



# **Academic Fraud in Online System during the COVID-19 Pandemic: Evidence from Lampung - Indonesia**

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## **Authors' contributions**

*This work was carried out in collaboration among all authors. Author FP designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Author Sudrajat and RO managed the analyses of the study. Author Sudrajat managed the literature searches. All authors read and approved the final manuscript.*

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## **ABSTRACT**

This study aims to find indications of academic fraud in the implementation of final semester assessment online from the perspective of diamond fraud theory consisting of four dimensions; pressure, opportunity, rationalization, and capability. This quantitative study with a questionnaire created with Microsoft Form to collect the required data. This research was conducted in Lampung Tengah on December 14, 2020, from 07.30 to 15.00 WIB using the Microsoft Form questionnaire. The number of samples in this study was 81. Respondents in this study were 3 vocational high school students in Lampung Tengah Regency who participated in the final semester assessment online. The data obtained is processed using the line analysis method with Smart PLS 3.3.2 software. The results showed that pressures and opportunities have no significant effect on academic cheating in the implementation of final semester assessment online. While rationalization and positive ability have a significant effect on academic cheating in the assessment of the final

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semester online. In addition to the impact of academic fraud, the results of this study provide solutions to reduce the occurrence of academic fraud in Vocational High School students conducted online.

*Keywords: Academic fraud; capability diamond fraud; online learning; opportunity; pressure; rationalization.*

## 1. INTRODUCTION

The development of information technology brings positive impacts, among others, can find and obtain information quickly, the easier to communicate, save time, more efficient and effective, and as a means to get entertainment easily. In education, there are many benefits of utilizing information technology, such as; to improve the quality of education, as a supporting medium for learning, as a means to obtain information, and as a medium of learning without limits. During the Covid-19 pandemic, the use of information technology is absolute for the learning process [1]. In addition to the positive impact also brings the impact of negative in academics namely academic fraud by using information technology. During the covid-19 pandemic, the ministry of agriculture and culture has issued circular no. 4 of 2020 on the implementation of education policies in the emergency period of the spread of the coronavirus disease (Covid-19), that to break the chain of the spread of COVID-19, distance learning is carried out [2]. All educational processes are carried out online. Starting from the learning process to the assessment process.

Educational institutions, as a forum to create noble character and personality, intellectual, emotional and spiritual intelligence of high students. Education has a big influence on improving the quality of human resources [3]. However, not all students do the educational process well. Some of them take inappropriate actions such as committing academic cheating to achieve higher test scores and to meet expectations as outstanding students [4].

Vocational High School (later is mentioned as SMK) is an educational institution that prints experts at the middle level. Vocational education is part of an education system that prepares a person to be able to work better in one working group or one job compared to another. According to the explanation of Law No. 20 of 2003 Article 15, vocational education is a secondary education that prepares students especially to work in certain fields. Vocational education

consists of Vocational High School and Vocational Madrasah Aliyah [5].

One of the privileges of vocational school is a direct practice in school under the competence of its expertise and conduct fieldwork practices in companies that become SMK institution partners for 3 to 6 months to prepare themselves to enter the world of work after completion of vocational education. Vocational school graduates also have the right to continue their education to a higher level with a national selection pathway to enter public universities or joint selection of state universities (SNMPTN / SBMPTN) and or through Bidik Misi (Scholarships) and service ties or can apply to become a member of the TNI / POLRI. The most important thing about vocational school is that students get guidance and training to become entrepreneurs to have an entrepreneurial spirit since the vocational school.

Accounting education has to follow changes in the business environment and must include ethics in the curriculum [5]. Building a relationship between accounting ethics education and ethical behavior in accounting work is a must. Academic is the main platform in learning and absorbs the essence of accountability and integrity which should shape individual behavior in the future. This encourages the need to embed ethics in the academic curriculum, especially accounting, whose premise is to equip the future of accountants [6], in this case, junior accounting technicians with basic knowledge of accountability and integrity as guidelines, especially in entering the world of work. Academic policy in embedding ethics in the accounting curriculum aims to reduce the tolerance threshold for accounting students to actions that damage integrity [6]. Accounting education has to follow changes in the business environment and must include ethics in the curriculum [6]. Building a relationship between accounting ethics education and ethical behavior in accounting work is a must. Academic is the main platform in learning and absorbs the essence of accountability and integrity which should shape individual behavior in the future. This encourages the need to embed ethics in the

academic curriculum, especially accounting, whose premise is to equip the future of accountants [7]. SMK of accounting and finance prepare experts at the middle level, namely junior accounting technicians with personal knowledge of basic capital and integrity guidelines, especially in the world of work. Academic policy in embedding ethics in the accounting curriculum aims to reduce the tolerance threshold for accounting students to actions that damage integrity [7].

Academic fraud is an attempt to take someone else's job, give, and get help illegally to make a profit [8]. Academic fraud is a global phenomenon that occurs in almost all educational institutions. Honesty value in the world of education is something very expensive. Honesty little by little begins to diminish even almost disappear when it should be the basis of an action little by little. More in-depth research is needed to determine the cause so that it can determine the solution. There is a lot of research on academic fraud but it is still interesting to re-examine, especially during the Covid-19 pandemic which forced all institutions in the world to carry out online learning.

Some cases of academic cases that occur are; cases of academic fraud such as what happened in the case of Luis Suarez cheating during an Italian language exam [9], then the case of prospective teachers being caught cheating by writing answers in nail polish that occurred in Mexico [10] and cases of education fraud that occurred in Indonesia were cheating case during the national exam in Grobogan, Central Java [11]. This illustrates that academic fraud exists in every sector.

The factor that influences the occurrence of academic cheating includes pressure factors that arise from the family that requires their children to get good grades because this value is one measure of a student's success. Besides, the opportunity factor arises in the form of indecisiveness of the exam supervisor or weak control system. As well as rationalization factors that arise because of the public perception that committing academic fraud is a natural thing [8].

The occurrence of academic fraud shows that the goals of Indonesia's national education have not been achieved, namely to develop capabilities and form a dignified national character and civilization to educate the nation's life, aiming at developing the potential of students to become humans who believe and

fear God Almighty, with noble character, healthy, knowledgeable, capable, creative, independent, and a democratic and responsible citizen [5].

Utami et al. [11] testing the causality of diamond fraud factors (pressure, rationalization, opportunity, and capability) and Machiavellian personality against fraudulent intentions states that all aspects of diamond fraud namely pressure, opportunity, rationalization, and capability lead to the emergence of fraud intention. Also, a high Machiavellian attitude can lead to high fraudulent intentions. Then, White [12] which conducts a reflection on academic integrity and accounting assessment during COVID19 and online learning states that students face incentives and pressures to engage in errors, opportunities that arise from online learning and assessment, and hold complex perceptions around their attitudes to academic integrity and rationalization of misperceptions. Bicer [13] states that for imitating students, a strong reason in the rationalization of cheating and the pressure do not affect academic cheating. Utami et al. [11] testing the causality of diamond fraud factors (pressure, rationalization, opportunity, and capability) and Machiavellian personality against fraudulent intentions states that all aspects of diamond fraud namely pressure, opportunity, rationalization, and capability lead to the emergence of fraud intention. In addition, a high Machiavellian attitude can lead to high fraudulent intentions.

Research conducted by Susanti and Lestari [8] about the influence of pressure, opportunity, and rationalization of academic cheating on vocational school accounting students found that there is a significant relationship between pressure, opportunity, and rationalization with academic fraud and that there is a partial influence of pressure on academic cheating. Then, the results obtained from Munirah and Nurkhin [14] who test the simultaneous and partial influence between pressure, opportunity, rationalization, ability, greed, need and disclosure against academic cheating in students of accounting skills competency SMK Negeri 1 Kendal produces pressure, opportunity, rationalization, ability, greed, needs, and disclosure positively and significantly affect academic cheating. It is supported by Fransika and Utami [15], who conduct research on student academic cheating behavior: the perspective of diamond theory fraud shows that academic cheating is carried out by students due

to pressure, lecturer attitudes in the lecture process, rationalization of cheating behavior, and ability.

In the meantime, Nurkhin and Fachrurrozi [15] who analyzed the influence of diamond fraud dimensions on the academic cheating behavior of UNNES accounting education students showed that there are only two dimensions of diamond fraud that proved to have a positive and significant effect on academic cheating behavior, namely pressure and rationalization. The dimension of opportunity has not proven to have a significant effect on academic cheating behavior. While the ability dimension has a negative and significant influence on academic cheating behavior. It is supported by Apriani et al. [2] who tested the influence of pressure, opportunity, and rationalization on academic cheating behavior in accounting students of the Undergraduate program of Ganesha University of Education stated that pressure and rationalization partially affect the behavior of academic fraud and opportunity partially does not have a significant effect on academic cheating behavior and is supported by Sasongko et al. [3] which tests the behavioral factors of students who commit academic cheating in college with the pentagon theory that the factors that cause academic cheating are the main students' arrogance and opportunity. Meanwhile, pressure, competence, rationalization, need and exposure factors do not affect students' academic cheating.

Fraud Academic is a behavior of taking things incorrectly. If seen at first glance, it seems like an act that is not too bad but has a very dangerous effect. Fraud academic will shape the corrupt soul of the student. With the Covid-19 pandemic that requires online learning and assessment activities, it is necessary to research the factors that cause academic fraud so that its prevention can be known.

This research is a replication of the research conducted by Murdiansyah et al. [16] and Nurkhin and Fachrurrozi [17]. Research that has the same purpose is to find out indications of academic fraud with diamond fraud theory. This study was conducted to examine the factors that cause students to commit academic fraud on the final semester online assessment during the COVID-19 pandemic using the perspective of diamond fraud theory. This research was conducted at a vocational high school that has a package of financial and institutional accounting expertise in Central Lampung Regency,

Lampung Province, Indonesia which carried out final semester online assessments with 81 accounting students as respondents.

This research was conducted to contribute to knowledge by placing diamond fraud theory into a picture of the current moral crisis experienced by students in Indonesia who always commit academic fraud. Therefore, this study is very helpful for teachers to formulate and apply appropriate teaching and assessment methods online as well as for the ministry of education and culture in formulating policies during the COVID-19 pandemic.

## 2. THEORETICAL REVIEW

### 2.1 Academic Fraud

Effective education will shape the character and behavior of students in the future. Unethical behavior can also occur in the educational environment. A lot of literature reveals that a lot of academic fraud is caused by the absence of students' ethical behavior. Ethical behavior is very important in careers involving public trust such as in the accounting and auditing fields [6]. Academic fraud is done more by the students in online learning than in traditional learning [17]. Effective education will shape the character and behavior of students in the future. Unethical behavior can also occur in the educational environment. A lot of literature reveals that a lot of academic fraud is caused by the absence of students' ethical behavior. Ethical behavior is very important in careers involving public trust such as in the accounting and auditing fields [7]. Academic fraud is done more by the students in online learning than in traditional learning [18].

According to ACFE, fraud is a misleading act carried out by a person or entity who knows that such action can result in harm to an individual or organization [16]. Academic fraud is an attempt to take someone else's job, give, and get help illegally to make a profit [10]. Eckstein (2003) in Nurkhin and Fachrurrozi [15] explains that academic fraud includes various ways that are carried out with an intentional element to cheat to get certain benefits by various circles in the world of education. Academic fraud is not only influenced by dishonest behavior but is influenced by another thing, namely moral competence [18]. Academic fraud behavior is a variety of dishonest behavior that students are forced to do to get good grades in ways that violate the rules, both implied and explicit. Academic fraud behavior is measured by two

main indicators, namely cheating and wrong cooperation [16]. According to ACFE, fraud is a misleading act carried out by a person or entity who knows that such action can result in harm to an individual or organization [19]. Academic fraud is an attempt to take someone else's job, give, and get help illegally to make a profit [8]. Eckstein (2003) in Nurkhin and Fachrurrozi [17] explains that academic fraud includes various ways that are carried out with an intentional element to cheat to get certain benefits by various circles in the world of education. Academic fraud is not only influenced by dishonest behavior but is influenced by another thing, namely moral competence [20]. Academic fraud behavior is a variety of dishonest behavior that students are forced to do to get good grades in ways that violate the rules, both implied and explicit. Academic fraud behavior is measured by two main indicators, namely cheating and wrong cooperation [17].

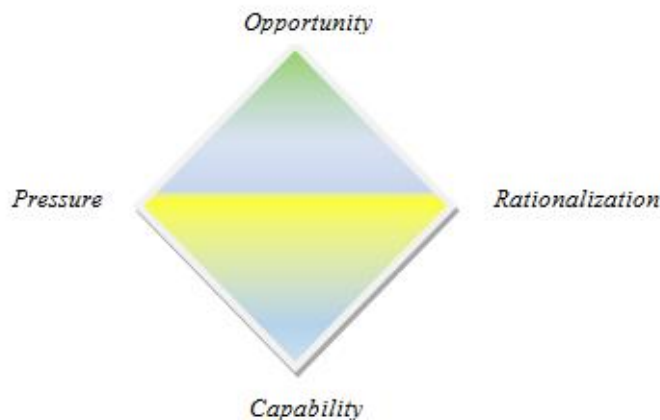
Plagiat is an act intentionally or unintentionally in obtaining value for scientific work, by quoting asn or all other people's scientific works and/or works, without stating the source appropriately and adequately [21]. Those that include acts of plagiarism are; other people's writings are recognized as self-writing, the ideas of others are recognized as self-thought, the findings of others are recognized as their findings, the work of other groups as recognized as their results, and so forth.

The government has passed law no. 19 of 2002 on copyright. The law states that plagiarism is a criminal act. This is stipulated in Article 72 paragraph (1): "Whoever deliberately and without right to do the act as referred to in Article 2

paragraph (1) or Article 49 paragraph (1) and paragraph (2) shall be penalized with imprisonment of at least 1 (one) month and/or fine at least Rp 1,000,000.00 (one million rupiahs), or imprisonment of maximum 7 (seven) years and/or a maximum fine of Rp 5,000,000,000.00 (five billion rupiahs)". And Article 2 paragraph (1) is: "Copyright is the exclusive right of the Creator or Copyright Holder to announce or reproduce his creation, which arises automatically after a creation is born without compromising restrictions according to applicable laws and regulations" [22].

## 2.2 Fraud Diamond Theory

The main motivation for fraud research is the development of a framework designed to prevent fraud [23]. Fraud diamond theory is a theory that explains the reasons people commit fraud, which was put forward by Wolfe and Hermanson in 2004. Fraud diamond theory is a development of its predecessor theory, namely the fraud triangle theory put forward by Cressey (1950). It is concluded that there are three causes for fraud, namely pressure, opportunity, and rationalization. In 2004 Wolfe and Hermanson put forward a new theory called the fraud diamond theory, in which there is one cause of fraud besides what has been mentioned in the fraud triangle theory, namely capability. Fraud will not happen without the right person with the right ability to do every detail of the fraud. "Opportunity" opens the door to fraud, "pressure" and "rationalization" can draw someone through it, but only people with "capability" can recognize that there are an open door and the opportunity to take advantage of it, not once, but over and over again.



**Picture 1. Fraud diamond**  
Source: Wolfe & hermanson (2004)



The factors that encourage someone to commit fraud according to the fraud diamond theory are:

### 2.2.1 Pressure

Perception of pressure is defined as motivation that directs perpetrators to carry out unethical behavior [20]. Pressure (or incentive, or motivation) refers to something that has happened in the fraudster's personal life that creates pressure needs that motivate him or her to commit the fraud. The pressure is an impulse that appears in a person because there are factors that persuade him to fulfil his needs [21]. The pressure is a person's motivation to commit fraud [22], [23]. The possibility of fraud occurring is not only because someone is feeling stressed, but also if there is an opportunity for someone who is not under pressure. This pressure can arise from the environment of students, especially in the classroom and family. The form of pressure most often experienced by students is the desire to get high grades and meet family expectations. Perception of pressure is defined as motivation that directs perpetrators to carry out unethical behavior [24]. Pressure (or incentive, or motivation) refers to something that has happened in the fraudster's personal life that creates pressure needs that motivate him or her to commit the fraud. Pressure is an impulse that appears in a person because there are factors that persuade him to fulfil his needs [25]. The pressure is a person's motivation to commit fraud [26], [27]. The possibility of fraud occurring is not only because someone is feeling stressed, but also if there is an opportunity for someone who is not under pressure. This pressure can arise from the environment of students, especially in the classroom and family. The form of pressure most often experienced by students is the desire to get high grades and meet family expectations.

COVID-19 and the financial crisis have added to the pressure, with many parents losing jobs and having to help earn income. Other sources of stress include an increasingly tight graduate job market, self-study at home without teacher guidance, and possible difficulties accessing online study support services. The opportunities and pressure for cheating appear to have increased significantly. Technological advances, worldwide use of the internet, and easy access to information have increased the opportunities for academic fraud and cheat. The pressure to get better grades, be successful, and academically progress is increasing along with the importance of getting good grades [28].

### 2.2.2 Opportunity

Opportunity is the system weakness that can be exploited by the right people to commit fraud [29]. According to Romney and Steinbart [27], an opportunity is a condition or situation which allows a person or organization to commit and hide their dishonest act and change it to their advantage. It is difficult to shift the assessment designed for face-to-face assessment to online assessment [13].

Opportunity can happen for the situation allowing committing fraud [30]. Opportunity usually happen in a low internal control system institution, inappropriate supervision, low punishment, and unclear procedure [31], [26], [32], [33], [34]. A fraudster always has the knowledge and the opportunity to commit fraud [19]. In this research, this opportunity arises in the situation of online assessment during the COVID-19 era. The online assessment has increased the fraud incident [35].

### 2.2.3 Rationalization

Rationalization is convincing oneself that this fraudulent behavior is worth the risk [24]. Rationalization is the justification made by the perpetrator of the fraud for his actions [22]. Rationalization makes those who don't want to commit fraud at the first turn want to do it. Rationalization is the reason which justifies the fraud incident and as if it is common sense to do [32]. Rationalization is needed for the fraud doer to create the perception that they are honest and trusted people [33]. Rationalization is convincing oneself that this fraudulent behavior is worth the risk [29]. Rationalization is the justification made by the perpetrator of the fraud for his actions [26]. Rationalization makes those who don't want to commit fraud at the first turn to want to do it. Rationalization is the reason which justifies the fraud incident and as if it is common sense to do [36]. Rationalization is needed for the fraud doer to create the perception that they are honest and trusted people [37]. Rationalization can be done both consciously and subconsciously for it is a system forcing people to commit fraud. It is like a system that requires the students to pass with a score above the minimum criteria. This causes a clash in the conscience of the perpetrator. Students who exhibit academic fraud behavior continue to seek rationalization by saying that academic fraud is justified for a variety of reasons [3]. Fraud (cheating) can provide pressure to cheat - if other students are found to

be cheating, then to ensure that they are not harmed, highly ethical students may feel pressured to cheat [12]. Students who always commit academic fraud or cheat repeatedly have the most important reason, namely imitating. They firmly believe they have the right to copy or cheat more than once. Likewise, believe that they have many rights to copy over and over or cheat during their education [13]. Rationalization can be done both consciously and subconsciously for it is a system forcing people to commit fraud. It is like a system that requires the students to pass with a score above the minimum criteria. This causes a clash in the conscience of the perpetrator. Students who exhibit academic fraud behavior continue to seek rationalization by saying that academic fraud is justified for a variety of reasons [4]. Fraud (cheating) can provide pressure to cheat - if other students are found to be cheating, then to ensure that they are not harmed, highly ethical students may feel pressured to cheat [13]. Students who always commit academic fraud or cheat repeatedly have the most important reason, namely imitating. They firmly believe they have the right to copy or cheat more than once. Likewise, believe that they have many rights to copy over and over or cheat during their education [28].

#### **2.2.4 Capability**

Capability is how much power and capacity a person has to commit fraud [26]. Capability is a personal trait and ability that plays a major role in determining whether fraud might occur in the presence of three other elements [29]. Only people who can commit fraud can see opportunities to commit and make it happen. Opportunity opens the door to fraud, pressure, and rationalization can attract someone to pass through it, but only people who have the capability can realize that there is an open door and opportunity to take advantage of it [31], [38]. Academic fraud is influenced by the ability of students to rationalize academic dishonesty and opportunities to cheat [31], [39].

#### **2.3 Online Learning**

Online learning uses internet networks with accessibility, connectivity, flexibility, and the ability to generate various types of learning interactions [40]. It is done using learning applications and social networks as the media both print (module) and non-print (audio/video) media, computers/internet, radio, and television

broadcasts. This educational method is carried out with a distance learning system, where learning and teaching activities are not carried out face-to-face [41].

Below are the characteristic of online learning according to Guru [42]

1. Under direct control of other means.
2. Under the direct control of a system.
3. Available for immediate or real-time use.
4. Connect to a system in operation,
5. Functional and ready to serve.

During online learning activities, students have the freedom to study, can study anywhere and anytime without being limited by time and space. Students can interact with teachers or peers via video calls, live chat, or web-based meetings.

According to White [13], there is an advantage missing from online exams, namely the struggle to read students' handwriting, and giving students access to real-world accounting tools (such as Excel) and resources (such as accounting or auditing standards) that can facilitate more authentic test design; no physical papers are collected or stored and save time by entering scores from exam scripts into spreadsheets or LMS. Online exams are more cost-effective, the ability for multiple questions to be graded automatically reduces the time for assessment. Online assessments are faster than making physical paper corrections.

### **2.4 Hypotheses Development**

#### **2.4.1 The influence of pressure towards academic fraud**

The pressure of 'success' is a strong impetus for students to commit fraud during the educational process, in completing assignments given by the teacher, and especially in taking exams both midterm and end of the semester [15]. Students usually cheat in the hope that their studies will run smoothly and achieve a good grade index. The need for good grades is the most dominant pressure factor felt by students. Values have a big impact on students and are a trigger for them to commit cheating [4]. These pressures make students commit academic fraud. Pressure affects academic fraud [3], [8], [14,15,17].

Based on this description, the hypothesis that can be pulled is:

H1 Pressure influences students to commit academic fraud at the end of semester assessments using the online mode.

#### **2.4.2 The influence of opportunity towards academic fraud**

Opportunities are opportunities that arise due to a lack of supervision, making it easier for students to commit academic fraud [4]. According to Fransiska and Utami [15] situations that make it easier for students to cheat also encourage students to commit fraud. Lack of teacher supervision due to online learning creates opportunities for academic fraud. Opportunities affect academic fraud [4], [8], [12], [14], [15].

Based on this description, the hypotheses that can be drawn is:

H2 Opportunities to influence students to commit academic fraud at the end of semester assessments using online mode.

#### **2.4.3 The influence of rationalization towards academic fraud**

Rationalization is a justification for wrong behavior as if the wrong behavior is acceptable [6]. Students who commit academic fraudulent behavior always seek rationalization by saying that their actions can be justified with reasonable reasons. Students consider academic fraud to be a common thing because there is no explanation of cheating behavior from the teacher, there is no strict sanction for students who commit fraud [13]. An attitude or rationalization that is morally acceptable needs to occur before the implementation of fraudulent behavior [4]. Rationalization affects academic fraud [3], [8], [12], [28], [14,15,17].

Based on this description, the hypothesis that can be pulled is:

H3 Rationalization influences students to commit academic fraud at the end of semester assessments using online mode.

#### **2.4.4 The influence of capability towards academic fraud**

The concept of fraud diamond was developed to detect fraudulent behavior by adding one element, namely capability [29]. He said that a

person would not commit fraud if he did not have the skills and abilities to do it. Individual abilities play a major role in academic fraud. Students who have competence or ability tend to commit academic fraud. Ability affects academic fraud [12], [14], [15].

Based on this description, the hypothesis that can be pulled is:

H4 Capability influences students to commit academic fraud at the end of semester assessments using online mode.

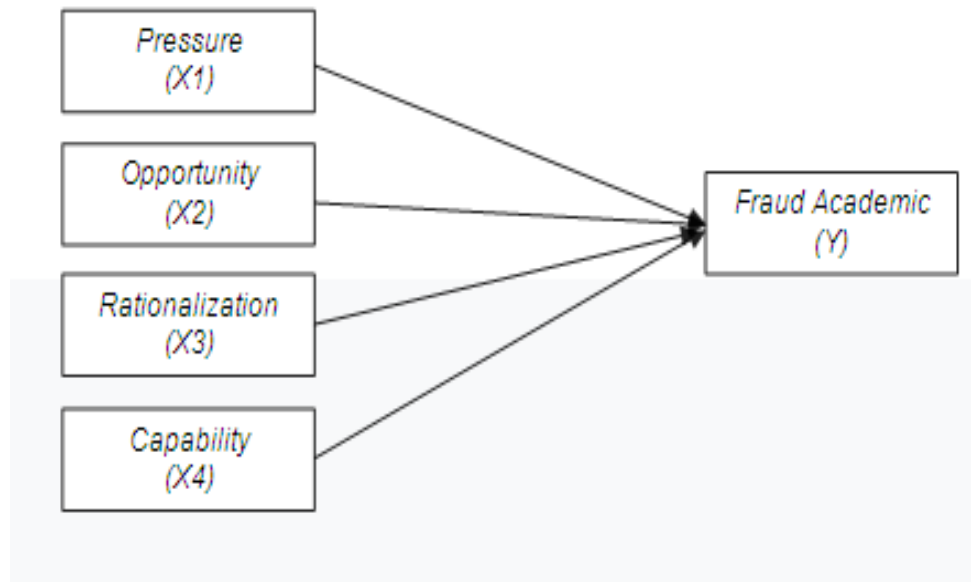
### **2.5 Research Method**

This is a quantitative study, to examines the effect of fraud diamond theory on students' academic fraud behavior when conducting online final semester assessments. The data used are primary data in the form of respondents' perceptions of the variables used which are compiled using a 5-point Linkert scale. The sampling method used in this study is purposive sampling. Metode purposive sampling is limited to certain types of people who can provide the desired information, either because they are the only people who have such information or meet the criteria determined by the researchers [43]. By using purposive sampling is expected to obtain samples that meet the criteria that match the researchers expect.

Respondents are students of grade XII SMK of accounting who are following the final assessment of the final semester online. There are 3 Vocational High Schools that have financial accounting and institutions expertise packages in Central Lampung Regency that conduct end of semester assessments using online mode, namely SMK Negeri 1 Terbanggi Besar, SMK Negeri 1 Seputih Surabaya, and SMK YPI Seputih Mataram.

To facilitate distribution, questionnaires were created using Microsoft form and distributed online through accounting teachers at Vocational High School who became respondents using the WhatsApp application. The questionnaire refers to previous research with adjustments to the question items adjusted to the conditions of online mode assessment. The questionnaire was arranged on a Linkert scale with the provisions, 1 strongly disagree, 2 disagree, 3 doubt, 4 agree and 5 strongly agree.





**Fig. 1. Research framework**

**Table 1. Indicators of variables**

Variable	Indicator	Item amount	Source
Fraud	1. Copying other's answer (cheating) (Y1) 2. Wrong cooperation (Y2)	8 items	[17]
Pressure	1. Pressure from the parents (X1.1) 2. Their willingness (X1.2) 3. Pressure from the environment (X1.3)	6 items	[17]
Opportunity	1. The teacher doesn't check the plagiarism (X2.1) 2. The teacher doesn't change the students' task or test (X2.2) 3. Students observe their environment involve in cheating too (X2.3) 4. The teacher doesn't prevent fraud activity (X2.4)	6 items	[16]
Rationalization	1. There is no explanation about fraud from the teacher (X3.1) 2. There is no strict punishment for the fraudster (X3.2) 3. The school doesn't detect fraud (X3.3)	6 items	[16]
Capability	1. The fraudster takes advantages of the internal control weakness (X4.1) 2. The fraudster has high confidence (X4.2) 3. The fraudster can affect others to commit fraud (X4.3) 4. The fraudster can control the stress (X4.4)	6 items	[16]

The dependent variable is academic fraud, namely, academic fraud behavior is a variety of dishonest behavior that students are forced to do to get good grades in ways that violate the rules, both implied and express [17]. The independent variable consists of pressure. The pressure is a strong impetus for students to commit fraud during the educational process, in completing

assignments given by the teacher, and especially in taking exams both mid-semester and at the end of the semester [15]. Opportunity variable. Opportunities are opportunities that arise due to a lack of supervision, making it easier for students to commit academic fraud [4]. Rationalization variable. Rationalization is a justification for wrong behavior as if the wrong

behavior is acceptable [6]. Ability variable. Capability is a personal trait and ability that plays a major role in determining whether fraud might occur in the presence of three other elements [29].

Here are the measurements of the variable used:

The analytical method used in this research is the path analysis method using the Structural Equation Model (SEM) partial least squares (PLS) with Smart PLS 3.3.2 software which is used to assess the measurement model and the structural model of the research. PLS technique is considered appropriate as an analytical tool to test the variables being researched so it was chosen because this tool is often used for complex causal-predictive analysis and is a suitable technique for use in predictive applications and theory development such as in this research. PLS is also a variance-based structural equation analysis that can simultaneously test the outer model as well as test the inner model.

The measurement model testing phase has been carried out and all research variables are valid and reliable, so the next testing phase is the structural model test. Structural model testing was carried out through Smart PLS using the Bootstrapping method so that the path coefficient and t statistical value were obtained.

### 3. RESULTS AND DISCUSSION

#### 3.1 Results

##### 3.1.1 Characteristics and demographic respondent

This study uses primary data obtained through a questionnaire. The questionnaires were distributed to 120 students of SMK of accounting in 3 SMK in Central Lampung Regency. The data collection process is carried out after the end of the semester assessment process is completed on December 14, 2020, starting at 07.30 am and closing at 3.00 pm (Indonesia Western Time). There are 95 entries. However, only 81 data can

be sampled and analyzed, because 9 data do not meet the criteria for further analysis. So that the rate of return (response rate) reaches 68%. The calculation of distribution and return of the questionnaire can be seen in Table 2.

Based on Table 2, it can be seen that the respondents consisted of 81 students from SMK Negeri 1 Terbanggi Besar or 43% with a composition of 3 males and 32 females. The smallest amount came from SMK YPI Seputih Mataram as many as 16 students with 1 male and 15 females. Meanwhile, SMK Negeri 1 Seputih Surabaya came up with 30 and all women.

Model is done by looking at the reliability of the indicator to test the level of validity. This study has 16 indicators and test results of indicator models can be seen in Appendix 1. In Table 4 is displayed all indicators are stated to have a loading factor value > 0.6 so that all indicators meet convergent validity requirements. If the loading factor value is < 0.5 then the validity of the convergent is less qualified.

##### 3.1.2 Measurement outer model

###### 3.1.2.1 Validity

Table 5 shows the results of data processing to test discriminant validity and composite reliability indicators using the AVE value, composite reliability, and Cronbach Alpha. Based on Table 6, all variables have good reliability and meet the requirements because after testing the Cronbach Alpha value is greater than 0.70 and the composite reliability value is greater than 0.60 as a reference value. Besides, the AVE value of all variables has a value greater than 0.50 so that all of them are declared valid.

###### 3.1.2.2 Reliability

This test consists of model indicator tests, validity tests, and reliability tests using the Smart PLS 3.3.2 software. Indicator reliability shows how many types of indicators the latent variable can

**Table 2. Percentage of distribution and return of questionnaires**

Remarks	Number of	Percentages
Questionnaire distributed	120	100%
Questionnaires returned	95	79%
A questionnaire that does not fit the criteria	9	8%
A questionnaire that can be processed and analyzed	81	68%

Source: Primary data processed (2020)

**Table 3. Respondent demographics**

<b>Institution</b>	<b>Number of</b>	<b>M</b>	<b>F</b>	<b>Percentage</b>
SMK Negeri 1 Terbanggi Besar	35	3	32	43%
SMK Negeri 1 Seputih Surabaya	30	0	30	37%
SMK YPI Seputih Mataram	16	1	15	20%
Total	81			

Source: Primary data processed (2020)

**Table 4. Validity test**

<b>Indicator</b>	<b>Kode</b>	<b>Academic fraud</b>	<b>Pressure</b>	<b>Opportunities</b>	<b>Rationalization</b>	<b>Capabilities</b>	<b>Result</b>
Copying other's answer (cheating)	Y1	0.931					Occurred
Wrong cooperation	Y2	0.916					Occurred
Pressure from the parents	X1.1		0.871				Occurred
Their willingness	X1.2		0.888				Occurred
Pressure from the environment	X1.3		0.934				Occurred
The teacher doesn't check the plagiarism	X2.1			0.937			Occurred
The teacher doesn't change the students' task or test	X2.2			0.906			Occurred
Students observe their environment involved in committing fraud too	X2.3			0.849			Occurred
The teacher doesn't prevent fraud activity	X2.4			0.627			Occurred
There is no explanation about fraud from the teacher	X3.1				0.902		Occurred
There is no strict punishment for the fraudster	X3.2				0.939		Occurred
The school doesn't detect fraud	X3.2				0.892		Occurred
The fraudster takes advantages of the internal control weakness	X4.1					0.856	Occurred
The fraudster has high confidence	X4.2					0.915	Occurred
The fraudster can affect others to commit fraud	X4.3					0.882	Occurred
The fraudster can control the stress	X4.5					0.782	Occurred

With increasing construct score > 0.5 it is expected that the test results will be more predictive

explain. The indicator is said to be valid if the loading factor value is  $> 0.6$  and when the indicator value is  $< 0.6$  then the indicator must be removed from the measurement model. The validity test is used to find out how well the accuracy of the instrument is to measure the concept that must be measured. The validity test is a test used to show the extent to which measuring instruments are used in measuring what is being measured. The results of the reliability test can be seen from the results of the Cronbach Alpha and Composite Reliability analysis. Latent variables have a high reliability if the composite reliability value is above 0.7.

**Table 5. AVE**

	<b>Ave</b>	<b>Result</b>
Capability	0.739	Valid
Opportunity	0.703	Valid
Pressure	0.806	Valid
Rationalization	0.830	Valid
Academic Fraud	0.853	Valid

Source: The result of processing questionnaire data, 2020

**3.1.3 Structural inner model test**

Structural model testing is carried out to see the relationship between constructs or latent variables as seen from the coefficient of determination (R<sup>2</sup>). The stability of this estimate was evaluated using a statistical t-test obtained through the bootstrapping method. The value of R-square (R<sup>2</sup>) is the coefficient of determination in endogenous constructs. The coefficient of determination is defined as the ability of all exogenous variables to explain the variance of their endogenous variables. The higher the R<sup>2</sup> value, the better the prediction model proposed, because the value on R<sup>2</sup> can be used to measure the effect of the independent variable on the dependent variable t count. Chin in Azwar et al. (2016) stated that the R-Square value is 0.67 (strong), 0.33 (moderate), and 0.19 (weak).

The results of data processing through Bootstrapping show that the dependent variable

has an R-Square value of 0.326 (moderate) or above 0.19. This implies a moderate determination of all independent variables in explaining the variance of the dependent variable. Next is to see the path coefficient value and t statistical value using the bootstrapping method on Smart PLS as shown in Table 7.

**3.1.4 Hypothesis test**

Hypothesis testing uses Partial Least Square (PLS) through the bootstrapping method. Testing the hypothesis can be seen from the t statistical value and the probability value. Where the t-test statistic aims to determine the effect and significance of each independent variable on the dependent variable. The criteria for the results of hypothesis testing are as follows: If the t-statistic  $> 1.96$  and p-value  $< 0.05$ , then it is real, in other words, the hypothesis is accepted, if the t-statistic  $< 1.96$  and p-value  $> 0.05$ , then it is not real, in other words, the hypothesis is not accepted.

**3.2 Discussion**

**3.2.1 The effect of pressure on academic fraud**

The research hypothesis testing is illustrated in Fig. 2. The effect of pressure on academic fraud has a coefficient value of 1.801 (statistical value), so this relationship model does not significantly affect academic fraud in online-mode end-of-semester assessments because the t statistical value (1.669) is smaller than t-table (1.99045) and the p-value is 0.096 greater than 0.05. Empirically H1 is not proven and is not accepted. This proves that students are not affected by having to pass the end of semester assessment with good grades. The students considered this was not the pressure because by removing the requirements for passing the national exam they could be freed from the pressure to study harder. They believe that they will pass the final assessment by using the online mode. Besides, they think that to enter the world

**Table 6. Reliability test**

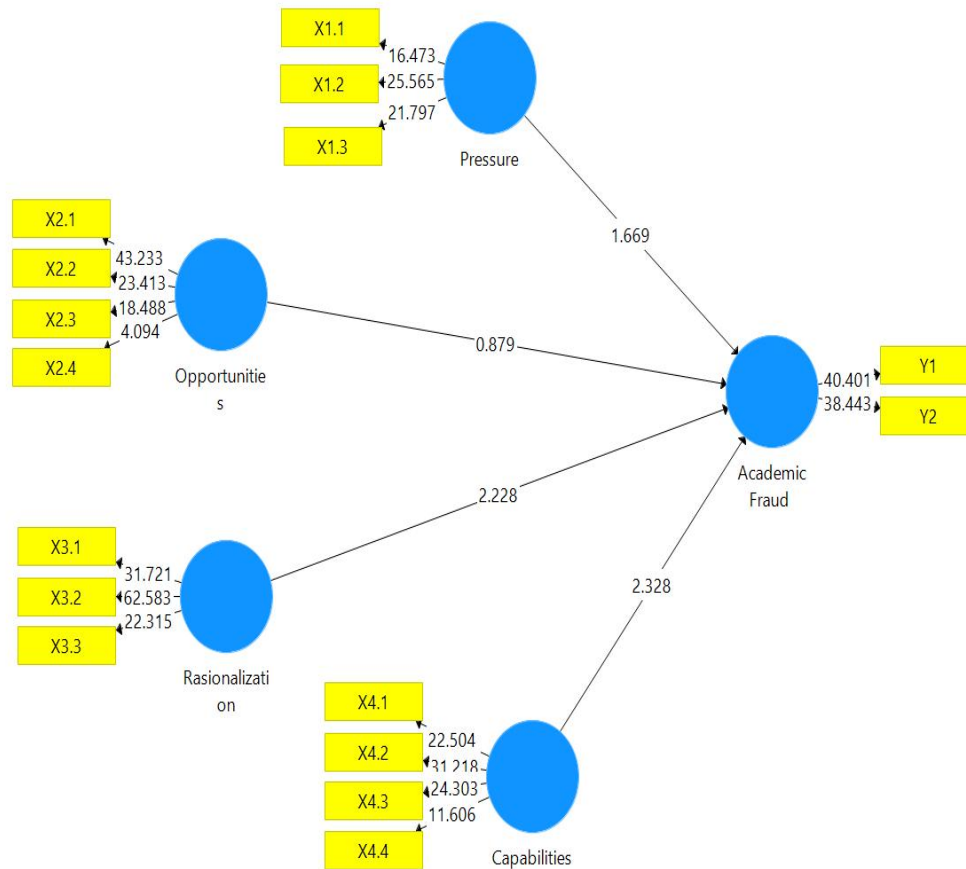
	<b>Cronbach's Alpha</b>	<b>Composite Reliability</b>	<b>Result</b>
Capability	0.883	0.919	Reliable
Opportunity	0.856	0.903	Reliable
Pressure	0.883	0.926	Reliable
Rationalization	0.898	0.936	Reliable
Academic Fraud	0.829	0.921	Reliable

Source: the result of processing questionnaire data, 2020

**Table 7. Test results of inner model**

	<b>R square</b>	<b>R square adjusted</b>
Academic Fraud	0.326	0.290

Source: the result of processing questionnaire data, 2020



**Fig. 2. Bootstrapping**

Source: the result of processing questionnaire data, 2020

**Table 8. The score of coefficient and t-statistic path**

	<b>Original sample (O)</b>	<b>Sample mean (M)</b>	<b>T statistics (O/STDEV)</b>	<b>P values</b>
Capabilities -> Academic Fraud	0.274	0.285	2.328	0.020
Opportunities -> Academic Fraud	0.098	0.101	0.879	0.380
Pressure -> Academic Fraud	0.185	0.182	1.669	0.096
Rationalization -> Academic Fraud	0.223	0.221	2.228	0.026

Source: the result of processing questionnaire data, 2020

of work they need skills or psychomotor aspects rather than knowledge aspects. The results of this study support the research by Sasongko et al. [4] and Bicer [28] who state that pressure does not affect student academic fraud.

**3.2.2 The effect of opportunities on academic fraud**

The effect of opportunities on academic fraud has a coefficient value of 0.936 (statistical value)



so that this relationship model does not significantly influence academic fraud at the end of semester assessments using online mode because the t statistic value (0.879) is smaller than the t-table (1.99045) and the p-value is 0.380 greater than 0.05. Empirically H2 is neither proven nor accepted. This proves that the policy of eliminating national exams and implementing the end-of-semester assessments using online mode does not make students commit academic fraud. Even though the plagiarism check had never been carried out, the questions were not changed, the students were not interested in using information technology tools to commit academic fraud. The results of this study support the research by Apriani et al. [3] and Nurkhin and Fachrurrozi [17] which states that opportunities do not affect student academic fraud.

### **3.2.3 The effect of rationalization on academic fraud**

The effect of rationalization on academic fraud has a coefficient of 2.333 (statistical t value), so this model illustrates that there is a positive and significant effect on academic fraud because the t statistic value (2.228) is greater than the t-table value (1.99045) and the p-value is 0.026 is less than 0.05. Empirically, H3 is proven and accepted. Students consider academic fraud to be something that is usually done because there is no explanation of cheating behavior from the teacher and there are no strict sanctions for students who commit fraud. Student attitudes also tend to be influenced by teacher/educator reactions to reports of cheating - the absence of a response from the teacher after a student reports that there has been cheating by his peers. This frustration can also encourage more students to cheat. Students have experienced incentives and pressures to excel during their SMK education, and saw opportunities to cheat - so why don't they? [13]. Besides that, the inability of schools to detect cheating students commit academic fraud. This supports the research of Apriani et al. [3], Susanti and Lestari [8], Utami et al. [12], Bicer [28], Munirah and Nurkhin [14], Fransiska and Utami [15], and Nurkhin and Fachrurrozi [17] rationalization affect academic fraud.

### **3.2.4 The effect of ability on academic fraud**

The effect of ability on academic fraud has a coefficient value of 0.275 statistical value (2.328), so this relationship model is a positive and significant effect on academic fraud in the end-

semester assessment using online mode because the t-statistic value (2.328) is greater than the t-table (1.99045) and the p-value is 0.020 less than 0.05. Empirically, H4 is proven and accepted. This proves that capability or competence is prioritized by students, both in the knowledge aspect and in the psychomotor aspect. They consider competence as the main asset to enter the world of work.

Therefore, they committed academic fraud at the end of the semester assessment to get a good score index. Academic fraud is influenced by students' ability to rationalize academic dishonesty and opportunities to cheat [39]. This supports the research of Utami et al. [12],s Fransiska and Utami [15], Munirah and Nurkhin [14], and Bicer [28] which state that ability affects academic fraud.

## **4. CONCLUSIONS**

In this study, the sex of women who cheated academically. Because almost all vocational schools accounting and finance classes are more dominant female students than male students. Meanwhile, the results of data analysis and discussion show that only the ability and rationalization variables have a positive and significant effect on academic fraud at the end of semester assessments conducted online. Meanwhile, the pressure and opportunity variables did not significantly influence academic fraud at the end of semester assessments which were carried out online. The variable that has the strongest influence on academic fraud is the ability, this can be seen from the t statistic for capability which is 2.328 and 2.228 for rationalization.

## **5. RECOMMENDATION**

Based on the results of the research, the suggestions that the author can give are:

1. Implement an anti-corruption curriculum in schools so that an anti-corruption culture can be instilled as early as possible by starting from an anti-fraud culture so that anti-corruption awareness will increase.
2. Improve student competence during online learning. Methods that can be used include increasing student motivation. According to Pratiwi [44], methods that can be done to increase student motivation are first; Teacher quality must be improved in online

learning by providing learning training and making online assessment tools for teachers. The teacher is a determining factor for the success and quality of online learning. Quality learning will produce good learning outcomes too. Second, selecting the right learning method. The selection of the right online learning method aims to achieve learning objectives. Appropriate learning methods will increase student motivation and interest in learning to create a pleasant learning atmosphere. Third; Online learning facilities are improved. Choosing the right learning method will increase students' motivation and interest in learning to create a pleasant learning atmosphere. Fourth; make use of the media. The use of attractive media will be able to make students interested in learning so that it can increase student motivation. Fifth, evaluate online learning. Online learning evaluation is important to do to find out whether learning can work effectively or not. If it is less effective, it can be modified according to the students' learning system.

3. Improve integrity in academic assessment [13]. What can be done are: (1) the reputation of the accounting program must be maintained; (2) the structure of the subject assessment and the opportunities provided for students to engage in academic cheating should be considered; (3) works to develop a culture of academic integrity throughout the program, not just in individual subjects; (4) efficient methods should be developed to detect violations and assign false responsibility for reporting; (5) every case of academic violations must be followed up with the full support of the school and school management.
4. Perform fraud prevention in online assessments [13]. The steps are (1) to provide incentives for children not to cheat, for example by conducting assessments or assignments related to oral competence. This is to see how students present themselves (using work clothes, web camera at eye level, appropriate background, and adequate lighting), verbal communication skills (such as speaking clearly so they can be understood, speed of delivery, and use of their tone) and skills non-verbal communication (such as eye

contact, posture, and hand movements). Of course, this can be done using webinar application platforms such as Ms Teams, Zoom, Webex, and so on; (2) the time for the quiz is limited to reduce the likelihood of students collaborating with peers; (3) the test is carried out orally interactively to determine the students' competency mastery.

5. Overcoming academic fraud with effective prevention programs, which target the four elements of fraud [13]. Teachers' attitudes, behaviors, and controls can play an important role in reducing the incidence of academic fraud. By the results of his research, what can be done (1) solve the rationalization for engaging in fraudulent behavior; and (2) establish and promote academic integrity as an ethical norm among students, helping to eliminate the rationalization of students that preceded academic fraud behavior. Overcoming academic fraud with effective prevention programs, which target the four elements of fraud [28]. Teachers' attitudes, behaviors, and controls can play an important role in reducing the incidence of academic fraud. By the results of his research, what can be done (1) solve the rationalization for engaging in fraudulent behavior; and (2) establish and promote academic integrity as an ethical norm among students, helping to eliminate the rationalization of students that preceded academic fraud behavior.

## 6. SUGGESTIONS FOR FURTHER STUDIES

A limitation that might affect the final result of this study was the population and sample were not many. Besides, SMK accounting and finance student respondents consist of more females than men. For further research, it is best to expand the population and sample as well, the population is not only from SMK of accounting and finance students but with SMK of technology students who are many males; add family culture variables as forming the basic character of children can be done; then, do it using the interview method because it is more flexible in asking questions about academic fraud, and is more likely to be responded well than using a questionnaire because it feels it is being observed. Thus, more accurate results will be obtained.

## CONSENT

As per international standard or university standard, the participant's written consent has been collected and preserved by the authors.

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## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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## APPENDIX

### Appendix 1. Correlation indicators

Indikator	No.	Missing	Mean	Median	Min	Max	Standard deviation	Excess KURTOSIS	Skewness
Y1	1	0	2.123	2.000	1.000	4.000	0.908	-0.378	0.557
Y2	2	0	2.333	2.000	1.000	5.000	0.916	0.042	0.654
X1.1	3	0	3.173	3.000	1.000	5.000	1.255	-1.217	-0.105
X1.2	4	0	2.951	3.000	1.000	5.000	0.859	-0.045	-0.379
X1.3	5	0	2.753	2.000	1.000	5.000	1.160	-1.263	0.113
X2.1	6	0	2.222	2.000	1.000	4.000	0.889	0.355	1.047
X2.2	7	0	2.383	2.000	1.000	4.000	0.810	0.123	1.029
X2.3	8	0	2.457	2.000	1.000	4.000	0.771	0.746	0.807
X2.4	9	0	2.543	2.000	2.000	5.000	0.721	0.662	1.155
X3.1	10	0	3.086	3.000	1.000	5.000	0.905	-0.305	-0.377
X3.2	11	0	2.765	2.000	1.000	5.000	1.168	-1.141	0.283
X3.2	12	0	3.074	3.000	1.000	5.000	1.051	-0.766	0.434
X4.1	13	0	2.407	2.000	1.000	4.000	0.927	-0.630	0.229
X4.2	14	0	2.222	2.000	1.000	5.000	0.981	0.877	0.973
X4.3	15	0	2.210	2.000	1.000	5.000	1.027	-0.279	0.749
X4.5	16	0	2.840	3.000	1.000	5.000	0.711	1.476	0.246

### Appendix 2. Discriminant validity

	Academic fraud	Capabilities	Opportunities	Pressure	Rationalization
Academic Fraud	0.924				
Capabilities	0.492	0.860			
Opportunities	0.393	0.544	0.838		
Pressure	0.419	0.545	0.476	0.898	
Rasionalization	0.347	0.244	0.260	0.171	0.911

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