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STUDENTS' MISUSE OF CHATGPT IN HIGHER EDUCATION: AN APPLICATION OF THE FRAUD TRIANGLE THEORY

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Article Info	ABSTRACT
<p>Article history: Received: 1 January 2024 Revised: 14 February 2024 Accepted: 3 March 2024 Published: 1 April 2024</p>	<p>Academic dishonesty is not a new thing among students. With the rapid development of AI technology such as ChatGPT, it is much easier for students to misuse it in their learning. This study seeks to investigate the causes of academic dishonesty among students by looking at how AI language models are misused. This study examines the components of academic dishonesty and how they interact with one another using the fraud triangle hypothesis. The idea proposes that opportunity, rationalization, and pressure are crucial elements for fraudulent action. Using validated questionnaires, 250 students from Malaysian public universities participated in this study to learn more about their experiences with ChatGPT cheating. A Microsoft Forms-based online questionnaire served as the primary data collection instrument. Academic dishonesty and ChatGPT misuse are both significantly predicted by two of the three components of the fraud triangle; pressure, the third component, was determined to be non-significant. Preventative strategies based on technology can be shaped by the results of this study. The contribution of this study is substantial, as it illuminates a major issue in education and offers vital information for educators and policymakers to tackle the problem and enhance academic standards.</p>
<p>Keywords: Academic Dishonesty, ChatGPT, Misuse, Fraud Triangle Theory</p> <p></p>	

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INTRODUCTION

Recently, several websites have surfaced that provide academic support to pupils. These websites offer paid access to educational resources such as test bank answers, solution manuals, and essays. This enables students to bypass the process of learning (Ahsan et al., 2022; Alshurafat et al., 2023). Studies on academic dishonesty in higher education have uncovered that students majoring in business are more prone to engaging in unethical behavior, leading to concerns that they may be more inclined to utilize assignment aid websites of this nature (Kelly et al., 2022).

Students are strongly discouraged from using ChatGPT, an artificial intelligence language model created by OpenAI, for academic dishonesty or cheating (Finnie-Ansley et al., 2022; Kim et al., 2022). Cheating on schoolwork using AI language models is unethical and could get students in trouble (Karnalim et al., 2022). Students must understand the importance of being truthful and creative in their academic endeavors and have integrity while studying (Karnalim et al., 2022). Thus, the purpose of this article is to delve into the reasons why students use ChatGPT as a means to cheat on their assignments. This research achieves its goal by utilizing the fraud triangle theory, which states that among the most important factors contributing to students' dishonest behavior are opportunity, reasoning, and pressure.

According to several research (Ahsan et al., 2022; Alshurafat et al., 2023), students' cheating behavior and academic dishonesty have been addressed. Due to ChatGPT's novelty, however, very few studies have looked at students' actions when they cheat utilizing the platform. Research on students abusing ChatGPT for academic dishonesty is essential in light of the growing problem of students using technology to cheat on their assignments. Students are finding new ways to cheat as technology advances and becomes more accessible (Ebaid, 2021). Students and the credibility of the educational institution are both put at risk when artificial intelligence language models like ChatGPT are abused (Alshurafat, 2023). It is crucial to comprehend the problem's scope and characteristics to devise effective prevention strategies.

Academic dishonesty among students can be analyzed by adopting the fraud triangle theory, which posits that opportunity, rationalization, and pressure are the three main reasons that lead to fraud. Academic dishonesty can be better understood if we take the time to investigate the causes of this problem. Higher education institutions, students, and the public can all benefit from a more trustworthy educational system if we use the fraud triangle hypothesis as a guide to pinpoint the root causes of the problem and try to fix it. There may be several studies that have been carried out before using other theories, in the context of this study the researcher feels it is meaningful if the researcher tests this theory to see if this theory can significantly predict this study.

Fraud Triangle Theory

Among the many theories that aim to explain fraud's origins, Cressey's (1953) FTT is most often mentioned. This theory focuses on what motivates people to act dishonestly and unethically. Pressure, opportunity, and rationalization are the three requirements for fraud to take place. Much subsequent study centered on the three italicized parts of this hypothesis such as pressure, opportunity, and rationalization often shortened as such. According to the theory, a crime cannot take place until all three are present.

According to the fraud triangle model (Cressey, 1971), three main factors lead individuals to perpetrate fraudulent activities: external pressure, opportunities, and rationalization. Several other reasons have been identified in previous research as driving pupils to cheat. Both Granitz and Loewy (2007) and Shbail et al. (2022) cited research showing that students cheat mostly due to a lack of assignment clarity and an obsession with A+ scores. The research conducted by Jantos (2021) and Akbaslı et al. (2019) exposed that students engaged in cheating due to their perception of unfairness in both the test processes and their instructors. Perceptions of unfairness often stem from feelings of disadvantage, marginalization, or illegitimacy when contrasted with other social groups (Parks et al., 2018). Coghlan et al. (2021) assert that, in ethics, the principles of openness and

responsibility are occasionally linked to the idea of justice. Per Chelliah et al. (2019), several Malaysian universities assert that the rapport between professors and students is crucial to the advancement of knowledge. Lecturers and students have a stronger sense of mutual regard and belonging when professors treat them fairly (Münscher, 2022). Students are less likely to cheat when they feel their professors are treating them fairly (Langenfeld, 2020; et al., 2020), whereas students may cheat more when they feel their professors are being unfair. Thus, getting rid of the unfairness that comes from online cheating is of the utmost importance.

In addition to lecturer fairness, the possibility of cheating has lately gained a lot of attention as a factor that contributes to academic cheating (Böhm et al., 2022). According to Böhm et al. (2022), opportunity strikes when it is very unlikely that fraudulent attempts would be discovered, and several circumstances raise the likelihood of this happening. The absence of oversight in online exams makes it possible for students to cheat (Shbail et al., 2022). The opportunity to perpetrate fraud might also be a result of one's position, says Dellaportas (2013). Students might take advantage of their position's connection to the supervisor to perpetrate fraud because of the personal nature of the relationship. Two groups of students may cheat, according to previous studies: first, those who are comfortable with cheating and have a strong motivation to do so; second, those who are timid but see a chance to cheat and are willing to take it (Jantos, 2021). As is often the case with online courses, this is especially important when exams are not physically present. So, pupils with low academic integrity and a history of experiencing excessive pressure from schools are more prone to cheating (Jantos, 2021; Shbail et al., 2022). The two variables that need to be addressed to prevent online cheating are lecturer fairness and the possibility of cheating (Sholikhah et al, 2024).

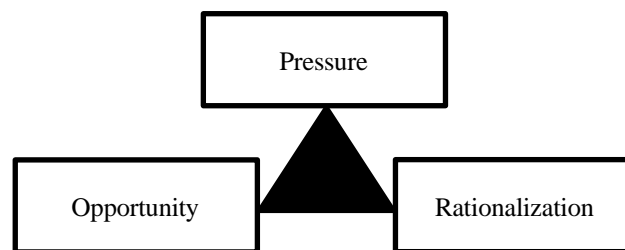


Figure 1: Fraud Triangle Theory

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

In the 1950s, criminologist Dr. Donald Cressey established the fraud triangle theory. His studies on trust-based embezzlement and white-collar crimes (Cheliatsidou et al., 2023) form the basis of this. Numerous sectors have embraced and utilized the theory to comprehend and forestall fraud; these include accounting, auditing, and criminology (Burke and Sanney, 2018). According to Alzahrane (2023), the fraud triangle theory has been around for a while and is a popular paradigm for studying and avoiding fraud. According to this hypothesis, the three conditions of opportunity, rationalization, and pressure are necessary for fraud to take place (refer to Figure 1). Al Shbail et al. (2021a, 2021c), Becker et al. (2006), Choo and Tan (2008), and DiGabriele (2009) all state that academic dishonesty among students can be better understood when the three pillars of the fraud triangle theory are applied to the problem. Armed with this information, we can work towards a world where academic dishonesty is less common and a culture of honesty prevails.

In this context, "opportunity" means that dishonest activities can be easily pursued (Free, 2015). Plagiarism, data falsification, and exam cheating are all possibilities for students in an academic setting. Cheliatsidou et al. (2023) and Tickner and Button (2021) are among the researchers who have shown that the likelihood of fraud increases when there is an opportunity to commit fraud without detection or consequences. Researchers have found that students are more likely to engage in academic dishonesty due to the increased accessibility of knowledge through the Internet and other technological advancements (Wardani and Putri, 2023). Students have a chance to cheat on their assignments and tests because of assignment help websites, according to Smith et al. (2021). When given the chance, students are more likely to cheat on their exams, according to their findings. Smith et

al. (2022) confirmed that students can immediately bypass the learning process due to the growth of websites that offer written tasks, lending credence to this result. In addition, business students are known to use assignment-help websites to cheat, according to Kelly et al. (2022). As a result, we postulate the following:

H1: The opportunities significantly increase the students' misuse using ChatGPT.

Individuals engage in rationalization when they attempt to explain their dishonest actions (Free, 2015). According to Al Shbail et al. (2021c), students could justify their actions by telling themselves that cheating is normal or that they are just like everyone else. Cheating, they may think, has no victims because the goals justify the means. According to Becker et al. (2006) and Choo and Tan (2008), students who think in this way are more likely to cheat on tests even when they are aware that it's illegal. According to research by Becker et al. (2006), dishonest exam cheating is often justified by business students. Burke and Sanney (2018) agreed, affirming that students' justification plays a crucial role in determining their cheating activities, lending credence to this data. Also, knowing that computer science students are unsure of what constitutes plagiarism, Albluwi (2019) discovered that rationalization is a strong predictor of students' instances of plagiarism. As a result, we postulate the following:

H2: The rationalization significantly increases the students' misuse using ChatGPT.

According to Free (2015), "pressure" is the term used to describe the factors that encourage someone to commit fraud. According to Becker et al. (2006), students who engage in academic dishonesty may experience pressure to do well in class and get good scores. Several people, such as parents, classmates, and instructors, can exert this kind of pressure (Al Shbail et al., 2021c). After finishing college, some students may feel even more pressure to get a job (Burke and Sanney, 2018). Students may feel compelled to resort to academic dishonesty when faced with such pressure. A variety of dishonest behaviors may be influenced by peer pressure, according to Homer (2020). Al Shbail et al. (2021c) concur, stating that students' cheating conduct is greatly influenced by the existence of pressure. One major factor that influences students to cheat in class is peer pressure, according to research by Choo and Tan (2008). Hence, the following theory is put forth:

H3: The pressure significantly increases the students' misuse using ChatGPT

METHODOLOGY

This study adopts a cross-sectional strategy. We implemented a procedural remedy to reduce any potential technique bias. The results were gathered through a survey in which participants completed a questionnaire independently. This approach is crucial for achieving a high response rate as it encourages and instills confidence in respondents, hence increasing their willingness to engage in and finish the survey (Stover and Stone, 1974). To mitigate social desirability bias, measures were taken to ensure privacy during the completion of the questionnaire. This was achieved by maintaining an appropriate distance and assuring respondents that their names and any other identifiable personal information would not be requested. It was also emphasized that the information provided would be used solely for research purposes (Schwepker and Schultz, 2013).

Common Method Bias

Since this study relied on a single informant strategy for data collection, it is necessary to employ Harman's single-factor analysis to account for the common method bias, as discussed in Podsakoff et al. (2003). According to the research, by Podsakoff et al. (2003), a single component explained 36.17% of the variation, which is less than 50%. This falls below the threshold and indicates that there are no severe concerns that could threaten the model's validity. We also conducted the full collinearity test by following the recommendations of Kock and Lynn (2012) and Kock (2015), we conducted a comprehensive collinearity test to ensure that the data was not skewed due to Common Method Bias, since it was derived from a single source. This method involves regressing all variables on a common variable; if the VIF is less than or equal to 3.3, it means that the data from the single

source does not introduce any bias. Since the VIF value was less than 3.3, we can rule out the possibility of significant single-source bias in our data.

Table 1: *Full Collinearity Testing*

PRESS	OPP	RAT	SAD
2.759	2.578	3.481	1.687

Note: PRESS = Pressure, OPP = Opportunity, RAT = Rationalization, SAD = Students academic dishonesty

Sample

We reached out to 300 students and received 250 surveys back, for an 83% response rate; 48% of those students were male and 52% were female. Most of the respondents (95% were in the 21–25 age range), as shown in Table 2, belonged to a fairly even distribution across all age categories. That is, students in their last semester of a Bachelor's degree program at a public university in Malaysia make up the sample.

Table 2: demography

Demography	Total percentage
Male	48%
Female	52%
Age	Total percentage
21-25	95%
26-30	5%

N=250

Data analysis

The measurements, instrument validity, reliability, and hypotheses were tested using the structural equation modeling (SEM) method in conjunction with the SmartPLS 4 software. SEM is a popular tool among modern academics for testing FTT constructs because of its ability to measure connections among latent variables (Lim et al., 2019). In behavioral research, Partial Least Square SEM (PLS-SEM) works well when there is little theoretical support for ideas and hypotheses, small sample sizes, and non-normal data (Hair et al., 2017). Predictive and confirmation theory can both benefit from PLS-SEM, a second-generation method for analyzing and explaining variance in endogenous latent constructs or dependent variables (Hair et al., 2014).

RESEARCH FINDINGS AND DISCUSSIONS

Measurement model

We used a two-stage testing procedure outlined by Anderson and Gerbing (1988) to evaluate the model. Before conducting the structural model test, we ensured that the instruments utilized were valid and reliable by running the measurement model according to the criteria of Hair et al. (2019) and Ramayah et al. (2018). The loadings, AVE, and CR of the measurement model were evaluated. For every one of these metrics the loadings, the AVE, and the CR must be greater than or equal to 0.5. Every AVE is greater than 0.5 and every CR is greater than 0.7, as demonstrated in Table 3 and Figure 2. Even the loadings were satisfactory; according to Hair et al. (2019), just a couple of the loadings were below 0.708.

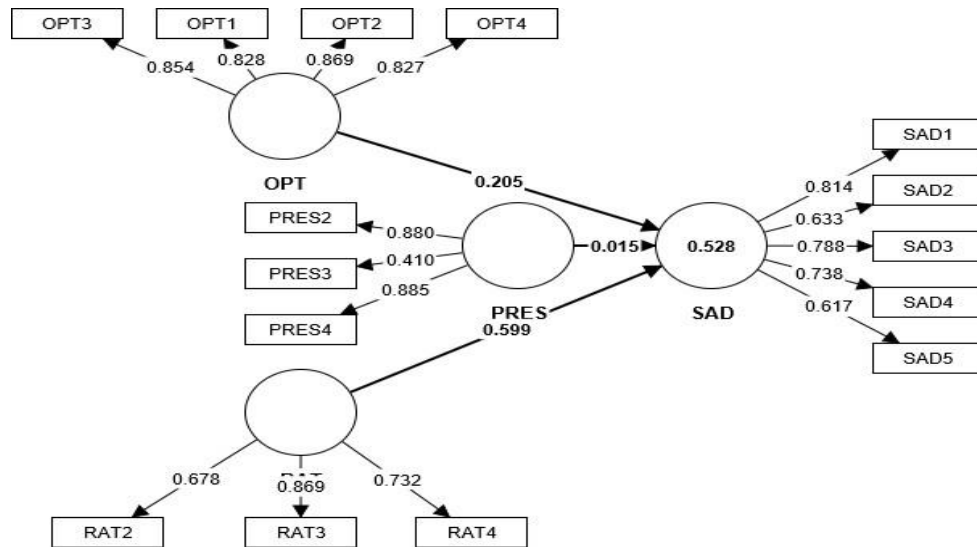


Figure 2: Measurement model

Table 3: Validity and reliability

Construct	Loading	Composite	AVE
OPT3	0.854		
OPT1	0.828		
OPT2	0.869	0.886	0.713
OPT4	0.827		
PRES2	0.880		
PRES3	0.410	0.775	0.575
PRES4	0.885		
RAT2	0.678		
RAT3	0.869	0.806	0.583
RAT4	0.732		
SAD1	0.814		
SAD2	0.633		
SAD3	0.788	0.843	0.522
SAD4	0.738		
SAD5	0.617		

In the second stage, we used the HTMT criterion, which was proposed by Henseler et al. (2015) and revised by Franke and Sarstedt (2019), to determine the discriminant validity. In the tougher criterion, the HTMT values should not exceed 0.85, whereas, in the more lenient criterion, they should not exceed 0.90. The results in Table 4 demonstrate that all nine HTMT values were below the more stringent threshold of ≤ 0.85 , allowing us to infer that the participants grasped the idea that the nine components are separate. Both of these validity tests, when combined, proved that the items used in the assessment were accurate and trustworthy.

Table 4: HTMT

	OPT	PRES	RAT	SAD
OPT				
PRES	0.391			
RAT	0.747	0.726		
SAD	0.557	0.416	0.833	

Note: PRESS = Pressure, OPP = Opportunity, RAT = Rationalization, SAD = Students academic dishonesty by using ChatGPT

Structural model

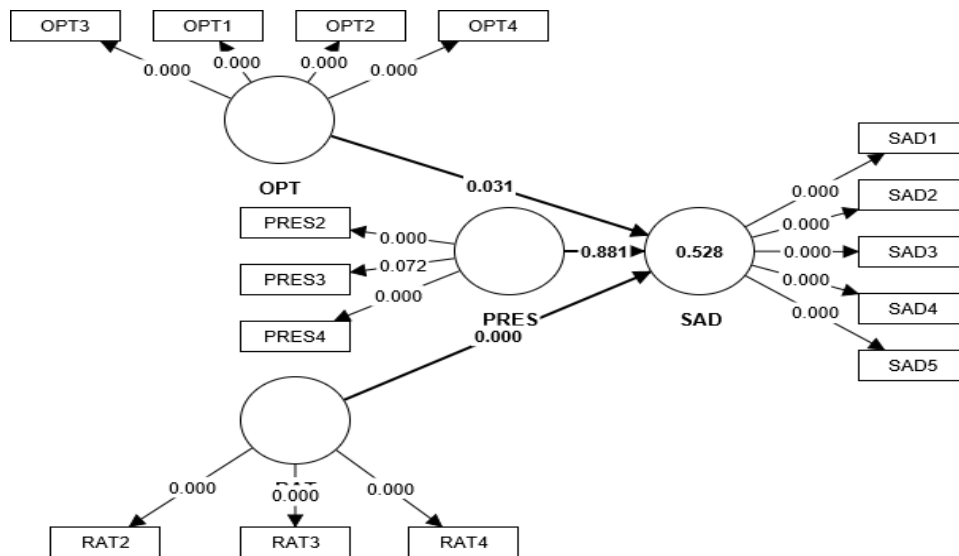


Figure 3: Structural model

Table 5: Hypothesis testing

	Beta value	Sample mean	(STDEV)	T statistics	P values	Result
OPT -> SAD	0.205	0.218	0.095	2.156	0.031	supported
PRES -> SAD	0.015	-0.011	0.104	0.149	0.881	Not supported
RAT -> SAD	0.599	0.591	0.106	5.655	0.000	Supported

Note: PRESS = Pressure, OPP = Opportunity, RAT = Rationalization, SAD = Students academic dishonesty by using ChatGPT

We conducted the analysis (bootstrapping for 10000) to examine the impact of three predictors on student academic dishonesty (SAD). The R2 value obtained was 0.528, indicating that the three variables collectively accounted for 53% of the variability in Student academic dishonesty by using ChatGPT. The variables Opportunity ($\beta = 0.205, t=20156, p < 0.01$), pressure ($\beta = 0.015, t=0.149, p < 0.01$), and rationalization ($\beta = 0.599, t=50655, p < 0.01$) all showed a. Therefore, this supports hypotheses H1, and H3 meanwhile h2 are not supported.

In addition to that, as described by Shmueli et al. (2019), PLSpredict is a process that uses a holdout sample to provide predictions at the case level, either on an item or construct level. This procedure employs PLS-Predict and incorporates a 10-fold procedure to assess the predictive relevance. According to Shmueli et al. (2019), if all the differences between items (PLS-LM) are lower, it indicates strong predictive power. Conversely, if all the differences are higher, it suggests that predictive relevance is not confirmed. If the majority of the differences

are lower, it indicates moderate predictive power, while if the minority of differences are lower, it suggests low predictive power. According to Table 6, the errors of the PLS model were consistently lower than those of the LM model. Therefore, we may infer that our model exhibits a robust predictive capability.

Table 6: PLS Predict

Item	PLS RMSE	LM RMSE	PLS-LM	Q ² _predict
OPT	0.955	1.065	-0.073	0.307
PRES	0.949	1.017	-0.048	0.325
RAT	0.971	1.035	-0.0356	0.388

Note: PRESS = Pressure, OPP = Opportunity, RAT = Rationalization, SAD = Students academic dishonesty by using ChatGPT

To find the moderately significant antecedents with low performance for the target construct, the investigators used the SmartPLS tool to conduct an importance-performance map analysis (IPMA). Consequently, problem areas may be identified. There are four quadrants: concentrate, maintain, reduce priority, and maximize. For instance, the components that are highly important and work well are shown in the maintenance quadrant; for this quadrant, it is recommended that the factors remain unchanged. Potentially overkilling components are shown in the quadrant along with those that are low in relevance but perform very well. According to Streukens et al. (2017), the components that are not very important but have poor performance are shown in the lower priority quadrant.

Table 7: Important & Performance Analysis

	Importance	Performance
OPT	0.205	72.185
PRES	0.015	19.13
RAT	0.599	77.237

Table 7 illustrates the IPMA outcome for student academic dishonesty as it pertains to ChatGPT in Malaysia higher education. Here, "performance" is the latent variable's score on a scale from 0 to 100, and "importance" is the sum of the antecedent constructs' effects on the student's academic dishonesty as measured by ChatGPT. Opportunity came in second, with pressure following closely behind. With a total impact value of 0.205, this indicates that students' academic dishonesty grows as opportunity increases.

DISCUSSION, CONCLUSION AND RECOMMENDATION

While students have always been able to cheat on exams (Wardani and Putri, 2023; Alshurafat et al, 2023), students now have even more tools at their fingertips (Smith et al., 2022). Students can evade learning and cheat on their projects by purchasing access to study materials such as essay samples, test bank answers, and solutions manuals. This paper emphasizes the importance of studying how students cheat using artificial intelligence language models like ChatGPT. By doing so, we can better understand the greater problem of technology-assisted academic dishonesty and its effects on the educational system.

The results show that students think ChatGPT makes it easy to cheat because it satisfies the need for opportunity, rationalization, and pressure, the three sides of the fraud triangle. Students looking to cut corners may find the AI-powered platform very enticing. Students may use ChatGPT to make themselves feel better about cheating. However, in this study, pressure did not show a significant relationship with AD students. The findings of this

study are contrary to the study of Alshurafat (2023) which describes the aspect of pressure as one of the factors in the occurrence of AD by using Chatgpt among students.

Using ChatGPT or any other artificial intelligence language model to cheat on homework is unethical and undermines academic credibility. The fraud triangle theory, which a recent study applies to this behavior, posits that opportunity, justification, and pressure are the three main drivers of fraudulent activity. Institutions of higher learning can do more to promote academic integrity and prevent cheating if they have a better grasp of the interplay and contributions of these factors to academic dishonesty.

A potential link between theory and practice can be seen in this research on how students in higher education use ChatGPT and other AI technologies for cheating. Educators and administrators can utilize the study's findings to craft focused programs and policies that tackle academic dishonesty with effectiveness. In addition to helping students understand the value of upholding ethical standards, this research can steer the creation and refinement of initiatives meant to promote academic integrity. The fraud triangle idea, when put into practice, can spark new conversations about academic honesty, the ethics of artificial intelligence, and ways to prevent fraud. Awareness and integrity activities need to be mobilized more intensively in solving this problem. In this more challenging and diverse technological world, the challenge of building integrity in academia needs to be more forward-looking and comprehensive.

However, there are limitations in this study that can be used as a guide for future researchers. Future studies can replicate this study in different contexts. This study was conducted in Malaysia and among degree program students only. Future studies can expand the study among larger and more specific respondents. Aspects such as the influence of the environment, grades, and achievements can also be used as research variables in the future.

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