



# Analysis of the Impact of Moral Education on Student Academic Cheating in Review of Hexagon Fraud

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**Abstract.** Academic fraud is a serious problem in the world of higher education. This study aims to analyze the impact of moral education on student academic fraud using the hexagon fraud approach. Hexagon fraud is a model that describes six dimensions of academic fraud: opportunity, pressure, rationalization, ability, arrogance, and collusion. Through this research, it is expected to provide a better understanding of the relationship between moral education and academic fraud and explain the importance of moral education in preventing and reducing student academic fraud. The population of this study is students of the University of Muhammadiyah Surakarta who are still active in their studies, and the sample in this study is active students at the Faculty of Teacher Training and Education, with a total number of respondents as high as 250. The final result was that moral education taught has a direct influence on academic fraud, and rationalization indicators in moral teaching have a partial effect on the prevention of academic fraud. Other indicators such as opportunity, pressure, ability, arrogance, and collusion in moral education teaching still have no impact on preventing academic fraud.

**Keywords:** Moral Education, Academic Fraud, Hexagon Fraud

## 1 Introduction

As a fairly large nation that has abundant natural and human resources, Indonesia must be recognized as a nation that plays an important role in the advancement of science and technology [1]. Education itself is a human right, which means that everyone has the right to obtain education [2].

The education system contributes to the sustainable development of the nation while giving students the opportunity to acquire moral values, skills, and competencies that help them bring change for themselves as well as in the society in which they live [3]. In this case, the teacher plays an important role as a moral example, and students consider the teacher as a role model.

Character education can also be referred to as values education, ethics education, or moral education. The main goal is to cultivate in students the ability to distinguish between the right and inappropriate choices, practice kindness, and know the spirit of spreading kindness in everyday life [4]. Educators can improve the character of students

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R. H. Mustofa et al. (eds.), *Proceedings of the 2nd International Conference on Education Innovation and Social Science (ICEISS 2023)*, Advances in Social Science, Education and Humanities Research 815,

[https://doi.org/10.2991/978-2-38476-190-6\\_9](https://doi.org/10.2991/978-2-38476-190-6_9)

by providing examples and explanations, which is one of the goals of national education, namely character building [5].

Education is said to be complete when it contributes to one's development, which includes mental and moral growth. From existing sources, it is said that there has been a dramatic decline in moral standards in modern times [6]. The purpose of moral education for sustainability is to equip students with the awareness and values necessary to produce a sustainable future. But unfortunately, moral education in Indonesia has not been so intense in responding to the importance of moral education, especially in the world of education. Almost everyone agrees that academic fraud is unfair, dishonest, dangerous, and morally bad [7].

From the available data most students cheat during their academic careers, therefore how can cheating be so common in education? One possibility is that moral judgments have little effect on decisions about cheating. And the other possibility is that moral judgment does play an important role in college students' decisions about cheating, and the gap between assessment and action is much smaller than is often assumed.

Simply put, in most situations students accurately perceive that cheating is wrong and decide to refrain from cheating. But in some situations, students cheat because they consider it acceptable or because they prioritize other pressing issues over their problems with academic integrity [8].

Basically, cheating can occur through intentional behavior, as is known as the fraud triangle. According to [9] this fraud triangle consists of three components: (1) Pressure, (2) Rationalization, and (3) Opportunity. Then over time, there was a modification in terms of the underlying fraudulent act known as diamond fraud with four main elements, namely by adding an element of capability; pentagon fraud with five elements, namely by adding an element of arrogance and finally added an element of collusion which is currently called hexagon fraud with six elements [10]. This study will discuss how the impact of moral education on academic fraud will be reviewed through hexagon fraud.

Do the obstacles faced by students force them to engage in these behaviors deliberately? Obstacles are things that are unwanted or disliked in existence that hinder one's progress, that cause difficulties both for individuals and others, and that want or need to be removed. If there is frequent fraud, it will be very possible for a decrease in the quality of education, therefore education is an important factor to see the back and forth of the quality of the nation [11].

## **2 Literature Review**

Analysis of the impact of moral education on student academic fraud using the hexagon fraud approach can provide deep insight into the relationship between moral education and academic fraud [12]. Hexagon fraud is a model that describes six dimensions of academic fraud: cognitive, moral, situational, opportunity, rationalization, and social control. Through analysis using the hexagon fraud framework, it can be understood that moral education has an important role in preventing and reducing academic fraud among students.

The moral dimension of hexagon fraud shows that a strong moral education can help students internalize the ethical values and integrity needed in an academic environment. Students with a high moral education tend to engage more in honest academic behavior and avoid cheating. In addition, moral education can also influence other dimensions of hexagon fraud, such as cognitive behavior, situational behavior, and rationalization [13]. Moral education that encourages critical thinking skills and dealing with challenging situations can help students avoid fraudulent behavior based on fraud or forgery. In addition, effective moral education can influence the way students justify or rationalize fraudulent behavior.

By analyzing the impact of moral education on various dimensions of academic fraud using the hexagon fraud approach, this literature review provides a more comprehensive understanding of the importance of moral education in preventing and overcoming academic fraud among students. With this understanding, higher education institutions can develop effective prevention strategies and implement a more integrated moral education approach in an effort to promote academic integrity in their learning environments.

### **3 Methodology**

In this study, quantitative research methods are used and use multivariate analysis methods with structural equation modeling (SEM) analysis approaches as quantitative analysis approaches, where complex system relationships can be explained by quantitative systematic models but cannot be represented by iconic or analog modeling [14]. Then the information and facts that have been obtained from the completed questionnaire will be entered into the SEM data processing procedure for verification. In the use of SEM, we will use the outer modeling model and the inner model, which represents the relationship between each construct and related indicators [15].

This research was conducted at the University of Muhammadiyah Surakarta, the implementation of the research will be carried out from February to March 2023. The population in this study is all active students registered at the University of Muhammadiyah Surakarta, in this study samples will be taken from various FKIP cross-study program students who are still active or registered at the University of Muhammadiyah Surakarta by determining samples using simple random proportional sampling techniques. In this study, researchers used 250 respondents, which according to Ghozali [16] explained that the number of representative samples to use SEM analysis techniques was 100 respondents.

### **4 Result and Analysis**

In using the PLS-SEM statistical analysis tool, there are two stages that need to be done by researchers before conducting a hypothesis test, these stages include testing the outer model and inner model. After processing the outer and inner model data has been carried out, then researchers can interpret the hypothesis test.

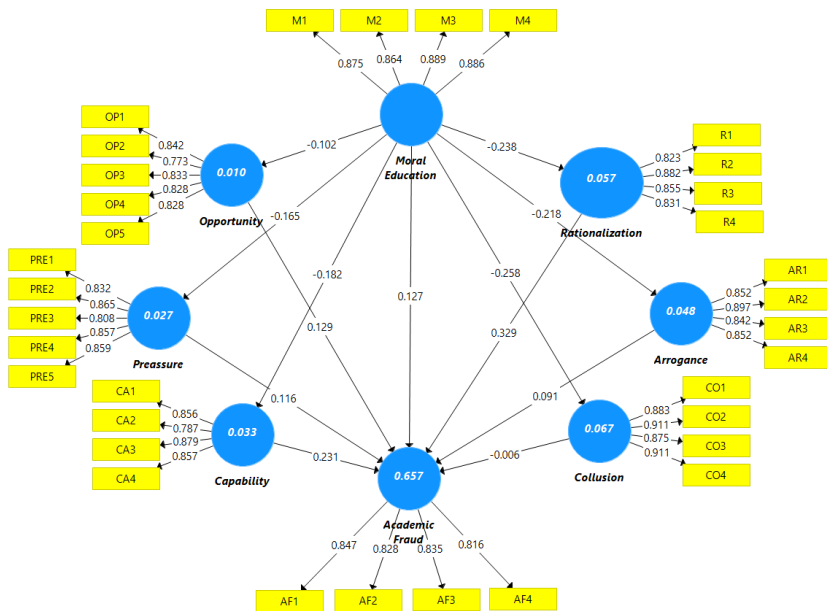


Figure 1. SmartPLS Outer Model Result

#### 4.1 Measurement Model Evaluation (Outer Model)

The measurement of correlation between indicators and latent constructs / variables aims to evaluate the measurement model. When the correlation has been found, it will be known the validity and reliability in a model.

##### 4.1.1. Convergent Validity (Loading's Factor)

Convergent validity itself is one of the stages of analysis that will produce an idea of whether the indicators used as manifest variables are able to represent and underlie the latent variables they build with interpretation: Indicators are said to be valid or fulfilled if the value of convergent validity is  $> 0.70$  [17].

Figure 1 is the first validity test result using the validity convergent test. Based on these results, it can be seen that each indicator gets a convergent value of  $> 0.70$  which is marked by a thick underline, with this, each variable that has a value above 0.70 can be said to meet the convergent validity, and vice versa.

##### 4.1.2. Construct Reability & Validity

Table 1. Construct Reability & Validity

	AVE	Composite Reliability	Cronbach's Alpha
Academic Fraud	0,691	0,900	0,851
Arrogance	0,741	0,920	0,884

Capability	0,715	0,909	0,866
Collusion	0,801	0,942	0,917
Moral Education	0,772	0,931	0,903
Opportunity	0,674	0,912	0,879
Pressure	0,713	0,926	0,899
Rationalization	0,720	0,911	0,870

Source: Output SmartPLS (2023)

4.1.3. Average Variance Extracted

The second validity test is the average variance extracted (AVE) test, this test is used to measure the accuracy of each indicator, where the AVE value will describe the variance value of each indicator in the construct captured by the variable more than the variance caused by measurement error. According to Hair et al. [18] the interpretation of this test is: The indicator is said to be valid if the AVE value is > 0.50. Table 1 is the result of the second validity test using construct reliability & validity tests. The test results show that the AVE value on each indicator is > 0.50 which is marked with a green chart indicating that the indicator has been fulfilled because it exceeds the existing conditions.

4.1.4. Composite Reliability

Composite reliability is used to describe the consistency of the indicators used to measure constructs, with an interpretation. An indicator is considered to have high consistency to measure its construct if it has a CR value of > 0.70.

Table 1 shows the results of the composite reliability test, from the test using PLS-SEM the results show that each indicator has a CR value of > 0.70 which is marked with a green chart, so the results show that the indicator has high consistency in measuring its construct. However, if the chart results are found in red, it shows that the CR value < 0.70 which indicates that the indicator has low consistency.

4.1.5. Cronbach’s Alpha

Cornbach's alpha value in this test will be used to strengthen the reliability of each indicator with recommended alpha value and considered reliable for the indicator is > 0.70 (18).

Based on table 1, it is shown that the result value of Cronbach's alpha on each indicator exceeds the predetermined condition of 0.70, this is indicated by a green char on each existing predictor.

4.1.6. Discriminant Validity

The discriminant validity test will describe whether the construct has an adequate discriminant, meaning that each loading value of each indicator against its construct must be greater than cross-loading value of the other construct.

Table 2 presents the results of the discriminant validity test which displays the results of loading indicators and also-cross loading. The value of the loading indicator is indicated by the value in black bold in the table, while the other value means the value of cross loading.

As a brief explanation, researchers take based on the AF1 question code, the AF1 code is the question code of the academic fraud indicator which has a loading indicator value of 0.847, while the value of 0.556 comes from the arrogance indicator, 0.639 comes from the capability indicator, 0.464 comes from collusion, 0.010 comes from moral education, 0.590 which is an indicator of opportunity, 0.597 is a pressure indicator, and the last 0.619 which is an indicator of rationalization is a value called cross loading. When viewed from AF1, the value of loading the indicator AF1 > cross loading AF1 which means the indicator is said to be valid, that the indicator can be used to explain the latent variable.

In the entire table 2 it can be seen that the loading indicator of each question has a bold black color, which indicates that the value of the loading indicator > the value of cross loading. However, if the indicator loading value is bold, red means that it indicates that the value is smaller (<) than cross loading.

**Table 2.** Discriminant Validity Test Result

Code	Academic Fraud	Arrogance	Capability	Collusion	Moral Education	Opportunity	Pressure	Rationalization
AF1	<b>0,847</b>	0,556	0,639	0,464	0,010	0,590	0,597	0,619
AF2	<b>0,828</b>	0,523	0,600	0,460	0,013	0,615	0,557	0,556
AF3	<b>0,835</b>	0,635	0,673	0,475	-0,063	0,615	0,635	0,655
AF4	<b>0,816</b>	0,648	0,625	0,503	-0,102	0,516	0,608	0,706
AR1	0,666	<b>0,852</b>	0,741	0,571	-0,130	0,672	0,721	0,778
AR2	0,671	<b>0,897</b>	0,800	0,650	-0,182	0,647	0,742	0,769
AR3	0,532	<b>0,842</b>	0,666	0,651	-0,317	0,504	0,615	0,687
AR4	0,570	<b>0,852</b>	0,694	0,679	-0,129	0,559	0,646	0,651
CA1	0,682	0,701	<b>0,856</b>	0,605	-0,114	0,676	0,709	0,759
CA2	0,616	0,572	<b>0,787</b>	0,540	-0,097	0,700	0,618	0,656
CA3	0,678	0,770	<b>0,879</b>	0,651	-0,221	0,676	0,736	0,786
CA4	0,602	0,814	<b>0,857</b>	0,682	-0,179	0,635	0,723	0,735
CO1	0,474	0,633	0,643	<b>0,883</b>	-0,228	0,510	0,582	0,605
CO2	0,565	0,712	0,686	<b>0,911</b>	-0,229	0,537	0,608	0,654
CO3	0,510	0,640	0,648	<b>0,875</b>	-0,187	0,506	0,545	0,587
CO4	0,495	0,653	0,646	<b>0,911</b>	-0,279	0,547	0,574	0,598
M1	- 0,074	- 0,207	- 0,204	- 0,255	<b>0,875</b>	-0,173	- 0,184	-0,238

M2	0,024	- 0,159	- 0,098	- 0,222	<b>0,864</b>	-0,022	- 0,102	-0,174
M3	- 0,053	- 0,220	- 0,172	- 0,231	<b>0,889</b>	-0,068	- 0,149	-0,223
M4	- 0,031	- 0,165	- 0,141	- 0,188	<b>0,886</b>	-0,063	- 0,124	-0,184
OP1	0,582	0,584	0,667	0,486	-0,082	<b>0,842</b>	0,661	0,661
OP2	0,540	0,461	0,580	0,400	0,013	<b>0,773</b>	0,565	0,564
OP3	0,537	0,459	0,610	0,434	0,012	<b>0,833</b>	0,565	0,552
OP4	0,554	0,629	0,684	0,523	-0,146	<b>0,828</b>	0,676	0,624
OP5	0,653	0,690	0,704	0,547	-0,187	<b>0,828</b>	0,735	0,724
PRE1	0,616	0,637	0,708	0,510	-0,069	0,711	<b>0,832</b>	0,652
PRE2	0,632	0,675	0,724	0,561	-0,136	0,729	<b>0,865</b>	0,674
PRE3	0,594	0,646	0,664	0,494	-0,180	0,609	<b>0,808</b>	0,710
PRE4	0,625	0,678	0,690	0,558	-0,120	0,650	<b>0,857</b>	0,688
PRE5	0,580	0,718	0,698	0,602	-0,192	0,616	<b>0,859</b>	0,710
R1	0,670	0,703	0,797	0,552	-0,121	0,704	0,753	<b>0,823</b>
R2	0,639	0,718	0,746	0,558	-0,242	0,650	0,679	<b>0,882</b>
R3	0,663	0,698	0,701	0,556	-0,221	0,629	0,660	<b>0,855</b>
R4	0,622	0,737	0,709	0,655	-0,224	0,621	0,668	<b>0,831</b>

Source: Output SmartPLS (2023)

## 4.2 Structural Model Evaluation / Inner Model

### 4.2.1. R<sup>2</sup> Value (R Square)

The R<sup>2</sup> value is used to measure model quality criteria or goodness of fit model as well as a coefficient of determination which shows the magnitude of the influence of exogenous latent variables on endogenous latent variables. The parameter R<sup>2</sup> according to [19][16][20]. It can be seen as follows, R<sup>2</sup> above 0.67 is considered to have a strong relationship, R<sup>2</sup> above 0.33 is considered to have a moderate relationship, and R<sup>2</sup> with a value of 0.19 is considered to have a weak relationship.

Table 3. R Square

	R Square	R Square Adjusted	Information
Academic Fraud	0,657	0,648	Moderate
Arrogance	0,048	0,044	Moderate
Capability	0,033	0,029	Moderate
Collusion	0,067	0,063	Moderate
Opportunity	0,010	0,006	Weak
Pressure	0,027	0,023	Weak

Rationalization	0,057	0,053	Moderate
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Source: Output SmartPLS (2023)

Table 3 presents the R Square value of each indicator, the R<sup>2</sup> value of academic fraud, arrogance, capability, collusion, and rationalization falls into the moderate category because  $R^2 > 0.33 < 0.67$  in the results of the R Square analysis, a moderate relationship refers to the strength of the influence of the independent variable on the dependent variable. When R Square has a moderate value, it indicates that the independent variable is able to partially explain the variation or change that occurs in the dependent variable.

In this context, the results of a moderate R Square analysis show that the independent variable has a significant influence on the dependent variable, but there are still other factors that also contribute to explaining the variation in the dependent variable. In other words, the moderate relationship in R Square indicates that the independent variable contributes indispensably to the dependent variable, but there are still other factors that influence the dependent variable significantly.

Furthermore, the opportunity and pressure indicators fall into the category of weak relationships because  $R^2 < 0.33 < 0.19$  in the results of the R Square analysis, a weak relationship refers to the strength of the influence of the independent variable on the dependent variable which is relatively low. When R Square has a weak value, it indicates that the independent variable has a limited or insignificant influence on the variation or change that occurs in the dependent variable.

In this context, the weak results of R Square analysis show that the independent variable has a limited contribution to make in explaining variation in the dependent variable. Other factors, not included in this analysis, may have a larger or more complex influence on the dependent variable. In the interpretation of the analysis results, the weak relationship in R Square indicates that the observed independent variable is not able to significantly explain the variation or change in the dependent variable alone. Therefore, it is important to consider other factors that might influence the dependent variable and conduct a more in-depth analysis to gain a more comprehensive understanding of the relationship.

In the case of a weak relationship, it is important to look at other factors that may influence the dependent variable and consider other aspects of the study to get a more complete picture. This can involve the exploration of additional variables, further statistical analysis, or follow-up research to gain a deeper understanding of the relationship between those independent and dependent variables.

#### 4.2.2. f<sup>2</sup> Value (f square)

The value of f<sup>2</sup> describes the magnitude of the influence of the predictor latent variable on the endogenous latent variable in the structural order. The f<sup>2</sup> magnitude can be categorized into three types, namely, the f<sup>2</sup> value of 0.02 is categorized as a weak influence, the f<sup>2</sup> value of 0.15 is categorized as a moderate influence, and the f<sup>2</sup> value of 0.35 is categorized as a strong influence [18].

**Table 4.** f<sup>2</sup> value

Construct	f <sup>2</sup>	Information
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Academic Fraud → Arrogance	0,005	Weak
Academic Fraud → Capability	0,024	Moderate
Academic Fraud → Collusion	0,000	Weak
Academic Fraud → Moral Education	0,042	High
Academic Fraud → Opportunity	0,015	Weak
Academic Fraud → Pressure	0,009	Weak
Academic Fraud → Rationalization	0,057	High
Arrogance → Moral Education	0,059	High
Capability → Moral Education	0,034	Moderate
Collusion → Moral Education	0,071	High
Opportunity → Moral Education	0,011	Weak
Pressure → Moral Education	0,028	Moderate
Rationalization → Moral Education	0,060	High

Source: Output SmartPLS (2023)

Based on table 4, f square can be categorized into each section, following the description of each category, namely weak, moderate and high:

In table 4 it can be seen that the following variables have a weak relationship or relationship because the values of  $f^2 < 0.02 < 0.15$ . In the results of f square analysis, a weak relationship refers to the relatively low strength of the influence of the independent variable on the dependent variable. f square is a measure of the effectiveness of the independent variable in explaining variations in the dependent variable in multiple linear regression models.

If the f square value is relatively low, it indicates that the independent variable has a limited contribution in explaining the variation in the dependent variable. In this context, a weak relationship in f square indicates that the observed independent variable is not capable of significantly explaining variations or changes in the dependent variable alone in multiple linear regression models. In the interpretation of the analysis results, a weak relationship in f square indicates that the observed independent variable has limited or insignificant impact in explaining variations in the dependent variable in the model being studied. Other factors not included in the model may have a larger or complex influence on the dependent variable.

Furthermore, in table 4 there are variables that have a moderate relationship or influence caused by  $f^2 > 0.15 < 0.35$  on other variables. In the results of f square analysis, a moderate relationship refers to the strength of the influence of the independent variable on the dependent variable which is quite significant in multiple linear regression models. f square is a measure of the effectiveness of the independent variable in explaining variations in the dependent variable.

If the value of f square has a moderate level, it indicates that the independent variable makes a significant contribution in explaining the variation in the dependent variable in multiple linear regression models. Although the effect is not strong, the independent variable still provides a better explanation than the variable that is not included in the model. In the interpretation of the analysis results, a moderate

relationship in f square indicates that the observed independent variable exerts a meaningful influence in explaining variation in the dependent variable in the context of multiple linear regression models. The independent variable can predict or partially explain variation in the dependent variable, although there are still other factors that can affect the dependent variable.

And finally in table 4 there are variables that have a high relationship or influence because they are caused by  $f^2 > 0.35$  on other variables. In the results of f square analysis, the high relationship refers to the strength of the influence of the independent variable on the dependent variable which is very significant in multiple linear regression models. F square is a measure of the effectiveness of the independent variable in explaining variations in the dependent variable.

If the value of f square has a high level, it indicates that the independent variable makes a strong and significant contribution in explaining the variation in the dependent variable in multiple linear regression models. The independent variable is substantially able to predict or explain the variation that occurs in the dependent variable. In the interpretation of the analysis results, the high relationship in f square indicates that the observed independent variable has a very significant influence in explaining variation in the dependent variable in the context of multiple linear regression models. The independent variable has a strong ability to predict or explain changes that occur in the dependent variable, with a clear and consistent explanation.

### 4.3 Hypothesis Determination

In the process of determining this hypothesis is done by comparing P Value with probability value of 5% or 0.05, with the interpretation of namely: "If P Value < 0.05 then  $H_a$  is accepted, so it is concluded that there is a significant influence between predictor variables on the dependent variable. However, if the P Value > 0.05 then  $H_a$  is rejected, which concludes that there is no significant effect between the predictor variable and the dependent variable".

**Table 5.** Direct & Indirect Effect

<b>Direct Effect</b>				
	<b>Original Sample (0)</b>	<b>T Statistics ( 0/STDEV )</b>	<b>P Values</b>	<b>Information</b>
Arrogance → Academic Fraud	0,091	1,094	0,274	Insignificant
Collusion → Academic Fraud	-0,006	0,110	0,912	Insignificant
Moral Education → Academic Fraud	0,127	3,460	0,001	Significant
Moral Education → Arrogance	-0,218	2,870	0,004	Significant
Moral Education → Capability	-0,182	2,360	0,019	Significant
Moral Education → Collusion	-0,258	3,678	0,000	Significant
Moral Education → Opportunity	-0,102	1,277	0,202	Insignificant
Moral Education → Pressure	-0,165	2,167	0,031	Significant

Moral Education → Rationalization	-0,238	3,137	0,002	Significant
Opportunity → Academic Fraud	0,129	1,226	0,221	Insignificant
Pressure → Academic Fraud	0,116	0,986	0,325	Insignificant
<b>Indirect Effect</b>				
	<b>Original Sample (0)</b>	<b>T Statistics ( 0/STDEV)</b>	<b>P Values</b>	<b>Information</b>
Moral Education → Arrogance → Academic Fraud	-0,020	0,994	0,321	Insignificant
Moral Education → Capability → Academic Fraud	-0,042	1,394	0,164	Insignificant
Moral Education → Collusion → Academic Fraud	0,002	0,106	0,916	Insignificant
Moral Education → Opportunity → Academic Fraud	-0,013	0,747	0,455	Insignificant
Moral Education → Pressure → Academic Fraud	-0,019	0,783	0,434	Insignificant
Moral Education → Rationalization → Academic Fraud	-0,078	2,219	0,027	Significant

Source: Output SmartPLS (2023)

From table 5 when viewed in terms of indirect influence or indirect effect states that rationalization is the only factor that has an indirect influence in this study, this is seen through the results of the analysis, namely the P Value value  $<$  of 0.05 which means that the indicator has an indirect influence on latent variables. The teaching of moral education seen from the side of rationalization has a significant positive impact, rationalization in moral education refers to the process of forming rational, moral, and ethical thoughts in individuals. Through teaching that focuses on moral reasoning and the building of strong ethical values, students can internalize the principles of honesty, integrity, and responsibility. This is in line with the results of the analysis of the direct effect of moral education on rationalization which states the results that moral education has a direct influence on rationalization.

But things are different when viewed in terms of arrogance, capability, pressure, and also collusion. These four factors when viewed from the indirect influence have P Value results of  $>$  0.05 which indicates that they do not have an indirect effect on academic fraud, but if you look at the direct influence between moral education on the four indicators, they both have a direct effect on each latent variable with P Value values  $<$  0.05. Arrogance in moral education tends to influence the attitude of students by feeling superior and considering themselves entitled to cheat without considering ethical values. Capability, if not balanced with strong moral values, can encourage students who have high academic ability to cheat in order to achieve higher achievement. Pressure, both from the school environment and from parents, who emphasize academic achievement without regard to the right way, can trigger cheating as a means to meet these expectations. In addition, collusion, which is collusion or conspiracy between students to help each other cheat, further exacerbates this problem.

Unlike the case when viewed from the opportunity side, from the results of the analysis, both direct and indirect influences, both find results that opportunity does not have an impact on preventing academic fraud, this can be seen from the results of direct and indirect effects that get P Value values 0.05. From these results, it indicates that the teaching of moral education that does not have an impact on preventing academic fraud because it provides opportunities for cheating will produce adverse effects. If students are given the opportunity to cheat without obvious consequences, they may feel tempted to violate ethical values in order to achieve the desired outcome.

And finally, the direct influence between moral education and academic fraud, the results of the analysis show that moral education has a direct impact on academic fraud as seen from the results of P Value  $< 0.05$ . These results show that broadly speaking through teaching that reinforces moral values, students are given a strong foundation to develop an honest attitude, integrity, and responsibility in an academic environment. Moral education teaches the importance of upholding ethics in every action, as well as the negative consequences of cheating, thus moral education has an important role in reducing academic fraud by developing positive attitudes and values in students.

## 5 Discussion

The relationship between gender and academic fraud has become an important determinant of an individual's identity and experience in a variety of contexts, including in academic settings. On the other hand, academic fraud refers to actions that are contrary to academic ethics and integrity, such as plagiarism, data manipulation, and exam cheating.

It's important to realize that the relationship between gender and academic fraud is multifaceted and influenced by many factors [21]. However, in fact, according to research conducted [22], gender does not have a significant relationship or influence on academic fraud. However, in other studies [23] it is also stated that gender has a positive effect on student academic fraud behavior, this is similar to the results of research conducted by the results of the study stated that female students tend not to commit academic fraud compared to men.

In addition to gender, the source of funds in the payment of study money can also be a factor in encouraging academic fraud. For example, students who get scholarships as a source of tuition funds must still maintain their grades in order to meet the requirements for funding source requirements, so that students get more pressure to maintain their grades and do various ways to maintain grades even by cheating.

Although this relationship is complex and influenced by many other factors, it is important to note that not all students who face such circumstances will engage in academic fraud, as adequate funding does not guarantee that there will be no academic fraud. The results of this study showed that 80% of funding sources were funded by parents, but in the final results of the study there were still academic fraud that occurred even though the source of funds was well fulfilled.

### **5.1 Impact of Moral Education on Academic fraud**

The results of this study show that moral education has a significant influence on academic fraud. This is evidenced by the results of the P-Value analysis smaller than the error standard of 5% ( $0.001 < 0.05$ ) which means that moral education variables have a significant effect on academic fraud. This research is in line with the findings of [24] and [25] which states that moral education has a significant impact on academic fraud.

The results of this study relate the impact of moral education, both ethics, views, behavior towards academic fraud which states that the moral education taught has a great impact on reducing academic fraud committed by Universitas Muhammadiyah Surakarta students. By teaching moral education to students to always instill honest behavior under any circumstances, it will be able to reduce the level of academic fraud.

Students who get a good moral education tend to be better able to recognize and resist the temptation to cheat, because they have a deep understanding of the importance of honesty in achieving meaningful achievements and building good relationships with others [26]. In addition, moral education also teaches values such as personal responsibility and respect for the rights of others, so students are more likely to respect applicable academic rules and norms [27]. Thus, moral education has an important role in reducing academic fraud by developing positive attitudes and values in students.

### **5.2 Impact Of Moral Education On Academic Fraud With Pressure As An Intermediary Variable**

Research shows that moral education does not have an impact on academic fraud with pressure as an intermediary. This is evidenced by the value of the P-Value analysis results greater than the error standard of 5% ( $0.434 > 0.05$ ), so with these results it is stated that moral education does not have a significant effect on pressure as an intermediary in academic fraud. In line with research from [28] and [29] which states that moral education in terms of pressure does not have a significant effect on reducing academic fraud.

The results obtained that moral education applied to Universitas Muhammadiyah Surakarta students with pressure as an intermediary did not affect academic fraud. So that the pressure that occurs both internally and externally can encourage students to commit academic fraud, in other words, the teaching of moral education when viewed from the side of pressure, does not have an impact on reducing cheating that occurs. The findings of this study can occur if students have many demands that they perceive as pressure, thus students commit academic fraud in order to meet the demands imposed on these students.

This suggests that although moral education may teach ethical values and integrity to students, pressure from the environment or external factors may remain a major cause of academic fraud [30]. Pressure factors such as high expectations, intense competition, or excessive achievement demands can drive students to look for shortcuts through cheating. Although moral education may provide a solid foundation for students to develop good moral thinking, strong external pressures can overcome the impact of such moral education [31]. Therefore, it is important to consider pressure factors and

look for ways to reduce such pressure as an additional step in preventing academic fraud.

### **5.3 Impact Of Moral Education on Academic Fraud using Opportunity as An Intermediary Variable**

The results of the research obtained stated that moral education has no impact on academic fraud with opportunities as an intermediary indicator. This finding can be proven through a P-value smaller than the error standard where the value of  $0.455 < 0.05$  is hereby stated that moral education has no impact on academic fraud with opportunities as an intermediary, this is in line with the results of research that has been conducted by [32], [33] and also [34].

This research found that opportunities in the academic process have an influence on the high level of academic fraud that occurs, the moral education that has been given has no impact because students have a great opportunity to be able to commit fraud without being exposed to existing sanctions. If the teaching of moral education does not include adequate supervision and provides opportunities for cheating, then its impact on the prevention of academic fraud will be reduced [35]. The opportunity afforded to commit cheating, whether caused by negligent supervision or other factors, can reduce the effectiveness of moral education in preventing academic fraud. It is important to remember that effective moral education must involve careful supervision, place emphasis on ethical values, and encourage students to respect academic integrity. Thus, moral education that does not pay attention to the opportunity factor for cheating can reduce its effectiveness in preventing academic fraud.

### **5.4 Impact Of Moral Education on Academic Fraud using Rationalization as An Intermediary Variable**

The results of this study found that moral education has an impact on academic fraud with rationalization as an intermediary medium. This is evidenced by the value of the P-Value greater than the established error standard, namely with a value of  $0.27 > 0.05$  with significant effect results. The results of this study are in accordance with the results found by [36], [33] and also [37] where rationalization has a positive effect on reducing academic fraud that occurs.

The results of this study state that rationalization or reasoning that is often taught in moral education has a positive impact on academic fraud. By instilling the thought that committing academic fraud is an improper act, it is hoped that students will be more aware of the importance of taking appropriate actions in today's educational world, and know the causes and consequences that will be borne in the future [38]. Through effective moral education, students can develop rational, moral, and ethical thinking that influences their attitudes toward cheating. Moral education teaching that focuses on moral reasoning and building strong ethical values can help students understand the importance of integrity and honesty in an academic environment. By reinforcing rationalization, students can assess cheating actions with a better perspective and avoid unethical rational justifications [39]. Thus, moral education plays an important role in reducing academic fraud through its positive influence on student rationalization.

### **5.5 The Impact of Moral Education on Academic Fraud using Ability as An Intermediary Variable**

This study found that moral education had no impact on academic fraud with ability as an intermediary indicator. This result is evidenced by the value of the P-Value analysis results smaller than the standard error of 5%, with the form  $0.164 > 0.05$  which states the results have no significant effect. The results of this study are in accordance with the findings of [40] and [41] where ability has no impact on reducing academic fraud.

The results of this study stated that moral education that had been taught in the study period did not have an impact on reducing academic fraud. By analyzing ability as an intermediary indicator, it was found that the ability in this academic process has a role in committing academic fraud, this is because the ability in academic fraud owned by students is getting bigger, therefore it makes it easier for students to commit academic fraud actions with their abilities. Although moral education can teach ethical values and integrity to students, their academic abilities or capabilities are not significantly affected by such moral education in the context of cheating. Capability factors, such as intelligence, academic ability, or specific skills, may have a more dominant influence on a student's decision to cheat. Although moral education can provide a solid moral foundation, students' academic ability remains a factor influencing their decisions in achieving academic results in unethical ways [42]. Therefore, to prevent academic fraud, it needs to be balanced with other strategies that improve academic integrity and consider other factors that can influence students' decisions regarding cheating.

### **5.6 Impact Of Moral Education On Academic Fraud With Arrogance As An Intermediary Variable**

The results of this study state that moral education does not have a significant impact on [43] academic fraud with arrogance as an intermediary. This is supported by the findings of the P-Value value greater than the error standard with a value of  $0.321 > 0.05$  which states that it has no significant effect where this finding is in line with the results of the research by [44].

This finding means that the teaching of moral education does not have an impact on academic fraud with arrogance as an intermediary medium, in other words this arrogance affects student academic fraud. Students can cheat academically by then being able to easily increase their confidence after cheating, feel that cheating on exams is cool, and take pride when cheating academically. Researchers [45] revealed that arrogance arises when a person considers himself not subject to internal controls, policies, or others so that he feels innocent when cheating.

Although moral education can teach ethical values and integrity to students, their level of arrogance is not significantly influenced by moral education [46]. Arrogance, which is a superior attitude and feeling entitled to cheat without considering ethical values, may be influenced by other factors such as social environment, parenting, or personal characteristics. Although moral education can provide an understanding of integrity and honesty, its impact on the level of arrogance of individuals in the context of academic misconduct may be limited. Therefore, in an effort to prevent academic fraud, it is necessary to consider a more holistic approach involving aspects of moral education along with other factors that can influence student arrogance.

### **5.7 Impact Of Moral Education on Academic Fraud using Collusion as An Intermediary Variable**

In this study, the results stated that moral education has no impact on academic fraud with collusion as an intermediary indicator. The results of this research were found through test results with a P-Value value greater than the error standard with a value of  $0.916 > 0.05$  which stated that it had no significant effect, this is certainly in line with the findings of Milik [47] which states that collusion has a role in increasing the level of academic fraud.

The findings in this study mean that the greater a person's collusion, the more likely the individual is to commit academic fraud during the learning process. Milik findings [33] state that collusion affects students' academic fraud behavior. To the knowledge of researchers, there have not been many studies that discuss collusion factors in academic fraud research, so there are only a few previous studies that are in line with this study. According to the results of the study, students with a strong sense of solidarity are more likely to share questions and answers to exams and assignments despite knowing that such behavior is prohibited by the agency. They prefer to be loyal to their friends even though there is a possibility of being punished by the agency.

Although moral education can teach students ethical values and integrity, the tendency to collude with other students in cheating is not significantly influenced by such moral education. Collusion often involves actions planned and carried out together to achieve dishonest gains in an academic context. Although moral education can provide an understanding of the importance of honesty, unethical cooperation in the form of collusion can be influenced by other factors such as peer pressure, academic culture that promotes cheating, or other social factors [48]. Therefore, to prevent academic fraud involving collusion, it is necessary to adopt approaches that involve broader prevention efforts, such as close supervision, building an academic culture that encourages integrity, and developing positive social skills.

## **6 Conclusion**

Based on the problems, research objectives, data analysis and research results and also discussions carried out by researchers, it can be concluded that the teaching of moral education has a significant influence on academic fraud. Rationalization in moral education has a significant positive impact, focusing on moral reasoning and the construction of strong ethical values. This helps students internalize the principles of honesty, integrity, and responsibility. However, factors such as arrogance, capability, pressure, and collusion, although they have a direct influence on moral education, when these factors are used as an intermediary between moral education and academic fraud, there is no indirect influence between the two latent variables. In addition, with the opportunity given to commit acts of cheating caused by negligent supervision and so on, the educational teaching provided has no impact on the prevention of academic fraud itself.



## References

1. Nugroho OF, Permanasari A, Firman H. The movement of stem education in Indonesia: Science teachers' perspectives. *J Pendidik IPA Indones.* 2019;8(3):417–25.
2. Digdowiseiso K. The Development Of Higher Education In Indonesia. *Int J Sci Technol Res.* 2020;9(02).
3. Asif T, Guangming O, Haider AM, Colomer J, Kayanii S, Amin NU. Moral Education for Sustainable Development: Comparison of University Teachers' Perceptions in China and Pakistan. *Sustainability.* 2020;12(3):3014.
4. Ratih K, Utami R., Fuadi D, Mulyasih S, Febriani D, Asmara S, et al. Penguatan Pendidikan Etika dan Karakter Peduli Lingkungan Sosial Budaya di SMP Muhammadiyah 10 Matesih, Karanganyar. *Bul KKN Pendidik.* 2020;2(1):44–9.
5. Narimo S, Utama S, Novitasari M. Pembentukan Karakter Peserta Didik dalam Pembelajaran Pendidikan Pancasila dan Kewarganegaraan Berbasis Budaya Lokal. *J VARIDIKA.* 2019;31(1):39–44.
6. Nargiza Y. SOCIAL AND MORAL EDUCATION OF STUDENTS AND DEVELOPMENT OF VALUES. *Galaxy Int Interdiscip Res J.* 2022;10(1):300–5.
7. Waltzer T, Dahl A. The Moral Puzzle of Academic Cheating : Perceptions , Evaluations , and Decisions. *Cheating and academic integrity: Lessons from 30 years of research.* 2022. 1–23 p.
8. Zhao L, Peng J, Dong LD, Li Y, Mao H, Compton BJ, et al. Effects of test difficulty messaging on academic cheating among middle school children. *J Exp Child Psychol.* 2022;220(105417).
9. Cressey D. THE CRIMINAL VIOLATION OF FINANCIAL TRUST. *Am Sociol Rev.* 1950;15(6):738–43.
10. Vousinas GL. Advancing theory of fraud: the S.C.O.R.E. model. *J Financ Crime.* 2019;26(1):372–81.
11. Muttaqien PI. IMPLEMENTASI PENDIDIKAN INKLUSIF DI KOTA TASIKMALAYA (STUDI KASUS: SDN GUNUNG LIPUNG 4 KOTA TASIKMALAYA). *J Pendidik Ilmu Sos.* 2020;30(1):28–38.
12. Agustin CR, Achyani F. Pengaruh Dimensi Fraud Hexagon terhadap Academic Fraud. *Pros Natl Semin Accounting, Financ Econ.* 2022;2(1):295–309.
13. Ariyana. W & Satwika. Pendidikan Karakter dan Kecurangan Akademik pada Mahasiswa. *J Psikol MANDALA.* 2022;6(2):57–72.
14. Zailani AU, Husain T, Budiyanantara A. Analisis Simulasi Sistem Penunjang Keputusan: Model Matematis Dengan Pendekatan Goodness-of Fit Berbasis Structural Equation Model. *SMARTICS J.* 2020;6(1):10–4.
15. Sarstedt M, Ringle CM, Hair JF. *Handbook of Market Research.* Handbook of Market Research. 2020.
16. Ghozali I. Structural Equation Modeling, Metode Alternatif dengan Partial Least Square (PLS). In: 4th ed. Semarang: Badan Penerbit Universitas Diponegoro; 2014.
17. Hair JF, Sarstedt M, Ringle CM, Gudergan SP. *Advanced Issues in Partial Least*

- Squares Structural Equation Modeling. Fargotstein L, McDuffee Y, Kirkhuff L, DeRosa K, Duffy SJ, editors. Los Angeles: SAGE Publications Inc; 2018. 2018 p.
18. Leguina A. A primer on partial least squares structural equation modeling (PLS-SEM). *Int J Res Method Educ* [Internet]. 2015 [cited 2020 Oct 16];38(2):220–1. Available from: <https://us.sagepub.com/en-gb/nam/a-primer-on-partial-least-squares-structural-equation-modeling-pls-sem/book244583#.X4ogRitu6Vo.mendeley>
  19. Chin WW. The partial least squares approach for structural equation modeling. In: *Modern methods for business research*. Mahwah, NJ, US: Lawrence Erlbaum Associates Publishers; 1998. p. 295–336. (Methodology for business and management.).
  20. Latan & G. *Partial Least Squares Konsep, Teknik dan Aplikasi Menggunakan Program SmartPLS 3.0*. Ed. Ke-2. Badan Penerbit Univ Diponegoro, Semarang. 2015;
  21. Whitley BE, Nelson AB, Jones CJ. Gender differences in cheating attitudes and classroom cheating behavior: A meta-analysis. *Sex Roles*. 1999;41(9–10):657–80.
  22. Novianti N. Integrity, Religiosity, Gender: Factors Preventing on Academic Fraud. *Asia Pacific Fraud J*. 2022;6(2):321.
  23. Andayani Y, Sari VF. Pengaruh Daya Saing, Gender, Fraud Diamond Terhadap Perilaku Kecurangan Akademik Mahasiswa. *J Eksplor Akunt*. 2019;1(3):1458–71.
  24. Santoso D, Yanti HB. Pengaruh Perilaku Tidak Jujur Dan Kompetensi Moral Terhadap Kecurangan Akademik (Academic Fraud) Mahasiswa Akuntansi. *Media Ris Akuntansi, Audit Inf*. 2017;15(1):1–16.
  25. Azuka EB. Academic Fraud among Students in Higher Education in Nigeria: Reasons, Methods Adopted and Strategies to Curb It. *J Educ Soc Res*. 2014;4(3):289–96.
  26. Fida R, Tramontano C, Paciello M, Ghezzi V, Barbaranelli C. Understanding the Interplay Among Regulatory Self-Efficacy, Moral Disengagement, and Academic Cheating Behaviour During Vocational Education: A Three-Wave Study. *J Bus Ethics*. 2018;153(3):725–40.
  27. Luz IP da, Wagnitz PR, Rengel R. The influence of ethical climate on academic cheating conduct mediated by self-interest. *Rev Catarinense da Ciência Contábil*. 2021;20:e3168.
  28. Sukmadilaga C, Winarningsih S, Handayani T, Herianti E, Ghani EK. Fraudulent Financial Reporting in Ministerial and Governmental Institutions in Indonesia: An Analysis Using Hexagon Theory. *Economies*. 2022;10(4):13.
  29. Meliana, Rini, Setiawan .A & Qur'an AA. FRAUD DIAMOND TERHADAP KECURANGAN AKADEMIK. *J Akuntansi, Audit dan Investasi*. 2022;2(1):20–4.
  30. Hussein N, Rahman NAA, Rusdi SD, Omar MK, Aziz ZZA. Factors that Influence Self-Perceived Academic Cheating: An Empirical Evidence of Business Students. *Int J Acad Res Bus Soc Sci*. 2018;8(11):758–67.

31. Gentina E, Tang TLP, Gu Q. Does Bad Company Corrupt Good Morals? Social Bonding and Academic Cheating among French and Chinese Teens. *J Bus Ethics*. 2017;146(3):639–67.
32. Djaelani Y, Zainuddin Z, Mustari Mokoginta R. Academic fraud of students in the Covid-19 period. *Int J Res Bus Soc Sci* (2147- 4478). 2022;11(2):414–22.
33. Ramadhan AP, Ruhiyat E. Kecurangan Akademik: Fraud Diamond, Perilaku Tidak Jujur, Dan Persepsi Mahasiswa. *JABI (Jurnal Akunt Berkelanjutan Indones*. 2020;3(1):13.
34. Nani DA, Handayani MTK, Safitri VAD. Fraud dalam Proses Akademik pada Perilaku Mahasiswa. *JAF- J Account Financ*. 2021;5(1):11.
35. Šorgo A, Vavdi M, Cigler U, Kralj M. Opportunity Makes the Cheater: High School Students and Academic Dishonesty. *Cent Educ Policy Stud J*. 2015;5(4):67–87.
36. Melati IN, Wilopo R, Hapsari I. Analysis of the Effect of Fraud Triangle Dimensions , Self- Ef fi cacy , and Religiosity on Academic Fraud in Accounting Students. *Indones Account Rev*. 2018;8(2):189–203.
37. Warni P, Margunani M. Pengaruh Dimensi dalam Fraud Diamond dan Penyalahgunaan Teknologi Informasi Terhadap Perilaku Kecurangan Akademik. *Bus Account Educ J*. 2022;3(1):36–49.
38. Krou MR, Acee TW, Pino NW, Hoff MA. Rationalizing the Decision to Cheat: An Empirical Analysis to Determine Whether Social Rational Orientation Can Predict Academic Dishonesty. *J Coll Character*. 2019;20(1):9–24.
39. Parks-Leduc L, Guay RP, Mulligan LM. The Relationships between Personal Values, Justifications, and Academic Cheating for Business vs. Non-Business Students. *J Acad Ethics*. 2022;20(4):499–519.
40. Tjoanda L, Diptyana P. the Relationship Between Academic Frauds With Unethical Attitude and Accounting Fraud. *Indones Account Rev*. 2012;3(01):53.
41. Khan ZR. The devil’s in the detail – counting unique and organic contract cheating sites targeting higher education students in the UAE as a call to delegitimize them. *Int J Educ Integr*. 2022;18(1):1–18.
42. David LT. Academic Cheating in College Students: Relations among Personal Values, Self-esteem and Mastery. *Procedia - Soc Behav Sci*. 2015;187:88–92.
43. Wira Utami DP, Purnamasari DI. The impact of ethics and fraud pentagon theory on academic fraud behavior. *J Bus Inf Syst (e-ISSN 2685-2543)*. 2021;3(1):49–59.
44. Rafnhar R, Muslimin. The Effect Of Academic Fraud Dimensions Of Fraud Pentagon’s On Accounting Students. *JASa (Jurnal Akuntansi, Audit dan Sist Inf Akuntansi)*. 2016;6(1):1–23.
45. Faradiza SA. Fraud Pentagon Dan Kecurangan Laporan Keuangan. *EkBis J Ekon dan Bisnis*. 2019;2(1):1.
46. Brunell AB, Staats S, Barden J, Hupp JM. Narcissism and academic dishonesty: The exhibitionism dimension and the lack of guilt. *Pers Individ Dif*. 2011;50(3):323–8.
47. Affandi A, Hakim TI. R, Prasetyono P. Dimensi Fraud Hexagon Dan Spiritualitas Pada Kecurangan Akademik Selama Pembelajaran Daring. *InFestasi*.

2022;18(1):InPress.

48. Cleophas C, Hönnige C, Meisel F, Meyer P. Who's Cheating? Mining Patterns of Collusion from Text and Events in Online Exams. *INFORMS Trans Educ.* 2023;23(2):84–94.

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