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Asset Misappropriation: a Fraud Hexagon Theory Perspective with Integrity as a Moderating Variable in the Public Sector (An Empirical Study of Regional Government Organizations in Jambi Province)

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ABSTRACT

Fraud has become a critical issue that can threaten accountability and performance in the public sector. One common form of fraud is asset misappropriation, which has the potential to cause significant financial losses to the state. This study aims to examine the effect of the fraud hexagon on asset misappropriation, with integrity as a moderating variable, within Regional Government Organizations (OPD) in the Provincial Government of Jambi. The approach used was quantitative, with data collection techniques through questionnaires distributed to state civil servants. Data analysis was conducted using the Partial Least Square (PLS-SEM) method. The results showed that pressure and opportunity significantly influenced asset misappropriation, while rationalization, capability, arrogance, and collusion did not. These findings indicate that asset misappropriation in the local government sector is more influenced by pressure and opportunity than other factors. Furthermore, integrity was proven to weaken the influence of pressure on asset misappropriation, but was unable to moderate the influence of opportunity, rationalization, capability, arrogance, and collusion. These results confirm that integrity plays a role as a value-based internal control, but cannot replace the function of a strong internal control system. Therefore, efforts to prevent asset misappropriation need to be implemented by strengthening individual integrity and improving the effectiveness of internal control systems and organizational accountability. This research contributes to the development of the fraud hexagon theory in the context of the public sector in Indonesia.

Keywords:*Fraud Hexagon, Asset Misappropriation, Integrity, Public Sector, Internal Control.*

INTRODUCTION

Fraud is a serious problem facing various types of organizations, including the public sector. The Association of Certified Fraud Examiners (ACFE) defines fraud as an unlawful act committed intentionally by an individual or group, which causes harm to another party for the benefit of the perpetrator. The ACFE classifies fraud into three main categories: corruption, asset misappropriation, and financial statement fraud (ACFE, 2022). According to a 2022 ACFE survey, asset misappropriation was the most common type of fraud, accounting for 47% of the total, far exceeding the other two categories. This high frequency of occurrence makes asset misappropriation a major threat to the sustainability and accountability of organizations, particularly in the government sector.

*Asset misappropriation*Misappropriation is a form of fraud committed by illegally taking ownership or embezzling organizational assets for personal enrichment or personal gain (Tuanakotta, 2019). This type of fraud is categorized as the easiest to detect compared to other categories, because the misappropriated assets are generally tangible or can be counted and measured concretely. However, ease of detection does not

necessarily reduce its frequency, because this act can be committed by various parties within the organization without being limited to a specific position level. This condition makes asset misappropriation a widespread problem and requires systematic, empirically evidence-based handling.

In Indonesia, cases of asset misappropriation within local governments have repeatedly occurred and resulted in significant state losses, reflecting weaknesses in public asset governance. One notable example is the misuse of regional assets in several districts and cities in Papua, where the Head of the Jayapura District Prosecutor's Office reported that 25 assets including motor vehicles, land, and eight cars worth approximately IDR 1 billion were successfully recovered from civil servants who had been transferred or retired (Costa, 2023). Moreover, the Acting Regent of Sarmi revealed that 30 official vehicles remain unaccounted for. A similar phenomenon was identified in Sarolangun Regency, where missing official vehicles caused cumulative losses of around IDR 600 million from previous years, with an additional loss of IDR 25 million in 2022 and approximately IDR 230 million subject to compensation (Usman, 2023). This condition aligns with global findings indicating that asset misappropriation is the most dominant type of fraud, underscoring that such misconduct is driven not only by individual factors but also by weak internal controls, the presence of opportunities, and low integrity among public officials in managing state assets.

The problem of asset misappropriation also occurs within the Jambi Provincial Government, which serves as the background for this research. One case that emerged was the misuse of a state-owned official car belonging to the Jambi Provincial DPRD Secretariat, driven by the son of a State Civil Apparatus (ASN), which secretly resulted in a single-vehicle accident in the Thehok area of Jambi City (Dian, 2023). This case demonstrates weak control over the use of regional assets, even at the legislative work unit level. This fact emphasizes that asset misappropriation is not merely an individual issue, but rather reflects systemic weaknesses in regional asset governance that require in-depth examination.

To explain and detect fraud, forensic accounting has developed several theories that have evolved over time. The first theory introduced was the fraud triangle theory by Cressey (1953), which identified three factors causing fraud: pressure, opportunity, and rationalization. This theory was later expanded into the fraud diamond theory by Wolfe & Hermanson (2004) by adding the element of capability, and then into the fraud pentagon theory by Crowe (2011) which includes the component of arrogance. However, various studies such as those by Kazemian et al. (2019), Koomson et al. (2020), and Matthew et al. (2021) have criticized these theories for being insufficiently comprehensive in analyzing all the elements that can lead to fraud, especially in complex organizations such as local governments.

Responding to the limitations of previous theories, Vousinas (2019) introduced the fraud hexagon theory, a reformation and refinement of previous theories. This theory encompasses six elements: pressure, opportunity, rationalization, capability, arrogance, and collusion, a new element not found in previous theories. According to Vousinas (2019), collusion is a form of cooperation between parties in fraudulent acts that can change individual behavior from honest to dishonest due to the influence of an unethical work environment. The fraud hexagon theory was chosen in this study because it offers a more diverse and comprehensive understanding of the underlying factors that cause fraud, thus playing a vital role in developing more effective anti-fraud measures in local government.

Various studies examining the fraud hexagon elements on asset misappropriation have shown inconsistent results. Regarding pressure, studies by Abdullahi & Mansor

(2018), Kazemian et al. (2019), and Wahyulistyo & Cahyonowati (2023) found a significant positive effect, while Fadly et al. (2020) and Hildayani & Sherly (2021) concluded otherwise. A similar finding occurred with the opportunity variable, where Wahyulistyo & Cahyonowati (2023) found a significant effect, but Pradipta & Bernawati (2019) and Achmad et al. (2022) found no such effect. Similarly, the results of existing studies on capability and arrogance are contradictory. This inconsistency indicates that other variables play a role in influencing the relationship between the fraud hexagon elements and asset misappropriation, which have not been included in previous research models.

To explain this inconsistency, this study proposes integrity as a moderating variable. According to Umar (2021), individual integrity plays a crucial role in determining whether someone will engage in unethical behavior within an organization. Integrity is a strong personal commitment to ethical principles demonstrated through concrete behavior, including honesty, transparency, courage, wisdom, and responsibility. Integrity influences how a person responds to pressure, exploits opportunities, rationalizes, uses abilities, acts arrogantly, and engages in collusion. Individuals with high integrity tend to resist involvement in asset misappropriation, while those with low integrity are more susceptible to various triggers of this fraud (Lestari & Supadmi, 2017). Integrity is positioned as a variable capable of weakening the influence of each element of the fraud hexagon on asset misappropriation.

This study refers to and expands on the study by Wahyulistyo & Cahyonowati (2023) entitled "Determining Factors of Asset Misappropriation Tendency by Employees in Perspective of Fraud Hexagon Theory," with several fundamental innovations. First, the study did not include a moderating variable, so the relationship between the fraud hexagon elements and asset misappropriation was assumed to be direct. This study adds integrity as a moderating variable, thought to be able to condition the strength of the relationship. Second, the analysis method is expanded from multiple regression to Partial Least Squares (PLS) with a moderating effect to test the role of integrity more precisely statistically. Third, the research object is directed specifically at the government sector, namely the Regional Apparatus Organizations (OPD) of Jambi Province, in line with the ACFE (2022) findings that government is the type of organization most harmed by fraud, with a proportion of 48.5%.

Based on the description above, this study aims to examine the influence of the six elements of the fraud hexagon pressure, opportunity, rationalization, capability, arrogance, and collusion on asset misappropriation in local governments, and to examine the role of integrity in moderating each of these influences. This study is expected to provide theoretical contributions by strengthening and expanding the framework of the fraud hexagon theory in the context of the public sector in Indonesia, while also providing practical contributions for local governments in formulating fraud prevention policies based on empirical evidence. The findings of this study are also expected to serve as a reference for local government auditors in sharpening audit aspects related to the risk of asset misappropriation in the Regional Apparatus Organization environment.

METHODS

This research is a quantitative research with a survey approach conducted at Regional Apparatus Organizations (OPD) within the Jambi Provincial Government. The object of the research is asset misappropriation with independent variables in the form of six elements of the fraud hexagon, namely pressure, opportunity, rationalization,

capability, arrogance, and collusion, and integrity as a moderating variable. The research population is all officials and employees involved in the administration of regional assets in all OPDs within the Jambi Provincial Government, based on the Decree of the Governor of Jambi Number 131/KEP.GUB/BPKPD-7.3/2025 concerning the Appointment of Proxy of Goods Users, Officials of User Administration of Goods, and Administrators of User Assets in Regional Apparatus within the Jambi Provincial Government for the 2025 Fiscal Year. Sampling was carried out using a judgment sampling technique, where researchers selected respondents based on certain criteria that were in accordance with the research objectives, namely the Asset Administration Officials and User Asset Administrators who understand regional asset management, are active employees in OPDs within the Jambi Provincial Government, and are willing to complete the questionnaire completely. Based on these criteria, a sample of 77 respondents was obtained from 43 OPDs of the Jambi Provincial Government. The research data is primary data collected through the distribution of questionnaires with a Likert scale instrument of 1-5, where each statement item measures the intensity of respondents' perceptions of each research variable, ranging from 1 (strongly disagree) to 5 (strongly agree).

All variables in this study were measured using operationally defined reflective indicators. The pressure variable was measured from financial pressure, the opportunity variable from individual authorization, the rationalization variable from seniority behavior, the capability variable from individual talent, the arrogance variable from high self-esteem, and the collusion variable from unethical acts, while the asset misappropriation and integrity variables were measured through behavioral indicators that refer to the ASN competency standards based on the Minister of PANRB Regulation Number 38 of 2017. The data analysis technique used the Partial Least Square (PLS) approach in the variant-based Structural Equation Modeling (SEM) model, with the help of SmartPLS software version 4.0. The selection of PLS-SEM was based on its advantages which do not assume a certain data distribution and are able to handle relatively small sample sizes (Ghozali, 2016). Testing was carried out in two stages, namely testing the outer model and inner model. Outer model testing includes reliability testing using composite reliability values (> 0.7) and Cronbach's alpha (> 0.6), convergent validity testing using loading factor values (> 0.70) and Average Variance Extracted (AVE > 0.50), and discriminant validity testing using the Fornell-Larcker Criterion and cross-loading methods. Inner model testing is conducted to examine the structural relationship between latent variables through path coefficient values, R-square values, F-square values, and the significance of the relationship through bootstrapping procedures, including testing the moderating effect of integrity on each relationship between fraud hexagon elements and asset misappropriation. Based on these operational constructs and analytical procedures, the research model applied in this study is illustrated as follows:

RESULTS AND DISCUSSION

A. RESULTS

Model testing in this study was conducted using the Partial Least Square Structural Equation Modeling (PLS-SEM) approach with the assistance of SmartPLS 4.0 software. Data analysis was carried out in two stages, namely testing the outer model (measurement model) and testing the inner model (structural model). The outer model testing aims to assess the validity and reliability of the instruments used in measuring each latent variable, including the variables pressure (X1), opportunity (X2), rationalization (X3), capability (X4), arrogance (X5), collusion (X6), integrity (Z), and asset misappropriation (Y).

Reliability testing was conducted by examining the Composite Reliability (CR) and Cronbach's Alpha (CA) values for each construct. The required CR value is greater than 0.70 and the CA value is greater than 0.60, indicating that all indicators consistently measure their respective constructs (Hair et al., 2017). The results of the reliability testing for all constructs are presented in Table 1 below.

Table 1. Results of Composite Reliability and Cronbach's Alpha Tests

Latent Variables	Cronbach's Alpha	Composite Reliability	Information
Pressure (X1)	0.919	0.923	Reliable
Opportunity (X2)	0.896	0.900	Reliable
Rationalization (X3)	0.906	0.909	Reliable
Capability (X4)	0.856	0.858	Reliable
Arrogance (X5)	0.877	0.880	Reliable
Collusion (X6)	0.894	0.895	Reliable
Integrity (Z)	0.935	0.935	Reliable
Asset Misappropriation (Y)	0.888	0.890	Reliable

Source: Data processing results, 2025

Based on Table 1, all latent variables in this study have Composite Reliability values above 0.70 and Cronbach's Alpha values above 0.60. The highest CR value is possessed by the integrity variable (Z) at 0.935, followed by pressure (X1) at 0.923. The highest CA value is also possessed by the integrity variable at 0.935. All constructs in this research model meet the established reliability requirements so that the resulting data can be relied upon to explain the measured latent variables. Convergent validity is assessed based on two criteria, namely the outer loading value and the Average Variance Extracted (AVE) value. According to Hair et al. (2016), the outer loading value must be above 0.70 and the AVE value must be above 0.50 for a construct to be declared to have adequate convergent validity. The results of the AVE test are presented in Table 2 below.

Table 2. Results of Average Variance Extracted (AVE) Measurement

Latent Variables	*Average Variance Extracted (AVE)*
X1	0.712
X2	0.706
X3	0.981
X4	0.634
X5	0.670
X6	0.702
Z	0.687
Y	0.642

Source: Data processing results, 2025

Based on Table 2, all latent variables have AVE values exceeding the minimum limit of 0.50. The highest AVE values are for the rationalization variable (X3) at 0.681 and the pressure variable (X1) at 0.712. The lowest AVE value is for the asset misappropriation variable (Y) at 0.642. Thus, all constructs in this research model are proven to be convergently valid, meaning that each indicator is able to measure its latent variable well. In addition, all indicators have outer loading values above 0.70 (minimum value of 0.769

in Item_26 for the capability variable), confirming that all indicators are valid and can be retained in the model.

Discriminant validity was tested using two methods: the Fornell-Larcker Criterion and cross-loading. The Fornell-Larcker Criterion compares the square root of the AVE of each construct with the correlation between constructs. A construct is said to have good discriminant validity if the square root of the AVE (shown in the diagonal of the matrix marked in bold) is greater than its correlation value with other constructs. The test results are presented in Table 3.

Table 3. Fornell-Larcker Criterion

	X1	X2	X3	X4	X5	X6	Y	Z
X1	**0.844**							
X2	0.711	**0.841**						
X3	0.638	0.730	**0.825**					
X4	-0.346	-0.419	-0.564	**0.796**				
X5	0.640	0.781	0.743	-0.515	**0.818**			
X6	0.637	0.757	0.772	-0.443	0.690	**0.838**		
Y	0.812	0.821	0.756	-0.485	0.734	0.798	**0.829**	
Z	-0.638	-0.700	-0.695	0.329	-0.668	-0.750	-0.793	**0.801**

Source: Data processing results, 2025

Based on Table 3, the AVE square root values for all constructs (shaded diagonal matrix, range 0.796–0.844) are greater than the correlations between constructs. For example, the AVE square root value for pressure (X1) of 0.844 is greater than the correlations of X1 with other constructs, such as with X2 (0.711), X3 (0.638), and Y (0.812). This finding confirms that all constructs have adequate discriminant validity. This is also supported by the results of the cross-loading test where the loading factor value of each indicator on its respective latent variable is greater than the loading factor value on other latent variables, so that all indicators are declared valid.

Hypothesis Testing of the Direct Effect of Fraud Hexagon on Asset Misappropriation

The hypothesis testing of the direct influence of the fraud hexagon variable on asset misappropriation was conducted by comparing the p-value with a significance level of 0.05. The hypothesis was accepted if the p-value was ≤ 0.05. The test results are presented in Table 4 below.

Table 4. Results of Hypothesis Testing of the Direct Effect of Fraud Hexagon on Asset Misappropriation

Connection	Original Sample	T-Statistics	P-Values	Information
Pressure (X1) → Asset Misappropriation (Y)	0.324	2,220	0.026	Significant (H1 Accepted)
Opportunity (X2) → Asset Misappropriation (Y)	0.286	2,071	0.038	Significant (H2 Accepted)
Rationalization (X3) → Asset Misappropriation (Y)	0.012	0.201	0.841	Not Significant (H3 Rejected)
Capability (X4) → Asset Misappropriation (Y)	-0.109	1,787	0.074	Not Significant

				(H4 Rejected)
Arrogance (X5) → Asset Misappropriation (Y)	0.018	0.299	0.765	Not Significant (H5 Rejected)
Collusion (X6) → Asset Misappropriation (Y)	0.136	1,741	0.082	Not Significant (H6 Rejected)

Source: Data processing results, 2025

Based on Table 4, of the six direct influence hypotheses tested, only two hypotheses were accepted, namely the influence of pressure (H1: p = 0.026) and opportunity (H2: p = 0.038) on asset misappropriation. Meanwhile, the influence of rationalization (H3: p = 0.841), capability (H4: p = 0.074), arrogance (H5: p = 0.765), and collusion (H6: p = 0.082) was not proven to be significant on asset misappropriation.

Hypothesis Testing of the Moderating Role of Integrity

Testing the moderating role of integrity was conducted by analyzing the effect of the interaction variable between integrity and each fraud hexagon factor on asset misappropriation. The interaction variable was formed using the product indicator approach procedure in SmartPLS 4.0. The test results are presented in Table 5 below.

Table 5. Results of Hypothesis Testing of the Moderating Role of Integrity

Moderation Relationship	Original Sample	T-Statistics	P-Values	Information
Integrity × Pressure (ZX1) → Asset Misappropriation (Y)	-0.181	2,053	0.040	Significant (H7 Accepted)
Integrity × Opportunity (ZX2) → Asset Misappropriation (Y)	-0.018	0.242	0.809	Not Significant (H8 Rejected)
Integrity × Rationalization (ZX3) → Asset Misappropriation (Y)	-0.023	0.309	0.757	Not Significant (H9 Rejected)
Integrity × Capability (ZX4) → Asset Misappropriation (Y)	0.008	0.124	0.901	Not Significant (H10 Rejected)
Integrity × Arrogance (ZX5) → Asset Misappropriation (Y)	-0.075	1,211	0.226	Not Significant (H11 Rejected)
Integrity × Collusion (ZX6) → Asset Misappropriation (Y)	-0.040	0.459	0.646	Not Significant (H12 Rejected)

Source: Data processing results, 2025

Based on Table 5, of the six moderation hypotheses tested, only one hypothesis was accepted, namely the moderation of integrity on the influence of pressure on asset misappropriation (H7: p = 0.040). The negative moderation coefficient (-0.181) indicates

that integrity weakens the influence of pressure on asset misappropriation. This means that the higher the integrity of civil servants, the weaker the impact of financial pressure in encouraging asset misappropriation. The other five moderation hypotheses were not proven significant (H8–H12).

Coefficient of Determination (R-Square)

The R-square (R^2) value is used to measure the extent to which all independent and moderating variables collectively explain the variance in the dependent variable, asset misappropriation. According to Chin (1998) in Setiaman (2020), an R^2 of 0.67 is categorized as strong; 0.33 as moderate; and 0.19 as weak. The test results are presented in Table 6.

Table 6. R-Square Value of Research Model

Dependent Variable	R Square	R Square Adjusted	Criteria
Asset Misappropriation (Y)	0.880	0.862	Strong

Source: Data processing results, 2025

Based on Table 6, the Adjusted R Square value of 0.862 indicates that all exogenous variables (pressure, opportunity, rationalization, capability, arrogance, collusion, and integrity along with moderating variables) together are able to explain 86.2% of the variance in asset misappropriation, while the remaining 13.8% is explained by other factors outside the research model. This value is included in the strong category, indicating that this research model has excellent predictive power regarding asset misappropriation in local governments.

Effect Size (F-Square)

The f-square (f^2) value is used to measure the substantive effect size of each independent construct on the dependent construct. The classification used refers to Cohen (1988): $f^2 < 0.02$ = no effect; $0.02 \leq f^2 < 0.15$ = small effect; $0.15 \leq f^2 < 0.35$ = medium effect; and $f^2 \geq 0.35$ = large effect. The results of the f^2 measurement are presented in Table 7.

Table 7. F-Square Value of Each Variable against Asset Misappropriation

Connection	f^2	Criteria
Pressure (X1) → Y	0.239	Medium
Opportunity (X2) → Y	0.111	Small
Rationalization (X3) → Y	0,000	No Effect
Capability (X4) → Y	0.046	Small
Arrogance (X5) → Y	0.001	No Effect
Collusion (X6) → Y	0.061	Small
Integrity (Z) → Y	0.143	Small
ZX1 (Integrity × Pressure) → Y	0.181	Medium
ZX2 (Integrity × Opportunity) → Y	0.001	No Effect
ZX3 (Integrity × Rationalization) → Y	0.002	Small
ZX4 (Integrity × Capability) → Y	0,000	No Effect
ZX5 (Integrity × Arrogance) → Y	0.022	Small
ZX6 (Integrity × Collusion) → Y	0.004	Small

Source: Data processing results, 2025

Based on Table 7, the pressure variable (X1) has a medium effect size with an f^2 value of 0.239, indicating that pressure has a significant substantive influence on asset misappropriation. The opportunity (f^2 = 0.111), capability (f^2 = 0.046), collusion (f^2 =

0.061), and integrity (f^2 = 0.143) variables have small effect sizes. Meanwhile, rationalization (f^2 = 0.000) and arrogance (f^2 = 0.001) show no substantive influence. For the moderating variable, the interaction of integrity × pressure (ZX1) has a medium effect size (f^2 = 0.181), confirming that integrity moderation has a significant substantive impact in weakening the influence of pressure on asset misappropriation.

Summary of Hypothesis Testing Results

All the results of the hypothesis testing in this study are summarized in Table 8 to provide a comprehensive overview of the direction and significance of the relationship between variables.

Table 8. Summary of Hypothesis Testing Results

H	Hypothesis	T-Stat	P-Value	Results
H1	Pressure has a positive effect on Asset Misappropriation	2,220	0.026	**Accepted**
H2	Opportunity has a positive effect on Asset Misappropriation	2,071	0.038	**Accepted**
H3	Rationalization has a positive effect on Asset Misappropriation	0.201	0.841	**Rejected**
H4	Capability has a positive effect on Asset Misappropriation	1,787	0.074	**Rejected**
H5	Arrogance has a positive effect on Asset Misappropriation	0.299	0.765	**Rejected**
H6	Collusion has a positive effect on Asset Misappropriation	1,741	0.082	**Rejected**
H7	Integrity weakens the influence of Pressure on Asset Misappropriation	2,053	0.040	**Accepted**
H8	Integrity weakens the influence of Opportunity on Asset Misappropriation	0.242	0.809	**Rejected**
H9	Integrity weakens the influence of Rationalization on Asset Misappropriation	0.309	0.757	**Rejected**
H10	Integrity weakens the influence of Capability on Asset Misappropriation	0.124	0.901	**Rejected**
H11	Integrity weakens the influence of Arrogance on Asset Misappropriation	1,211	0.226	**Rejected**
H12	Integrity weakens the influence of Collusion on Asset Misappropriation	0.459	0.646	**Rejected**

Source: Data processing results, 2025

B. DISCUSSION

The results of this study indicate that the factors in the fraud hexagon theory do not all have a uniform influence on asset misappropriation in Regional Apparatus Organizations (OPD) within the Jambi Provincial Government, thus demonstrating the existence of contextual dynamics in fraudulent practices in the public sector. Pressure is proven to have a significant and positive influence on asset misappropriation, indicating

that pressure, both financial and psychological, is the main driver for civil servants in misappropriating assets. This condition reflects that life pressures, such as an imbalance between income and needs, debt burdens, and lifestyle demands, can encourage individuals to seek instant solutions through unethical actions. In line with the Theory of Planned Behavior (TPB), external pressures such as financial demands influence individual attitudes and intentions to behave. Wexley and Yuki (in Simbolon, 2017) suggest that dissatisfaction due to inadequate compensation encourages employees to steal equipment, supplies, and inventory as compensation. Individuals who feel financial pressure that cannot be disclosed to others tend to seek instant solutions, including through asset misappropriation. This finding is in line with research by Said et al. (2018) and Kazemian et al. (2019), Matthew et al. (2021), and Koomson et al. (2020) consistently show that pressure is a significant predictor of asset misappropriation.

Opportunity was shown to have a significant and positive effect on asset misappropriation (T-stat = 2.071; p = 0.038; f^2 = 0.111/small), thus H2 was accepted. This finding confirms that weaknesses in the Internal Control System (ISC) and high levels of individual authorization are loopholes exploited by officials to misuse assets. Opportunities arise when internal oversight is weak, procedures are inadequate, or excessive authority is granted to certain individuals, such as holding concurrent positions or having full access to the entire organizational system. Nuraini and Fuad (2022) emphasized that weak ISCs provide opportunities for individuals to commit fraud because they believe they will go undetected. This condition applies to many local government agencies in Indonesia, including Jambi Province, where the segregation of duties has not been optimally implemented.

From the TPB perspective, perceived behavioral control plays a key role. When individuals perceive that fraudulent acts are easy to commit and difficult to detect, their intentions and actions increase. This finding supports research by Said et al. (2018), Kazemian et al. (2019), Koomson et al. (2020), and Wahyulistyo & Cahyonowati (2023), which found that opportunity has a positive effect on asset misappropriation. With a small effect size (f^2 = 0.111), this finding indicates that opportunity has a significant but smaller contribution than pressure.

Rationalization was not shown to have a significant effect on asset misappropriation (T-stat = 0.201; p = 0.841; f^2 = 0.000/no effect), thus H3 was rejected. This finding contradicts some previous literature, but is in line with research by Wahyulistyo & Cahyonowati (2023), Achmad et al. (2022), and Utomo (2019). Conceptually, rationalization is a self-justification mechanism that allows perpetrators to view their fraudulent actions as normal or understandable. However, these findings indicate that rationalization is not a strong predictor of asset misappropriation in local governments. The most plausible explanation is that when opportunities are dominant and wide open, individuals no longer need moral justification to misuse assets. Fraud occurs not because perpetrators successfully justify their actions, but because structural conditions (weak controls and financial pressure) are strong enough to act as drivers. This indicates that in the Indonesian public sector context, asset misappropriation is more opportunity- and pressure-driven than rationalization-driven. When the risk of being caught approaches zero due to weak oversight, perpetrators no longer need to construct complex justification narratives, as found in D. Utomo's (2019) research on government agencies with very weak segregation of duties.

Capability was not shown to have a significant effect on asset misappropriation (T-statistic = 1.787; p = 0.074; f^2 = 0.046/small), thus H4 was rejected. Although the T-statistic value approached the significance limit and the f^2 was relatively small (there was a slight effect), statistically this hypothesis cannot be accepted at the 5% level. This

finding strengthens the argument that asset misappropriation in local government generally does not require specialized expertise or high managerial positions. Most cases of asset misappropriation, such as the unauthorized use of official vehicles that occurred at the Jambi Provincial DPRD Secretariat, were committed by low- to mid-level employees who do not require complex technical skills. The exploited loopholes were more a result of weak internal controls and available opportunities, rather than the sophistication of the perpetrators' abilities. This finding is consistent with research by Achmad et al. (2022), Sari et al. (2020), and Utomo (2019), but differs from Wahyulistyo & Cahyonowati (2023) and Mirfazli et al. (2019) found a significant effect of ability on fraud. This difference is likely due to the fact that studies that found a significant effect generally focused on financial statement fraud, which requires accounting expertise, while asset misappropriation is more straightforward and requires less technical skills.

Arrogance was not shown to have a significant effect on asset misappropriation (T-stat = 0.299; p = 0.765; f^2 = 0.001/no effect), thus H5 was rejected. This finding aligns with Achmad et al. (2022), but differs from D. Utomo (2019) and Situngkir (2019). Arrogance, characterized by a sense of superiority, an attitude of impunity, and the belief that using organizational assets for personal gain is appropriate, is theoretically a factor that drives fraud. However, in the context of local government, civil servants are generally aware of the significant legal consequences of asset misappropriation. Fear of administrative sanctions, dismissal, and even criminal prosecution tends to outweigh arrogance, so that despite a sense of superiority, individuals choose to refrain. Furthermore, asset misappropriation in the public sector is more often driven by economic necessity (financial pressure) and structural opportunities than by arrogance. These results confirm that arrogance as an additional element in the fraud hexagon theory does not have strong empirical relevance in the context of asset misappropriation in the Jambi Provincial government.

The same thing also happened with the collusion variable, which did not show a significant effect on asset misappropriation, although it had a tendency to have a small effect. Collusion was not proven to have a significant effect on asset misappropriation (T-statistic = 1.741; p = 0.082; f^2 = 0.061/small), so H6 was rejected. Although the T-statistic value was close to the significance limit and there was a small effect, statistically this hypothesis was not met. This finding contradicts Wahyulistyo & Cahyonowati (2023) who found collusion to be the strongest predictor of asset misappropriation, but is consistent with Achmad et al. (2022). The explanation for this result is that the Jambi Provincial Government has implemented a relatively transparent financial reporting system, reflected in the Unqualified Opinion (WTP) obtained, thus limiting the scope for collusion in manipulating assets. Increased transparency and accountability limit the ability of collusive groups to place certain individuals in key positions without detection. Furthermore, although the f^2 value is small (0.061), it indicates a small substantive effect that is not captured statistically, possibly due to limited sample size or variations in the implementation of oversight systems across OPDs. This finding confirms that collusion as an element of the fraud hexagon theory has contextual relevance that depends on the strength of the organization's control system and transparency.

Furthermore, this study found that integrity plays an important role as a moderating variable, particularly in weakening the influence of pressure on asset misappropriation. Integrity was proven to significantly moderate the influence of pressure on asset misappropriation (T-stat = 2.053; p = 0.040; f^2 = 0.181/medium), thus H7 was accepted. The negative moderation coefficient confirmed that integrity weakens the influence of pressure on asset misappropriation—the higher an individual's integrity, the lower the impact of financial pressure in driving fraudulent behavior.

These findings have important theoretical implications. Integrity forms an internal moral standard that serves as self-governance when external controls are weak. Individuals with high integrity have a high ethical threshold, so financial pressure does not necessarily translate into an intention to misuse assets. This mechanism aligns with Kazemian et al. (2019) who found that high integrity reduces the effect of pressure on state-owned enterprise employees. The findings of Abdullahi and Mansor (2018) also confirm that integrity reduces individual sensitivity to pressure in the context of the fraud hexagon. Furthermore, the moderate moderation effect size (f^2 = 0.181) indicates that integrity's role in mitigating the impact of pressure is quite substantive and not merely a marginal effect. This confirms that building ASN integrity is not merely a normative aspect, but rather a fraud prevention mechanism with measurable impacts. Integrity weakens the effect of pressure through four pathways: (1) increasing the ethical threshold; (2) preventing moral disengagement; (3) encouraging pro-social solutions such as reporting to superiors; and (4) functions as self-governance when internal control is weak (Yulianti et al., 2019; Ramantha, 2020; Umar, 2021).

Integrity was not shown to significantly moderate the effect of opportunity on asset misappropriation (T-stat = 0.242; p = 0.809; f^2 = 0.001/no effect), so H8 was rejected. This finding carries an important managerial message: integrity cannot replace system improvements. When internal control weaknesses are structural and widespread, individual integrity is not strong enough to resist the urge to exploit available loopholes. D. Utomo (2019) found that in agencies with very weak segregation of duties and unrestricted access, opportunity had a significant effect on asset misappropriation; the integrity × opportunity interaction was not significant because the probability of detection was close to zero, so moral factors were not dominant.

In situations where opportunity is dominant, perceived detection probability becomes a greater determinant of behavior than personal moral values. Istifadah and Senjani (2020) add that when access to assets is loose and there are rationalizations deemed legitimate by the environment (e.g., "only borrowing official vehicles"), integrity becomes ineffective. Thus, organizations cannot rely solely on recruiting employees with integrity to close the gaps created by weaknesses in SPI.

Integrity was not shown to significantly moderate the effect of rationalization on asset misappropriation (T-stat = 0.309; p = 0.757; f^2 = 0.002/small), thus H9 was rejected. Rationalization works by deactivating moral standards before fraudulent behavior occurs through justifications such as "I'm just borrowing," "no one is being harmed," or "it's my right." Integrity is only effective as a deterrent if an individual's moral standards are still active (moral engagement). However, once an individual has successfully achieved moral disengagement through these justifications, the value of integrity is no longer accessed as a basis for decision-making (Pradipta & Bernawati, 2019). This finding implies that strengthening individual integrity alone is not enough to break the link between rationalization and asset misappropriation. Organizations need to dismantle the justification narratives that develop within the organizational culture, strengthen the ethical climate, and clarify the definition of fraud through formal policies and consistent law enforcement, because once rationalization has been established, integrity often no longer functions as an effective deterrent.

Integrity was not shown to significantly moderate the effect of capability on asset misappropriation (T-stat = 0.124; p = 0.901; f^2 = 0.000/no effect), thus H10 was rejected. Capability is technical and value-neutral, while integrity is moral. When someone has a high level of system understanding, has the authority to access assets, and can conceal their actions, system loopholes can be exploited without causing strong moral dissonance, as such actions are seen as legitimate 'exploitation of expertise'. Abdullahi

and Mansor (2018) explain that capability transforms opportunities into actual fraud; in this condition, integrity does not moderate because moral standards are not triggered by technical factors. Sari et al. (2020) also found that auditors with a deep understanding of accounting systems are still tempted to use their expertise when other elements of the fraud triangle are met. These findings imply that organizations need to limit excessive capability through structural mechanisms such as job rotation, least privilege principle-based access restrictions, dual control, and surprise audits, because individual integrity is not strong enough to restrain someone who is already very capable and confident of not being detected.

Integrity was not proven to significantly moderate the effect of arrogance on asset misappropriation (T-stat = 1.211; p = 0.226; f^2 = 0.022/small), so H11 was rejected. Arrogance conceptually contradicts the essence of integrity. Arrogance reflects entitlement and a sense of superiority, while integrity demands consistency between values and actions and respect for rules. When arrogance is dominant, integrity as a self-concept becomes inactive because individuals do not perceive any moral conflict; they believe their actions are right because of their status or position (Abdullahi & Mansor, 2018). Moral entitlement generated by arrogance deactivates the function of integrity: arrogant individuals believe that their position or contribution gives them the right to take organizational assets, so integrity standards are not triggered. Pradipta and Bernawati (2019) found something similar that entitlement-based justification makes integrity standards inaccessible as a basis for decision-making. These findings underscore the need to strengthen zero-tolerance policies against arrogant behavior and improve checks and balances mechanisms that do not rely on individual humility.

Integrity was not shown to significantly moderate the effect of collusion on asset misappropriation (T-stat = 0.459; p = 0.646; f^2 = 0.004/small), thus H12 was rejected. Collusion shifts risk calculations from the individual to the collective level: when fraud is committed together, the perceived detection probability decreases sharply because each party protects and conceals information. Abdullahi and Mansor (2018) explain that collusion is the most difficult element to detect because it involves parties who should be monitoring. In this condition, individual integrity becomes irrelevant because decisions are no longer made autonomously by individuals bound by group commitments and norms. Groupthink theory explains that individuals tend to sacrifice moral judgment to maintain group cohesion (ethical silence). Sari et al. (2020) found that even auditors with high integrity experience ethical silence when faced with pressure to conform to a consensual group. This finding confirms that preventing collusion-induced asset misappropriation is not sufficient by simply strengthening individual integrity. Organizations need stronger structural mechanisms: segregation of duties, job rotation, a whistleblowing system that protects anonymity, and strict implementation of the four-eyes principle in managing regional assets.

CONCLUSIONS

*Asset misappropriation*The fraud in Regional Apparatus Organizations (OPD) within the Jambi Provincial Government is significantly influenced by pressure and opportunity, with financial pressure and internal control weaknesses being the primary drivers of asset misappropriation. Conversely, rationalization, capability, arrogance, and collusion do not show a significant influence, indicating that fraud is more opportunistic than influenced by moral factors, ability, or group cooperation. Integrity has been shown to only weaken the influence of pressure, but is ineffective in moderating opportunity and other structural factors. Therefore, preventing asset misappropriation requires a combination of strengthening individual integrity and improving internal control

systems. This research is still limited to OPD objects in Jambi Province and the fraud hexagon variable. Therefore, further research is recommended to expand the object and add other variables to obtain more comprehensive results.

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