

The effect of governor's age on fraud in Indonesia: Opportunity as a mediating variable

Ramadona Simbolon^{1*}, Sri Elviani², Yusrita³, Heny Triastuti K⁴, Julienda Br. Harahap⁵

^{1,2,4} Department of Accounting, Universitas Islam Sumatera Utara, Indonesia

^{3,5} Department of Management, Universitas Islam Sumatera Utara, Indonesia

*Corresponding author E-mail: ramadona@fe.uisu.ac.id

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Abstract

This study investigates the intricate relationship between a governor's age, opportunity, and the incidence of fraud within Indonesian regional administrations. Challenging conventional wisdom, it seeks to determine if age directly correlates with fraudulent activities and explores the role of fiscal decentralization. This study uses quantitative analysis with a panel data approach, including factor analysis, panel data regression, and mediation. We used purposive sampling with an observation period of 2018 – 2021 in 34 provinces, so the total sample we used was 136 analysis units for this study. The age of a governor has no direct, significant correlation with fraudulent activities. A higher ratio of transfer income is a significant, negative predictor of fraud, suggesting that increased fiscal capacity, when transparently managed, can mitigate corruption. Capital expenditure lacks a direct influence on fraud. TRAREV acts as a mediator in the relationship between a governor's age and fraud, indicating that the impact of age is contingent on the structure of fiscal transfers. This study identifies the nuanced role of fiscal governance mechanisms, particularly the mediating effect of TRAREV, in shaping governance outcomes. It calls for a paradigm shift in fraud prevention strategies, emphasizing transparency, effective resource management, and robust regulatory frameworks. This aligns with the broader need for good governance and fraud prevention strategies in Indonesia.

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1. Introduction

Fraud in the government sector is a global issue that undermines the integrity of public institutions and public trust [1], [2]. Indonesia, with its position at rank 101 in the Corruption Perception Index with a score between 34-36 [3], is still grappling with serious challenges in combating fraud [4]. Although various efforts have been made, the level of fraud remains concerning [5]. The study of white-collar crime by Sutherland (1940) paved the way for modern understanding of fraud as a crime committed by individuals in strategic positions who exploit opportunities from their positions [6]. Then, a study identified pressure, opportunity, and rationalization as the three main elements in the fraud triangle [7], a view supported by various previous studies conducted by [8], [9], [10], [11]. Of the three elements, opportunity is often considered the most significant factor [12], [13]. Even several other study revealed that only opportunity has an impact on fraud [14], [15].

Opportunity in the context of fraud refers to situations or conditions that allow such actions to occur. Weaknesses in the oversight system, lack of transparency, or gaps in regulations can create opportunities for individuals to commit fraud [12], [16]. A study emphasize that opportunities can be observed because they are related to the internal control structure of the organization, such as lack of supervision, policies, procedures, or weak anti-fraud programs [17]. Furthermore, subsequent studies delve deeper into how opportunity can be measured and mitigated, such as the use of financial ratios to represent opportunities [18], while the others developed it by adopting the SAS 99 categories, namely nature of industry, ineffective monitoring, and organizational structure, which are also identified with financial ratios [11]. Several previous study reveal that weak internal controls are consistently identified as a major driver of fraud, as they create opportunities for perpetrators to commit fraudulent acts [19], [20], [21]. Research from various perspectives supports this view, emphasizing that weaknesses in internal controls create opportunities for potential perpetrators [12]. A report also emphasizes that weaknesses in internal controls are a major triggering factor for fraud [22]. On the other hand, a strong internal control system can significantly reduce the likelihood of fraud occurring [1], [23]. However, although 'opportunity' is an important element of the fraud triangle when focusing on risk control within an organization, this opportunity has not been extensively researched empirically [24].

In addition to internal control, demographic characteristics such as age, gender, and education level can also influence important organizational activities, such as decision-making, strategy, policy, innovation, performance, and fraud risk [25], [26], [27]. Age is the most easily measurable demographic characteristic and is important in influencing decision-making [28], and it is also the most effective in predicting individual behavior [29], [30]. Age, as a marker of experience, intelligence, and motivation, may affect many choices and behaviors, such as risk-taking behavior and attitude [31], ethical behavior [32], good decision-making [33], and even business strategy [34], [35].

Therefore, this study focuses on age as the main demographic characteristic of the Governor. Empirical research indicates that older leaders tend to adopt more controls and higher levels of compliance with laws, which narrow down the margin for fraud [30], [36]. Various case studies of public organizations indicate that older leaders give greater priority to control and accountability features, which can potentially limit instances of fraud [37]. Senior leaders use more conservative methods in cutting chances through tighter budgets and the possession of assets [38]. Internal control is the foundation of good governance, a process carried out by every element of the organization, especially top management, designed to ensure the achievement of organizational goals related to operations, reporting, and compliance [1]. Furthermore, the other studies found that the 'top people' in an organization are the most frequently involved in illegal activities [39], [40]. In the context of the public sector, effective internal controls are crucial for detecting and preventing fraud. Thus, the Governor, as the leader of the regional government, plays a central role in decision-making and the management of public resources, which potentially influences opportunities and the occurrence of fraud.

Empirical studies show that the age of governors affects fraud and performance [41], [42]. However, these findings are not consistent with the reality on the ground, where many governors, regardless of age, engage in fraudulent activities by exploiting existing opportunities. A study even shows that younger politicians may have a higher anti-corruption awareness [43]. This study aims to investigate the influence of the governor's age on fraud, with a focus on opportunity as a mediating variable. Although previous research has examined the direct relationship between age and fraud, as well as between opportunity and fraud, this study offers a new contribution by testing the mediating role of opportunity in that relationship. This approach is important because it provides deep insights into how the age of the governor interacts with opportunity in influencing the probability of fraud occurring.

2. Literature review and hypothesis development

Opportunity is one of the main risk factors in the fraud triangle that can influence the occurrence of fraudulent activities [44]. Opportunities arise when fraud perpetrators feel confident that they will not be caught and believe that internal controls are inadequate, because these opportunities can be identified, controlled, and

corrected [45], [46]. The lack of internal controls, inadequate asset security, low concern about being caught, and unclear policies all contribute to the creation of opportunities for fraud [47]. According to a study, these opportunities are caused by weak organizational control and governance, leaders' unawareness, irregular employee policy inspections, and the perception that no one will notice or follow up on these actions [48]. To reduce and control opportunities within the organization, the effectiveness of the internal control system needs to be evaluated and improved, as these opportunities create many gaps that allow management to engage in unethical behavior with a low risk of detection [49], [50].

In government institutions, the opportunity for unethical behavior to occur can arise, as revealed in a study in South Africa by [51]. The study found that the government in South Africa is in a more vulnerable position to commit unethical acts due to poor law enforcing and checking systems, political disaffiliation, dispersal of political agendas, and absence of meritocracy. An increase in fraud activities within the South African government sector is caused due to the inability to apply the principles of good governance and the neglect of the risk management aspect, thus opening the door for fraudsters to engage in their criminal work [52]. Opportunities are also critical in explaining the role of governors in criminal activity in Indonesia.

Needs according to the law for the office of the governor are very much interconnected with the reinforcement of the internal control system. The Regional Government by way of the Governor can soften or harden the internal control system. One manner of conducting the hardening is through the establishment of supporting regulations in each jurisdiction of a region. Once the regulations have been created, negotiations between the legislative, executive, and other stakeholders, including business persons, can be made in accordance with these regulations. But as the internal control system weakens, negotiation can become more interest-based at the expense of each party, and hence opportunities for fraud open up.

2.1. Governor age and fraud

Age is perhaps the most critical trait in risk-taking, sound decision making, and ethical conduct [53]. As part of attempts to study how age affects fraud, various empirical researches have been carried out, for example, by [28], [30], [54]. Subsequently, a study provided facts that mature executives would not be so much concerned with making money but their careers, economic security, stable social relationships, and retirement planning in the long run [34]. Thus, mature executives are more likely to possess higher moral standards, and thus it is more challenging for them to commit fraud. A research provides evidence that age at the CEO level has a negative relationship with frequency of financial restatements in a way [30], that financial reporting fraud by younger CEOs is more frequent [28]. As a whole, current research presents empirical evidence that implies older leaders are more ethical and risk-averse than their younger counterparts.

Based on the ACFE, the majority of fraudsters globally in 2024 were between the ages of 36 and 45 with a percentage of 38%. Then there were fraudsters aged 26-35 with a percentage of 25%, then fraudsters aged 46-55 with a percentage of 23%, and the least was fraudsters aged over 55 with a percentage of only 9%. This is also corroborated by the result of a survey, in which fraudsters are generally between 36-45 years old and taper off with age [55]. These findings are consistent with a public sector study, which showed that age was a considerable variable in the case of predicting a person's chance of fraud commission [56], [57].

2.2. Governor age and opportunity

The parties responsible for making decisions in the business sector are executives and directors. They work to lead the company in order to implement the organization's strategic goals through the challenges presented by the complex and competitive business environment. Studies in the management literature show that executives generally have significant discretion in making business decisions, and their actions can materially affect the value of the company [25], [58], [59], [25], in their seminal article on upper echelon theory, mention age as one of the "most supported and compelling" demographic characteristics of executives that can shape managerial preferences for risk, and in turn, influence executives' views on company policies and performance.

Although as they age, executives experience a decline in cognition, ambition, and energy, the age of executives can enhance organizational performance through experience, wisdom, and increased knowledge. Executives serve as the primary internal monitors to mitigate agency problems [60]. Executives perform their supervisory functions by hiring or firing managers and setting their salaries [61]. Executives can evaluate opportunities in the organization by looking at situational stimuli and their own characteristics [62]. The age of executives is a situational stimulus that indicates supervisory effectiveness, thereby influencing their evaluation and decision-making regarding opportunities [53]. Older executives will be more experienced, allowing them to make more accurate judgments and manage organizations with a high level of complexity [63].

2.3. Opportunity as mediating variable

Executives have the power and authority to act according to their desires, making wise or foolish decisions, or even committing fraud, whether intentionally or not [64]. By using this authority, executives can improve performance by controlling opportunities through performance enhancement and strengthening internal controls, thereby preventing fraud. Similarly, the Governor in Indonesia, as the executor and manager of regional government in Indonesia, has the duty and responsibility to regulate and control the government, including improving regulations and regional governance as a strengthening of internal control.

Based on the studies previously outlined, it has been revealed that older governors tend to have higher levels of integrity and are less involved in corruption cases. On the other hand, there are also studies that show that younger age is not always associated with higher levels of fraud, especially when opportunity and oversight factors are taken into account. The increasing amount of fraud or unethical actions in Indonesia, particularly in the government sector, makes the study of age and ethical behavior still very important to conduct. Therefore, this study will complement the existing literature by examining how opportunity mediates the relationship between the age of governors and fraud.

3. Research method

This research aims to examine the mediating effect of opportunity on the relationship between the age of the governor and fraud. In addition, this study also examines the influence of the governor's age and opportunity on fraud. The population of this study is the Provincial Government in Indonesia with an observation period from 2018 to 2021. The sampling method used was purposive sampling, with the criteria being provinces that publish financial reports and have been audited by the Audit Board of Indonesia. Based on the sampling method, the research sample consists of all provinces in Indonesia, namely 34 provinces, with an observation period of 4 (four) years, resulting in a total of 136 units of analysis for this study.

3.1. Measurement of variables

This study examines the variables of the governor's age, opportunity, and fraud. A study measures age, calculated from birth up to the time of fraud occurrence [54], while the others up to the period of the study [30], [65]. Considering that this research focuses on the public sector, the measurement of the governor's age is based on the age of each governor in Indonesia during the research period. The age data was obtained through the official profiles of the governors available on the official websites of the respective provincial governments.

The elements of the fraud triangle consist of pressure, opportunity, and rationalization. When the opportunity measures with financial ratios, the indicators have a high risk of error [18]. Then a study developed the measurement by adopting Statements on Auditing Standards using industry characteristics, ineffective monitoring, and organizational structure [11]. Next, measurement of opportunity developed in the public sector using regional working units, capital expenditure, and population size [5], the others using accountability score, gross regional domestic product, audit follow-up, and employee salaries [66]. Furthermore, opportunity exploration also uses regional complexity, local government size, capital

expenditure, and internal audit findings as representations of opportunities [67]. Meanwhile, the indicators used in this study consist of the ratio of capital expenditure to total expenditure (CAPEX) and the number of working units (RWU) [5]. This study also adds another indicator for opportunity mapped from the business sector to the public sector, namely the transfer revenue to total revenue ratio (TRAREV) [11]. These ratios are considered controllable by the Governor and a source of opportunities for fraud to occur.

The capital expenditure ratio to total expenditure shows the proportion of capital expenditure to total expenditure. Capital expenditure is the largest source of fraud, thereby increasing the likelihood of fraud [67]. A study identified fraud modes in capital expenditure, including mark-up, mark-down, embezzlement, illegal expenses, abuse of power, bribery, and gratuity [68]. Fraud perpetrators often misuse capital expenditures for personal/group interests [69]. Thus, capital expenditures are highly vulnerable to fraud, and larger capital expenditures increase the likelihood of fraud [68]. Furthermore, the Governor has the authority to regulate the number and budget for each working unit [70]. The more working units there are, the more complex the government becomes, thereby increasing the potential for fraud [5]. Furthermore, the ratio of transfer income to total income indicates the Provincial Government's dependence on the Central Government, therefore the use of this ratio aligns with indicator used by other study to measure opportunity, namely the ratio of local original income to total income [11]. Most of the fraud in the regions is sourced from transfers from the Central Government [71]. Transfer revenues are needed to meet the provincial government's expenditures due to the lack of original regional income. This condition provides the Governor with the opportunity to negotiate with the authorities to secure a massive injection of funds [72]. Thus, this study argues that the conditions provide an opportunity for collusion to commit fraud.

Next, the dependent variable of this research is fraud. Skousen uses total accrual to represent fraud in the business sector. A study measure fraud using a dummy variable, which is a score of 1 if the local government has a fraud case, and a score of 0 otherwise [5]. However, the measurement of fraud in this study uses the number of fraud cases that occur in each province in Indonesia, because this measure takes into account the differences in the number of fraud cases and the turnover of Governors. Fraud data will be obtained from reports by the Corruption Eradication Commission (KPK).

Before conducting hypothesis testing, verification of basic assumptions needs to be carried out to ensure that the research data is suitable for use. Initial checks are conducted on the assumptions of outliers and data normality. Outlier testing was conducted using Mahalanobis distance, while data normality was tested using skewness and kurtosis. With a 95% confidence level, data is considered normally distributed if the skewness and kurtosis probability values are greater than 0.05 [73]. Another assumption that needs to be met is multicollinearity, which is tested using the Variance Inflation Factor (VIF). If the VIF value is less than 10, it can be concluded that there is no significant correlation between the independent variables [74]. Further assumption testing is conducted to detect heteroscedasticity using the Breusch-Pagan test. If the probability value from the Breusch-Pagan test is greater than 0.05, then the model's residual variance is considered homogeneous, indicating the absence of heteroscedasticity [75]. The last assumption evaluated is autocorrelation, which is tested using the Wooldridge test. Data is considered free from autocorrelation if the Wooldridge test probability value is greater than 0.05 [76]. After all assumptions are met, the analysis continues with hypothesis testing using multiple regression analysis and mediation analysis. Multiple regression analysis produces probability values for each independent variable. If the probability value of the independent variable is less than 0.05, then the variable is considered to have a significant influence on fraud. Meanwhile, from the mediation analysis, an overview of the direct or indirect influence occurring through the mediation variable can be obtained. If the value of direct influence is greater than the value of indirect influence, it is concluded that there is no mediation effect, and vice versa.

4. Results

Before conducting hypothesis testing, assumption testing is first carried out, starting with outlier and normality tests.

Tabel 1. Transformed data and VIF

Variable	Original Data		Best Transformation Method	Transformed Data		VIF
	Skewness	Kurtosis		Skewness	Kurtosis	
Age	0.214	0.2248	None	0.214	0.224	1.04
RWU	0.000	0.000	inverse	0.446	0.796	1.23
CAPEX	0.382	0.071	None	0.382	0.071	2.86
TRAREV	0.000	0.000	1/(Square Root)	0.017	0.461	2.99
Fraud	0.000	0.000	Square Root	0.656	0.323	

Source(s): Author's own work

After the assumption check was conducted, no outlier data was found. However, some data from each variable do not follow a normal distribution. To meet the normality assumption, data transformation was performed using the best transformation method as shown in Table 1. Next, based on the multicollinearity assumption test, it was found that the Variance Inflation Factor (VIF) values for each independent variable were less than 10 ($VIF < 10$). Thus, it can be concluded that this study does not violate the multicollinearity assumption. The next assumption that needs to be met is heteroscedasticity. Based on the data analysis, it was found that the Breusch-Pagan probability value is greater than 0.05. This indicates that the residuals of the data in this study are homogeneous and do not exhibit signs of heteroscedasticity. In addition, the assumption of autocorrelation has also been met, as the Wooldridge test probability value is greater than 0.05. After all assumptions are met, the analysis continues with statistical calculations to obtain factors that open opportunities for fraud in the Regional Government using factor analysis, presented in Table 2.

Table 2. Result of factor analysis

	Uji 1			Uji 2		
	MSA	Komunalitas		MSA	Komunalitas	
		Initial	Extraction		Initial	Extraction
RWU	0.696**	1.000	0.102*		1.000	
CAPEX	0.511**	1.000	0.686**	0.500**	1.000	0.713**
TRAREV	0.511**	1.000	0.673**	0.500**	1.000	0.713**
KMO MSA	0.517			0.501		
Barlett's test	28.207			26.726		
df	3			1		
sign	0.000			0.000		

Source(s): Author's own work

The test results show a KMO value > 0.5 for the two data reduction processes. In addition, the results of Bartlett's test for both reduction processes yielded a significant Chi-square value of 0.000. This means that the reduction process can be carried out and the correlation matrix is not an identity matrix, allowing for factor extraction using the principal component method and finding only one component with an eigenvalue above one from the two variables included in the factor analysis. This means that from the two variables, namely CAPEX and TRAREV, they can only be grouped into one. The factor group that can explain 71.29 percent of the component variance. So, the factor group is valid and can be accepted for research in the social field. The factor groups resulting from the factor analysis consist of CAPEX and TRAREV because these variables have strong correlation values, namely 0.844 each on factor 1. Capital expenditures are used because their budget values are large and easy to misuse [77].

The results of the grouping of these two variables are named according to the elements of the fraud triangle, namely opportunity. The test results found that the opportunity to commit fraud in local governments increases if the local government has a higher proportion of capital expenditure and transfer funds. With the acquisition of opportunity indicators based on factor analysis, hypothesis testing is continued using multiple regression analysis and mediating regression analysis with a panel data approach.

Table 3. Result of fixed effect regression

Variable	Predicted Sign	Coef	t-statistic	p-value
AGE	+	0.284	0.47	0.636
CAPEX	-	2.940	1.64	0.101
TRAREV	-	7.042	-7.20	0.000
F value	23.82			
R2	0.121			

Dependent variable: Fraud

Source(s): Author's own work

The results of the fixed effect regression analysis in Table 3 show that F-value of the model statistically significant at the 0.05 level. The R2 within value of 0.121 indicates that the independent variables involved in the model explain 12.1 percent of the dependent variable, which is fraud. The regression results also found that age does not have a significant effect on fraud, with a probability value greater than 0.05 ($p = 0.636 > 0.05$). Furthermore, the analysis results reveal that TRAREV has a negative and significant impact on fraud, while CAPEX does not have an impact on fraud. The next hypothesis test was conducted to examine the influence of the Governor's age on opportunity, indicated by CAPEX and TRAREV based on mediating regression analysis, as presented in Table 4.

Table 4. Result of the effect of governor age on opportunity

Variable	Predicted Sign	Coef	t-statistic	p-value
AGE--- > CAPEX	-	0.030	1.13	0.259
AGE--- > TRAREV	+	0.058	1.48	0.139

Source(s): Author's own work

Table 4 indicates that governor age does not affect opportunity. This is evident from the results of the mediating regression analysis which show that governor age does not affect CAPEX, with a probability value of 0.259 greater than 0.05. Similarly, the effect of governor age on TRAREV is not significant, with a probability value of 0.139, which is greater than the alpha of 0.05. The next hypothesis test was conducted through mediating regression analysis, as presented in Table 6, by examining the direct and indirect effects on this research model. The next hypothesis test was conducted through mediating regression analysis, as presented in Table 5, by examining the direct and indirect effects on this research model.

Table 5. Mediating analysis

Model	Direct Effect	Indirect Effect	Description
Structural CAPEX < --Age	0.056	0.0128	Not Mediated
Structural TRAREV < --Age	0.056	0.0790	Mediated

Dependent variable: Fraud

Source(s): Author's own work

Based on Table 5, the mediation analysis results indicate that CAPEX does not serve as a mediating variable in the relationship between governor age and fraud, because the direct effect coefficient is greater than the indirect effect coefficient. The direct influence coefficient between governor age and fraud with CAPEX as mediation is 0.039, while the indirect influence coefficient is 0.0128. Next, the mediation analysis shows that TRAREV functions as a mediating variable, because its indirect effect coefficient of 0.0780 is greater than its direct effect coefficient of 0.039

5. Discussion

Opportunity, measured by CAPEX does not influence fraud, but TRAREV (the ratio of transfer receipts to total receipts), has a negative and significant impact on fraud. This indicates that regions that heavily rely on transfer funds from the central government tend to be more vulnerable to fraudulent practices. [71] explain that most fraud in local governments in Indonesia is related to APBD funds sourced from central government transfers. Law number 23 of 2014 grants local governments the authority to manage their regions and allocate

expenditures according to their respective budgets and needs, which can lead to fiscal disparities and increased transfer funds to the regions [78], [79]. This condition opens up opportunities for public officials to commit fraud [67]. A study also highlight that routine programs that appear in the budget every year are very vulnerable to embezzlement due to the intense collaboration between officials and service providers [80]. In addition discretion in transfer funds is very vulnerable to corruption in the allocation process if there is no clear oversight from the central government [81]. To address this, local governments need to strengthen the implementation of transparency and accountability principles [82].

The implication of this finding that the governor's age does not make a difference in fraud is that susceptibility to fraud is not exclusive to certain ages. The Indonesian political system is most likely to depict a platform under which elected representatives, such as governors, can misuse their powers for personal or group gain [83], [84], [85], [86]. Further contributes that a common political environment within the public sector can give rise to the exercise of power for the interests of particular groups [87]. For instance, important governance decisions, particularly asset and budget management decisions, are typically made by groups or consultants who collaborate with the governor. In addition, working together between government and private organizations can be the lifestyle, regardless of the community interests and promoting governors of all ages to engage in fraudulent activities [83]. This agrees with the findings of other study that indicate that fraudsters in Indonesia come from all ages [88]. This is also compounded by the persistent scourge of corruption in most areas [82]. The evidence from research tells us that the age of the governor does not influence opportunities, which means that the experience that the governor accumulates when they get older does not directly influence the management of fraud opportunities.

This is due to the fact that the union of business and politics tends to bring along interest conflicts, which discourages the publication of good governance [83]. The Indonesian provincial government budget absorption performance evaluation system can also get worse in that it does not call upon local authorities to enhance their performance but instead calls upon them to increase their group and individual wealth [89]. This situation opens up a space for regional leaders to achieve the capital expenditure budget on the expense of collusion actions during planning [90]. Also, the absence of the incentive of becoming financially independent of the regions results in overreliance on transfer payments from the central government. These findings underscore the importance of bureaucratic reform and performance improvement in local governance.

This study found that CAPEX does not mediate the relationship between the age of the governor and fraud, while TRAREV (the ratio of transfer receipts to total receipts) serves as a mediating variable. In Indonesia, transfer funds are often considered a form of fiscal failure because their management and allocation are not yet effective and efficient [91]. High dependence on transfer funds from the central government has become one of the triggering factors for budget leaks [92]. Although there are disparities between regions, the level of competition to improve financial performance remains low due to the excessive focus on budget absorption as the main performance indicator. This encourages governors to negotiate with executive and legislative actors at the central level. This situation is exacerbated by the lavish lifestyle of public officials in Indonesia, which is not commensurate with the salaries they receive [93]. Based on reports that the largest proportion of factors causing fraud is living beyond means [22]. This arrangement opens the door to collusion activity and heightens the prospects for fraud [94]. Therefore, when a governor can consolidate and dominate the fiscal independence of the area, it can break dependence on transfer payments, which can in turn minimize the prevalence of fraud. Weak control over fiscal independence, however, can entrench dependence and heighten the prospects of fraud.

6. Conclusions

This study tries to investigate the age of the governor and chance to perpetrate fraud and examine the mediating effect of opportunity between fraud and age. These results are significant considering that fraud is so common in Indonesia, implying the need for efficient avoidance methods. The research identified that there is no significant influence of age on fraud. This shows that the corrupt activities are not only between youthful

or aged governors but are a problem that cuts across age. These results invalidate the general belief that age is a predictor of fraudulent activities. Of the opportunity measures they tested, TRAREV negatively and significantly affects fraud, but CAPEX does not significantly affect it. These results mean that TRAREV, as immediate provider of provincial government funding in the absence of fiscal maneuverability, can actually be an anticorruption factor if managed effectively. On the contrary, CAPEX, which is often considered an area vulnerable to corruption, has not been proven to have a significant impact on fraud in this study. Moreover, RWU cannot be used as an indicator of opportunity formation.

Another interesting finding is that CAPEX does not have a mediating effect on the relationship between the governor's age and fraud, while TRAREV acts as a mediator in that relationship. This implies that good management of TRAREV can reduce the impact of the governor's age on fraud. CAPEX and TRAREV are factors that create opportunities and sources of fraud, so they must be managed transparently, effectively, and efficiently by utilizing information technology. Therefore, the evaluation of provincial performance needs to be developed, so that it is not only focused on budget absorption but also on the quality of financial performance, financial management, and fraud prevention. Thus, this strategy can enhance competition among provinces to improve regional performance.

This study has limitations in investigating the age of governors and provincial administrations with an observation period from 2015-2018. The relatively short observation period has the potential to influence the generalization of research findings because fraud phenomena tend to be identified in long term time horizons, namely more than 5 (five) years. Therefore, subsequent research can develop this study by adding other characteristics that are expected to have a significant contribution to fraud and opportunity control, such as gender, education level, and experience. Future researchers can also expand this study by exploring other regional governments and adding a longer observation period. Overall, this research provides new insights into the complexity of the relationship between the age of governors, opportunity, and fraud in local government in Indonesia. These findings can serve as a basis for policymakers in designing more effective fraud prevention strategies, taking into account contextual factors and interactions between different variables.

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The authors declare that they have no known financial or non-financial competing interests in any material discussed in this paper.

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Author contribution

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design. Contributed to various areas of the book, specifically the literature review and portions of the discussion, particularly those pertaining to the fraud triangle, in conjunction with the first author. Yusrita, Heny Triastuti K and Julienda Br. Harahap: Executed the preliminary drafting and oversaw the submission procedure to the journal system. Engaged in data collecting, tabulation, and testing. Proactively supplied materials and compiled essential reference sources for the research.

Informed consent

Informed consent for the publication of personal data in this article was obtained from the participant(s).

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