Student Academic Fraud during Maths Exams During the Covid-19 Pandemic Based on GONE Theory Dimensions

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Abstract: This study aims to describe students' academic fraud during math exams during the Covid-19 pandemic based on the missing theory dimension regarding students' academic abilities. This research was conducted in class IX, a junior high school in Semarang. Six subjects were selected purposively, with high, moderate, and low academic ability, two students each. Data collection uses test scores, academic fraud scales, and interviews. The technique of checking the validity of the data is through triangulation of sources and methods. This study shows that students with high, moderate, and low academic abilities commit academic fraud when taking the same exam but with different intensities. The background of the fraud is greed, opportunity, need, and exposure. The form of fraud is copying answers on the internet or collaborating with other friends while doing exams. Students do this because of the effects of online learning and the lack of supervision from the teacher during the exam.

INTRODUCTION

Corona Virus Disease 2019 (Covid-19) has been considered one of the biggest health threats worldwide, resulting in many countries closing schools to minimize transmission. This closure is a serious threat to education worldwide, especially in Indonesia. The outbreak of Covid-19 cases and the imposition of Community Activity Restrictions (CAR) have resulted in many students following changing learning policies. These changing learning policies raise various concerns, including issues of digital literacy, equitable access, and unethical academic behavior. One aspect of concern is the issue of unethical academic behavior. Such unethical behavior is academic fraud.

In online learning, students cheat because of the lack of communication that occurs during learning between teachers and students, too many assignments, and an unsupportive home learning environment for students (Mahmudi & Fernandes, 2021). In line with this, Blau et al. (2021) analyzed fraud behavior in online learning and found that students still cheated even though they believed fraud was unethical. They commit fraud because they are influenced by an environment that considers it natural. The research results from Alan et al. (2020) show that students with a high IQ are more likely to commit academic fraud than those with an average IQ. Students with higher socioeconomic status are also more likely to commit academic fraud. Students from religious schools are less likely to cheat academically (Azar & Applebaum, 2020).

Schuessler & Cressey (1950) argued that there are three factors behind academic fraud, namely pressure, opportunity, and rationalization, known as the fraud triangle.

According to Wolfe & Hermanson (2004), consider the fourth element, the ability (capability); these four factors are known as the fraud diamond to improve the prevention and detection of fraud. Then, Sorunke (2016) introduced the fraud pentagon by adding a personal ethical factor to the fraud diamond. The Fraud pentagon complements the factors behind academic fraud into five factors: academic pressure, opportunity, rationalization, ability, and personal ethics.

Academic fraud committed by students is not only the act of fraud in doing assignments or collaborating during the exam but also the act of copying the work of other friends in whole or in part without including the source. (Lewellyn & Rodriguez, 2015) argue that academic fraud can be plagiarism and unauthorized assistance on assignments and examinations. While Elisabeth & Simanjuntak (2021) and Muhsin et al. (2018) stating fraud can take many forms, such as not being involved in group assignments, dishonesty in completing individual assignments, and plagiarism. In line with this, Padmayanti et al. (2017) argue that fraud on friends' work, copying assignments from the internet, using small notes during exams, plagiarizing friends' results, and using false information or data, and others, are forms of fraud.

The results of previous studies follow a theory that explains someone committing fraud, namely the GONE Theory (Elisabeth & Simanjuntak, 2021; Munirah & Nurkhin, 2018; Neva & Amyar, 2021; Zamzam et al., 2017). Jack Bologne introduced this theory in the book Fraud Auditing and Forensic Accounting: New Tools and Techniques in 1993. The elements contained in GONE Theory are greed, opportunity, needs, and exposure. If one of these four elements can be minimized, the fraud rate will be lower. Shifting from these things, this study aimed to describe students' academic fraud when taking math exams during the Covid-19 pandemic based on the dimensions of the GONE theory.

METHODS

Research design uses qualitative research. This research focuses on academic fraud in mathematics, especially when taking exams. The subjects in this study were class IX students at a junior high school in Semarang city in the 2021/2022 academic year. Exam scores are used to categorize students' academic abilities. The classification for determining the categories is presented in Table 1.

Table 1. Research Subject and Category

Category	Interval	Subject
High	Score > Average + SD	KAT_1 and KAT_2
Moderate	Average – SD ≤ Score ≤ Average + SD	KAS_1 and KAS_2
Low	Score < Average - SD	KAR_1 and KAR_2

SD: Standard Deviation

After the students were classified in each category, six subjects were taken purposive, including two students in the high category, two in the moderate category, and two in the low category. Taking the six subjects from the school test scores and the considerations given by the mathematics teacher. The method used for data collection is scale, interviews, and documentation. The academic fraud scale is based on the GONE (Greed, Opportunities, Need, and Exposure) Theory used to measure student fraud. This scale used a Likert with four answer choices for each statement. The greed indicators are: (1) not satisfied with high scores, (2) stingy in sharing knowledge, and (3) fear of being competitive. The opportunity indicators are: (1) students do not check for plagiarism, (2) students do not change assignments or exams that have been given to other students, (3) students see that their environment also commits fraud, and (4) teachers do not prevent

fraud. The need indicators are: (1) students need high scores, (2) lack of mastery of the material, and (3) entrust attendance as a condition for taking the exam. The exposure indicators are: (1) there are no strict sanctions, (2) the habit of fraud, and (3) the teacher doesn't care about students when taking exams. An interview guide was used to confirm students' answers on the scale. The interview questions are designed the same as the scale. School test scores, photos, videos, and audio recordings were collected using the documentation method as research data archives. Expert judgments have validated all instruments.

Data analysis was carried out by reducing data, presenting data, and concluding while testing the validity of the data using method and source triangulation techniques (Leavy, 2014). Analysis of the data in this study using the help of QSR NVivo software (Edwards-Jones, 2014). This software facilitates data validity by calculating the correlation coefficient of each pair of data sources to determine their consistency (Bahiyyah et al., 2021; Juniasani et al., 2022; Khanifah et al., 2019; Muhtarom et al., 2017; Sutrisno et al., 2019). Interpretation of the correlation coefficient using the guidelines in Table 2.

Table 2. Correlation Coefficient Interpretation

Correlation Value	Interpretation
Less than 0.40	Poor Agreement
0.40 - 0.75	Fair to Good Agreement
More than 0.75	Excellent Agreement

RESULTS & DISCUSSION

Results

This study obtained data on students' academic fraud, especially students with high academic abilities. The analysis results of the scale answers and during the academic fraud interview of the research KAT_1 and KAT_2 when working on the exam obtained the triangulation method presented in Table 3 and Table 4.

Table 3. Results of Method Triangulation of KAT1

Dimension	Scale	Interview	Triangulation Method
Greed dimension	KAT_1 will continue to cheat even though their scores have exceeded the minimum completeness criteria, do not study together before the exam with other friends, cheat because they are afraid that the ranking will drop, and feel jealous of other friends who get higher scores than them.	KAT_1 continuously checks the answers on the internet to ensure that the answer is correct and shares the answer with other friends during the exam. KAT_1 cheated because he feared the ranking would drop.	In the **greed dimension**, which is to keep fraud even though the score exceeds the minimum completeness criteria, checking answers on the internet to ensure that the answer is correct, and not studying with other friends, KAT_1 is afraid of the ranking. Down and feel rivaled if other friends get a higher score. In the **opportunities dimension**, KAT_1 copies answers online during exams. It does not change answers from the internet or other friends because there are no differentiating questions,
Opportunities dimension	KAT_1 cheated by copying answers from the internet because they were in a hurry to work without understanding the contents, not rechecking the answers found online and understanding the teacher's criteria easier to cheat during the exam. He assumed that other friends also committed fraud. KAT_1 stated that the teacher did not give a score of 0	KAT_1 cheated by copying answers from the internet and did not change answers from other friends because there were no differentiating questions. KAT_1 knew another friend who cheated on the exam and mentioned that the teacher did not punish cheating students.	

Dimension	Scale	Interview	Triangulation Method
	if there were students who had the same answer, and the teacher did not give punishment/punishment for students who cheated during the exam.		and the environment cheats on exams. In the **need dimension**, KAT_1 cheated on another friend to ensure the answer was correct because it required a high score even though they understood the material well enough. While **on the exposure dimension**, KAT_1 believes that there is no punishment from the teacher for students who cheat during tests/exams. The teacher does not supervise, so KAT_1 feels free to commit acts of fraud.
Need dimension	KAT_1 asked another friend, so there was no wrong answer. The KAT_1 cheated because the material tested was too much, and KAT_1 did not understand the material before the exam.	KAT_1 asked other friends via chat to ensure the correct answer.	
Exposure dimension	KAT_1 argues that there is no penalty/reduction in grades for students who cheat, and the teacher does not supervise the exam via video conference.	KAT_1 believes no teacher is punished for cheating students during tests/exams. KAT_1 is used to looking for answers on the internet to ensure that the answers are correct, and the teacher does not supervise so that KAT_1 feels free to commit acts of fraud.	
Correlation Coefficient: 0.613761 (Fair to Good Agreement)			

Table 4. Results of Method Triangulation of KAT_2

Dimension	Scale	Interview	Triangulation Method
Greed dimension	KAT_2 ignores the teacher during the lesson and does not study with other friends before the exam, and KAT_2 cheats because he feels rivaled if another friend gets a higher score.	KAT_2 asked other friends during the exam, even though they had a score exceeding the minimum completeness criteria, to cheat on each other with other friends because they were afraid their rank would drop.	In the **greed dimension**, KAT_2 once asked another friend during an exam even though the score was above the minimum completeness criteria because he feared his rank would drop.
Opportunities dimension	KAT_2 copied answers from the internet because they were hurrying to work by understanding the contents and fraud. After all, there were no differentiating questions or double-checking the answers found on the internet. KAT_2 stated that the teacher did not give a score of 0 to students who cheated but only gave punishment.	KAT_2 cheated by copying answers from the internet and did not change the answers other friends gave during the exam because there were no differentiating exam questions. KAT_2 knew that other friends also cheated on the exam and mentioned that the teacher did not punish cheating students.	In the **opportunities dimension**, KAT_2 copies answer on the internet by understanding the contents and does not change the answers other friends give because there are no differentiating questions. The environment is fraud even though it is difficult when fraud, and there is no punishment from the teacher. $KAT2$ cooperates with other friends in the **need dimension**, so the score is high when the material is not understood.
Need dimension	$KAT2$ asked other friends for answers in the need dimension, so their scores were high.	KAT_2 cooperates with other friends during the exam through chat because they do not understand the material.	
Exposure dimension	KAT_2 argues that there is no grade reduction for cheating students. KAT_2 never collected the answers late, while the teacher did not supervise during the exam.	KAT_2 believes there is no punishment for student fraud during the exam. KAT_2 cheated by looking for answers on the internet or asking other friends during the exam, and the teacher did not supervise the students, so	

Dimension	Scale	Interview	Triangulation Method
		students felt freer to cheat during the exam.	In the **exposure dimension**, KAT_2 argues that there are no sanctions for perpetrators of fraud, they are used to fraud, and there is no strict supervision from the teacher during the exam.
Correlation Coefficient: 0.60759 (Fair to Good Agreement)			

Based on the results of the triangulation method from the two high academic abilities subjects, the source triangulation was obtained, as shown in Table 5.

Table 5. Results of Sources Triangulation of High Academic Abilities
(KAT_1 and KAT_2)

KAT_1	KAT_2	Source Triangulation
In the **greed dimension**, which is to keep fraud even though the score exceeds the minimum completeness criteria, checking answers on the internet to ensure that the answer is correct, and not studying with other friends because KAT_1 are afraid of the ranking. Down and feel rivaled if other friends get higher scores. In the **opportunities dimension**, KAT_1 copies answers online during exams. It does not change answers from the internet or other friends because there are no differentiating questions, and the environment cheats on exams. In the **need dimension**, KAT_1 cheated on another friend to ensure the answer was correct because it required a high score even though they understood the material well enough. While **on the exposure dimension**, KAT_1 believes that there is no punishment from the teacher for students who cheat during tests/exams. The teacher does not supervise, so KAT_1 feels free to commit acts of fraud.	In the **greed dimension**, he once asked another friend during an exam even though the score was above the minimum completeness criteria because he feared his rank would drop. In the **opportunities dimension**, KAT_2 copies answer on the internet by understanding the contents and does not change the answers other friends give because there are no differentiating questions. The environment is fraud even though it is difficult when fraud, and there is no punishment from the teacher. In the **need dimension**, KAT_2 cooperates with other friends, so the score is high when the material is not understood or sufficiently understood. In the **exposure dimension**, KAT_2 argues that there are no sanctions for perpetrators of fraud, they are used to fraud, and there is no strict supervision from the teacher during the exam.	In the **greed dimension**, KAT_1 cheated even though the score had exceeded the minimum completeness criteria, checked the answers online to ensure that the answer was correct, and did not study with other friends. While KAT_2 once asked another friend during the exam even though the score exceeded the minimum completeness criteria. This is because KAT_1 fear their ranking will drop and feel competitive if other friends get higher scores. Meanwhile, KAT_2 are afraid of their ranking drops. In the **opportunities dimension**, KAT_1 and KAT_2 copy answers on the internet during exams, do not change answers from the internet or other friends because there are no differentiating questions, the environment also cheats on exams, and there is no punishment from the teacher. In the **need dimension**, KAT_1 cheated on another friend to ensure the answer was correct because it required a high score even though they understood the material well enough. While KAT_2 cooperates with other friends, the score is high when the material is not understood and or is sufficiently understood. In the **exposure dimension**, KAT_1 and KAT_2 cheated because there were no sanctions for those who cheated, they were used to fraud, and the teacher did not supervise the exam.
Correlation Coefficient: 0.874062 (Excellent Agreement)		

For students with moderate academic ability, the analysis of scale answers and academic fraud interviews of KAS_1 and KAS_2 when working on exams obtained the triangulation method presented in Table 6 and Table 7.

Table 6. Results of Method Triangulation of KAS_1

Dimension	Scale	Interview	Triangulation Method
Greed dimension	KAS_1 did not study with other friends before the exam, and KAS_1 cheated because they felt jealous when other friends got higher scores.	KAS_1 look for answers on the internet or ask other friends, share answers with other friends during the exam, and cheat because they are afraid that their ranking will drop.	In the **greed dimension**, KAS_1 cheated on another friend because they felt competitive if another friend got a high score. However, KAS_1 has free time to discuss with other friends.
Opportunities dimension	KAS_1 copy answers on the internet because they are in a hurry to do exams by understanding the contents, double-check answers found on the internet because teachers do not distinguish between types of questions during exams, and understand teacher criteria making it easier for them to cheat during exams and KAS_1 think that students who understand the material also cheat during exams. KAS_1 stated that the teacher did not reduce the score for students who had the same answer, but the teacher punished students who cheated on the exam.	KAS_1 cheat by copying answers from the internet if they feel pressed. They don't change the answers other friends gave during the exam because there are no differentiating exam questions. They will continue to cheat even though they don't understand the teacher's criteria. KAS_1 stated that the teacher did not punish students who cheated on each other during the exam.	In the **opportunities dimension**, KAS_1 cheated by copying answers from the internet (once did not include the source). Other friends also cheated when doing individual tasks, such as copying answers, and the teacher did not reprimand the fraudulent actions that occurred. In the **need dimension**, KAS_1 cheated when he did not understand the material and needed a high score. In the **exposure dimension**, KAS_1 never got a deduction when they were late in submitting assignments and when they cheated. KAS_1 are used for fraud even though they feel detrimental to themselves because teachers sometimes give too many assignments and don't give sufficient deadlines to collect tasks.
Need dimension	KAS_1 asked other friends to ensure the answer was not wrong even though they had studied outside class hours.	KAS_1 cheated, namely, collaborating with other friends during the exam and fraud if the material being tested was too much and challenging.	
Exposure dimension	KAS_1 argues that there are penalties for students who cheat during exams, such as deducting grades and teachers not monitoring via video conference.	KAS_1 believes there is no punishment for student fraud during the exam. KAS_1 cooperates with other friends during the exam because of the effect of online learning. While the teacher does not supervise so that students feel freer to cheat during the exam.	
Correlation Coefficient: 0.635758 (Fair to Good Agreement)			

Table 7. Results of Method Triangulation of KAS_2

Dimension	Scale	Interview	Triangulation Method
Greed dimension	KAS_2 ignores the teacher during learning to get a high score during the exam, cheats even though the score exceeds the minimum completeness criteria, does not study with other friends before the exam, and cheats for fear of dropping rankings.	KAS_2 cheat with other friends, once intentionally share answers that are not necessarily correct during the exam so that other friends' scores are low, and commit fraud because they fear their ranking will drop.	In the **greed dimension**, KAS_2 ignores the teacher during learning to get high scores during the exam, cheats with each other with other friends, does not study together with other friends before the exam, and has intentionally

Dimension	Scale	Interview	Triangulation Method
Opportunities dimension	KAS$_2$ copy answers online because they are in a hurry to do the exam by understanding the contents and double-checking the answers online. After all, the teacher does not distinguish the types of questions during the exam, understands the teacher's criteria, making it easier for him to cheat, and does not reduce the score for students with the same answer. The teacher does not give penalties for students who cheat during exams.	KAS$_2$ cheat in the form of copying answers from the internet and even fraud on other friends if they feel lazy, not changing the answers found during the exam because there are no differentiating exam questions, knowing that other friends also cheat, and does the teacher not give a warning to students who cheat on each other during the exam.	shared answers that are not necessarily correct with other friends during the test. The exam takes place so that other friends score low because they feel jealous and afraid if their ranking drops. In the **opportunities dimension**, KAS$_2$ copies answers on the internet. It does not change the answers found during the exam because there are no differentiating exam questions; understanding the teacher's criteria makes it easier for him to cheat, and the environment also commits acts of fraud. The teacher does not reprimand or punish students who contradict each other. Cheat during the exam.
Need dimension	KAS$_2$ asked another friend to make sure that the answer was not wrong, did not study outside class hours, and did not learn to understand the material before the exam took place even though there was too much material being tested, and once asked another friend to collect the answers.	KAS2 cheated, namely collaborating with other friends because they needed good grades, and fraud if they did not understand the material and the material being tested was too much.	In the **need dimension**, KAS$_2$ cheated, namely collaborating with other friends, fraud because they did not learn to understand the material before the exam took place even though there was too much material being tested, and once asking another friend to collect the answers.
Exposure dimension	KAS$_2$ argues that there is no punishment for cheating students during the exam. The teacher does not supervise the exam but occasionally monitors the exam via video conference.	KAS$_2$ believes there is no punishment for students who cheat during the exam, which is essential for all students. KAS$_2$ cooperates with other friends during the exam because of the effect of online learning. While the teacher does not supervise so that students feel freer to cheat during the exam.	In the **exposure dimension**, there are no penalties for students who cheat during exams, cooperate with other friends during exams because of the effects of online learning, and teachers do not supervise so that students feel freer to cheat during exams.
Correlation Coefficient: 0.612447 (Fair to Good Agreement)			

Based on the results of the triangulation method of the two moderate academic ability subjects, the source triangulation was obtained, as shown in Table 8.

Table 8. Results of Sources Triangulation of Moderate Academic Ability (KAS$_1$ and KAS$_2$)

KAS$_1$	KAS$_2$	Source Triangulation
In the **greed dimension**, KAS$_1$ cheated on another friend because they felt competitive if another friend got a high score. However, KAS$_1$ has free time to discuss with other friends.	In the **greed dimension**, KAS$_2$ ignores the teacher during learning to get high scores during the exam, cheats with each other with other friends, does not study together with other friends before the exam,	In the **greed dimension**, KAS$_2$ ignores the teacher during learning to get high scores during the exam, cheats with each other with other friends, does not study together with other friends before the exam,

KAS$_1$	KAS$_2$	Source Triangulation
In the **opportunities dimension**, KAS$_1$ cheated by copying answers from the internet (once did not include the source). Other friends also cheated when doing individual tasks, such as copying answers, and the teacher did not reprimand the fraudulent actions that occurred. In the **need dimension**, KAS$_1$ cheated when he did not understand the material and needed a high score. In the **exposure dimension**, KAS$_1$ never got a deduction when they were late in submitting assignments and when they cheated. KAS$_1$ are used for fraud even though they feel detrimental to themselves because teachers sometimes give too many assignments and don't give sufficient deadlines to collect tasks.	and has intentionally shared answers that are not necessarily correct with other friends during the test. The exam takes place so that other friends score low because they feel jealous and afraid if their ranking drops. In the **opportunities dimension**, KAS$_2$ copies answer on the internet. It does not change the answers found during the exam because there are no differentiating exam questions. Understanding the teacher's criteria makes it easier for him to cheat. The environment also commits acts of fraud, and the teacher does not give reprimands or punishments for students who contradict each other. Cheat during the exam. In the **need dimension**, KAS$_2$ cheated, namely collaborating with other friends, fraud because they did not learn to understand the material before the exam took place even though there was too much material being tested, and once asking another friend to collect the answers. In the **exposure dimension**, there are no penalties for students who cheat during exams, cooperate with other friends during exams because of the effects of online learning, and teachers do not supervise so that students feel freer to cheat.	and has intentionally shared answers that are not necessarily correct with other friends during the test. The exam takes place so that other friends score low because they feel jealous and afraid if their ranking drops. In the **opportunities dimension**, KAS$_2$ copies answer on the internet. It does not change the answers found during the exam because there are no differentiating exam questions; understanding the teacher's criteria makes it easier for him to cheat, and the environment also commits acts of fraud. The teacher does not reprimand or punish students who contradict each other. Cheat during the exam. In the **need dimension**, KAS$_2$ cheated, namely collaborating with other friends, fraud because they did not learn to understand the material before the exam took place even though there was too much material being tested, and once asking another friend to collect the answers. In the **exposure dimension**, there are no penalties for students who cheat during exams, cooperate with other friends during exams because of the effects of online learning, and teachers do not supervise so that students feel freer to cheat.
Correlation Coefficient: 0.8557 (Excellent Agreement)		

For students with low academic ability, the analysis of scale answers and during the academic fraud interview of KAR1 and KAR2 when working on the exam obtained the triangulation method presented in Table 9 and Table 10.

Table 9. Results of Method Triangulation of KAR$_1$

Dimension	Scale	Interview	Triangulation Method
Greed dimension	KAR$_1$ ignored the teacher during learning and cheated even though the score exceeded the minimum completeness criteria. They did not study with other friends before the exam and cheated because they felt jealous when other friends got higher scores.	KAR$_1$ share answers with other friends during the exam if asked and cheat because they fear being of a lower rank.	In the **greed dimension**, the KAR$_1$ cheats even though the score is more than the minimum completeness criteria, does not study together with other friends before the exam, shares answers with other friends during the exam if asked, and cheats because they feel jealous when other friends get higher scores and are afraid if it is at the bottom.
Opportunities dimension	KAR$_1$ copied the answers on the internet because they were in a hurry to do	KAR$_1$ cheated by copying answers from the internet. They did not change their	In the **opportunities dimension**, KAR$_1$ copied answers online

Dimension	Scale	Interview	Triangulation Method
	the exam by not understanding the contents and not rechecking the answers found on the internet. KAR$_1$ assumes that students who understand the material also cheat during the exam, the teacher does not reduce the score for students who have the same answer, and the teacher does not punish students who cheat.	answers during the exam because they felt pressed. KAR$_1$ knew that other friends also cheated, and the teacher did not know that students cheated on each other during the exam.	because they were in a hurry to do the exam by not understanding the contents and not rechecking/changing answers found online because of urgency. Other students also did. KAR$_1$ stated that the teacher did not reduce grades or give punishment to students who cheated during the exam. The **need dimension**, KAR$_1$, cheats if they do not understand the material and the material being tested is too much. In the **exposure dimension**, KAR$_1$ believes there is no penalty or reduction in grades for students who cheat during exams. KAR$_1$ was once late in collecting answers because he was paying attention to other friends and looking for answers on the internet during the exam because he felt lazy to do it. The teacher also does not supervise during the exam but occasionally monitors the exam via video conferencing. KAR$_1$ was once late in collecting answers because he was paying attention to other friends and looking for answers online during the exam because he felt lazy to do it. The teacher also does not supervise during the exam but occasionally monitors the exam via video conferencing. KAR$_1$ was once late in collecting answers because he was paying attention to other friends and looking for answers online during the exam because he felt lazy to do it. The teacher also does not supervise during the exam but occasionally monitors the exam via video conferencing.
Need dimension	KAR$_1$ does not study outside class hours even though too much material is being tested.	KAR$_1$ cheated if they did not understand the material and the material being tested was too much.	
Exposure dimension	KAR$_1$ argues that there is no reduction in scores for students who cheat during the exam and are only given punishment. The teacher does not supervise during the exam but occasionally monitors the exam via video conference.	KAR$_1$ believes there is no punishment for student fraud during the exam. KAR$_1$ looked for answers online during the exam because they felt lazy, and the teacher did not supervise them during the online exam.	

Correlation Coefficient: 0.588712 (Fair to Good Agreement)

Table 10. Results of Method Triangulation of KAR$_2$

Dimension	Scale	Interview	Triangulation Method
Greed dimension	The KAR$_2$ cheats even though the score is more than the minimum completeness criteria and pays attention to the teacher during learning, does not study together with other friends before the exam, has shared answers during the exam, and cheats for fear of	KAR$_2$ cheated with each other, collaborated with other friends during the exam, and cheated because they feared being in the lower ranks.	In the **greed dimension**, the KAR$_2$ cheated even though the score was higher than the minimum completeness criteria, did not study together with other friends before the exam, shared answers during the exam, and cheated on each other with other friends. KAR$_2$ cheated because they feared being in the lowest

Dimension	Scale	Interview	Triangulation Method
	dropping the ranking and feeling jealous when other friends get grades higher.		rank and felt jealous when other friends got higher scores. In the **opportunities dimension**, the original KAR$_2$ copied
Opportunities dimension	KAR$_2$ copies answer on the internet because they are in a hurry to take the exam without understanding the contents and double-checking the answers found on the internet. After all, the teacher does not distinguish the questions during the exam, understands the teacher's criteria, making it easier for him to cheat, and assumes that students who understand the material also cheat during the exam. KAR$_2$ stated that the teacher did not reduce grades or punish students who cheated on the exam.	KAR$_2$ cheated by copying answers from the internet and even fraud on their friends because they felt lazy, not changing the answers other friends gave. After all, there were no differentiating exam questions, and knowing that other friends also cheated. KAR$_2$ stated that the teacher did not warn or punish students who cheated on each other during the exam.	internet answers. They were in a hurry to do the exam without understanding the contents, cheated on friends because they felt lazy, and double-checked the answers found on the internet but did not change the answers given by other friends because the teacher did not distinguish the types of questions during the exam, understood the teacher's criteria making it easier for him to cheat during the exam, and assumed that students who understood the material also cheated during the exam. KAR$_2$ stated that the teacher did not reduce grades or punish students who cheated on the exam.
Need dimension	The KAR$_2$ asked other friends to ensure that the answer was not wrong, did not study outside class hours, and did not learn to understand the material before the exam because too much material was being tested.	The KAR$_2$ cheated, namely collaborating with other friends because they needed good grades and fraud if they did not understand the material and the material being tested was too much.	In the **need dimension**, KAR$_2$ asked other friends to make sure that the answers were not wrong, cooperated with other friends because they needed high scores, and did not study outside of class hours or before the exam took place because there was too much material being tested. In the **exposure dimension**, the KAR$_2$ believes no penalty or grade reduction exists for
Exposure dimension	KAR$_2$ argues that there is no penalty or reduction in grades for students who cheat during the exam, and the teacher does not supervise via video conference.	KAR$_2$ argues that there is no punishment for students who cheat during the exam. What is essential is that all students do it. KAR$_2$ once asked other people to take online exams because they felt lazy, and the teacher did not know that some students cheated during the exam.	students who cheat during exams. KAR$_2$ once asked other people to take online exams if they felt lazy because the teacher did not supervise via video conference, so they did not know that some students cheated during the exam.
Correlation Coefficient: 0.588127 (Fair to Good Agreement)			

Based on the results of the triangulation method from the two low academic ability subjects, the source triangulation was obtained, as shown in Table 11.

Table 11. Results of Source Triangulation of Low Academic Ability
(KAR$_1$ and KAR$_2$)

KAR$_1$	KAR$_2$	Source Triangulation
In the **greed dimension**, the KAR$_1$ cheats even though the score is more than the minimum completeness criteria, does not	In the **greed dimension**, the KAR$_2$ cheated even though the score was higher than the minimum completeness	In the **greed dimension**, KAR$_1$ and KAR$_2$ cheat even though the score is more than the minimum completeness criteria, do not study together with

KAR₁	KAR₂	Source Triangulation
study together with other friends before the exam, shares answers with other friends during the exam if asked, and cheats because they feel jealous when other friends get higher scores and are afraid if it is at the bottom. In the **opportunities dimension**, KAR_1 copied answers online because they were in a hurry to do the exam by not understanding the contents and not rechecking/changing answers found online because of urgency. Other students also did. KAR_1 stated that the teacher did not reduce grades or give punishment to students who cheated during the exam. The **need dimension**, KAR_1, cheats if they do not understand the material and the material being tested is too much. In the **exposure dimension**, KAR_1 believes there is no penalty or reduction in grades for students who cheat during exams. KAR_1 was once late in collecting answers because he was paying attention to other friends and looking for answers online during the exam because he felt lazy to do it. The teacher also does not supervise during the exam but occasionally monitors the exam via video conferencing. KAR_1 was once late in collecting answers because he was paying attention to other friends and looking for answers online during the exam because he felt lazy to do it. The teacher also does not supervise during the exam but occasionally monitors the exam via video conferencing. KAR_1 was once late in collecting answers because he was paying attention to other friends and looking for answers online during the exam because he felt lazy to do it. The teacher also does not supervise during the exam but occasionally monitors the exam via video conferencing.	criteria, did not study together with other friends before the exam, shared answers during the exam, and cheated on each other with other friends. KAR_2 cheated because they feared being in the lowest rank and felt jealous when other friends got higher scores. In the **opportunities dimension**, the original KAR_2 copied answers on the internet because they were in a hurry to do the exam without understanding the contents, cheated on a friend because they felt lazy, rechecked the answers found on the internet but did not change the answers given by other friends because the teacher did not distinguish the types of questions when exam, understand the teacher's criteria making it easier for him to cheat during the exam, and assume that students who understand the material also cheat during the exam. KAR_2 stated that the teacher did not reduce grades or punish students who cheated on the exam. In the **need dimension**, KAR_2 asked other friends to make sure that the answers were not wrong, cooperated with other friends because they needed high scores, and did not study outside of class hours or before the exam took place. There was too much material being tested. In the **exposure dimension**, KAR_2 argues that there is no penalty or grade reduction for students who cheat during exams.	other friends before the exam, share answers with other friends during the exam, and cheat for fear of being in a lower rank and feel jealous when with other friends get a higher score. In the **opportunities dimension**, KAR_1 and KAR_2 copied answers online because they were in a hurry to do the exam without understanding the contents. KAR_1 did not double-check/change the answers found online because of urgency, and other students did too. While KAR_2 cheated on a friend because they felt lazy, double-checked the answers found on the internet but did not change the answers given by other friends because the teacher did not distinguish the types of questions during the exam, understand the teacher's criteria, making it easier for him to cheat during the exam, and assume that students who understand the material also cheat during the exam. KAR_1 and KAR_2 stated that the teacher did not reduce grades or give punishment to students who cheated during the exam. In the **need dimension**, KAR_1 cheated if they did not understand the material and if the material being tested was too much. Meanwhile, KAR_2 asked another friend to make sure that the answer was not wrong, cooperated with other friends because it required high scores, and did not study outside of class hours or before the exam because there was too much material being tested. In the **exposure dimension**, KAR_1 and KAR_2 argued that grades were not penalized or reduced for students who cheated during the exam. KAR_1 was once late in collecting answers because he was paying attention to other friends and looking for answers online during the exam because he felt lazy to do it. Meanwhile, KAR_2 once asked other people to take online exams if they felt lazy. KAR_1 stated that the teacher did not supervise during the exam but occasionally monitored the exam via video conference. In contrast, KAR2 argued that the teacher did not supervise via video conference, so they did not know if there were students who cheated during the exam.
Correlation Coefficient: 0.800878 (Excellent Agreement)		

In academic fraud committed during exams, four dimensions of GONE theory underlie student fraud: greed, opportunities, need, and exposure. The hierarchy chart in Figure 1 shows that the broadest area is shown in the dimensions of opportunities and greed, then exposure and need. The size indicates the amount of coding on the node.
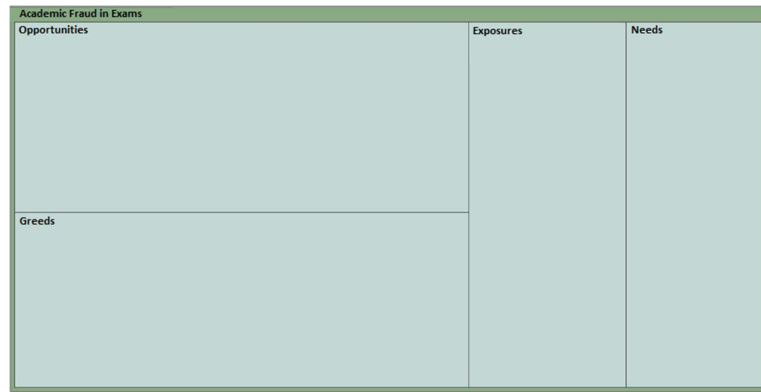

Figure 1. Hierarchy Chart of Academic Fraud in Exams

This study showed that the subject had different types of academic fraud when taking various exams. This study wanted to determine students' academic fraud in mathematics lessons during Covid-19 learning carried out by research subjects based on the GONE theory dimension. To find out this is done with the help of the NVivo QSR software with the Matrix Coding Query feature. In this way, the researcher can present the results of the comparative analysis of academic fraud owned by the subject based on the dimensions of the GONE theory.

Figure 2 clearly shows the differences in each indicator of academic fraud in research subjects. Fraud in the exams for KAT_1 and KAS_2 has a higher fraud rate than in other subjects, followed by KAR_2, KAT_2, KAR_1, and KAS_1. KAT_1 and KAS_2 have coded 16 times, KAR_2 and KAT_2 have coded 15 times, and KAR_1 and KAS_1 have coded 12 times.
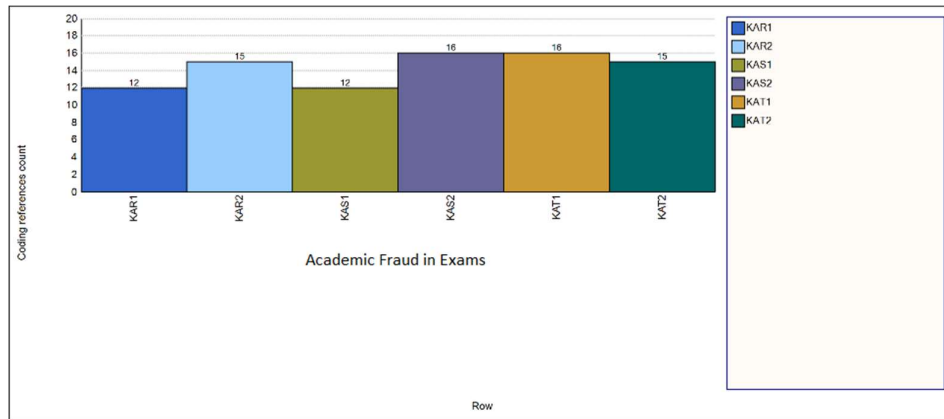

Figure 2. Differences in Academic Fraud in Exams on Research Subjects

From the results of the scale analysis and academic fraud interviews using the method and source triangulation technique by juxtaposing the data from the scale and interviews in data collection, the formulation of the problem determined in this study can be answered.

Discussion

While completing the exam, KAT_1 and KAT_2 cheated. In the greed dimension, KAT_1 cheated even though the score had exceeded the minimum completeness criteria, checked the answers online to ensure that the answer was correct, and did not study with other friends. While KAT_2 once asked another friend during the exam even though the score exceeded the minimum completeness criteria. This is because KAT_1 fear their ranking will drop and feel competitive if other friends get higher scores. Meanwhile, KAT_2 are afraid of their ranking drops. Greed affects academic fraud because students are unsatisfied with what they have honestly got (Zaini et al., 2015).

In the opportunities dimension, KAT_1 and KAT_2 copy answers on the internet during exams, do not change answers from the internet or other friends because there are no differentiating questions, the environment also cheats on exams, and there is no punishment from the teacher. Opportunity influences the occurrence of academic fraud behavior (Pratama, 2017). In the need dimension, KAT_1 cheated on another friend to ensure the answer was correct because it required a high score even though they understood the material well enough. While KAT_2 cooperates with other friends, the score is high when the material is not understood and or is sufficiently understood. Indrawati et al. (2017), in their research, stated that needs influence academic fraud behavior.

In the exposure dimension, KAT_1 and KAT_2 cheated because there were no sanctions for those who cheated, they were used to fraud, and the teacher did not supervise the exam. Zaini et al. (2015) show in their research that if the agency or the educator does not disclose more to students, the higher the tendency of students to commit academic fraud.

KAS_1 commits academic fraud while taking the exam. In the greed dimension, KAS_1 had looked for answers online or asked other friends, did not study together before the exam, and cheated because they feared their ranking would drop. Meanwhile, KAS_2 ignored the teacher during the lesson, cheated on each other with other friends, did not study together with other friends before the exam, and intentionally shared answers that were not necessarily correct with other friends during the exam so that other friends' scores were low because they felt envy and fear if the ranking drops. Indrawati et al. (2017) state that greed positively influences academic fraud behavior.

In the opportunities dimension, KAS_1 and KAS_2 are used to copying answers from the internet if they feel pressed, rechecking answers found online. At the same time, KAS_2 did not change the answers found during the exam because there were no differentiating exam questions. This is because the environment also commits acts of fraud, and the teacher does not give warnings or punishments for students who cheat on each other during exams. Nursani & Irianto (2014) stated that several opportunity factors influence academic fraud, such as internet technology that provides access to copies without citing the source, supervisors who do not supervise closely and thoughtfully, and class conditions it is not balanced with strict sanctions (Budiman, 2018).

In the dimension of needs, KAS_1 and KAS_2 work together with other friends because the material being tested is too tricky, and it takes a lot to ensure that the answer is not wrong, even though the KAS_1 has been studied outside class hours. In contrast, the KAS_2 does not learn to understand the material before the exam. Nursani & Irianto (2014) stated that high-needs students would influence academic fraud behavior. Regarding exposure, KAS_1 and KAS_2 argue that there are rarely punishments, such as deductions for students who cheat during exams. KAS_1 and KAS_2 cooperate with other friends during the exam because of the effect of online learning. In addition, the teacher does not supervise via video conferencing so that students feel freer to cheat during exams.

KAR_1 commits academic fraud while taking the exam. The GONE theory has four dimensions that cause the subject to commit fraud. In the greed dimension, KAR_1 and KAR_2 cheat even though the score is more than the minimum completeness criteria, do not study together with other friends before the exam, share answers with other friends during the exam, and cheat for fear of being in a lower rank and feel jealous when other friends get a higher score. The higher the greed, the higher the potential for academic fraud behavior (Gultom & Safrida, 2020).

In the opportunities dimension, KAR_1 and KAR_2 copied answers online because they were in a hurry to do the exam without understanding the contents. KAR_1 did not double-check/change the answers found online because of urgency, and other students did too. Meanwhile, KAR_2 cheated on a friend because they felt lazy, double-checked the answers found on the internet but did not change the answers given by other friends because the teacher did not distinguish the types of questions during the exam, understood the teacher's criteria, making it easier for him to cheat during the exam, and assumed that students understood the material. They were also cheated on exams. KAR_1 and KAR_2 stated that the teacher did not reduce grades or give punishment to students who cheated during the exam.

In the need dimension, KAR_1 cheated if they did not understand the material and if the material being tested was too much. Meanwhile, KAR_2 asked another friend to make sure that the answer was not wrong, cooperated with other friends because it required high scores, and did not study outside of class hours or before the exam because there was too much material being tested. The need occurs when an urge requires a person to get a perfect score, which can come from the family or the school environment (Ismatullah & Eriswanto, 2016).

Regarding exposure, KAR_1 and KAR_2 argued that grades were not penalized or reduced for cheating students during the exam. KAR1 was once late in collecting answers because he was paying attention to other friends and looking for answers online during the exam because he felt lazy to do it. Meanwhile, KAR_2 once asked other people to take online exams if they felt lazy. KAR_1 stated that the teacher did not supervise during the exam but occasionally monitored the exam via video conference. In contrast, KAR_2 argued that the teacher did not supervise via video conference, so they did not know if there were students who cheated during the exam.

CONCLUSION

Student academic fraud in mathematics lessons during the Covid-19 pandemic based on the GONE theory dimension with high, moderate, or low academic abilities when taking exams, on the greed dimension, fraud even though the score has exceeded the minimum completeness criteria, checking answers on the internet to ensure that the answers are correct, not studying with other friends, asking other friends during the exam even though the score is above the minimum completeness criteria. This is because students are afraid that their rank will drop and feel competitive if other friends get higher scores and are afraid if their ranking drops. In the opportunities dimension, copy answers on the internet during exams, and do not change answers from the internet or other friends because there are no different questions, the environment also cheats during exams, and there is no punishment from the teacher. The dimension of the need, students with high academic abilities cheat other friends to ensure that the answers are correct because they require high scores even though they understand the material enough. They cooperate with other friends, so their scores are high when the material is insufficient or understood. Meanwhile, students with academic abilities are working with other friends because the testing material

is too tricky, and it takes a lot to ensure that the answers are not wrong. In addition, students with low academic abilities asked other friends to make sure that the answers were not wrong, cooperated with other friends because they needed high scores, and did not study outside class hours or before the exam because there was too much material being tested.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

REFERENCES

Alan, S., Ertac, S., & Gumren, M. (2020). Cheating and incentives in a performance context: Evidence from a field experiment on children. *Journal of Economic Behavior & Organization*, *179*, 681–701. https://doi.org/10.1016/j.jebo.2019.03.015

Azar, O. H., & Applebaum, M. (2020). Do children cheat to be honored? a natural experiment on dishonesty in a math competition. *Journal of Economic Behavior & Organization*, *169*, 143–157. https://doi.org/10.1016/j.jebo.2019.11.007

Bahiyyah, S. F., Indiati, I., & Sutrisno, S. (2021). Analisis kesalahan siswa SMP dalam menyelesaikan soal literasi matematika berdasarkan metode newman ditinjau dari kemandirian belajar. *AKSIOMA : Jurnal Matematika Dan Pendidikan Matematika*, *12*(3), 436–446. https://doi.org/https://doi.org/10.26877/aks.v12i3.9067

Blau, I., Goldberg, S., Friedman, A., & Eshet-Alkalai, Y. (2021). Violation of digital and analog academic integrity through the eyes of faculty members and students: Do institutional role and technology change ethical perspectives?. *Journal of Computing in Higher Education*, *33*(1), 157–187. https://doi.org/10.1007/s12528-020-09260-0

Budiman, N. A. (2018). Perilaku kecurangan akademik mahasiswa: dimensi fraud diamond dan gone theory. *Akuntabilitas: Jurnal Ilmu Akuntansi*, *11*(1), 75–90. https://doi.org/10.15408/akt.v11i1.8807

Edwards-Jones, A. (2014). Qualitative data analysis with NVivo. *Journal of Education for Teaching*, *40*(2), 193–195. https://doi.org/10.1080/02607476.2013.866724

Elisabeth, D. M., & Simanjuntak, W. (2021). Analisis review pendeteksian kecurangan (FRAUD). *Methosika: Jurnal Akuntansi Dan Keuangan Methodis*, *4*(1), 9–18. https://doi.org/10.46880/jsika.Vol4No1.pp9-18

Gultom, S. A., & Safrida, E. (2020). Analisis pengaruh fraud diamond dan gone theory terhadap academic fraud (studi kasus mahasiswa akuntansi se-Sumatera Utara). *Jurnal EKSIS*, *9*(3), 113–124.

Indrawati, G. A. P. S., Purnamawati, I. G. A., & Atmadja, A. T. (2017). Pengaruh greed, opportunity, need, exposure terhadap perilaku kecurangan akademik pada mahasiswa akuntansi program S1 negeri di Bali. *JIMAT (Jurnal Ilmiah Mahasiswa Akuntansi) Undiksha*, *8*(2).

Ismatullah, I., & Eriswanto, E. (2016). Analisa pengaruh teori gone fraud terhadap academic fraud di Universitas Muhammadiyah Sukabumi. *Riset Akuntansi Dan Keuangan Indonesia*, *1*(2), 134–142. https://doi.org/10.23917/reaksi.v1i2.2731

Juniasani, A., Sutrisno, S., & Pramasdyahsari, A. S. (2022). Mathematical communication skills of junior high school students with high mathematical resilience on opportunity materials. *Journal of Medives : Journal of Mathematics Education IKIP Veteran Semarang*, *6*(1), 11. https://doi.org/10.31331/medivesveteran.v6i1.1796

Khanifah, K., Sutrisno, S., & Purwosetiyono, FX. D. (2019). Literasi matematika tahap merumuskan masalah secara matematis siswa kemampuan tinggi dalam memecahkan masalah matematika kelas VIII. *JKPM (Jurnal Kajian Pendidikan Matematika)*, *5*(1), 37. https://doi.org/10.30998/jkpm.v5i1.4544

Leavy, P. (2014). *The Oxford handbook of qualitative research*. Oxford University Press. https://doi.org/10.1093/oxfordhb/9780199811755.001.0001

Lewellyn, P. G., & Rodriguez, L. C. (2015). Does academic dishonesty relate to fraud theory? A comparative analysis. *American International Journal of Contemporary Research*, *5*(3), 1–6.

Mahmudi, W., & Fernandes, R. (2021). Adaptasi siswa tehadap pola pembelajaran daring pada masa pandemi covid-19 di SMAN 1 Solok. *Jurnal Perspektif: Jurnal Kajian Sosiologi Dan Pendidikan*, *4*(3), 395–406. https://doi.org/10.24036/perspektif.v4i3.471

Muhsin, M., Kardoyo, M., Arief, S., Nurkhin, A., & Pramusinto, H. (2018). *An analysis of student's academic fraud behavior*. *164*(Icli 2017), 34–38. https://doi.org/10.2991/icli-17.2018.7

Muhtarom, M., Hery Murtianto, Y., & Sutrisno, S. (2017). Thinking process of students with high-mathematics ability (a study on QSR NVivo 11-assisted data analysis). *International Journal of Applied Engineering Research*, *12*(17), 6934–6940.

Munirah, A., & Nurkhin, A. (2018). Pengaruh faktor-faktor fraud diamond dan gone theory terhadap kecurangan akademik. *Economic Education Analysis Journal*, *3*(1), 120–139.

Neva, S., & Amyar, F. (2021). Pengaruh fraud diamond dan gone theory terhadap academic fraud. *JAS-PT (Jurnal Analisis Sistem Pendidikan Tinggi Indonesia)*, *5*(1), 41. https://doi.org/10.36339/jaspt.v5i1.408

Nursani, R., & Irianto, G. (2014). Perilaku kecurangan akademik mahasiswa: dimensi fraud diamond. *Jurnal Ilmiah Mahasiswa FEB*, *2*(2), 1–8.

Padmayanti, K. D., Sujana, E., & Kurniawan, P. S. (2017). Analisis pengaruh dimensi fraud diamond terhadap perilaku kecurangan akademik mahasiswa (studi kasus mahasiswa penerima bidikmisi jurusan akuntansi S1 Fakultas Ekonomi Universitas Pendidikan Ganesha). *JIMAT (Jurnal Ilmiah Mahasiswa Akuntansi) Undiksha*, *8*(2). https://doi.org/10.23887/jimat.v8i2.13169

Pratama, R. Y. S. (2017). *Analisis Dimensi Fraud Diamond dan Gone Theory terhadap Academic Fraud*. Skripsi. Surakarta: Universitas Muhammadiyah.

Schuessler, K. F., & Cressey, D. R. (1950). Personality characteristics of criminals. *American Journal of Sociology*, *55*(5), 476–484. https://doi.org/10.1086/220588

Sorunke, O. A. (2016). Personal ethics and fraudster motivation: the missing link in fraud triangle and fraud diamond theories. *International Journal of Academic Research in Business and Social Sciences*, *6*(2), 159–165. https://doi.org/10.6007/IJARBSS/v6-i2/2020

Sutrisno, S., Sudargo, S., & Titi, R. A. (2019). Analisis kemampuan representasi matematis siswa smk kimia industri theresiana semarang. *JIPMat (Jurnal Ilmiah Pendidikan Matematika)*, *4*(1), 65–76. https://doi.org/10.26877/jipmat.v4i1.3626

Zaini, M., Achdiar, A. C., & Setiawan, R. (2015). Analisis pengaruh fraud diamond dan gone theory terhadap academic fraud (studi kasus mahasiswa akuntansi Se-Madura). *SNA Ke-18 Mataram*, 1–20.

Zamzam, I., Mahdi, S. A., & Ansar, R. (2017). Pengaruh fraud diamond dan tingkat religiuitas terhadap kecurangan akademik (studi pada mahasiswa S-1 se Kota Ternate). *Jurnal Ilmiah Akuntansi Peradaban*, *3*(2), 1–24. https://doi.org/10.24252/jiap.v3i2.4546