ISSN 1816-6075 (Print), 1818-0523 (Online)
Journal of System and Management Sciences
Vol. 15 (2025) No. 2, pp. 175-192
DOI:10.33168/JSMS.2025.0211

Moderating Role of Individual Morality in Relationship Between Aspects of Fraud Hexagon and Fraudulent Behavior: A Study of Budget User Officials in Indonesian Local Government

Rahman Pura[1,2], Kartini[3*], Amiruddin[3], Aini Indrijawati[3]

[1]Students of Accounting Doctoral Program at Hasanuddin University Makassar, Indonesia
[2]Lecturer of Accounting Study Program at STIEM Bongaya Makassar, Indonesia
[3]Lecturers of Accounting Study Program at Hasanuddin University Makassar, Indonesia
rahmanpura@stiem-bongaya.ac.id, hanafikartini@fe.unhas.id (Corresponding author))

Abstract. This study investigated the moderating effect of individual morality on the relationship between aspects of fraud hexagon (stimulus, capability, collusion, opportunity, rationalization and ego) and fraudulent behavior among the budget user officials in Regional Apparatus Organizations in Indonesia. This research used a quantitative survey approach. Research data were obtained by the distribution of structured questionnaires to 220 respondents. The data were analyzed using Structural Equation Modeling with Partial Least Squares (SEM-PLS) and moderation models.

The research findings reveal that all aspects of fraud hexagon have a significant positive effect on fraudulent behavior and this relationship is significantly moderated by individual morality. In particular, high individual morality weakens the effect of the fraud hexagon aspects on fraud behavior. The results of this study contribute to the development of fraud theory by highlighting the importance of individual morality in preventing fraudulent behavior. The findings have practical implications for organizations in designing and implementing fraud prevention strategies by considering official morale development.

However, this study is limited to the use of a cross-section design and focus on a particular population. Therefore, future research is expected to explore other potential moderating factors and use a longitudinal design to establish causal relationships.

Keywords: Fraud hexagon, Individual morality, Fraudulent behavior

1. Introduction

Fraud frequently becomes a topic of conversation that attract people's attention (Kassem & Higson, 2012) (Kassem & Higson, 2012). It is criminal behavior (Yazid et al., 2020), because the impact of fraud is noxiousness to individuals, other employees and organizations (Dzomirah, 2015). The impact of individual fraud is loss of trust, decreased reputation and legal consequences. Organizational fraud can result in financial losses, loss of assets and investor distrust (Stamler et al., 2014; Alfarago et al., 2023). The Association of Certified Fraud Examiners (ACFE) in 2022 analyzed 20,000 fraud cases. Of these cases, asset misappropriation is the most common fraud scheme, accounting for 86% of cases and causing financial losses of USD 100,000 per case. The financial reporting fraud scheme had 9% of cases and caused a financial loss of USD 593,000 per case. The corruption scheme had 5% of cases and caused financial losses of USD 150,000 (ACFE, 2022)

In addition, the Indonesian Corruption Watch (ICW) conducted a cases mapping related to fraud schemes associated with corruption. ICW revealed that the trend of corruption in Indonesia in the last three years has increased, both in number of cases and number of suspects. In 2020, there were 444 cases of corruption with 857 suspects and state financial losses of IDR 18,615 trillion. In 2022 it increased to 579 cases, 1,396 suspects and IDR 47,747 trillion in state financial losses. The mapping cases based on perpetrators of fraudulent behavior showed that the State Civil Apparatus (ASN) profession was the most actors who committed fraud, namely in 2020 there were 272 cases, in 2021 there were 342 cases and in 2022 there were 223 cases (ICW, 2022). Corruption is one type of fraudulent behavior, other types are frauds in asset misuse and financial reporting (ACFE, 2022).

The Law of Republic of Indonesia Number 28 of 1999 explains that "Innocent State Administrators are the State Administrators who comply with the general principles of state administration and are free from corrupt practices, collusion and nepotism, and other despicable acts". Thus, the state apparatus should provide the best service to community, not committing acts harmful to community. However, some of the cases previously described indicate that there are still unscrupulous state apparatus who commit fraud, such as corruption. there are many factors of behavior or event occurrence (such as fraudulent behavior). Therefore, researchers feel the need to conduct research and analyze the factors that cause the State Civil Apparatus to commit fraud.

Attribution theory developed by Fritz Heider in 1958 explains the reasons for the occurrence of a behavior or event (Schmitt, 2014; Martinko & Mackey, 2019).The fraud hexagon theory explains that there are six factors that cause someone to commit fraud, namely; stimulus/pressure, capability, collusion, opportunity, rationalization and ego (Vousinas, 2019).

The results of empirical studies show that all aspects of the fraud hexagon, namely; stimulus, capability, collusion, opportunity, rationalization and ego have effect on financial reporting fraud (Aviantara, 2021). The results of this analysis illustrate that the aspects of stimulus (pressure), opportunity, rationalization, capability, ego and collusion are the factors driving people to commit fraud. However, several other studies have shown that not all aspects of the fraud hexagon have effect on fraudulent behavior. The results of the study by (Achmad et al., 2022) show that financial stability (internal pressure) and external pressure have a positive effect on financial reporting fraud, but ineffective supervision (opportunity), auditor turnover (rationalization), director turnover (capability), ego, and collusion have no effect on financial reporting fraud. Likewise, the results of research by (Alfarago et al., 2023) show that only stimulus has effect on the possibility of financial reporting fraud, while capability, collusion, opportunity, rationalization and ego have no effect on financial reporting fraud.

The diversity of research results indicates that there may be a contingency (situational) relationship. Contingency theory was developed by Lawrence and Lorch in 1967 which states that organizational effectiveness is aligned with organizational characteristics (Donaldson, 2001). Organizational structure and characteristics are influenced by the stability of market and technological environment.This contingency theory can be explained that situational organizational effectiveness is strongly influenced

by organizational structure and characteristics. Researchers assume individual morality is a contingency factor that moderates the effect of the aspects of fraud hexagon on fraudulent behavior. Individual morality determines whether or not a person is motivated to commit fraud.

Moral development theory explains that there are three stages of moral reasoning namely; pre-conventional, conventional and post-conventional (Kohlberg, 1963). Moral development is a process that guides moral decisions (Garrigan et al., 2018). The higher the moral development of individuals, the more individuals try to avoid unethical behavior and not harm other parties (Liyanarachchi & Newdick, 2009). Conversely, the lower the morality, the more unethical behavior (such as fraudulent behavior) increases. Low morale encourages fraud and can ultimately damage and even destroy the organization. Low morality tends to lead people to commit fraud (Haliah et al., 2021).

This study was intended to investigate the moderating effect of individual morality on the relationship between aspects of fraud hexagon and fraudulent behavior among budget user officials at Regional Apparatus Organizations in Indonesia. Budget users are officials who hold the power to use the regional budget, namely the Head of Regional Apparatus Organization who is responsible for the use of the budget in each organization they lead. They are considered prone to fraud. This research can make a theoretical contribution to the development of fraud models. Morality determines fraudulent behavior. Low individual morality can strengthen the aspects of fraud hexagon affecting the fraudulent behavior. Conversely, high individual morality will weaken the effect of the aspects of fraud hexagon on fraudulent behavior.

2. Theoretical Review

2.1 Attribution Theory

Attribution theory is a social psychology theory developed by Fritz Heider in 1958. This theory explains the causes of a behavior (Schmitt, 2014). Attribution theory studies a person's tendency to seek information on why someone does something. A person tries to understand the behavior of others who may have one or more attributions to become the basis to behave. Attribution theory is synonymous with the way a person interprets the events around them. In internal attribution, a person's behavior is affected by internal traits, personality or attitudes while external attribution is driven by situations or circumstances (Pishghadam & Abbasnejad, 2017). Aspects of fraud hexagon (stimulus, capability, ego) and individual morality are internal attributions and aspects of fraud hexagon (collusion, opportunity, rationalization) are external factors that could trigger a fraudulent behavior.

2.2 Contingency Theory

Contingency theory is the first organizational theory developed by Lawrence and Lorch in 1967. This theory reveals that stability of market and technological environment affects the structure and characteristics of organization (Liu, 2020). The essence of contingency theory states that the effectiveness of an organization is aligned with organizational characteristics (Donaldson, 2001). This contingency theory can be explained that organizational effectiveness is situational and strongly influenced by organizational structure and characteristics. Contingency theory in relation to fraud behavior explains that fraud can be aligned with a person's moral level. There are differences between individuals who have a high level of morality and individuals who have a low level of morality in committing fraud(Efrizon et al., 2020). The higher the moral development of individuals, the more individuals try to avoid unethical behavior and so as not to harm other parties (Liyanarachchi & Newdick, 2009). Conversely, the lower the morality, the more unethical behavior (such as fraud behavior) increases. Low morale encourages fraud and ultimately damage and even destroy organization. Low morality tends to lead people to commit fraud (Haliah et al., 2021),

2.3 Moral Development Theory

Moral development theory is used to explain the aspects of individual morality in influencing fraudulent behavior. Morals develop through three levels; (1) pre-conventional level, where individuals take an action because they are afraid of existing laws/regulations, (2) conventional level, where individuals base their actions on the approval of their friends and family and also on the norms that apply in society and (3) post-conventional level, individuals behold the interests of others and universal laws in acting (Kohlberg, 1963;Welton & Lagrone, 1994;Lovell, 1997 and Wahyudi et al., 2021). The higher individual's level of moral reasoning, the more likely he is to do the 'right thing'. The higher individual's moral level, the more individuals try to avoid unethical behavior and so as not to harm other parties (Liyanarachchi & Newdick, 2009). Individual morality significantly reduces accounting fraud (Kusuma & Andreina, 2017).

2.4 Fraud Hexagon Theory

The latest development of fraud theory is the fraud hexagon developed from the previous fraud theory. The development of fraud hexagon theory does not eliminate any of the elements in the crowe horwath pentagon fraud, namely pressure, opportunity, rationalization, capability, and ego (Marks, 2014), but adds the collusion factor as a new factor that prompts people to perform a fraud. Collusion plays an important role in determining the factors that lead to fraud. This fraud hexagon theory is also called the SCCORE model, an acronym for six factors that prompti someone to commit a crime called white-collar crimes (Vousinas, 2019). White-collar crimes can be corruption, financial crimes (Dearden, 2017), financial fraud (Dodge, 2020) and asset misappropriation (Billings et al., 2021). Stimulus / pressure, capability, collusion, opportunity, rationalization and ego affect fraud (Siska et al., 2020). The fraud hexagon model is illustrated in the following figure.

Fig.1: Fraud Hexagon (Vousinas, 2019)

3. Hypothesis Development

3.1 Effect of Fraud Hexagon Aspects on Fraudulent Behavior

Attribution theory explains the causes of a behaviour (Schmitt, 2014). In attribution theory there are internal and external factors that cause behaviour (Pishghadam & Abbasnejad, 2017). The aspects of fraud hexagon, namely; stimulus/pressure, capability, collusion, opportunity, rationalization and ego are internal and external factors that cause fraudulent behavior. The results of identification and analysis reveal that stimulus/pressure, capability, collusion, opportunity, rationalization and ego prompt the fraudulent behavior (Vousinas, 2019). Then the results of research (Aviantara, 2021) show that all aspects of the fraud hexagon, namely; stimulus, capability, collusion, opportunity, rationalization and ego affect financial reporting fraud. The results of this analysis illustrate that aspects of stimulus (pressure), opportunity, rationalization, capability, ego and collusion are factors encouraging individual to commit fraud.

Stimulus is the pressure to commit fraud and has financial and non-financial properties (Vousinas, 2019). Strain theory explains that various pressures can increase the potential for crime to occur (Agnew,

1992). Stimulus or pressure always leads to unethical behavior and every fraudster faces some type of pressure to commit unethical behaviour (Abdullahi et al., 2015). Every fraudster always faces pressure and some of that pressure involves financial needs, although there are also non-financial pressures in form of frustration with work that can motivate fraud (Albrecht et al., 2008). Thus, the following hypothesis can be formulated.

H1 : Stimulus has a positive effect on fraudulent behavior.

Capability is an ability, competence, capacity, skills, ethics, values, and attitudes, distinguishing characteristics, qualities, and attributes that individuals have mobilized to carry out tasks (Odukoya & Samsudin, 2021). Theory of differential association developed by Edwin H. Sutherland in 1947 explains that criminal behavior is learned in the process of communication in intimate groups, such as the skills and techniques needed in committing a crime (Matsueda, 2010). A person's position or function in an organization provides the ability to create or explore an opportunity to commit fraud, which others do not have (Ruankaew, 2016). Opportunity opens the door to fraud. Meanwhile, pressure and rationalization pull people towards fraud. The person must have the ability to understand the opportunities that open up and take advantage of them (Wolfe & Hermanson, 2004 ; Imagbe et al., 2020 ; Avortri & Agbanyo, 2021). Many acts of fraud, especially fraud on financial, in billions of dollars will not occur without the ability of the perpetrator to carry it out (Siska et al., 2020). Thus, the research hypothesis can be formulated as follows.

H2: Capability has a positive effect on fraudulent behavior.

Collusion refers to an agreement to commit fraud between two or more people, where one party takes action for several criminal purposes, such as fraud (Meidijati & Amin, 2022). Theory of differential association developed by Edwin H. Sutherland in 1947 explains that criminal behavior is learned in the process of communication in intimate groups (Matsueda, 2010). Intimacy or closeness of relationship between individuals in a particular group enable to form a corporation to commit a crime or illegal act. Collusion may contribute to financial crime (Vousinas, 2019). Every criminal act cannot occur without the help of others(Ikechi & Anthony, 2020). Thus, the following hypothesis can be formulated.

H3 : Collusion has a positive effect on fraudulent behavior.

Opportunities result from a situation that can lead to fraud (Kazimean et al., 2019). Rational Choice Theory (RCT) developed by Cornish & Clarke in 1986 explains that there are three assumptions in this theory, namely; (1) human behavior is influenced by preferences, (2) opportunities affect behavior, (3) actors maximize benefits, actors choose the best action and provide the highest satisfaction (Vousinas, 2019) (Opp, 2020). Individuals not only decide to commit fraud but choose when the right time and where to do it (Ikechi & Anthony, 2020). Opportunity results from a situation that can lead to fraud (Kazimean et al., 2019). Fraud is triggered by opportunity (Avortri & Agbanyo, 2021). Thus, the following hypothesis can be formulated.

H4 : Opportunity has a positive effect on fraudulent behavior.

Rationalization is a mindset that seeks justification before committing fraud (Utomo et al. 2021). Theory of differential association developed by Edwin H. Sutherland in 1947 explains that another thing learned in intimate groups is the motive or rationalization which makes a crime justified or unjustified (Matsueda, 2010). A condition that arises when fraud has been committed is that the fraudster will be able to rationalize his action. Some individuals have an attitude, character, or set of ethical values that enable them to consciously and deliberately commit dishonest acts (Kassem & Higson, 2012). Thus the following hypothesis can be formulated.

H5 : Rationalization has a positive effect on fraudulent behavior

Ego (arrogance) is an attitude of one's superiority combined with an attitude of greed and the belief that internal control does not apply to him (Marks, 2014 ; Rahmatika et al., 2019). The theory of ethical egoism developed by Ayn Rand explains that the only ethical criterion is self-interest, namely the ethical obligation of humans to maximize their own benefits in certain situations (Sharaf & Ardakani, 2015). Maximizing benefits may cause a greedy attitude and tends to take the rights of others for one's own interests. Another aspect that can spur fraud is ego (Vousinas, 2019). People who always maintain their status tend to commit fraud (Koomson et al., 2020). Thus, the following hypothesis can be formulated.

H6 : Ego has a positive effect on fraudulent behavior.

3.2 Individual Morality Moderating Aspects of Fraud Hexagon on Fraud Behavior

Morality is an obstacle for individuals in committing an act of fraud, because morality contains moral values that provide messages about the negative impact of a fraud. Thus, individuals who have moral values can control their behavior so that they do not commit fraud. Contingency theory states that the effectiveness of an organization is aligned with organizational characteristics (Donaldson, 2001). Contingency theory in relation to fraudulent behavior reveals that fraud can be aligned with a person's moral level. Moral development theory explains that morals develop through three levels, namely: pre-conventional level, conventional level and post-conventional level (Kohlberg, 1963 ; Welton & Lagrone, 1994 ; Lovell, 1997 ; Wahyudi et al., 2021).

The higher the individual's moral level, the more individual tries to avoid unethical behavior and not harm other parties (Liyanarachchi & Newdick, 2009). Conversely, the lower the morality, the more unethical behavior (such as fraud behavior) increases. Low morale encourages fraud and ultimately can damage and even destroy organization. Low morality tends to fraudulent behaviour (Haliah et al., 2021). Thus someone who has a low moral level can strengthen the effect of fraud hexagon aspects on fraudulent behavior. Conversely, someone who has a high moral level will weaken the effect of fraud hexagon aspect on fraudulent behavior.

H7 : Individual morality moderates stimulus on fraudulent behavior
H8 : Individual morality moderates capability on fraudulent behavior
H9 : Individual morality moderates collusion on fraudulent behavior
H10 : Individual morality moderates opportunity on fraudulent behavior
H11 : Individual morality moderates rationalization on fraudulent behavior
H12 : Individual morality moderates ego on fraudulent behavior

4. Methodology

4.1 Research Design

This research used a quantitative approach with a survey method (Creswell, 2014 ; Neuman, 2014 ; Sekaran & Bougie, 2016) to analyze the causes of fraudulent behavior in the scope of local government. The survey was conducted on the State Civil Apparatus, namely budget user officials at the Regional Apparatus Organization in the district / city of South Sulawesi province.

The data collection method used a questionnaire by mail and electronically (google form) sent to respondents, namely Budget User Officials at Regional Apparatus Organizations in 14 districts / cities in South Sulawesi. Questionnaire development based on previous research indicators and pre-testing to measure the validity and reliability of questionnaire statements. Some of the techniques applied to increase the response to the questionnaire (Sekaran & Bougie, 2016) are; (a) designing questionnaire statements/questions that are relatively short and easy to understand so as not to make respondents feel bored, (b) sending a cover letter or calling the respondent or respondent's comrade first to confirm willingness to fill out the questionnaire, (c) providing a return envelope (questionnaire by mail). The

questionnaire was distributed to 230 respondents and 220 respondents returned the questionnaire with complete answers to be processed and analyzed.

Data analysis used Structural Equation Modeling - Partial Least Squares (SEM-PLS) with moderation models. The advantages of using SEM-PLS (Hair et al., 2017) ; (Hair et al., 2019) are; (a) SEM PLS is able to test complex research model simultaneously and has many variables and many indicators, (b) SEM PLS can be used for small sample sizes, (c) SEM = PLS can measure formative and refrective indicators. The minimum sample size required in SEM-PLS analysis is determined based on the criteria developed by Hair et al. (2017) which is at least 10 times the number of independent variables. The number of independent variables in this research is 7 variables so that the minimum sample size is 70. Thus 220 samples in this research are representative and suitable for analysis using SEM-PLS. The analysis model can be seen in the following figure.

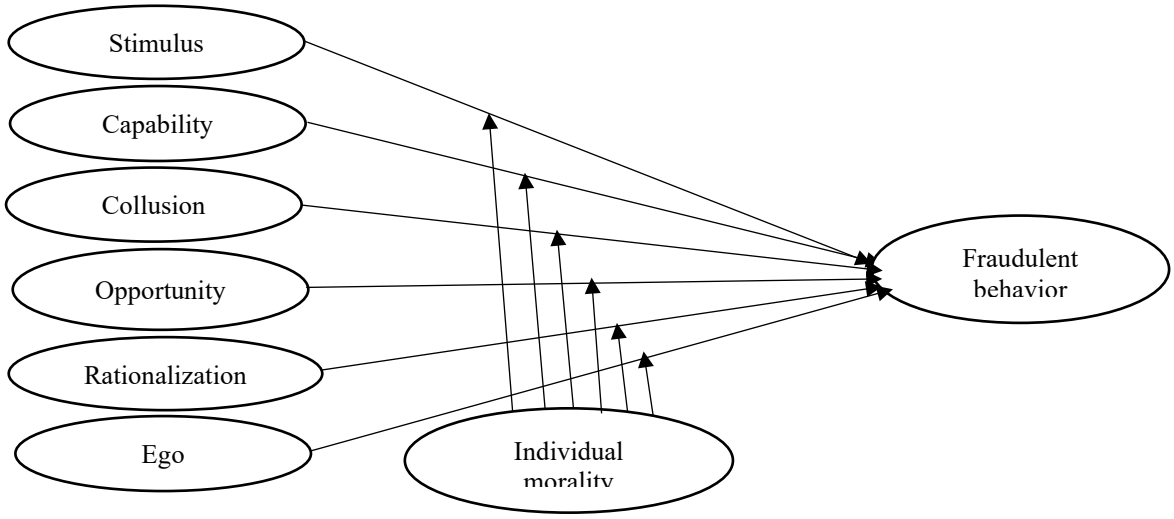

Fig.2: Research model

The equation model is as follows:

$$FB = \alpha + \beta_1 ST + \beta_2 CP + \beta_3 CL + \beta_4 OP + \beta_5 RZ + \beta_6 EG + \beta_7 |ST*IM| + \beta_8 |CP*IM| + \beta_9 |CL*IM| \beta_{10} |OP*IM| + \beta_{11} |RZ*IM| + \beta_{12} |AR*IM| + \varepsilon$$

4.2 Research variables and measurements

Variables tested are aspects of fraud hexagon (stumulus/pressure, capability, collusion, opportunity, rationalization and ego) and individual morality as exogenous variables. While fraudulent behavior is the endogenous variable. Variable measurements can be seen in the following table.

Table 1. Variable measurement

No	Variable	Incikator	Reference
1	Stimulus (ST)	a). Low income, b) excessive financial needs, c) family pressure with a high lifestyle, d) pressure from superiors/colleagues, e) work pressure	Dani et al. (2022)
2	Capability (CP)	a). Ability to exceed other people, b) ability to influence other people, c) position, d) ability to control situations, c) ability to solve problems	Dani et al. (2022)
3	Collusion (CL)	a). Group influence perspective, b) social selection perspective, c) instrumental perspective, d) social change perspective	Vousinas (2019)
4	Opportunity (OP)	a).Characteristics vulnerable to fraud, b) ineffective management, c) complex and unstable organizational structure, d) inadequate internal control	Dani et al. (2022)

5	Rasionalization (RZ)	a). Just borrow and will pay it back, b) no party is at a loss, c) for a good cause, d) deserves more	Dani et al. (2022)
6	Ego (EG)	a). Always be better than other people. b) don't care about people's negative views of themselves, c) don't care about the decline/loss of self-esteem, d) don't care about the situation.	(Dani et al., 2022)
7	Individual morality (IM)	a). Level pre-conventional, b) level conventional, c) level post-conventional(Wahyudi et al., 2021)	(Wahyudi et al., 2021)
8	Fraudulent behavior (FB)	a). Recording inappropriate/fictitious income/expenses, b) bribery, c) gratification, d) theft of office cash, e) using office assets for personal purposes	ACFE (2022) and Dani et al.(2022).

4.3 Pilot Test

Before conducting research, researchers first conducted a pilot test to measure the validity and reliability of the research instrument. The pilot test was conducted on 35 budget user officials at the Regional Apparatus Organization in South Sulawesi province which was carried out randomly. The questionnaires were distributed to 35 respondents and all returned to be processed. The validity was tested by analyzing the convergent value, namely measuring the magnitude of the loading factor for each construct. Loading factor above 0.70 is highly recommended. The analysis results show that all indicators in each construct have loading indicator value > 0.70, so it can be said that the instrument is valid as a construct measurement. The results of the Outer Loading factor pilot test for 35 samples can be presented in the following table

Table 2 : Outer Loading Factor (Pilot Test 35 sample)

Item Statements	Convergen Validity (Validity ≥ 0,7)							
	ST	CP	CL	OP	RZ	EG	IM	FB
1	0.791	0.830	0.956	0.782	0.960	0.918	0.807	0.820
2	0.884	0.905	0.940	0.889	0.802	0.911	0.853	0.859
3	0.812	0.795	0.962	0.893	0.947	0.909	0.934	0.925
4	0.785	0.905	0.779	0.815	0.900	0.842	0.843	0.847
5	0.821	0.933	0.974	0.898	0.802	0.784	0.853	0.947
6	0.782	0.750	-	-	-	-	0.884	0.939
7	-	-	-	-	-	-	-	0.911

Source: Data processed using Smart PLS

Reliability test used Composite Reliability value analysis. A high Composite Reliability value indicates good consistency of each indicator in the latent variable to measure the variable. The criteria for the composite reliability value > 0.7 indicate that the variable has good internal consistency. The composite reliability test results show that all constructs get a value > 0.7. Therefore, the instrument is considered to have good internal consistency. The complete composite reliability value is presented in the table below.

Table 3: *Composite Reliability Test* (Pilot Test 35 sample)

	Variable							
	ST	CP	CL	OP	RZ	EG	IM	FB
Composite Reliability (≥ 0,7)	0,92	0,94	0,96	0,93	0,94	0,94	0,94	0,96

Source: Data processed using Smart PLS

5. Results and Discussion

5.1 Respondent Profile

The composition of the distribution of questionnaires in service-shaped organizations is 104 (48%). The characteristics of respondents based on educational level show that most respondents have an undergraduate education of Strata 2 (162 people or 74%) and based on gender (184 men or 84%). The characteristics of the 220 respondents can be explained in table 2 below.

Table 4 : Respondent Characteristics

Description	Annotation	Sum	Percentage
Type of organization	Secretariat	9	4 %
	Body	31	14 %
	Inspectorate	5	2 %
	Agency	104	48 %
	Office	4	1 %
	Subdistrict	67	31 %
Education level	S1	41	17 %
	S2	162	74 %
	S3	17	9 %
Gender	Man	185	84 %
	Female	35	16 %

Source: Data processed using Smart PLS

5.2 Outer Model Test PLS Algorithm (Evaluation of Measurement Model)

Outer model is a model that specifies the relationship between latent variables and their indicators. Outer model is interpreted more towards validity test and reliability test. The validity test with convergent value analysis is to measure the loading factor for each construct. Loading factor above 0.70 is highly recommended. The analysis results show that the value of all indicators in each construct has an indicator loading value > 0.70, so it is said valid as a measurement of its construct. The complete PLS Algorithm model and loading factor (indicator value) are presented in the figure and table below.

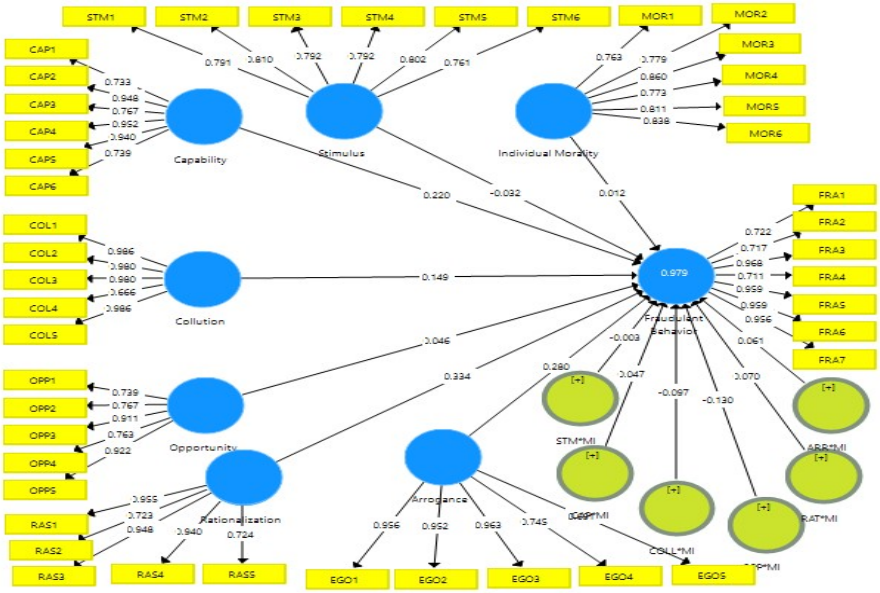

Fig.3: PLS Algorithm Model

Table 5 : Outer Loading

Items of Statement	Convergen Validity (Validity ≥ 0,7)							
	ST	CP	CL	OP	RZ	EG	IM	FB
1	0.791	0.733	0.986	0.739	0.955	0.956	0.763	0.722
2	0.810	0.948	0.980	0.767	0.723	0.952	0.779	0.717
3	0.792	0.767	0.980	0.911	0.948	0.963	0.860	0.968
4	0.792	0.952	0.777	0.763	0.940	0.745	0.773	0.711
5	0.802	0.940	0.986	0.922	0.724	0.891	0.811	0.959
6	0.761	0.739	-	-	-	-	0.838	0.959
7	-	-	-	-	-	-	-	0.956

Source: Data processed using SmartPLS

The reliability test used an analysis of Composite Reliability, Cronbach's Alpha and Average Variance Extracted (AVE) values. The high Composite Reliability, Cronbach's Alpha and Average Variance Extracted (AVE) values indicate good consistency of each indicator in latent variable to measure that variable. The criteria for the composite reliability value, Cronbach's Alpha > 0.7 and AVE > 0.5 indicate that the variable has good internal consistency. The results of the composite reliability and Cronbach's Alpha tests show that all constructs have a value > 0.7 and the AVE test results show that all constructs have a value > 0.5. Therefore it can be said that the instrument has good internal consistency. The complete composite reliability value is presented in the table below.

Table 6. Uji *Composite Reliability,* Cronbach's Alpha and *AVE*

Variable	Composite Reliability (≥ 0,7)	Cronbach's Alpha (≥ 0,7)	Average Variance Extracted (AVE) (≥ 0,5)
Stimulus (ST)	0,91	0,88	0,62
Capability (CP)	0,94	0,92	0,72
Collusion (CL)	0,96	0,95	0,86
Opportunity (OP)	0,91	0,88	0,68
Rasionalization (RZ)	0,93	0,91	0,74
Ego (EG)	0,93	0,91	0,75
Individual Morality (IM)	0,91	0,89	0,64
Fraudulent behavior (FB)	0,95	0,94	0,74

Source: Data processed using Smart PLS

5.3 Inner Model Test (Evaluation of Structural Model)

The structural model test is carried out by looking at the R^2 (R Square Adjusted) value which is the Goodness of the fit test. The fraudulent behavior construct has a value of 0.978 which can be interpreted that the variation in fraudulent behavior is explained by the constructs of Stimulus, Capability, Collusion, Opportunity, Rationalization, Ego and Individual Morality by 97% (0.978 x 100%), while the remaining 3% (100% - 93%) is explained by other variables outside this study. The goodness of the fit value can be seen in the following table.

Table 7. R-Square value

	R Square	R Square Adjusted
Fraudulent Behavior	0.980	0.978

Source: Data processed using SmartPLS

The Goodness of Fit test besides Adjusted R Square is measured by using the SRMR (Standardized Root Mean square Residual) and NFI (Normed Fit Index) values. A model is said to be fit if the SRMR ≤ 0.08 and the NFI value ≤ 0.97 (Hair et al, 2019). The goodness of fit test results show that the SRMR value is 0.077 ≤ 0.08 and the NFI value is 0.81 ≤ 0.97. It means that the model is fit, so the conclusion is that the model can be used as a basis for analyzing this research problems. The goodness of fit value of the structural equation model of this study is as follows:

Table 8. SRMR and NFI Test

Construct	SRMR	NFI	Annotation
Model	0.077	0.819	*good fit*

Source: Data processed using Smart PLS

The effect size test (f2) is used to determine the magnitude of the effect of each endogenous variable on exogenous variable. The effect size (f2) assessment criteria according to Hair et al, (2017) are 0.02 ≤ f ≤ 0.15 = small effect, 0.15 ≤ f ≤ 0.35 = medium effect, and f ≥ 0.35 = large effect. The effect size test results (f2) show that the opportunity variable has a large effect on fraudulent behavior. Stimulus, rationalization and ego variables have a medium effect on fraudulent behavior. Capability variables, collusion and individual morality have a small effect on fraudulent behavior. The full effect size test results can be seen in the following table.

Table 9. Effect Size Test (f^2)

Variable	f^2	Criteria
Stimulus	0.311	*Medium effect*
Capability	0.120	*Small effect*
Collusion	0.029	*Small effect*
Opportunity	0.374	*Large effect*
Rationalization	0.294	*Medium effect*
Ego	0.173	*Medium effect*
Individual Morality	0.024	*Small effect*

Source: Data processed using SmartPLS

5.4 Path Coefficient Measurement

Measurement of path coefficients is carried out to determine the significance of the effect of endogenous constructs on exogenous variable and hypothesis testing. The measured path coefficient value ranges from -1 to +1. The relationship between the two constructs is stronger if it approaches a value of +1, and weaker closer to -1. For hypothesis testing with a significance level of 5%, if the t-statistic value> 1.96 and p value <0.05, the null hypothesis (H0) is rejected (Hair at al., 2017). The t-statistic value of the latent construct effect coefficient is obtained from PLSBootstrapping. The results of the analysis can be seen in the following table.

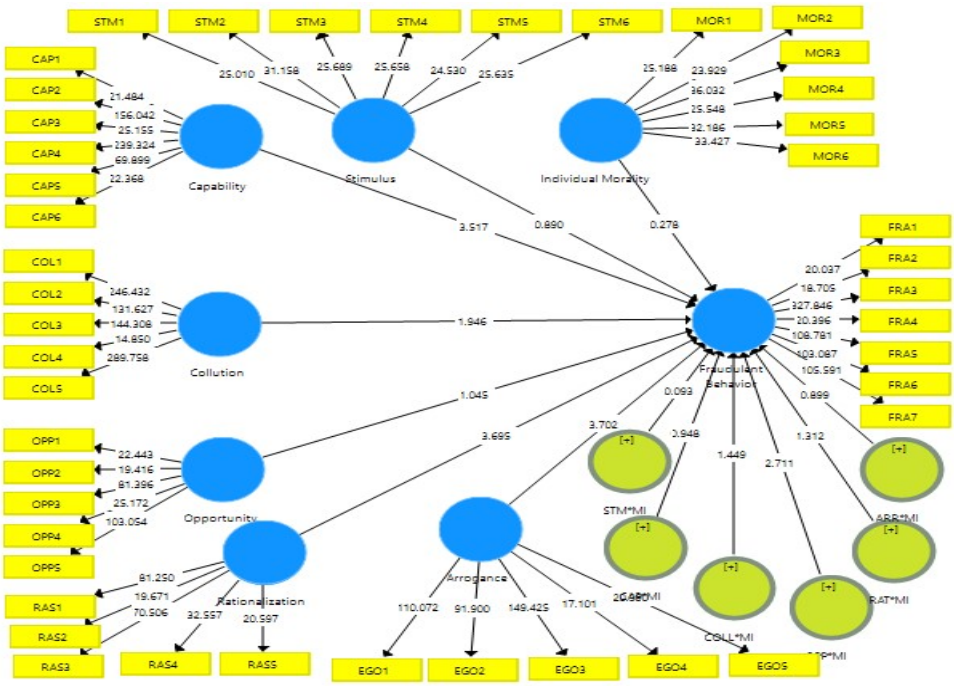

Fig.4: PLS *Bootstraping Model*

Table 10. Path Coefficient of Direct Effect

Path of Direct Effect	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values	Hypothesis Test decision
ST ->FB	0.032	0.029	0.036	5.890	0.037	H1 Accepted
CP ->FB	0.220	0.212	0.063	3.517	0.000	H2 Accepted
CL ->FB	0.149	0.140	0.077	3.946	0.022	H3 Accepted
OP ->FB	0.046	0.043	0.044	4.045	0.030	H4 Accepted
RZ -> FB	0.334	0.364	0.090	3.695	0.000	H5 Accepted
EG ->FB	0.280	0.269	0.076	3.702	0.000	H6 Accepted

Source: Data processed using SmartPLS

Interpretation results of the significance test of direct path analysis of fraud hexagon aspect on fraudulent behavior (data in table 10) can be explained that coefficient value of the stimulus effect on fraudulent behavior is positive at 0.032. The t-statistic value is 5.890> 1.96 and the p-value is 0.037 <0.05 so that the hypothesis (H1) is accepted. These results state that the stimulus variable has a significant positive effect on fraudulent behavior. Coefficient value of the capability effect on fraudulent behavior is positive at 0.220. The t-statistic value is 3.517> 1.96 and the p-value is 0.000 <0.05 so the hypothesis (H2) is accepted. These results state that the capability variable has a significant positive effect on fraudulent behavior. Coefficient value of the effect of collusion on fraudulent behavior is positive at 0.149. The t-statistic value is 3.946> 1.96 and the p-value is 0.022 <0.05, so the hypothesis (H3) is accepted. These results state that the collusion variable has a significant positive effect on fraudulent behavior.

Coefficient value of the effect of opportunity on fraudulent behavior is positive at 0.046. The t-statistic value is 4.045> 1.96 and the p-value is 0.030 <0.05, so the hypothesis (H4) is accepted. These results state that the opportunity variable has a significant positive effect on fraudulent behavior. Coefficient value of the effect of rationalization on fraudulent behavior is positive at 0.334. The t-statistic value is 3.695> 1.96 and the p-value is 0.000 <0.05, so the hypothesis (H5) is accepted. These results state that the rationalization variable has a significant positive effect on fraudulent behavior.

Coefficient value of the ego's influence on fraud behavior is positive at 0.280. The t-statistic value is 3.702> 1.96 and the p-value is 0.000 <0.05, so the hypothesis (H6) is accepted. These results state that the ego variable has a significant positive effect on fraudulent behavior.

Furthermore, the results of path coefficient measurement of indirect effects with moderating variables can be presented in the following table.

Table 11. Path Coefficient of Indirect Effect with Moderation Variable

Path of Moderating Effect	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values	Hypothesis Test decision
ST*IM -> FB	0.003	0.000	0.033	5.093	0.026	H7 Accepted
CP*IM -> FB	0.047	0.044	0.050	2.948	0.034	H8 Accepted
CL*IM -> FB	0.097	0.097	0.067	4.449	0.015	H9 Accepted
OP*IM -> FB	0.130	0.129	0.048	2.711	0.007	H10 Accepted
RZ*IM -> FB	0.070	0.067	0.054	3.312	0.019	H11 Accepted
EG*IM -> FB	0.061	0.062	0.068	5.899	0.037	H12 Accepted

Source: Data processed using Smart PLS

Results interpretation of significance test of the indirect path analysis of the effect of fraud hexagon aspect on fraudulent behavior moderated by individual morality (data in table 11) show that the coefficient value of the stimulus effect on fraudulent behavior moderated by individual morality is 0.003. The t-statistic value is 5.093> 1.96 and the p-value is 0.026 <0.05, so the hypothesis (H7) is accepted. These results state that individual morality is significantly able to moderate the variable stimulus effect on fraudulent behavior. Coefficient value of the effect of capability on fraudulent behavior moderated by individual morality is 0.047. The t-statistic value is 2.948> 1.96 and the p-value is 0.034 <0.05, so the hypothesis (H8) is accepted. These results state that individual morality is significantly able to moderate the effect of the capability variable on fraudulent behavior. Coefficient value of the effect of collusion on fraudulent behavior moderated by individual morality is 0.097. The t-statistic value is 4.449> 1.96 and the p-value is 0.015 <0.05, so the hypothesis (H9) is accepted. These results state that individual morality is significantly able to moderate the effect of collusion variables on fraudulent behavior.

Coefficient value of the effect of opportunity on fraudulent behavior moderated by individual morality is 0.1308. The t-statistic value is 2.711> 1.96 and the p-value is 0.007 <0.05, so the hypothesis (H10) is accepted. These results state that individual morality is significantly able to moderate the effect of opportunity variables on fraudulent behavior. Coefficient value of the effect of rationalization on fraudulent behavior moderated by individual morality is 0.070. The t-statistic value is 3.312> 1.96 and the p-value is 0.019 <0.05, so the hypothesis (H11) is accepted. These results state that individual morality is significantly able to moderate the effect of rationalization variables on fraudulent behavior. Coefficient value of the effect of ego on fraudulent behavior moderated by individual morality is 0.061. The t-statistic value is 5.899> 1.96 and the p-value is 0.037 <0.05, so the hypothesis (H12) is accepted. These results state that individual morality is significantly able to moderate the effect of ego variables on fraudulent behavior.

6. Discussion

6.1 Effect of Fraud Hexagon Aspects on Fraudulent Behavior

Interpretation of the results of direct path analysis significance test states that all aspects of fraud hexagon (stimulus, capability, collusion, opportunity, rationalization and ego) have a significant positive effect on fraudulent behavior. These results in detail can be explained that the stimulus aspect has a significant positive effect on fraudulent behavior. The higher the stimulus / pressure, the more

fraudulent behavior increases. These results are consistent with the analysis conducted by Vousinas (2019) and also support several previous studies such as the research by Koomson et al. (2020), Omukaga (2020), Nair et al. (2023), Achmad et al. (2022), Ratmono & Frendy (2022) and Alfarago et al. (2023).

Capability has a significant positive effect on fraudulent behavior. Individuals may have the ability to potentially commit fraud (Larum et al., 2021) because they can create opportunities and influence others to commit fraud. These results support the analysis conducted by Vousinas (2019) and support previous research such as Omukaga (2020) and Dani et al. (2022).

Collusion has a significant positive effect on fraudulent behavior which is usually done together. Fraud perpetrators assume that fraud committed together is easier, less risky and cover each other's actions. These results support the analysis and results of research conducted by Vousinas (2019) and Aviantara (2021).

Opportunity has a significant positive effect on fraudulent behavior. The more opportunities with not well documented procedures and policies, lack of supervision and financial transactions are not properly recorded, the more the fraudulent behavior increases. These results support research conducted by Vousinas, (2019) and also support several previous studies such as those conducted by Kazimean et al.(2019), Omukaga (2020), Dani et al. (2022), Ratmono & Frendy (2022), Nair et al. (2023) and Johari et al. (2023).

Rationalization has a significant positive effect on fraudulent behavior. Individuals who always justify a fraud tend to have the desire to frequently do this action, so that intensity of the fraudulent behavior increases. These results are in accordance with the research conducted by Vousinas (2019) and support the research conducted by Umar et al. (2020), Harman & Bernawati (2021), Avortri & Agbanyo (2021) and Dani et al. (2022).

Ego has a significant positive effect on fraudulent behavior. This shows that the greater the ego attitude, the greater the occurrence of fraudulent behavior. The results of this study support the analysis and results of research conducted by Vousinas (2019), Koomson et al. (2020), and Dani et al. (2022).

6.2 Individual Morality Moderating Aspects of Fraud Hexagon on Fraudulent Behavior

Results of the interpretation of significance test of indirect path analysis show that individual morality is significantly able to moderate the effect of fraud hexagon aspect on fraudulent behavior. These results indicate that individual morality is significantly able to moderate the effect of stimulus aspect on fraudulent behavior. Individuals who have a high moral level (post-conventional) do not tend to commit fraud although there is a financial or non-financial stimulus or pressure. Likewise, individual morality is significantly able to moderate the effect of capability aspects on fraudulent behavior. When someone has a high moral level (post-conventional), they do b not tend to commit fraud even though there is the ability to commit the fraud.

Individual morality is significantly able to moderate the effect of collusion aspect on fraudulent behavior. Although there is collusion, fraud will not occur if individuals have a high moral level. Likewise, individual morality is significantly able to moderate the effect of opportunity aspect on fraudulent behavior. Though there is an opportunity to commit fraud, individuals with a high level of morality will avoid committing fraud. Furthermore, individual morality is significantly able to moderate the effect of rationalization variable on fraudulent behavior. Individuals with high morality will not rationalize that fraud is a good act so that the tendency to commit fraud is lower. Individual morality is significantly able to moderate the effect of ego variable on fraudulent behavior. Individuals with high ego but having high morals will not commit fraud.

The results of this study indicate that individual morality weakens the effect of fraud hexagon aspects such as stimulus, capability, collusion, opportunity, rationalization and ego, on fraudulent behavior. This is in accordance with the statement by Liyanarachchi & Newdick (2009) that the higher

the individual's moral level, the more individuals try to avoid unethical behavior and not harm other parties. Morality is a good attitude and behavior possessed by individuals who do not tend to ask for compensation or selflessness for their goodness Sutrisno et al. (2021). Individual morality is the overall principles and values regarding the goodness or awareness of an official to be responsible for an entity, to uphold the value of honesty and ethics, and to comply with every rule in the entity Wahyudi et al. (2021). Thus, individuals with high moral level will not commit fraud even though they are in a condition of stimulus / pressure, capability, collusion, opportunity, rationalization and ego.

Individual morality plays an important role in preventing the fraudulent behavior in the government environment. Therefore, it is necessary to strengthen the morals of each government apparatus through regular integrity and anti-corruption character training.

7. Conclusion

Based on the research results, the conclusion is drawn that all aspects of the fraud hexagon (stimulus, capability, collusion, opportunity, rationalization and ego) have a significant positive effect on fraudulent behavior and individual morality can significantly moderate this relationship.

This research has limitations in use of a cross-section design and focus on a certain population, namely the local governments at a certain time. Therefore, future research is expected to explore other potential moderating factors and use a longitudinal design to establish causal relationships and develop this research model in other public sector organizations.

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