaging in academic dishonesty in high school and university, meaning that students who have been engaging in academically dishonest behaviours in high school are more likely to do so also in university. Additionally, correlation analysis shows similar results - one of the most important factors that influence dishonest behaviour is whether the person has cheated in high school or observed others cheating in high school. McCabe et al. (2001) suggest that the majority of students have experienced the occurrence of academic dishonesty in high school - they have seen fellow students engaging academically dishonest behaviours or they have some personal experience. When students come to the university already knowing the option to behave academically dishonest and, even more, seeing second-, third-, and fourth-year students engaging in academic dishonesty, they are exposed to a high probability to ignore academic integrity and accept some academically dishonest behaviours.

When raising the question of the relationship between the engagement in academic dishonesty in high school and university in the interview with Agnese Dāvidsone, she highlighted that it is a critical factor. She explained that the time in university is short compared to twelve years in school, and if the student has established particular dishonest practices, it is

hard to change them. “Coming to university, students may have a difficult time understanding the new requirements when suddenly something they have been doing all their lives, is not working anymore. And it does not make sense for them at the beginning. It makes them angry instead - ‘What do you want from us?’ kind of attitude”.

In the interview, Ingūna Blese mentioned some more influencing factors that were not looked at particularly in the survey: parent’s expectations and time pressure. She stated: “it is not because “I do not care, I do not like something”, but exactly the opposite – students care, but the deadlines push them, and they have to reach some results to feel satisfied”. The time factor also appeared in the interview with Agnese Dāvidsone. Agnese highlighted the issue of the inability to plan time which creates a kind of bottleneck and often results in engagement in academic dishonesty. Ingūna also mentioned factors like laziness and the feeling of gambling.

Additionally, Tālis Putniņš stressed out that “in tests, it really comes down to how well the test is set up”. He explained this thought by saying that if the test will be with possibilities to cheat easily and if it happens in an HEI in which there is not a very strong academically honest environment, then “you almost guarantee to get cheating”. However, afterward, Putniņš added that in an environment where students are with a strong sense of integrity, motivated to study and with a developed attitude for study process, “you can set up a test, leave it completely open to students with an opportunity to cheat, and they will not cheat”.

Also, Inta Jaunzeme mentioned that, even if she does not support it, she sees that a motivation to cheat from students’ point of view could be created by some assignments that are not interesting enough; so, the students do not have a motivation to devote a lot of time to manage to dot the task honestly.

From here, we can continue with other factors that discourage students from engaging in academic dishonesty. For example, the possibility of being reported - students are less willing to engage in academically dishonest behaviours if there is a higher probability of being reported by these behaviours, knowing that they will most probably receive a penalty for engaging in academic dishonesty as the possibility of being reported positively correlates with the possibility of receiving a penalty. When looking at academically dishonest behaviours one by one, regressions show that the students are less likely to copy others’ work without referencing if

there is a higher probability to receive a penalty for this action. Additionally, students are less likely to give information to others during the test if there is a higher probability of being reported for this behaviour. In general, Tālis Putniņš explained that the disadvantages of being dishonest could be summarised as “the probability of getting caught times by the penalty if caught”. However, in our quantitative analysis, we did not get any significant results related to students’ behaviour, based on how large the expected penalty is.

An interesting outcome can be observed when we look at some demographic variables. The T-test in Table 6 shows that students who filled the survey in English are less willing to engage in academic dishonesty than those who filled the survey in Latvian. It possibly may be the situation that the respondents who filled the survey in English are exchange students or coming from another country to study in Latvia. It could be translated in a way that the foreign students might feel more motivated in the new environment.

Of course, the engagement in academic dishonesty is impacted by some factors that differ across institutions and study years, as ANOVA shows that the level of engagement in academic dishonesty differs by HEIs and study years. The differences between HEIs can be related to the fact that academic dishonesty is not clearly defined around the world. As Schmelkin et al. (2008) mentioned, it is difficult to classify academically dishonest behaviours and each institution’s representatives understand it differently. Therefore, for various institutions, the definition of academic dishonesty may differ.

5.2.1 Justifications

In some situations, students face different reasons why they might engage in academic dishonesty. In other words, there are several justifications that students think are valid for engagement in academic dishonesty. According to the results in Table 5, the justification that is the most acceptable according to students is “to stay in university”. Meaning that students are ready to engage in academic dishonesty to stay in university and state that it is slightly acceptable. Also, Tālis Putniņš indicates that this is the only one of the provided justifications for which he would see some social value. He thinks that this justification is unacceptable; however, in his opinion, it could create some real benefit for the student. Putniņš explains “suppose, you

have someone that is struggling for some reason and they are about to be kicked out. If they cheat a bit and that helps them to stay in, there is a chance that their behaviour might turn around, they might start studying harder, they might become honest from that point onwards and end up with education and good outcomes. Whereas, if they did not cheat and it is the end of their studies, it might set them on a path that leads to much worse life outcomes for them”.

According to students, the second most acceptable reason for cheating is “to keep financial aid/scholarship”. These results are supplemented by the statement in both interviews - with Ingūna Blese and Agnese Dāvidsone - that competition among students (including competition for scholarship) is an important factor students consider for engaging in academic dishonesty. Most often the justification of keeping scholarship overlaps with the justification of better grades because students receiving higher grades are more likely to keep the scholarship.

However, according to students, the least acceptable justification for engaging in academic dishonesty is “because a friend asked”. Meaning that students perceive it slightly unacceptable to engage in academic dishonesty because a friend asked for help. Quite understandably, the engagement in academic dishonesty is impacted by how valid students perceive given justifications - students that identify these justifications as more valid are more likely to engage in academic dishonesty and *vice versa*.

Overall, based on his personal experience, Tālis Putniņš mentioned that the attitude towards academic integrity is changing in the Baltics. In his mind, students who have started the studies in recent years understand that cheating is not good behaviour, on the contrary of previous students who finished their high school just a little bit after the Soviet times.

5.3 Suggestions for Reducing Academic Dishonesty

Riga Stradins University has chosen an approach to tackle the issue of academic dishonesty. This approach involves discussions with the lecturers and here is what they found out. “Lecturers are missing a clear structure, they fear. Because nowadays students are so protected; teachers cannot do anything – cannot take student’s stuff and say that it is a cheat sheet. Teachers often fear to point to academic dishonesty if they are not sure they can convincingly prove it”. Consequently, what is being organized in RSU is related to the introduction of a clear structure - all involved

parties are aware of what can and should be done when acknowledging the presence of academic dishonesty. This message is being spread through different informative materials.

Vidzeme University of Applied Sciences uses a similar practice of communicating this issue. According to Agnese Dāvidsone, they have a separate course devoted to academic writing principles, similarly as in SSE Riga. Moreover, they encourage student associations to raise awareness about academic integrity, so it is more like peer-to-peer communication. Tālis Putniņš suggested that for eliminating dishonesty that comes from some grey area activities like, for example, collaborating on an individual task, it is advisable that the lecturer is the one that defines and communicate clear instructions and does not leave it for students to “try and work out whether they can or cannot do something”. Additionally, he claimed that HEIs can regulate the intensity of penalties because there will be different students’ perception of different size of penalties, for example, it will matter whether when caught in being dishonest, “you get a 50% point reduction on that particular assignment versus the next step up is that you fail that particular course and you have to retake it versus the next step up is a zero-tolerance policy at the extreme level - if you cheat on anything in this university, you are kicked out of this university, no questions asked”.

Speaking about proactive activities that would eliminate involvement in dishonest activities, Putniņš admits that it is hard to improve the situation with behaviours in which students have engaged already in high school; also, Inta Jaunzeme stated that the awareness and acceptance of academic integrity should be created and developed in school and that the change should be started by individual teachers. In the end, Tālis Putniņš emphasized and suggested that HEIs could work to develop and fulfill a culture in which students know what is acceptable and what is not; even more, in which every student is aware that by being dishonest they are cheating themselves and their friends more than the lecturers.

Successful examples from interviews of limiting the engagement in academic dishonesty included plagiarism checking tools and in-depth discussions between faculty members and lecturers to detect the main weaknesses of the current system and think of possible solutions.

5.4 Limitations

As Ingūna Blese correctly noted in the interview, it is hard to arrive at the point where students answer these questions honestly because “even people who sometimes engage in academic dishonesty, still see themselves as academically honest”. We refer to this fact as our most significant limitation and risk - students may have not filled in the survey honestly. We tried to tackle this issue by introducing ourselves and the research when asking students to fill in the survey and making it clear for them that the survey is completely anonymous. Also, if possible, we remained present the whole time the students filled in the questionnaire if any questions about the survey and anonymity arise. However, if we may speculate - if respondents were dishonest when filling the questionnaire, they most probably underestimated the true involvement in dishonest behaviours. In that case, we would expect the potential involvement in academic dishonesty is even higher than reported by respondents.

For the reason of possibly dishonest answers, we introduced the variables *others_mean* and *you_oth_mean* that represent the question “How often have you seen others engaging in dishonest behaviours?” (*others_mean*) and the combination of this question and “How often have you engaged in dishonest behaviours?” (*you_mean*). In the interview, Tālis Putniņš mentioned that the real engagement in academic dishonesty would be somewhere between the two averages but closer to *others_mean*, especially for behaviours that students perceive as more dishonest. It would be very crucial to research exact relationships between answers to these questions if our work’s main objective would be to get to a precise academic dishonesty level. However, our goal was to identify which dishonest behaviours are more popular among students. Therefore, by checking that students' answers about others' behaviour divide the dishonest actions into the same groups by five (most popular/less popular), we believe that our classification of actions is trustworthy.

6. Conclusions

In this paper we highlight the importance of academic integrity and address two research questions - **What are the most common academically dishonest actions in Latvias' HEIs?** and **What factors impact the engagement in these actions the most?** Using quantitative and qualitative analysis, we were able to spot the most common academically dishonest behaviours and factors impacting engagement in these behaviours.

The three most popular academically dishonest behaviours are collaborating on individual tasks, giving information to others during the test, and getting information from others during the test. Results show that engagement in these behaviours varies between 'Occasionally' and 'Sometimes'. Yet the least popular dishonest behaviours are falsifying excuses to delay, asking others to complete one's assignment, and fabricating false references. Reported engagement in these behaviours ranges from 'Never' to 'Rarely'. Acceptability of a particular dishonest behaviour, observing peers engaging in academically dishonest behaviours, and engaging in academically dishonest behaviours in high school are factors contributing to students' engagement in academic dishonesty. The interviewees also suggested such impacting factors as time pressure, laziness, family expectations, test set-up, and the feeling of gambling. According to the results, there is a negative relationship between engaging in academic dishonesty and a higher probability of being reported. Respondents report that the most acceptable justification for engaging in dishonest behaviours is "to stay in university"; however, the least acceptable - "because a friend asked".

To reduce the appearance of academic dishonesty in the study process, we conclude that a clear structure and steps taken by all involved parties shall be provided and available to both - lecturers and students. Of course, the use of tools like plagiarism checking increases the awareness of academic integrity significantly. Regular discussions between faculty members to exchange ideas and experience regarding restricting academic dishonesty as well as communicating the issue through different channels are likely to positively affect the presence of academic integrity and create a more academically integrated environment.

According to our results, on a 6-point scale, the average engagement in academic dishonesty is between 2.27 (respondent's own engagement) and 3.21 (others' engagement perceived by respondent). In this paper we did not focus so much on the exact level of dishonesty as to define the most popular dishonest behaviours; however, we got insights that more advanced methodology and analysis would be required to define the precise level of academic dishonesty. For further research, it would be intriguing to investigate the relationships between students' answers about their engagement and answers about others' engagement in dishonest behaviours deeper to be able to define the academic integrity level more precisely. Also, the academic integrity research covering more than one (social sciences) field would provide impressive results.

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8. Appendices

Appendix A. Glossary

Academic integrity - compliance with ethical and professional principles, standards, practices and consistent system of values, that serves as guidance for making decisions and taking actions in education, research and scholarship.

Academic dishonesty - morally culpable behaviours perpetrated by individuals or institutions that transgress ethical standards held in common between other individuals and/or groups in institutions of education, research, or scholarship.

Cheating - actions that attempt to get any advantage by means that undermine values of integrity.

Code of conduct - statement of principles and values that establishes a set of expectations and standards for behaviour applying to individuals and within institutions, including minimum required levels of compliance and disciplinary actions.

Collaboration - working in a group or team towards common goals.

Plagiarism - presenting work/ideas taken from other sources without proper acknowledgment.

**Definitions taken from ENAI glossary (ENAI, n.d.).*

Appendix B. Survey questionnaire

1. Do you think that academically dishonest actions interfere with the acquisition of qualitative education?
 - Yes
 - No
2. How important is the problem of academic dishonesty in Latvia's higher education institution?
 - Not at all
 - Slightly important
 - Important
 - Extremely important
3. Rate 1-6 (1-Totally unacceptable, 6-Perfectly acceptable) how acceptable are these actions for you!
 - Copying others' work without citing
 - Giving information to others during a test

- Getting information from others during a test
- Using unauthorized materials during a test
- Collaborating on an individual task
- Fabricating false references
- Asking others to complete one's assignment
- Getting information for the test from others in advance
- Completing another's assignment
- Falsifying excuse to delay

4. Rate 1-6 (1-Never, 6-Very often) how often have you engaged in these behaviours!

- Copying others' work without citing
- Giving information to others during a test
- Getting information from others during a test
- Using unauthorized materials during a test
- Collaborating on an individual task
- Fabricating false references
- Asking others to complete one's assignment
- Getting information for the test from others in advance
- Completing another's assignment
- Falsifying excuse to delay

5. Rate 1-6 (1-Never, 6-Very often) how often have you seen others engaging in these behaviours!

- Copying others' work without citing
- Giving information to others during a test
- Getting information from others during a test
- Using unauthorized materials during a test
- Collaborating on an individual task
- Fabricating false references
- Asking others to complete one's assignment
- Getting information for the test from others in advance
- Completing another's assignment
- Falsifying excuse to delay

6. Rate 1-6 (1-Extremely unlikely, 6-Extremely likely) how likely it is to be reported for these behaviours!

- Copying others' work without citing
- Giving information to others during a test
- Getting information from others during a test
- Using unauthorized materials during a test
- Collaborating on an individual task
- Fabricating false references
- Asking others to complete one's assignment
- Getting information for the test from others in advance
- Completing another's assignment
- Falsifying excuse to delay

7. Rate 1-6 (1-Extremely unlikely, 6-Extremely likely) how likely it is to receive a penalty for these behaviours!

- Copying others' work without citing

- Giving information to others during a test
- Getting information from others during a test
- Using unauthorized materials during a test
- Collaborating on an individual task
- Fabricating false references
- Asking others to complete one's assignment
- Getting information for the test from others in advance
- Completing another's assignment
- Falsifying excuse to delay

8. Are these actions mentioned in the institutions' academic integrity conduct or course outline?

- Copying others' work without citing
- Giving information to others during a test
- Getting information from others during a test
- Using unauthorized materials during a test
- Collaborating on an individual task
- Fabricating false references
- Asking others to complete one's assignment
- Getting information for the test from others in advance
- Completing another's assignment
- Falsifying excuse to delay

9. Rate 1-6 (1-Totally unacceptable, 6-Perfectly acceptable) how acceptable are these justifications for engaging in before-mentioned actions!

- For better grade
- Because friends asked
- To keep scholarship/financial aid
- To stay in the university
- To get into a better master program

10. How often did you engage in these academically dishonest behaviours in high school!

- Never
- Rarely
- Occasionally
- Sometimes
- Often
- Very often

11. Select the year of studies in the current program:

- 1.
- 2.
- 3.
- 4.
- 5.

12. Select your gender:

- Male
- Female
- Other

13. Select HEI you are studying in:

- University of Latvia
- Riga Stradins University
- Latvia University of Life Sciences and Technologies
- Vidzeme University of Applied Sciences
- Stockholm School of Economics in Riga
- Turība University
- RISEBA University
- Riga Business School
- Ventspils University of Applied Sciences
- Liepāja University
- Do not want to disclose

14. How do you finance your studies?

- Scholarship
- Support from family
- Work while studying
- Study loan
- Other

Appendix C. Data conversion

	1	2	3	4	5	6
<i>Q 1</i>	Yes	No				
<i>Q 2</i>	Not at all	Slightly important	Important	Extremely important		
<i>Q 3</i>	Totally unacceptable	Unacceptable	Slightly unacceptable	Slightly acceptable	Acceptable	Perfectly acceptable
<i>Q 4</i>	Never	Rarely	Occasionally	Sometimes	Often	Very often
<i>Q 5</i>	Never	Rarely	Occasionally	Sometimes	Often	Very often
<i>Q 6</i>	Extremely unlikely	Unlikely	Slightly unlikely	Slightly likely	Likely	Extremely likely
<i>Q 7</i>	Extremely unlikely	Unlikely	Slightly unlikely	Slightly likely	Likely	Extremely likely
<i>Q 8</i>	Yes	No	I do not know			
<i>Q 9</i>	Totally unacceptable	Unacceptable	Slightly unacceptable	Slightly acceptable	Acceptable	Perfectly acceptable
<i>Q 10</i>	Never	Rarely	Occasionally	Sometimes	Often	Very often
<i>Q 11</i>	1.	2.	3.	4.	5.	

<i>Q 12</i>	Male	Female	Other			
<i>Q 14</i>	Scholarship	Support from family	Work while studying	Study loan		

Source: Created by Authors

Appendix D. Average engagement in dishonest behaviours

The table shows how many respondents engage in particular behaviours by frequency (1-Never, 6-Often), average engagement for each dishonest behaviour, and how many students (in %) have engaged in each of the behaviours at least once.

Behaviour	1	2	3	4	5	6	Average engagement	engaged at least once (%)
<i>you_collab</i>	64	93	111	150	61	17	3.21	87.10
<i>you_giv</i>	82	93	123	151	38	9	2.99	83.47
<i>you_get</i>	91	100	126	136	37	6	2.89	81.65
<i>you_get_adv</i>	121	117	101	106	38	13	2.72	75.60
<i>you_mat</i>	123	127	92	112	36	6	2.66	75.20
<i>you_cop</i>	226	153	66	42	7	2	1.91	54.44
<i>you_compl</i>	278	114	45	38	13	8	1.83	43.95
<i>you_excuse</i>	307	93	45	39	9	3	1.71	38.10
<i>you_ask</i>	360	88	24	19	4	1	1.43	27.42
<i>you_ref</i>	381	64	28	15	5	5	1.41	23.19
<i>Total</i>	2033	1042	761	808	247	69	2.28	

Source: Created by Authors

Appendix E. Sample and variable description

This table presents descriptive statistics for the main sample. Variables *you_mean*, *others_mean*, *you_others_mean*, *acc_mean*, *report_mean*, *penalty_mean*, *conduct_mean*, *just_mean* are the averages of all dishonest behaviours included in each question. The meaning of each variable: *qual* - students' perception whether academic dishonesty interferes with qualitative education,

important - students' perception whether academic dishonesty is an important issue, *year* - respondents' study year, *gender* - respondents' gender, *high_school* - students' engagement in academic dishonesty in high school, *you_mean* - respondents' engagement in academic dishonesty, *others_mean* - respondents' perception of others' engagement in academic dishonesty, *you_others_mean* - respondents' and others' engagement in academic dishonesty, *acc_mean* - respondents' perception of how acceptable is academic dishonesty, *report_mean* - perception of how likely it is to be reported for dishonesty, *penalty_mean* - perception of how likely it is to be penalized for dishonesty, *conduct_mean* - respondents' knowledge about dishonest behaviours in conduct, *just_mean* - perception of the validity of justification.

	Mean	Median	SD
<i>qual</i>	1.202	1	0.4016097
<i>important</i>	2.411	2	0.7655417
<i>high_school</i>	3.252	3	1.297626
<i>you_mean</i>	2.274	2.2	0.7807078
<i>others_mean</i>	3.208	3.2	1.095832
<i>you_others_mean</i>	2.741	2.750	0.8342128
<i>acc_mean</i>	2.646	2.6	0.7894147
<i>report_mean</i>	2.738	2.7	1.039782
<i>penalty_mean</i>	3.647	3.8	1.082588
<i>conduct_mean</i>	2.227	2	1.053132
<i>just_mean</i>	3.129	3.2	1.065057

Source: Created by Authors

Appendix F. Regression outputs

F.1 & F.2 Regressions for academic dishonesty (dependent = *you_mean*)

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

F.1 without variable of <i>high_school</i>	F.2 with variable <i>high_school</i>
lm(formula = <i>you_mean</i> ~ <i>others_mean</i> + <i>report_mean</i> + <i>penalty_mean</i> + <i>conduct_mean</i> + <i>acc_mean</i> , data = .)	lm(formula = <i>you_mean</i> ~ <i>others_mean</i> + <i>report_mean</i> + <i>penalty_mean</i> + <i>conduct_mean</i> + <i>acc_mean</i> + <i>high_school</i> , data = .)
Residuals:	Residuals:
Min 1Q Median 3Q Max	Min 1Q Median 3Q Max
-1.54152 -0.32492 -0.02852 0.31859 1.98554	-1.7883 -0.3037 -0.0342 0.3190 2.1272

<p>Coefficients:</p> <pre> Estimate Std. Error t value Pr(> t) (Intercept) -0.06950 0.13842 -0.502 0.616 others_mean 0.31192 0.02176 14.334 <2e-16 *** report_mean 0.00901 0.02615 0.344 0.731 penalty_mean -0.01425 0.02470 -0.577 0.564 conduct_mean 0.00546 0.02227 0.245 0.806 acc_mean 0.51341 0.03029 16.952 <2e-16 *** --- Residual standard error: 0.5099 on 490 degrees of freedom Multiple R-squared: 0.5777, Adjusted R-squared: 0.5734 F-statistic: 134.1 on 5 and 490 DF, p-value: < 2.2e-16 </pre>	<p>Coefficients:</p> <pre> Estimate Std. Error t value Pr(> t) (Intercept) -0.20863 0.13127 -1.589 0.113 others_mean 0.26148 0.02139 12.225 < 2e-16 *** report_mean 0.02360 0.02465 0.957 0.339 penalty_mean -0.01539 0.02322 -0.663 0.508 conduct_mean -0.00257 0.02096 -0.123 0.903 acc_mean 0.43010 0.03028 14.203 < 2e-16 *** high_school 0.15481 0.01915 8.084 4.95e-15 *** --- Residual standard error: 0.4794 on 489 degrees of freedom Multiple R-squared: 0.6275, Adjusted R-squared: 0.6229 F-statistic: 137.3 on 6 and 489 DF, p-value: < 2.2e-16 </pre>
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F.3 & F.4 Regressions for academic dishonesty (dependent = you_others_mean)

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

<p>F.3 without variable of high_school</p> <pre> lm(formula = you_others_mean ~ report_mean + penalty_mean + conduct_mean + acc_mean, data = .) Residuals: Min 1Q Median 3Q Max -2.57484 -0.51397 0.00604 0.50964 2.20376 Coefficients: Estimate Std. Error t value Pr(> t) (Intercept) 1.61777 0.18419 8.783 <2e-16 *** report_mean -0.08389 0.03766 -2.228 0.0264 * penalty_mean 0.02373 0.03576 0.663 0.5074 conduct_mean -0.00826 0.03227 -0.256 0.7982 acc_mean 0.48561 0.04249 11.429 <2e-16 *** --- Residual standard error: 0.739 on 491 degrees of freedom Multiple R-squared: 0.2217, Adjusted R-squared: 0.2153 F-statistic: 34.96 on 4 and 491 DF, p-value: < 2.2e-16 </pre>	<p>F.4 with variable high_school</p> <pre> lm(formula = you_others_mean ~ report_mean + penalty_mean + conduct_mean + acc_mean + high_school, data = .) Residuals: Min 1Q Median 3Q Max -2.74385 -0.47108 -0.02633 0.50932 1.69939 Coefficients: Estimate Std. Error t value Pr(> t) (Intercept) 1.20146 0.17581 6.834 2.47e-11 *** report_mean -0.05043 0.03495 -1.443 0.150 penalty_mean 0.01823 0.03301 0.552 0.581 conduct_mean -0.01949 0.02981 -0.654 0.513 acc_mean 0.32779 0.04274 7.670 9.36e-14 *** high_school 0.24211 0.02606 9.291 < 2e-16 *** --- Residual standard error: 0.6821 on 490 degrees of freedom Multiple R-squared: 0.3382, Adjusted R-squared: 0.3315 F-statistic: 50.09 on 5 and 490 DF, p-value: < 2.2e-16 </pre>
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F.5 & F.6 Regressions for academic dishonesty for specific behaviours

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

<p>F.5 Behaviour “copying from others without referencing”</p> <pre> lm(formula = you_cop ~ others_cop + report_cop + penalty_cop + conduct_cop + acc_cop, data = .) Residuals: Min 1Q Median 3Q Max -2.4657 -0.5981 -0.1686 0.4230 3.0268 Coefficients: Estimate Std. Error t value Pr(> t) (Intercept) 0.85923 0.19598 4.384 1.42e-05 *** others_cop 0.20202 0.02783 7.258 1.55e-12 *** report_cop 0.05155 0.02989 1.724 0.0852 . </pre>	<p>F.6 Behaviour “giving information to others during the test”</p> <pre> lm(formula = you_giv ~ others_giv + report_giv + penalty_giv + conduct_giv + acc_giv, data = .) Residuals: Min 1Q Median 3Q Max -3.1385 -0.5578 -0.0198 0.5670 4.9386 Coefficients: Estimate Std. Error t value Pr(> t) (Intercept) 0.31008 0.23603 1.314 0.190 others_giv 0.42306 0.03356 12.608 <2e-16 *** report_giv -0.08887 0.03839 -2.315 0.021 * </pre>
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penalty_cop -0.13747 0.03165 -4.343 1.71e-05 ***	penalty_giv 0.03798 0.03475 1.093 0.275
conduct_cop 0.03808 0.04580 0.832 0.4060	conduct_giv -0.03879 0.04740 -0.818 0.414
acc_cop 0.41298 0.03844 10.744 < 2e-16 ***	acc_giv 0.41791 0.03750 11.145 <2e-16 ***
---	---
Residual standard error: 0.8758 on 490 degrees of freedom	Residual standard error: 0.9558 on 490 degrees of freedom
Multiple R-squared: 0.3173, Adjusted R-squared: 0.3103	Multiple R-squared: 0.4439, Adjusted R-squared: 0.4382
F-statistic: 45.55 on 5 and 490 DF, p-value: < 2.2e-16	F-statistic: 78.22 on 5 and 490 DF, p-value: < 2.2e-16

Appendix G. T-test outputs

G.1 Respondents' answers about their own engagement and others' engagement in academic dishonesty.

<pre>data: You_or_others\$dishonest_mean by You_or_others\$you_or_others t = -15.451, df = 894.55, p-value < 2.2e-16 alternative hypothesis: true difference in means is not equal to 0 95 percent confidence interval: -1.0520383 -0.8148972 sample estimates: mean in group 1 mean in group 2 2.274395 3.207863</pre>
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G.2 & G.3 Respondents' engagement in academic dishonesty based on different demographics options

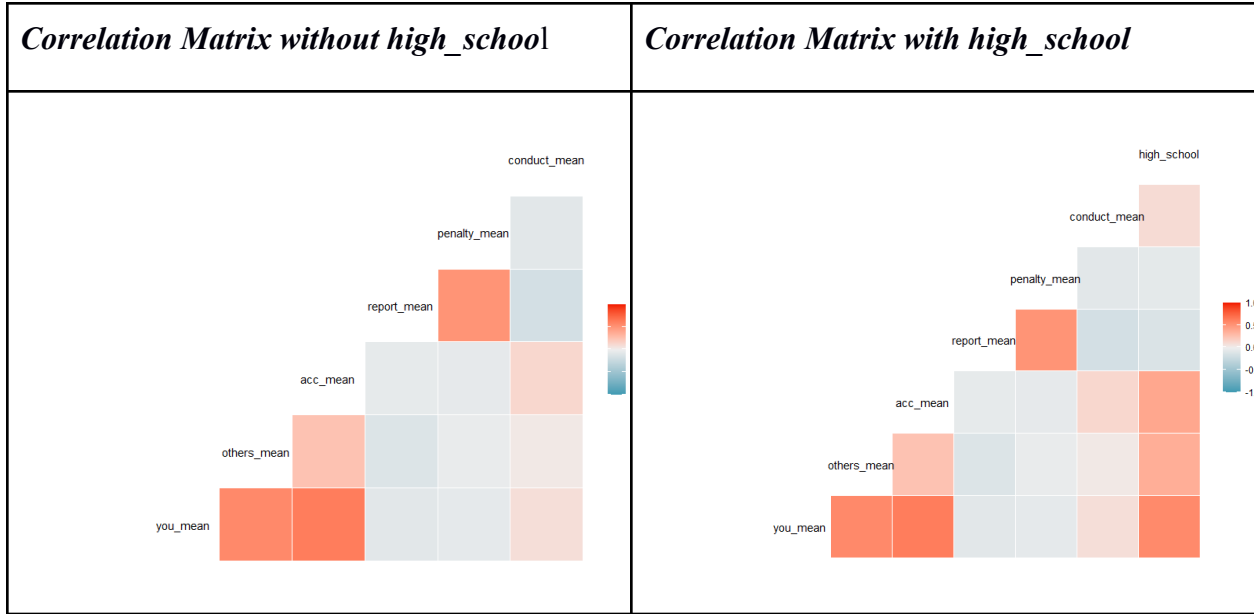
G.2 Engagement by language	G.3 Engagement by gender
<pre>Welch Two Sample t-test data: Data\$you_mean by Data\$lang t = 4.6089, df = 213.64, p-value = 6.96e-06 alternative hypothesis: true difference in means is not equal to 0 95 percent confidence interval: 0.2151688 0.5367482 sample estimates: mean in group 1 mean in group 2 2.375207 1.999248</pre>	<pre>Welch Two Sample t-test data: Data_gender\$you_mean by Data_gender\$gender t = -0.1952, df = 242.47, p-value = 0.8454 alternative hypothesis: true difference in means is not equal to 0 95 percent confidence interval: -0.1778968 0.1458185 sample estimates: mean in group 1 mean in group 2 2.258442 2.274481</pre>

G.4 & G.5 Respondents' engagement in academic dishonesty by finance option.

G.4 scholarship vs work	G.5 scholarship vs family support
<pre>data: Data_scholarship_work\$you_mean by Data_scholarship_work\$finance t = -2.5786, df = 99.819, p-value = 0.01138 alternative hypothesis: true difference in means is not equal to 0</pre>	<pre>data:Data_scholarship_family\$you_mean by Data_scholarship_family\$finance t = -0.90656, df = 194.15, p-value = 0.3658 alternative hypothesis: true difference in means is not equal to 0</pre>

95 percent confidence interval: -0.62869379 -0.08192646 sample estimates: mean in group 1 mean in group 3 2.16506 2.52037	95 percent confidence interval: -0.2961931 0.1096469 sample estimates: mean in group 1 mean in group 2 2.165060 2.258333
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Appendix H. Correlation matrices



Appendix I. ANOVA for justifications

Df	Sum Sq	Mean Sq	F value	Pr(>F)
just_groups	1	36.61	36.61	68.21 1.35e-15 ***
Residuals	494	265.10	0.54	

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1				