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Fraud Pentagon Analysis in Preventing Academic Fraud during Online Learning in the COVID-19 Period

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Abstract. *Students have more opportunities to commit academic fraud on online learning during the COVID-19 period. The purposes of this study are to examine the types of possible academic fraud during online learning, the motives of fraud using pentagon theory, and to provide some important recommendations for higher educationin fraud prevention. The data collection methods are questionnaires and interviews with students and lecturers at a private university in Indonesia. In addition, the data analysis is qualitative and descriptive statistical analyses. The results of this study indicate that academic fraud such as cheating, seeking help, plagiarism, and collusion occurs during online learning process. Pressure, opportunity, rationalization and arrogance are four important factors that cause academic fraud. The prevention of fraud can be through building awareness on integrity and ethical values, implementing rules and strong punishment system, building close relationship with students, improving the methods of learning and assessment, and improving internal controls..*

Keywords: *fraud pentagon theory, academic fraud, online learning, fraud prevention, COVID-19*

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Abstrak. Siswa memiliki lebih banyak kesempatan untuk melakukan kecurangan akademik saat pembelajaran online pada masa pandemic COVID-19. Penelitian ini bertujuan untuk menjelaskan jenis kecurangan akademik yang terjadi saat pembelajaran online, faktor-faktor yang menyebabkan kecurangan ditinjau dari *fraud pentagon theory* memberikan rekomendasi untuk institusi perguruan tinggi untuk mencegah kecurangan akademik. Metode pengambilan data dalam penelitian ini dilakukan melalui survey pada mahasiswa disertai wawancara pada mahasiswa dan beberapa dosen di suatu universitas swasta di Indonesia. Analisis dilakukan dengan metode kualitatif dengan didukung hasil statistik deskriptif. Hasil menelitian ini menunjukkan bahwa kecurangan akademik dalam bentuk *cheating, seeking outside help, plagiarism,* dan *collusion* terjadi saat pembelajaran online. Hal ini disebabkan karena elemen tekanan, kesempatan, rasionalisasi dan arogansi. Upaya pencegahan kecurangan yang dapat dilakukan diantaranya adalah membangun kesadaran tentang integritas dan nilai etis, pemberlakuan aturan dan sanksi, perbaikan pengendalian internal, membangun kedekatan dengan siswa serta perbaikan terhadap sistem penilaian yang digunakan. Upaya deteksi kecurangan dapat dilakukan dengan *whistle-blowing system* dan *digital solution*.

Kata kunci: *fraud pentagon theory*, kecurangan akademik, pembelajaran online, pencegahan kecurangan, COVID-19

Introduction

In March 2020, World Health Organization (WHO) declared COVID-19 as a pandemic (Ducharme, 2020). The rapid spread of the virus with dangerous fatalities has forced governments in various countries to limit public activities. Restrictions on community activities eventually affect the education system. As a result, the learning process of more than 220 million students was disrupted due to university closures during COVID-19 pandemic (UNESCO, 2021). Higher education is required to change its learning methods so that the learning process can continue to run well, despite restrictions on public activities. Online learning methods are increasingly being used.

Higher education in Indonesia has also been affected by the pandemic. In March 2020, the Minister of Education and Culture enacts regulation No. 4 of 2020 regarding the implementation of education during the COVID-19 emergency , regulating online learning and study from home for the safety of students and educators. Higher education, which mostly still relies on direct face-to-face learning, must change its learning method to distance learning using digital (online) media. Various media such as Zoom, Google Classroom, Whatsapp (Azhiimah et al., 2021), Facebook (Ulla & Perales, 2021) and Youtube (Rahmatika et al., 2021) are used in delivering learning materials.

Study from home using digital media has a positive impact but not without obstacles. Universities are forced to transform learning methods to digital media, which is significantly needed in the Education 4.0 era (Miranda et al., 2021). In addition, study from home using online media increases the independence, flexibility and creativity of students to utilize various learning resources (Ulla & Perales, 2021). On the other

hand, several problems also arise due to the unpreparedness of the supporting regulation, infrastructure, educational institutions, educators and students (Martha et al., 2021; Rafsanjani et al., 2022).

Study from home using online media has at least three negative impacts. Firstly, online learning tends to makes teachers give more assignments, so that students feel stressed and anxious (Lemay et al., 2021). Secondly, online learning requires specific assessments using digital media, but it turns out that many difficulties arise, such as internet connection problems and increases the occurrence of academic fraud by students (Bashitialshaaer et al., 2021; Elsalem et al., 2021; Goff et al., 2020; Golden & Kohlbeck, 2020; Janke et al., 2021). Finally, online exams cannot truly show students' real abilities and distinguish among the level of abilities, as the answers are relatively similar (Bashitialshaaer et al., 2021). When the assessment cannot be surely provided accurate results, the quality of graduates will be questioned (Goff et al., 2020).

The discussion above highlights that a crucial negative impact of online learning is the increase in academic fraud. Academic fraud is common in the education system, but the number is increasing during online learning (Bashitialshaaer et al., 2021; Elsalem et al., 2021; Goff et al., 2020; Golden & Kohlbeck, 2020; Janke et al., 2021). There are four academic frauds arise during online learning, namely cheating and plagiarism (Janke et al., 2021), collusion (Harris et al., 2020). Online learning during the pandemic provides more opportunity for students to do cheating (Comas-Forgas et al., 2021). Students also have more chance to commit plagiarism (Janke et al., 2021).

There are several factors that trigger students to commit academic fraud during online learning, namely pressure and opportunity (Shbail et al., 2022), rationalization, the ability to commit fraud and high self-confidence (Purwatmiasih et al., 2021). A pressure to achieve a high GPA is a trigger for fraud during online learning (Meccawy et al., 2021). Opportunity to commit fraud during online learning is greater (Golden & Kohlbeck, 2020). Students easily obtain unauthorized information from various sources, such as the internet and from other people without being known, leading to cheat during online exams (Reedy et al., 2021). The rationalization is another trigger for academic cheating (Melati et al., 2018). Students assume that committing academic fraud is common, especially if there are no clear rules and punishment (Kiekkas et al., 2020; Purwatmiasih et al., 2021). In addition, the ability to commit fraud also plays a key role in the occurrence of academic fraud. Perpetrators of fraud do so because they feel they can penetrate existing internal controls and have high self-confidence. All this studies focus on academic fraud during online learning but they are not analyze five factor integratedly under fraud pentagon theory.

A more recent literature point out the causes of academic fraud into five components, namely pressure, opportunity, rationalization, competence and arrogance, in accordance with the fraud pentagon theory (Hardiana et al., 2021; Yulianto, 2019). Following this theoretical framework, the current research evaluate the academic fraud using the fraud pentagon theory during online learning period in a private university in Indonesia. Fraud pentagon theory is used in this study because it can identify elements of arrogance as one of the causes of fraud which does not exist in

the fraud triangle theory or fraud diamond theory so the analysis of the causes of fraud will be more complete.Private universities were chosen as the object of this research because the level of academic dishonesty at private universities is quite high (Ahmed, 2018). Tuition fees at private universities are relatively higher than state universities (Hoque & Islam, n.d.). This causes students at private universities to be more pressured to cheat in order to graduate on time so as not to incur more tuition fees. This study explore the five factors by conducting questionnaire and interview for providing recommendations for higher education institutions to prevent academic fraud during online learning period.

Theoritical Framework and Research Question Development

Academic Fraud

Academic integrity is a commitment to upholding the values of honesty, trust, fairness, respect, responsibility, and courage in academic work (The International Center for Academic Integrity, 2022). Violations of academic integrity lead to academic fraud, which is also known as academic dishonesty, is the behavior of misleading others by providing information that the academic work is genuine (Golden & Kohlbeck, 2020). Academic fraud can appear in various forms such as cheating, plagiarizing, and bribing to get the desired results. Academic fraud can occur as a form of effort made by students to obtain the desired success in a dishonest way.

Academic dishonesty will be bad for employers. Academic fraud will result in a misrepresentation of students' actual academic abilities and the understanding of knowledge (Meng et al., 2014) so that employers do not obtain right information related to student competencies. There was a relationship between dishonesty behavior in college and unethical behavior in the workplace (Guerrero-Dib et al., 2020). Students whose often conducted dishonesty behavious have potency to continued their unethical behaviour in the workplace (LaDuke, 2013) and in turn will cause disadvantages for their employers.

The availability of information in the digital era will certainly make it easier for many students to be able to commit fraudulent acts (Reedy et al., 2021). In this era, students can easily obtain unauthorized information, making it easier to do e-cheating or plagiarism. Online assessment also opens up greater opportunities for students to commit academic fraud, so universities need to make efforts to minimize it.

Types of Academic Fraud

Academic fraud can takes four types, namely cheating, seeking outside help, plagiarism, and collusion. The main form of cheating at university is inappropriate assistance in examinations, or in the preparation of written work submitted for evaluation (Singh & Remenyi, 2016). Cheating can also be in the forms of copying from other students, using non-permitted notes, obtaining information about a test from someone, and obtaining questions prior to an exam (Münscher et al., 2020).

Seeking outside help is a form of fraud by seeking help from outside parties such as parents, relatives, or friends, and even other people (Eastman et al., 2008), whether paid or not. An example of seeking outside help in academic environment is ghostwriting, where someone (paid or not) writes or creates a work in the name of others (Singh & Remenyi, 2016). Ghostwriting is a fraudulent act that is difficult to detect .

Plagiarism is to present ideas, words, and data from others without citing the source and claiming them as one's own (Coughlin, 2015). The current development of information technology makes one easier to "copy-paste" references from the internet without acknowledges the source. It makes plagiarism become more common in the modern world (Singh & Remenyi, 2016).

Collusion in the context of academic fraud is an "illegal/unallowed" collaboration between students in doing assignments or during exams (Smith, 2013). This can mean that students work together during assignments/exams that should be done and assessed individually (Smith, 2013). This also applies on group assignments when a group works together with other groups, so their answers have high similarities.

Fraud Pentagon Theory

Fraud Pentagon Theory states that there are five important elements can trigger someone to commit fraud. The five elements are pressure, opportunity, rationalization, competence and arrogance (Horwarth, 2011). Internal pressure as well as pressure from outside, such as family is one factor in the occurrence of academic fraud (Yulianto, 2019). Pressure can be grouped into four. The first one is financial pressures. Financial pressures have significant role in motivating someone to commit fraud (Hollow, 2014). Second type of pressure is bad habits, arising when extravagant lifestyle encourages a person to commit fraud in order to get more money to fulfill his/her lifestyle. Third type of pressure comes from outside or external parties. Parents sometimes place great demands on their children to get good grades and obtain a good job, triggering strong pressure for the students to commit academic fraud (Hardiana et al., 2021). The last type of pressure is other pressures, such as a perspective to be success regardless the way to achive it and sometime forget being honest.

The second element of fraud pentagon, opportunity, can occur due to several factors, such as weakness of internal control, light punishment of perpetrators of fraud, and the inability of the system to detect fraud. Opportunity affects the occurrence of academic fraud (Shbail et al., 2022).

Rationalization, as the third element of fraud pentagon, is a character or action in which a fraudster feels that the fraudulent actions taken are acceptable and justifiable. Fraudsters feel that cheating is a common action because their friends also commit similar acts. Fraudsters often compare their own behavior with others' behavior and, somehow, often believe that others cheated even more than they did (Wenzel & Reinhard, 2020).

As the fourth element, a person's ability to commit fraud also plays a role in the occurrence of academic fraud (Purwatmiasih et al., 2021). However, the other research stated that ability is not a factor causing academic fraud (Hardiana et al., 2021). The capability includes the ability to see internal control weaknesses. Perpetrator feels confidence so that they are sure that the actions taken will not be detected.

Lastly, 70% of fraudster commits fraud because of a combination of pressure and arrogance (Horwarth, 2011). Arrogance refers to an attitude which illustrates the superiority and greed (Horwarth, 2011). Students who commit academic fraud feel that it is necessary to protect their self-esteem so that they tend to maintain and improve existing academic achievements. This fraud is carried out not because students are not aware of the existing rules, but mostly because students ignore the rules and the consequences of their actions.

Preventing Academic Fraud

Five famous ways to prevent the occurrence of academic fraud are spreading awareness, developing an appropriate punishment system, strengthening the internal control system, building close relationship, and providing proper learning assessment scenario. Spreading awareness regarding strict rules on cheating is an important medium to prevent academic fraud. Types of actions that are classified as academic fraud and the consequences should be clearly informed. Fraud prevention can be done by educating students about the importance of the learning process from many aspects, not merely for obtaining high scores for exam (Baran & Jonason, 2020).

Strong regulations and punishments against academic fraud is a second medium (Simatupang & Peter, 2021). Strong regulation will make fraudsters to rethink committing fraud. Furthermore, if fraud does occur, then punishment must be applied to provide a deterrent effect, as well as an example for other students.

Internal control will reduce the opportunities of fraud (Nawawi & Salin, 2018). A grading system with adequate supervision will make it difficult for students to commit fraud. In addition, build close relationship with students is another way to make students more open to their learning problems, although this means that lecturer have to spend more time with their students (Singh & Remenyi, 2016).

Providing proper learning models is another way to prevent fraud. Creative learning model attracts students' interest and make students easier to understand the learning purpose. High understanding of material encourages students to perform better in exams. Assessments need to be carried out along the learning process, not only during exams. This assessment scenario will reduce student cheating during exams (Purwatmiasih et al., 2021).

Empirical Literature and Research Question Development

Several previous studies show strong evidence on the effect of pressure on academic fraud (Shbail et al., 2022; Yulianto, 2019). Prevention is necessary to educate students about the importance of the learning process, rather than the final horizon to obtained high score (Baran & Jonason, 2020). Student financial assistance such as employing

students as student employees or providing scholarship is another way to reduce the financial pressure experienced by students.

Some studies indicate the significant effect of opportunity in encouraging people to commit fraud (Shbail et al., 2022). In another research, it is found that rationalization also a key factor for the occurrence of academic fraud (Purwatmiasih et al., 2021). Futhermore, raise awareness is found to be an important variable in committing fraudulent acts (Palupi & Santoso, 2017).

Building close relationship with students is also found to be important element in empirical studies. Educators need to develop a close relationship with students, so that if there are changes in student behavior and performance, educators can immediately identify and discuss it with student (Singh & Remenyi, 2016).

Several empirical findings show an importance of proper assessment methods in reducing academic fraud. Oral assessment is found to be crucial in reducing the occurrence of fraud (Purwatmiasih et al., 2021). It is also found that anti plagiarism software is a creative assessment method to prevent plagiarism, while ghostwriting can be reduced by conducting periodic supervision of the progress of student work (Singh & Remenyi, 2016).

It is also argued in empirical studies that strong punishment is an effective way in preventing academic fraud. University need to create clear rules and strong punishment related to plagiarism (Simatupang & Peter, 2021) and ghostwriting (Singh & Remenyi, 2016). In addition, it is also found in the empirical studies that competence encourages academic fraud, so anti-fraud materials must be included in the curriculum to build a culture of honesty (Purwatmiasih et al., 2021).

Based on the review of the previous research and the main objectives of the current research, three research questions (RQ) are put forward:

RQ1: What types of academic fraud are committed by students during online learning in the COVID-19 pandemic period?

RQ2: What elements in the fraud pentagon theory cause students to commit fraud during online learning in the COVID-19 pandemic period?

RQ3: What efforts can be made by higher education institutions to prevent fraud committed by students during online learning process?

Methods

This research is explanatory research, which explains the types and causes of academic fraud and provides specific recommendations for prevention during online learning process. This research was conducted at a private university in Indonesia using qualitative research methods and supporting with descriptive statistical tools. The data collection was carried out by distributing questionnaires randomly to 100 undergraduate accounting students year 2017 to 2020 at a private university in Surabaya. This student are chosen because they experienced offline learning before the COVID-19 pandemic as well as online learning during the COVID-19 pandemic. Of

the 100 questionnaires distributed, 84 were filled and 81 were valid, so that data processing was carried out on 81 questionnaires. The questionnaire are divided into 2 parts. The first part is to identify fraud that has been committed during online learning during the COVID-19 pandemic period, while the second part is to identify the causes of fraud using the five elements in the fraud pentagon theory. In addition, the researchers also conducted interviews with 25 students who refer to as respondents 1, 2, 3 and so on randomly to to explore the explanation of each answer in the questionnaire to answer mini research questions 1 and 2 and explore ideas for solutions to overcome academic fraud that occurs during online learning. Four lecturers are interviewed and here in after referred to as lecturers 1,2, 3 and 4. The interviews are conducted to explore information related to the efforts that can be made to prevent academic fraud. The four selected lecturers are lecturers who have taught for more than 5 years so they understand the difference between offline and online learning model.

Result and Discussion

Types of academic fraud during online learning in the Pandemic COVID-19 period

a. Cheating

The results of this current study show that cheating do occurs during the online learning process. Table 1 below records that 74.1% of the observed students declare that they have given cheats on assignments to friends. Another type of cheating is copying answers from a friend's assignment, with 64.2% respondents answer yes. In contrast, only about 14.8% or 12 out of 81 respondents declare that they did not cheat.

Table 1. Cheating

Questions	Number of "yes"	Percentage of "yes"
Have you ever cheat someone else's assignment?	52	64.2%
Have you ever cheat someone else's work during an exam or test?	36	44.4%
Have you ever allow someone to copy your assignment?	60	74.1%
Have you ever allow someone to copy your work during an exam or test?	42	51.9%
I never cheat during exam or assignment	12	14.8%

Source: Processed data 2021

Interesting finding is that students are more often cheat on assignments rather than exams. In interview session, some students stated that they ask friends to cross-check their answer. This action was done because of the lack of preparation by the students, as stated by respondent 1 as followed. "*…if there is not enough preparation, we depend on the communication with friends." (respondent 1)"*

b. Seeking Outside Help

The results of the questionnaire explain that seeking outside help also occurred during online learning process. However, only 29.6% of students agree that they have ever asking other people for help.

Table 2. Seeking Outside Help

Questions	Number of "yes"	Percentage of "yes"
Have you ever ask someone else's to do your assignment?	8	9.9%
Have you ever ask someone else's to do an exam or test?	4	4.9%
Have you ever paid "joki"/someone else to do your assignment?	2	2.5%
Have you ever paid "joki"/someone else to do your exam?	3	3.7%
Have you ever done other student's assignment?	12	14.8%
Have you ever done other student's exam?	7	8.6%
Have you ever been paid to do other student's assignment?	2	2.5%
Have you ever been paid to do other student's exam?	2	2.5%
I never ask someone else to do my exam or assignment	57	70.4%

Source: Processed data 2021

Based on the results of interviews, only a few students knew that their friends had committed this type of fraud. An interesting finding is that during online learning, there is "joki", a person who is illegally doing assignment or exam for a student. There are 2 students whose answer that they did paid someone else to do their assignment, whereas there are 3 students state that they did pay someone else to do their exam during online learning. On the other hand, 2 students claim that they have been paid as a "joki" when working on other students' assignments while 2 other students state that they have been paid to do other students' exam during online learning. Other students have also been aware of the existence of online "joki", such as implying in the following statement: "I have heard of "joki" services, some of my friends use them (respondent 11)". Respondents 1, 2, 10, 11, 14, 16, 17 also stated that the practice of "joki" is increasing during online learning process. This statement support the result of respondent 14' inteviews that said "*…I don't know if it used in offline class, but there are many "joki" like that during online learning process in the COVID-19 pandemic. My friend use "joki" services, but I don't know who the jockey is…"*

c. Plagiarism

The percentage of students who answer that they have commited plagiarism during online learning is 67.9% of the total respondents. More than half of students (51.9%) have copied answers from Google without mentioning the source.

Table 3. Plagiarism

Questions	Number of "yes"	Percentage of "yes"
Have you ever copied an answer from Google without mentioning the source	42	51.9%
Have you ever copied someone else's thesis or article without mentioning the source?	8	9.9%
Have you ever copied someone else's work and acknowledged it as your own?	14	17.3%
Have you ever copied someone else's exam answers and acknowledged it as your own?	8	9.9%
I never do plagiarim as mentioned in 4 questions above	26	32.1%

Source: Processed data 2021

Based on the interviews with 3 lecturers, all of them stated that they had found several assignments are copying from internet sources. The following is a statement from lecturer 2 "…*During the online learning exam, some students provided exactly the same answer as those of other students, so that I gave them zero marks. I frequently use the google form for exams. I found strong indication of plagiarism when I did a sorting on the student answers from google form. The answer from several students is the same…"* Respondent 2 also stated that his friend was penalized by the university because of plagiarism *"... My friend maybe was too innocent in taking the answer, he didn't use his own words so that his work has been indicated as plagiarism and he was penalized".*

d. Collusion

The results of the questionnaire showed that 88.9% of the total respondents provide answer of worked together or shared answers during an exam. Thus, it implies that the majority of respondents have committed collusion fraud. Illegal collaboration occurs when students share answers. It is also found that 46.9% of the observed students have also asked friends to share answers. The students (respondent 4, 5, 7, 18, 19, 20, 22, 24, and 25) reasoned that the collaboration was carried out to cross-check whether their answers were correct. So that students can review and recalculate if an error occurs in their answer. The multiple choice exam makes it easier for the illegal collaboration. The main reason for committing this illegal collaboration is to achieve high scores and to not lose friends "*… if the exam is multiple choice, I usually ask my friend to cross check my answer to get a good score (respondent 3)".* Respondent 4 said:*"Students usually exchange answers because we need each other"*, "*Sometimes we work together like that, but we don't use the same word, so if you use turnitin, it's a bit difficult to detect (respondent3)"*

The results of this study indicate that cheating and plagiarism do occur during online learning process. This is in line with the results in previous research (Janke et al., 2021; Münscher et al., 2020; Singh & Remenyi, 2016). 74.1% of the observed students declare that they have given cheats on assignments to friends, whereas 64.2% of the observed students confess that they copy answers from friends during assignments. Only about 14.8% of the respondents declare that they did not committing cheat. The percentage of students who answer that they did plagiarism during online learning is high (67.9%). More than half of students (51.9%) agree that they copied answers from google without mentioning the source. Some students (29,6%) answer that they were seeking outside help, which support finding of previous research (Singh & Remenyi,

2016). Collusion also occurs during online learning process, which is found to be in line with previous research (Smith, 2013). 88.9% of the total respondents declare that they worked on exam questions together or shared the answers. Thus, it can be concluded that the majority of respondents have committed academic fraud.

Pentagon Fraud

a. Pressure

Based on the results of the questionnaire as shown in table 4, students cheated because of pressure from their families or girlfriend/boyfriend to graduate soon. This is pictured by the mean value of 3 for the corresponding question. There are 44.4% of the 81 respondents who agree and strongly agree with the statement. Meanwhile, students who disagree and strongly disagree are 42.0% of the total respondents. The results of the interviews showed that students feel pressures from external parties. *"GPA is still important thing for our parents, so they give pressure on their children to get high GPA. (respondent 7)"* Some students also feel pressure from inside themselves due to anxiety about future jobs, as many companies require a high GPA during job recruitment, according to the following statement "…*There are also pressure that come from companies, because some of them require a certain threshold of GPA during job recruitment, … (respondent 9)"* and *"…in my opinion, Indonesian companies still see GPA more than character…" (respondent 1)*

Table 4. Pressure

Questions	Percentage							
	SA	A	SA+A	U	D	SD	D+SD	Mean
I commit academic fraud because of demands from my family/boyfriend/girlfriend to graduate soon	18.50%	25.90%	44.40%	13.60%	21.00%	21%	42.00%	3
I commit academic fraud becauseI wanted to graduate soon so I could get a job or get married	38.30%	35.80%	74.10%	7.40%	7.40%	11.10%	18.50%	3,827
myself	4.90%	14.90%	19.80%	13.60%	33.30%	33.30%	66.70%	2.247
I commit academic fraud because I was embarrassed if I didn't pass the course	50.60%	30.90%	81.50%	6,20%	3.70%	8.60%	12.30%	4.111
I commit academic fraud because I get paid to do other people's assignments or exams	1.20%	6.20%	7.40%	6.20%	32.10%	54.30%	86.40%	1,667
I commit academic fraud because I was pressured to give answers/do assignments/exam to other	1.20%	5%	6.20%	8.60%	38.30%	46.90%	85.20%	1.753
SA=Strongly Agree; A=Agree; U=Undecided; D=Disagree; SD=Strongly Disagree							Average:	2,268

Source: Processed data 2021

The findings from questionnaire support the interview results, which show that students commit fraud because they want to graduate quickly (the mean value is 3.827). There are 74.1% of the respondents agree and strongly agree with this statement. Meanwhile, students who disagree and strongly disagree are 18.5% of the

total respondents. Another interesting result is that students tend to commit fraud because they feel embarrass when they did not pass a subject (the mean value is 4.111). There are 81.5% of the respondents who agree and strongly agree with the statement. Meanwhile, students who disagree and strongly disagree are only 12.3%.

The results of this study indicate that students who had pressured are motivated to commit academic fraud during online learning. Pressure from external parties such as family or boyfriend/girlfriend to graduate soon increases anxiety from within students if they cannot graduate on time so they cannot find a job immediately. The results of this study are in line with previous research (Hardiana et al., 2021; Purwatmiasih et al., 2021; Yulianto, 2019) which states that pressure is one of the motivations for someone to commit academic fraud.

b. Opportunity

The results from questionnaire show that students commit fraud for falsifying attendance data because they feel that the attendance system during online learning is not proven by real attendance. This is evidenced by the mean value of 3,272 in the corresponding question (Table 5). There are 48.1% of the respondents who agree and strongly agree with the statement. Meanwhile, students who disagree and strongly disagree are only 23.5%. In addition, the results of interviews with several other students confirm that the attendance system on online class is still unable to provide an overview of the real presence because students can still fill in attendance even though they are not present in the class. Students also don't have to be on camera during online learning, so it may seem as if they are present but they don't listen because they are doing other things or being in another room. The following is the statement of one respondent:*"In my opinion, attendance system is still weak, students who are not present can still sign as attending class, though they don't listen in class….(respondent 5)"*.

Other factors of opportunity are not dominant causes of academic fraud, but some students agree that these factors also encourage fraud. Based on this fact, some corrective actions can be taken by educational institutions in order to reduce the effect of the opportunity factors.

These findings indicate that the only factor in the opportunity element that encourages students to commit fraud is the attendance checking system, which is still weak, so that the system can be used by students to commit fraud. The results are in line with previous research (Shbail et al., 2022) whose state that opportunity is one of the element that encourage someone to commit fraud. In contrast, the weak punishment system, rules, examination and assessment system during online learning are not key factors motivating students to commit fraud. The possible explaination for these findings is that the internal control of online learning system in this university is quite sufficient to prevent students to commit fraud, so that the opportunities to commit fraud are reduced.

Table 5. Opportunity

Questions	Percentage							
	SA	A	SA+A	U	D	SD	D+SD	Mean
I commit academic fraud because the punishment is weak	1.2%	6.2%	7.4%	24.7%	42%	25.9%	67.9%	2.148
I commit academic fraud because there are no rules in my university	1.2%	5%	6.2%	21%	44.4%	28.4%	72.8%	2.062
I commit academic fraud because the implementation of the rules at my university was weak	0%	18.5%	18.5%	38.3%	24.70%	18.5%	43.2%	2.444
I commit academic fraud because attendance cannot be proven by real presence in online classes	12.3%	35.8%	48.1%	28.4%	14.8%	8.7%	23.5%	3.272
I commit academic fraud because the weak examination system at my university	8.6%	23.5%	32.1%	25.9%	32.1%	9.9%	42%	2.889
I commit academic fraud because the weak assess,emt system at my university	11.1%	19.8%	30.9%	24.7%	29.6%	14.8%	44.4%	2.287
SA=Strongly Agree; A=Agree; U=Undecided; D=Disagree; SD=Strongly Disagree							Average:	2,607

Source: Processed data 2021

c. Rationalization

Table 6 provides evidence regarding rationalization fraud, indicating that students commit fraud because many other students also do so. This can be seen by the mean value of 3,741 of the corresponding question. There are 72.8% of the respondents who agree and strongly agree with the statement. Meanwhile, students who disagree and strongly disagree are only 13.6% of the total respondents. The results of the interview complement those from questionaire that students cheated because of their personal desire to see their friends also doing it and not getting caught. Some of the students feel it is unfair if they study independently but get grades below their friends who cheat, such as the following statement: "*… I don't cheat on the exam and then I got frustrated because my friends who cheated on the exam got a better grade than me, when I asked them how did it worked and they said that they asking each other ….(respondent 10)"*.

The results also show that students cheat because they feel that cheating is a common practice, so that it will not be a big problem (mean value of 3.321). There are 49.38% of the respondents who agree and strongly agree with the statement. Meanwhile, students who disagree and strongly disagree are 16.0% of the total respondents. Some students feel that cheating is natural act because the environment around them also does the same thing, as stated in the following statement:"*Umm, if we did the exam online, cheating is make sense (respondent 15)"*. Some students even feel a little weird if they don't cheat when they did online exam, *"... if you go online but don't cheat, you are the weird one or what?(respondent 3)"* .Another reason for rationalization is to help friends (the mean value is 3,307). There are 34.57% of students who agree and

strongly agree with the statement. Meanwhile, students who disagree and strongly disagree are 27.2% of total respondents. The feeling of wanting to help a friend who is in need of assistance is often thought of by students, especially in terms of cross-checking the answers in order to find out which answer is correct. This was stated by respondent 6 during the following interview: *"... I'm not smart enough, but i feel have to help friends in need* (respondent 6)".

Table 6. Rationalization

Questions	Percentage							
	SA	A	SA+A	U	D	SD	D+SD	Mean
I commit academic fraud because other students also do the same thing	8.5%	54.3%	72.8%	13.6%	9.9%	3.7%	13.6%	3.741
I commit academic fraud because it's a common thing so it's no big deal	6.17%	43.21%	49.38%	34.57%	8.65%	7.4%	16.05%	3.321
I commit academic fraud so i could graduate quicly so i wouldn't burden my family's finance	6.17%	20.99%	27.16%	28.4%	24.69%	19.75%	44.4%	2.679
I commit academic fraud because it's a venial sin	3.7%	17.3%	21%	38.3%	22.2%	18.5%	40.7%	2.654
I commit academic fraud because that sin will be forgiven by God	2.47%	8.64%	11.11%	45.68%	19.75%	23.46%	43.21%	2.481
I commit academic fraud to help a friend	4.94%	29.63%	34.57%	38.27%	18.5%	8.64%	27.16%	3.037
SA=Strongly Agree; A=Agree; U=Undecided; D=Disagree; SD=Strongly Disagree							Average:	2,986

Source: Processed data 2021

Findings in Table 6 are in line with previous research (Purwatmiasih et al., 2021; Wenzel & Reinhard, 2020), which state that rationalization is an important element for someone to commit fraud during online learning. The existence of students who commit fraud during online learning encourages their friends to commit similar frauds, so that more students follow the tendency to commit fraud. Ironically, the results picture also an interesting evidence that many fraud perpetrators feel that their actions are good actions because they help friends.

d. Competence

The results of questionnaires and interviews show that this competence factor is not an element that causes academic fraud. This is evidenced by the mean value of less than 3 for all questions (table 7). However, some students commit fraud because they think they are smart enough to take other people's exams (19.75%), they are able to give pressure to others to give answers (1.2%), and they think can penetrate the existing scoring system (8.6 %).

Table 7. Competence

Questions	Percentage							
	SA	A	SA+A	U	D	SD	D+SD	Mean
I commit fraud because I am smart enough to give answers/do assignments/do exams for others	2.47%	7.28%	9.75%	37.04%	23.46%	19.75%	43.21%	2.593
I commit academic fraud because I am able to pressure other students to want to give assignments	0%	1.2%	1.2%	9.9%	45.7%	43.2%	88.9%	1.691
I commit academic fraud because I can enter the faculty system	0%	8.6%	8.6%	13.6%	39.5%	38.3%	77.8%	1.938
SA=Strongly Agree; A=Agree; U=Undecided; D=Disagree; SD=Strongly Disagree							Average:	2,074

Source: Processed data 2021

Findings in Table 7 are similar to those in previous research (Hardiana et al., 2021) Click or tap here to enter text.in that competency is not an important element in causing students to commit fraud, alhought the sample used in Hariana's research is focused on state university's students. It can be concluded that at both state and private universities, competence is not a key element that causes students to commit academic fraud

e. Arrogance

The results of this study shown that arrogance plays a significant role in academic fraud, which supports previous research (Horwarth, 2011). Table 8 show that students commit fraud to get perfect scores (with mean value of 3,343). There are 65.5% of the 81 students who agree and strongly agree with the statement. Meanwhile, students who disagree and strongly disagree are 22.2% of the total respondents. However, the statement of not being afraid of sin atau the ability to hide their academic fraud are not the dominant factor. Only small number of students agreed and strongly agreed that these factors encourage them to commit fraud.

Table 8. Arrogance

Questions	Percentage							
	SA	A	SA+A	U	D	SD	D+SD	Mean
I commit fraud to get a perfect score	23.5%	42%	65.5%	12.3%	9.9%	12.3%	22.2%	3.543
I commit fraud because I'm not afraid of sin	2.5%	8.6%	11.1%	24.7%	27.2%	37%	64.2%	2.099
I commit academic fraud because I am able to hide my actions	3.7%	2.3%	6%	34.6%	35.8%	13.6%	49.4%	2.568
SA=Strongly Agree; A=Agree; U=Undecided; D=Disagree; SD=Strongly Disagree							Average:	2,737

Source: Processed data 2021

3. *Fraud Prevention*

Fraud prevention can be done through several actions. The following are recommendation must be taken by higher education institution based on the causes of fraud which analyzed by fraud pentagon theory. Internal pressure and rationalization are primary elements of academic fraud. To decrease the possibility, university shoud raise student fraud awareness. This recommendation are similar to those in previous research (Baran & Jonason, 2020; Palupi & Santoso, 2017) which stated that fraud awareness program shall be implemented. Higher institution has an obligation to inform about ethical values, integrity and honesty to their students. Boundaries of acts on cheating also need to be shown, so that students are aware about which actions are included as cheating action and which those that are not. Socialization and awareness programs can be done in various ways, such as delivery through the institution's website and e-learning platform, explanations in the syllabus, socialization of lecturers in class, as well as special sessions during new student orientation or other online sessions that are specifically made to socialize this issue. Higher education can provide character building program to support fraud awareness program. It can be carried out at the time of welcoming new students or another special session. It will reduce the rationalization and arrogance of students when they want to commit fraud.

Another important recommendation is to build a close relationship with students (Singh & Remenyi, 2016). It is recommended to make students more open and enable them to overcome online learning difficulties. The difficulty of communicating with lecturer during online learning process sometimes frustrates students and ends up cheating as a last resort. Lecturer can utilize existing social media such as forming line groups or whatsapp groups to build open communication with students. Chatrooms available on institution-owned e-learning platforms can also be used. Thus, if students have difficulty understanding the material, they can easily ask their lecturer directly. Lecturer 3 said that university also can assign academic advisor to help student solving their problem during online learning process.

Furthermore, the university needs also improve its learning model and assessment system. This recommendation in line with previous research (Purwatmiasih et al., 2021; Singh & Remenyi, 2016) which stated that proper assessment methods will reduce academic fraud. The level of student understanding is difficult to measure in online learning process. Therefore, an assessment system should be built to overcome this matter. Lecturer 1 said that the asssessment should include several aspects, such as class activities, presentations and class discussions besides the exam. The implementation of student center learning needs also be improved. Lecturer should position themselves as mentors and students need be encouraged to explore learning problems, to think critically in solving existing problems, so that understanding of a topic does not only depend only on lecturer. The exam model should also be modified. Exams with multiple choice answers should only be applied when the number of students is large. These recommendations are expected to reduce pressure and arrogance elements.

Other recommendation is to create and implement rules dan strong punishment related to academic fraud. Rules related to fraud are important to restrict behavior to commit fraud (Simatupang & Peter, 2021). During interview session, several students stated that the existence of strict rules would make them afraid to commit fraud, such as in the following statement: "*If there is a clear regulation, it might make students*

afraid so that cheating may decrease (respondent 4). Rules must be supported by strong punishment, so that perpetrators can feel deterred. It also give warnings for students who want to commit fraud. The main purpose of this recommendation is to reduce rationalization although at the same time it can also be used to reduce opportunities to commit fraud.

The last recommendation is to improve internal control. This recommendation is in line with (Albrecht, 2012) who stated that it will reduce opportunity to commit fraud. Lecturer 1,2,3 & 4 said that supervision during lecturing and exams needs to be built properly. During online study *(synchronous method)*, students may occasionally be asked to be on camera. Lecturers can also ask questions directly to several students to check that they are present during online lectures. If necessary, students are required to use two cameras for monitoring process during exams. Media for storing assignments and exam results must be safe and cannot be accessed by unauthorized persons. Based on the results of interviews, several students mentioned that in several courses where students are required to submit assignments using Google Drive, their work can be accessed by other parties and eventually used for fraud, as stated in the following statement: *"We save it on Google Drive folder and it can be accessed by many students. Some students can copy and paste our answers even though we don't know them….(respondent 13)"*

Conclusion

This research concludes that academic fraud does occurs during online learning at COVID-19 pandemic. All four types of academic fraud are existed during online learning. Most students have done cheating, plagiarism, and collusion, but only a few students have done seeking outside help. The high level of academic fraud during learning process cannot truly show students' real abilities and the quality of graduates will be questioned. The large number of academic fraud that occurs during online learning shows that the learning system and academic atmosphere during online learning need to be improved.

The results of this study indicate that the four elements in the fraud pentagon theory, namely pressure, opportunity, rationalization and arrogance, are the causes of fraud, while the element of competence is not the cause of fraud. Knowing the causes of fraud will help universities design action plans to improve the learning system and academic atmosphere during online learning so that academic fraud can be prevented.

Five possible ways can be recommended to prevent fraud during online learning of the pandemic period. The first prevention is fraud awareness program. There should be clear rules on academic fraud, the rules need to be well socialized to all academia and they should be implemented consistently to provide a deterrent effect on the perpetrators as well as a warning to students regarding the institution's commitment to fighting fraud. The second prevention is through proper supervision during online learning and exams, as well as the strong security system of storing assignments and exam files. The third prevention is closeness with students, which needs to be developed and maintained so that students have a medium to convey their problems and obtain solutions directly from lecturers or faculty management.

This research was only conducted in one private university, so that the results cannot be generalized. In addition, the education level under study is a higher education with undergraduate students as respondents, so that different results might be obtained if the research is carried out at other levels, such as elementary or secondary education, or even higher levels of higher education such as master degree or doctoral students.

The researchers suggest that further research can be carried out with the object of many higher education institutions, so that the results could provide a more general view. The researchers also recommend for future research to carried out for other many levels of education, so that the variation among educational level can be pictured and the results would benefits the management in improving the learning systems.

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